Turn to the Pros

HARRIS INDUSTRIAL EQUIPMENT CATALOG
HARRIS KNOWS
WHAT IT TAKES TO
GET THINGS DONE,
THAT’S WHY WE’VE
BEEN EQUIPPING PROS

CUT

WELD
WITH THE BEST PRODUCTS FOR OVER 110 YEARS.

Each day, Harris sets out to make the best and most complete line of industrial grade tools in the world. Why? Because superior results count to professional tradesmen. Having the right tools from Harris will deliver a job well done, every time. We’re going to keep doing what we do best, so you can do what you do best. For the best and most complete line of industrial grade products, TURN TO THE PROS – TURN TO HARRIS.
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The Harris Products Group was formed by combining two strong names in the welding business—Harris Caloric and J.W. Harris. The Harris Products Group is a world leader in metalworking products used in the brazing, soldering, welding, cutting and gas distribution industries. The combined company offers excellence in the manufacture of:

- Gas welding and cutting equipment
- Industrial and specialty gas regulation equipment
- Gas distribution systems
- Brazing and soldering alloys
- Welding alloys
- Pre-formed bends, rings and return bends

The Harris Products Group is a wholly-owned subsidiary of The Lincoln Electric Company. Lincoln has more than 48 manufacturing locations, including operations and joint ventures in 19 countries and a worldwide network of distributors and sales offices covering more than 160 countries.

THE HARRIS PRODUCTS GROUP HISTORY

1889  
John Harris, founder, invents the first flame-cutting torch.

1904  
Harris exhibits his invention at the World’s Fair in St. Louis, Missouri (USA).

1905  
John Harris establishes The Harris Caloric Company. Harris continued to refine its gas torches and starts manufacturing related accessories, including gas pressure regulators.

1914  
Joseph W. Harris founds the J.W. Harris Company, specializing in the distribution and repair of specialized parts for automotive and farm vehicles. The company later expands into welding alloys and accessories.

1926  
U.S. Welding Co. of Minnesota purchases Harris Caloric and becomes part of Emerson Electric Co. in 1973.
MANUFACTURING FACILITIES

Based in Mason, Ohio, The Harris Products Group has four manufacturing locations in four countries and a worldwide network of distributors and sales offices covering more than 90 countries.
WHY PROFESSIONAL TRADESMEN TURN TO THE PROS

EXPERIENCE
We know your industry. Our customers worldwide will attest that Harris products improve their processes, drive down costs and increase profits. We understand your business and the challenges you face every day.

COMMITMENT
The Harris Products Group is committed to a continuous pursuit of improvement in manufacturing excellence through the implementation of “lean manufacturing” concepts. Incorporated in our lean manufacturing initiatives are the principal concepts of continuous flow, pull demand, elimination of waste and pursuit of a system that is responsive to customers but lean in inventory, labor and manufacturing costs. Tools we currently use in this effort include Six Sigma, statistical process control, preventive maintenance, kanban and kaizen.

In addition to our lean manufacturing efforts we have also implemented automation systems, robotic systems and a incentive pay system. We use a rigorous financial planning process in conjunction with disciplined project management for the implementation of planned cost reductions for material, labor and overhead, as well as new product development.
QUALITY
The Harris Products Group is certified to ISO 9001:2000. Quality is an integral part in all processes of the company from development, planning, design and manufacturing to sales and service activities. Our quality system is regularly audited on both an internal and external basis to ensure that consistent business processes are applied.

EXPERTISE
Good companies become great companies when their employees are passionate about the company and the products they produce. We make it our business to know your company so that we can provide the right products for your processes. Our sales team is comprised of product application specialist that can complete on-site evaluations and surveys. They work closely with you to provide a total solution. This also includes support for our customers after the sale through our safety and factory training.

CERTIFICATIONS
The Harris Products Group is committed to environmental stewardship and resource conservation throughout the world. All Harris facilities are certified to ISO 14001.

The Harris Products Group is certified to ISO 9001:2000. Quality is an integral part in all processes of the company from development, planning, design and manufacturing to sales and service activities.

Many Harris industrial gas regulators and torches are certified to the UL® listed standard. Choosing to work with UL® standards demonstrates our commitment to the highest levels of safety and quality.

Harris regulators and torches are all manufactured to the applicable Compressed Gas Association (CGA) standard.
OUR REGULATORS ARE MADE FROM THE HIGHEST QUALITY INDUSTRIAL-GRADE COMPONENTS. THEY ARE DESIGNED TO WITHSTAND THE HARDEST ENVIRONMENTS AND ARE 100% TESTED PRIOR TO SHIPMENT FROM OUR FACILITY. WE OFFER A COMPLETE RANGE OF SINGLE-STAGE INDUSTRIAL REGULATORS TO MEET YOUR APPLICATIONS AND BUDGET.

GET CONNECTED
Go to www.facebook.com/HarrisProductsGroup

QUICK SELECTION GUIDE

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HISTORY

Tradesmen today demand rugged, industrial-grade tools that can stand up to harsh work environments and are engineered to last. The time-proven technology of the Model 25 regulator has made it the workhorse of the Harris regulator offering. Fabricators everywhere depend on it to deliver consistent performance and reliability.

We’ve taken everything you’ve come to trust about the Model 25 performance and made it even better. Whether it’s our silky smooth adjusting knob, our large easy-to-read gauges or our 7-year warranty, we are delivering the next generation of regulation equipment now.

We’ve been designing the best equipment money can buy for over 110 years—and we are just getting started…
**ECONOMICAL**

**DESCRIPTION**
This single-stage regulator is designed to be compact and economical, but with features typically available in more expensive regulators. It is used where weight, cost and size are factors.

**DETAILS**
- **Capacity:** Light duty
- **Cv:** 0.08
- **Gauges:** 50mm ABS plastic
- **Pressure Regulation:** 0.4 PSIG/100 PSIG
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Certifications:** UL® listed/CGA E-4
- **Featured In:** Expert® series kits, air fuel equipment kits, Port-A-Torch®
- **Weight:** 1.39 lbs. / 0.63 kg.

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<td>100</td>
<td>4000</td>
<td>CGA 540</td>
<td>“A” 3/8” - 24 RH</td>
</tr>
</tbody>
</table>

*Regulator designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.

**HVAC PURGING REGULATOR**

**DESCRIPTION**
The model 601 is designed for applications where weight and size are critical factors. Used for HVAC purging, pressure testing and blanketing with nitrogen or other inert gases. Gauges feature rubber gauge guards for added protection in abusive conditions. Plastic knob for easy grip and precise adjustment. Maximum delivery pressure 400 or 800 PSIG.

**DETAILS**
- **Capacity:** Light/Medium Duty
- **Cv:** 0.17
- **Gauges:** 50mm ABS plastic-psi/bar
- **Pressure Regulation:** 0.4 PSIG/100 PSIG
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body:** Brass
- **Outlet:** 1/4” 45° Flare SAE
- **Certifications:** CGA E-4
- **Where Used:** HVAC purging, pressure testing and blanketing
- **Weight:** 1.39 lbs. / 0.63 kg.
- **Related Items:** Gauge-Guard, CPR63332
  - P/N: 9003727

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>GAS</th>
<th>MAX. INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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<tr>
<td>3000648</td>
<td>601-400-580</td>
<td>Ar, He, N2</td>
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<td>0 - 400</td>
<td>600</td>
<td>4500</td>
<td>CGA 580</td>
<td>1/4” 45° flare SAE</td>
</tr>
<tr>
<td>3000649</td>
<td>601-800-580</td>
<td>Ar, He, N2</td>
<td>3000</td>
<td>0 - 800</td>
<td>1450</td>
<td>4500</td>
<td>CGA 580</td>
<td>1/4” 45° flare SAE</td>
</tr>
</tbody>
</table>
**COMPACT**

**DESCRIPTION**
This single-stage regulator is designed to be compact, light weight and rugged. It provides accurate pressure regulation to 100 PSIG.

**DETAILS**

- **Capacity:** Light to medium duty
- **Cv:** 0.08
- **Gauges:** 2” Steel dual scale
- **Pressure Regulation:** 0.4 PSIG/100 PSIG
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Certifications:** UL® listed/CGA E-4
- **Weight:** 2.2 lbs./0.99 kg.

**MODEL SHOWN:**
301-100-540

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**COMPACT GENERAL PURPOSE**

**DESCRIPTION**
The model 801 is designed to be a medium duty regulator, perfect for most industrial cutting and welding applications. It features 2” gauges that are easy to read and an ergonomic adjusting knob for precise operation and a longer service life.

**DETAILS**

- **Capacity:** Medium duty
- **Cv:** 0.17
- **Gauges:** 2” Steel dual scale
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body:** Brass
- **Featured In:** Ironworker HMD & VMD series outfits
- **Certifications:** CGA E-4
- **Where Used:** Industrial cutting and welding applications
- **Weight:** 2.32 lbs. / 1.05 kg.

**MODEL SHOWN:**
801-145-540
**DESCRIPTION**

This single-stage nitrogen purging regulator is designed for performance and economy, it is with features typically available in more expensive regulators. Specifically designed for HVAC and other nitrogen pressure testing and blanketing applications. Both the 25GX-250 and 25GX-500 feature a "T" bar for easier adjustment at high pressures.

**DETAILS**

**Capacity:** Medium to heavy duty  
**Cv:** 0.17  
**Gauges:** 2.5" Steel dual scale  
**Pressure Regulation:** 0.2 PSIG/100 PSIG  
**Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat  
**Certifications:** CGA E-4

Where Used: HVAC purging, pressure testing and blanketing  
**Weight:** 3.2 lbs./1.45 kg.  
**Related Equipment:** Steel gauge guards Green (Oxygen) P/N: 4300239 Red (Fuel) P/N: 4300238  
**Outlet P/N:** 9001426

**BEST VALUE**

The 25GX is designed to be the next generation workhorse of the Harris industrial regulator line. It features larger, easier to read gauges and an ergonomic adjusting knob that also shields the adjusting mechanism from contaminants. ***Some models are available in clamshell packaging (CS).**

**DETAILS**

**Capacity:** Medium to heavy duty  
**Cv:** 0.17  
**Gauges:** 2.5" Steel dual scale  
**Pressure Regulation:** 0.2 PSIG/100 PSIG  
**Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat  
**Certifications:** UL® listed/CGA E-4

Featured In: Steelworker® Classic & V-Series® kits  
**Weight:** 2.9 lbs./1.32 kg.  
**Related Equipment:** Steel gauge guards Green (Oxygen) P/N: 4300239 Red (Fuel) P/N: 4300238  
**Outlet P/N:** 9001426

---

*Regulators designed for propane service can be used with any other LPG fuel. NOT FOR USE WITH ACETYLENE.  
**Supplied with 5/8"-18 adaptor P/N: 9000002 ***Packaged in clamshell  
3000485 has 30 PSIG plain face gauge
**BEST FEATURES**

**DESCRIPTION**

Model 425 is a premium, single-stage, industrial regulator that is an ideal choice for most industrial applications. This regulator incorporates a number of Harris features designed to make it a rugged, long-lasting performer, including an exclusive tamper-proof, self-reseating internal HP safety valve and a neoprene diaphragm. The 425 is also available in a multitude of pressure ranges and for all standard industry gases.* Some models are available in clamshell packaging (CS).

**DETAILS**

**Capacity:** Heavy duty

Cv: 0.17

Gauges: 2.5” brass

Pressure Regulation: 0.2 PSIG/100 PSIG

Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

Certifications: UL® listed/CGA E-4

**PART NO.** | **MODEL NO.** | **GAS** | **MAX. INLET PSIG** | **DELIVERY PRESSURE RANGE PSIG** | **DELIVERY PRESSURE GAUGE PSIG** | **SUPPLY PRESSURE GAUGE PSIG** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3000816 | 425-15-300 | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 300 | 9⁄16” - 18 LH
3004541 | 425-15-300 CS* | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 300 | 9⁄16” - 18 LH
3000815 | 425-15-510 | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 510 | 9⁄16” - 18 LH
3004542 | 425-15-510 CS* | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 510 | 9⁄16” - 18 LH
3000713 | 425-50-510P | LPG** | 3000 | 0 - 50 | 60 | 400 | CGA 510P | 9⁄16” - 18 LH
3004543 | 425-50-510P CS* | LPG** | 3000 | 0 - 50 | 60 | 400 | CGA 510P | 9⁄16” - 18 LH
3000784 | 425-50A-350 | H2, METHANE | 3000 | 0 - 50 | 60 | 400 | CGA 350 | 9⁄16” - 18 LH
3000794 | 425-125A-350 | H2, METHANE | 3000 | 0 - 125 | 200 | 400 | CGA 350 | 9⁄16” - 18 LH
3000787 | 425-125-350 | ETHYLENE, METHANE | 3000 | 0 - 125 | 200 | 400 | CGA 350 | 9⁄16” - 18 LH
3000795 | 425-50-540 | OXYGEN | 3000 | 0 - 50 | 60 | 400 | CGA 540 | 9⁄16” - 18 RH
3000714 | 425-125-540 | OXYGEN | 3000 | 0 - 125 | 200 | 400 | CGA 540 | 9⁄16” - 18 RH
3004544 | 425-125-540 CS* | OXYGEN | 3000 | 0 - 125 | 200 | 400 | CGA 540 | 9⁄16” - 18 RH
3000796 | 425-200-540 | OXYGEN | 3000 | 0 - 200 | 400 | 400 | CGA 540 | 9⁄16” - 18 RH
3000762 | 425-125-346 | MEDICAL AIR | 3000 | 0 - 125 | 200 | 400 | CGA 346 | 9⁄16” - 18 RH
3000764 | 425-200-346 | MEDICAL AIR | 3000 | 0 - 200 | 400 | 400 | CGA 346 | 9⁄16” - 18 RH
3000821 | 425-125-590 | INDUSTRIAL AIR | 3000 | 0 - 125 | 200 | 400 | CGA 590 | 9⁄16” - 1/2” NPT (M)
3000837 | 425-15-320 | Ar, He, N2 | 3000 | 0 - 15 | 30 | 400 | CGA 580 | 9⁄16” - 18 RH
3000843 | 425-50-580 | Ar, He, N2 | 3000 | 0 - 50 | 50 | 400 | CGA 580 | 9⁄16” - 18 RH
3000767 | 425-125-580 | Ar, He, N2 | 3000 | 0 - 125 | 200 | 400 | CGA 580 | 9⁄16” - 18 RH
3000765 | 425-125A-580 | Ar, He, N2*** | 3000 | 0 - 125 | 200 | 400 | CGA 580 | 9⁄16” - 18 RH
3000773 | 425-200-580 | Ar, He, N2 | 3000 | 0 - 200 | 400 | 400 | CGA 580 | 9⁄16” - 18 RH
3000848 | 425-15-555 | BUTANE | 3000 | 0 - 15 | 30 | 400 | CGA 555 | 9⁄16” - 18 RH
3000775 | 425-125-320 | CO2 | 3000 | 0 - 125 | 200 | 400 | CGA 320 | 9⁄16” - 18 RH

* Models with “CS” suffix are clamshell packaged.
** Regulators designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.
***Models with anti-vibrator “A” for He and H2 applications feature the standard Harris internal safety.

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**PRO INFO**

**CHOOSE THE RIGHT HARRIS FLOW CONTROL DEVICES**

One of the most common uses for gas flow control devices in the industrial gas market is to control shielding gases for GTAW (TIG) and GMAW (MIG) welding. No other manufacturer in the industry offers a more complete line of shielding gas equipment than Harris. Harris offers many designs and models of flow meters, flow meter regulators and flow gauge regulators for all gas supply systems, high-pressure cylinders, liquid cylinders and pipelines.

**CONTACT YOUR HARRIS REPRESENTATIVE FOR THE FEATURES AND BENEFITS THAT BEST FIT YOUR APPLICATION(S).**
THE TRUE MEASURE OF A REGULATOR

Performance = Pressure Regulation

There is a reason they are called "pressure" regulators. Regulators take unusable high pressure, for example, from a cylinder and break it down into a lower usable pressure. This is the true function of a regulator. How well a regulator maintains the lower pressure, despite the changes in pressure upstream, is the true measure of a regulator. The more constant the set pressure is held, the better the regulator. The Harris Model 450 offers superior pressure regulation over competitive models.

Pressure Comparison

Both of the competitive models, delivery pressure rises twice as fast as the Harris Model 450. This is important because the Harris Model 450 user will get a better, more constant delivery pressure, as the cylinder empties. Additionally, the user won't have to adjust the regulator as much, meaning more time spent working.

Calculations were performed per the Compressed Gas Association (CGA) E-4 standard. It is the most up-to-date and comprehensive regulator standard in the world today for the welding industry. It defines product safety and production test requirements and it defines performance characteristics required to meet field applications.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Pressure Rise PSI / 100PSI</th>
<th>Change In Delivery Pressure</th>
<th>Final Outlet Pressure</th>
<th>Percent Change</th>
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<td>0.30</td>
<td>+ 7.65</td>
<td>37.65</td>
<td>25%</td>
</tr>
<tr>
<td>Competitive Model 1a</td>
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<td>44.28</td>
<td>47%</td>
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<tr>
<td>Competitive Model 1b</td>
<td>0.70</td>
<td>+ 17.85</td>
<td>47.85</td>
<td>60%</td>
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</table>
**STAINLESS STEEL DIAPHRAGM**

**DESCRIPTION**

The Model 450 is an economically priced industrial duty regulator, but with premium features found only in high priced regulators. The 450 has a stainless steel diaphragm and a Harris exclusive internal tamper-proof self-seating safety. *Some models are available in clamshell packaging (CS*).

**DETAILS**

Capacity: Heavy duty

Gauges: 2.5" brass

Pressure Regulation: 0.3 PSI/100 PSI

Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

Certifications: UL® listed/CGA E-4

Weight: 4.6 lbs./2.09 kg.

---

**PART NO.** | **MODEL NO.** | **GAS** | **MAX. INLET PSI** | **DELIVERY PRESSURE RANGE PSI** | **DELIVERY PRESSURE GAUGE PSI** | **SUPPLY PRESSURE GAUGE PSI** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3002493 | 450-15-300 | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 300 | ½" - 18 LH
3004545 | 450-15-300 CS | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 300 | ½" - 18 LH
3002494 | 450-15-510 | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 510 | ½" - 18 LH
3002466 | 450-15-510 CS | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 510 | ½" - 18 LH
3002495 | 450-50-510P | LPG** | 500 | 0 - 50 | 100 | 400 | CGA 510P | ½" - 18 LH
3004547 | 450-50-510P CS | LPG** | 500 | 0 - 50 | 100 | 400 | CGA 510P | ½" - 18 LH
3002496 | 450-50-540 | OXYGEN | 3000 | 0 - 50 | 100 | 400 | CGA 540 | ½" - 18 RH
3002497 | 450-125-540 | OXYGEN | 3000 | 0 - 125 | 200 | 400 | CGA 540 | ½" - 18 RH
3004548 | 450-125-540 CS | OXYGEN | 3000 | 0 - 125 | 200 | 400 | CGA 540 | ½" - 18 RH
3002499 | 450-200-540 | OXYGEN | 3000 | 0 - 200 | 400 | 400 | CGA 540 | ½" - 18 RH
3002498 | 450-125-580 | AR, HE, N₂ | 3000 | 0 - 125 | 200 | 400 | CGA 580 | ½" - 18 RH

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* Models with "CS" suffix are clamshell packaged.

**STAINLESS STEEL DIAPHRAGM**

**DESCRIPTION**

The Model 45S single stage regulator has a stainless steel diaphragm for extra safety, longer life, and greater dependability. Harris 45S regulators have a Harris exclusive internal, tamper-proof, self-seating safety.

**DETAILS**

Capacity: Heavy duty

Gauges: 2.5" brass

Pressure Regulation: .3 PSI/ 100 PSI

Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

Certifications: CGA E-4

---

**PART NO.** | **MODEL NO.** | **GAS** | **MAX. INLET PSI** | **DELIVERY PRESSURE RANGE PSI** | **DELIVERY PRESSURE GAUGE PSI** | **SUPPLY PRESSURE GAUGE PSI** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3001776 | 45S-145-540 | OXYGEN | 3000 | 0 - 145 | 4000 | 4000 | CGA 540 | ½" - 18RH
3001777 | 45S-15-510 | ACETYLENE | 500 | 0 - 15 | 400 | 400 | CGA 510 | ½" - 18LH
3001778 | 45S-15-300 | ACETYLENE | 500 | 0 - 15 | 400 | 400 | CGA 300 | ½" - 18LH

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* Regulator designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.

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**THE HARRIS PRODUCTS GROUP**

www.harrisproducts.com  Orders: 1.800.733.4043

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**MODEL SHOWN:**

*450-125-540*
**DESCRIPTION**

The Model 29 gaugeless regulator is specifically designed for use in installations where rough handling of gas apparatus is commonplace. The color coded cylinder contents indicator and the delivery pressure calibration on the bonnet are easy to read.

**DETAILS**

Capacity: Heavy duty
\[ C_v = 0.17 \]
Gauges: N/A
Pressure Regulation: 0.2 PSIG/100 PSIG
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

Certifications: UL® listed/CGA E-4
Weight: 2.7 lbs./1.22 kg.

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**DESCRIPTION**

The Model 330 regulator allows for gaseous withdrawal from oxygen, carbon dioxide, argon and/or nitrogen liquid cylinders. It has a stainless steel diaphragm and a tamper-proof, self-reseating internal HP safety valve. Its unique design permits inlet pressures of up to 3000 PSIG for use on high pressure cylinders. The model 330 has an auxiliary plugged low pressure port.

**DETAILS**

Capacity: Heavy duty
\[ C_v = 0.37 \]
Gauges: 2” Brass
Pressure Regulation: 0.2 PSIG/100 PSIG
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

Certifications: CGA E-4
Where Used: Cryogenic cylinders for vapor withdrawal
Weight: 4.3 lbs./1.95 kg.

---

**PART NO.** | **MODEL NO.** | **GAS** | **MAX. INLET PSIG** | **DELIVERY PRESSURE RANGE PSIG** | **DELIVERY PRESSURE GAUGE PSIG** | **SUPPLY PRESSURE GAUGE PSIG** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3600260 | 29-15C-510 | ACETYLENE | 500 | 0 - 15 | - | - | CGA 510 | ⅜” - 18 LH
3600250 | 29-15C-300 | ACETYLENE | 500 | 0 - 15 | - | - | CGA 300 | ⅜” - 18 LH
3600320 | 29-50C-510P | LPG* | 500 | 0 - 50 | - | - | CGA 510P | ⅜” - 18 LH
3600340 | 29-100C-540 | OXYGEN | 3000 | 0 - 100 | - | - | CGA 540 | ⅜” - 18 RH
3600200 | 29-100C-540SG | OXYGEN | 3000 | 0 - 100 | - | - | CGA 540SG | ⅜” - 18 RH
3600345 | 29-100C-580 | Ar, He, N\textsubscript{2} | 3000 | 0 - 100 | - | - | CGA 580 | ⅜” - 18 RH

*Regulator designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.
DESCRIPTION

The Model HP750 series dome loaded regulator is a high pressure, high flow dome loaded regulator system. The key to the performance of this regulator is the servo-dome load technology. The servo-dome load feature allows the regulator to supply high flow rates with straight line pressure regulation. Typical applications include high flow laser assist gases, pressure transfer, blanketing and high flow manifolds and lasers too.

DETAILS

Capacity: High flow/constant pressure
Cv: 0.55 for 3000 PSIG inlet models
0.40 for 5500 PSIG inlet models

Gauges: 2.5” Brass - psi/bar
Pressure Regulation:
0.3 PSIG/100 PSIG on 5500 inlet models
0.5 PSIG/100 PSIG on 3000 PSIG inlet models

Bushing: ¼” MNPT x ¼” NPT (F) P/N: 9005806

Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat for 3000 PSIG models CTFE (Kel-F®) for 5500 PSIG Models

Certifications: CGA E-4

Weight: 8.5 lbs./3.85 kg.

Related Options: Panel Mount Nut: P/N: 9100887
Adapters: CGA 580 P/N: 9103616, CGA 540 P/N: 9103615, CGA 680 P/N: 9103617

Additional Technical Information: PG. 189

PRO INFO

SERVO-DOME LOADED TECHNOLOGY

The servo-dome load feature automatically adjusts the regulator as the cylinder pressure declines which helps maintain a steady outlet pressure and flow rate without user adjustment. Unlike competitive models, the Harris Model 750 is a rugged one piece unit with no external tubing.

CONTACT YOUR HARRIS REPRESENTATIVE FOR THE FEATURES AND BENEFITS THAT BEST FIT YOUR APPLICATION(S).
**DESCRIPTION**

The Model 8700 is a single-stage, high pressure regulator designed to operate on high pressure cylinders up to 7500 PSIG. Typical applications include high pressure testing, charging accumulators and pressurizing aircraft struts. Models for inert gas and air are self-relieving for safety.

**DETAILS**

**Capacity:** Ultra high pressure

**Gauges:** 2.5" Brass psi/bar

**Pressure Regulation:** 3.3 PSIG/100 PSIG

**Seat:** One-piece encapsulated seat design with internal filter and CTFE (Kool F®) seat

**Certifications:** CGA E-4

**Related Items:** Panel mount nut P/N: 9100887

**Weight:** 5.8 lbs./2.63 kg.

**ULTRA HIGH PRESSURE UP TO 7500 PSI INLET**

**MODEL SHOWN:** 8700-2500-350

---

<table>
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<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>MAX. INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
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<td>3200322</td>
<td>8700-4500-677*</td>
<td>Ar, He, N₂</td>
<td>7500</td>
<td>0 - 4500</td>
<td>6000</td>
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<td>6000</td>
<td>CGA 695</td>
<td>1⁄8&quot; - SS TUBE FITTING</td>
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*Self venting for safety and ease of adjustment

SG – Surge Guard – for Safety with Oxygen

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**MODEL SHOWN:** 8700-2500-350

Additional Technical Information: PG. 190
**DESCRIPTION**

The Model 3500 is specifically designed to provide high gas flows from cylinders and to supply manifold gas systems. It is also ideal for special high flow cylinder applications such as heavy cutting and heating. All models offer dual port outlets. All models have a neoprene diaphragm.

**DETAILS**

Capacity: High pressure, high flow

Cv: 0.55 and 0.4

Gauges: 2.5” Brass

Pressure Regulation:

1.6 PSIG/100 PSIG on 0.55 Cv models & 0.9 PSIG/100 PSIG on 0.4 Cv models

Seat: One-piece encapsulated seat design with internal filter and CTFE (Kel F®) seat

Certifications: CGA E-4

Related Items:

¼” plug P/N: 9000306

¾” plug P/N: 9000373

Weight: 4.6 lbs./2.09 kg.

---

**PART NO.** | **MODEL NO.** | **GAS** | **MAX. INLET PSIG** | **DELIVERY PRESSURE RANGE PSIG** | **DELIVERY PRESSURE GAUGE PSIG** | **SUPPLY PRESSURE GAUGE PSIG** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3003504 | 3500-15-510 | ACETYLENE | 500 | 0 - 15 | 30 | 400 | CGA 510 | ¾” - 18 LH
3003505 | 3500-15-300 | ACETYLENE | 500 | 0 - 15 | 30 | 400 | CGA 300 | ¾” - 18 LH
3003514 | 3500-50-510P | LPG* | 500 | 0 - 50 | 100 | 400 | CGA 510P | ¾” - 18 LH
3003503 | 3500-125-350 | H₂, METHANE | 3000 | 0 - 125 | 200 | 400 | CGA 350 | ¾” - 18 LH
3003509 | 3500-125-695 | H₂, METHANE | 5500 | 0 - 125 | 200 | 600 | CGA 695 | ¾” - 18 LH
3003513 | 3500-200-350 | H₂, METHANE | 3000 | 0 - 200 | 400 | 400 | CGA 350 | ¾” - 18 LH
3003518 | 3500-200-695 | H₂, METHANE | 5500 | 0 - 200 | 400 | 600 | CGA 695 | ¾” - 18 LH
3003500 | 3500-125-540 | OXYGEN | 3000 | 0 - 125 | 200 | 400 | CGA 540 | ¾” - 18 RH
3003510 | 3500-200-540 | OXYGEN | 3000 | 0 - 200 | 200 | 400 | CGA 540 | ¾” - 18 RH
3003502 | 3500-125-346 | AIR | 3000 | 0 - 125 | 200 | 600 | CGA 346 | ¾” - 18 RH
3003508 | 3500-125-347 | AIR | 5500 | 0 - 125 | 200 | 600 | CGA 347 | ¾” - 18 RH
3003512 | 3500-200-346 | AIR | 3000 | 0 - 200 | 400 | 400 | CGA 346 | ¾” - 18 RH
3003517 | 3500-200-347 | AIR | 5500 | 0 - 200 | 400 | 600 | CGA 347 | ¾” - 18 RH
3003501 | 3500-125-580 | Ar, He, N₂ | 3000 | 0 - 125 | 200 | 400 | CGA 580 | ¾” - 18 RH
3003507 | 3500-125-680 | Ar, He, N₂ | 5500 | 0 - 125 | 200 | 600 | CGA 680 | ¾” - 18 RH
3003511 | 3500-200-580 | Ar, He, N₂ | 3000 | 0 - 200 | 400 | 400 | CGA 580 | ¾” - 18 RH
3003516 | 3500-200-680 | Ar, He, N₂ | 5500 | 0 - 200 | 400 | 600 | CGA 680 | ¾” - 18 RH
3003540 | 3500-400-580 | Ar, He, N₂ | 300 | 0 - 400 | 500 | 4000 | CGA 580 | ½” - NPT(M)
3003541 | 3500-600-580 | Ar, He, N₂ | 3000 | 0 - 600 | 1000 | 4000 | CGA 580 | ½” - NPT(M)

*Regulators designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.

**PART NO.** | **MODEL NO.** | **GAS** | **MAX. INLET PSIG** | **DELIVERY PRESSURE RANGE PSIG** | **DELIVERY PRESSURE GAUGE PSIG** | **SUPPLY PRESSURE GAUGE PSIG** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3003538 | 3500-400-580 | Ar, He, N₂ | 3000 | 0-400 | 500 | 4000 | CGA 580 | ¾” NPT(M)
3003539 | 3500-600-580 | Ar, He, N₂ | 3000 | 0-600 | 1000 | 4000 | CGA 580 | ¾” NPT(M)
DESCRIPTION
The Model 3510 is a high flow manifold regulator. It is equipped with inlet and outlet connections required on Harris manifold systems. The body ports are ¼” NPT for direct mounting in piping systems. The 3510 now features both a ¼” NPT high and ¼” NPT low pressure port. All models have a neoprene diaphragm.

DETAILS
Capacity: Heavy duty
Cv: 0.4 for 15 PSIG models 0.55 for all other models
Gauges: 2.5” Brass psi/bar
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat. 15 PSIG models have neoprene seat.

Pressure Regulation:
1.6 PSIG/100 PSIG

CERTIFICATIONS:
CGA E-4

Where Used:
Manifold systems, pipeline systems

Weight: 5.5 lbs./2.49 kg.

PART NO. | MODEL NO. | GAS | MAX. INLET PSIG | DELIVERY PRESSURE RANGE PSIG | DELIVERY PRESSURE GAUGE PSIG | SUPPLY PRESSURE GAUGE PSIG | INLET CONNECTION | OUTLET CONNECTION
--- | --- | --- | --- | --- | --- | --- | --- | ---
3003547** | 3510-15-LH | FUEL GAS | 400 | 0 - 15 | 30 | 400 | 1.00-11.5 NPS LH (M) | 1.00-11.5 NPS LH (F)
3003548 | 3510-125-LH | FUEL GAS | 3000 | 0 - 125 | 200 | 4000 | 1.00-11.5 NPS LH (M) | 1.00-11.5 NPS LH (F)
3003551 | 3510-200-LH | FUEL GAS | 3000 | 0 - 100 | 400 | 4000 | 1.00-11.5 NPS LH (M) | 1.00-11.5 NPS LH (F)
3003546** | 3510-15-RH | NON-FUEL GAS | 400 | 0 - 15 | 30 | 400 | 1.00-11.5 NPS RH (M) | 1.00-11.5 NPS RH (F)
3003549 | 3510-125-RH | NON-FUEL GAS | 3000 | 0 - 125 | 200 | 4000 | 1.00-11.5 NPS RH (M) | 1.00-11.5 NPS RH (F)
3003550 | 3510-200-RH | NON-FUEL GAS | 3000 | 0 - 200 | 400 | 4000 | 1.00-11.5 NPS RH (M) | 1.00-11.5 NPS RH (F)

* NOT FOR USE WITH ACETYLENE.
** NOT FOR HIGH PRESSURE CYLINDER GASES CGAs Gas-996(RH), 997(LH)

MODEL SHOWN: 3510-200-RH

CYLINDER/PIPELINE HIGH FLOW

DESCRIPTION
The Model 3520 is a high flow, two gauge, in-line manifold regulator for pipeline and other applications up to 3000 PSIG inlet pressure. Typically used for high flow, non-corrosive gas applications, high purity gas applications, process analyzer gases and bulk gas distribution systems. Models with a 15 lb delivery pressure have a neoprene diaphragm. All models with a delivery pressure of 50 PSIG and above have a stainless steel diaphragm.

DETAILS
Capacity: High flow
Cv: 0.55
Gauges: 2.5” Brass - psi/bar
Pressure Regulation:
1.6 PSIG/100 PSIG
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat. 15 PSIG model has neoprene seat.

HP Safety: External, self-seating, captured vent

CERTIFICATIONS:
CGA E-4

Where Used:
Manifold systems, pipeline systems

Related Items: CGA adaptor kits:
CGA 540 - P/N: 9103615,
CGA 580 - P/N: 9103616

Weight: 4.5 lbs./2.04 kg.

PART NO. | MODEL NO. | GAS | MAX. INLET PSIG | DELIVERY PRESSURE RANGE PSIG | DELIVERY PRESSURE GAUGE PSIG | SUPPLY PRESSURE GAUGE PSIG | INLET CONNECTION | OUTLET CONNECTION
--- | --- | --- | --- | --- | --- | --- | --- | ---
3003560 | HP 3520-15 | NON CORROSIVE | 500 | 0 - 15 | 30 | 600 | ½" - NPT(F) | ½" - NPT(F)
3003561 | HP 3520-50 | NON CORROSIVE | 3000 | 0 - 50 | 100 | 4000 | ½" - NPT(F) | ½" - NPT(F)
3003562 | HP 3520-125 | NON CORROSIVE | 3000 | 0 - 125 | 200 | 4000 | ½" - NPT(F) | ½" - NPT(F)
3003563 | HP 3520-250 | NON CORROSIVE | 3000 | 0 - 250 | 400 | 4000 | ½" - NPT(F) | ½" - NPT(F)
3003564 | HP 3520-500 | NON CORROSIVE | 3000 | 0 - 500 | 600 | 4000 | ½" - NPT(F) | ½" - NPT(F)

Additional Technical Information: PG. 191

MODEL SHOWN: HP 3520-25NPT(F)
DESCRIPTION
The Model 3530 is a brass barstock regulator for pipeline and manifold applications, plumbed in-line for inlet pressures up to 3000 PSIG. Designed for non-corrosive, high flow gas applications, process analyzer gases, laser gas systems and emission monitoring system gases. Models for high pressure inlet (500 PSI) include a high pressure external safety. Models with a 15 lb delivery pressure have a neoprene diaphragm. All models with a delivery pressure of 50 PSIG and above have a stainless steel diaphragm.

DETAILS
Capacity: High flow
Cv: 0.55
Gauges: 2.5” Brass psi/bar
Pressure Rise: 1.6 PSIG/100 PSIG
Seat: One-piece encapsulated valve design with internal filter and PTFE Teflon® seat

HP Safety: External, Seaf-seating, Captured vent
Certifications: CGA E-4
Where Used: Manifold systems, pipeline systems
Related Items: Brass bushing to convert ports, ⅜” NPT (F) x ¼” MNPT (M)
P/N: 9005806
Weight: 4.3 lbs./1.95 kg.

PART NO. MODEL NO. GAS MAX. INLET PSIG DELIVERY PRESSURE RANGE PSIG DELIVERY PRESSURE GAUGE PSIG SUPPLY PRESSURE GAUGE PSIG/BAR INLET CONNECTION OUTLET CONNECTION
4000800 HP 3530-15 NON CORROSIVE 500 0 - 15 30 - 
⅛” - NPT (F) ⅛” - NPT (F)
4000801 HP 3530-50 NON CORROSIVE 3000 0 - 50 100 - 
⅛” - NPT (F) ⅛” - NPT (F)
4000802 HP 3530-125 NON CORROSIVE 3000 0 - 125 200 - 
⅛” - NPT (F) ⅛” - NPT (F)
4000803 HP 3530-250 NON CORROSIVE 3000 0 - 250 400 - 
⅛” - NPT (F) ⅛” - NPT (F)
4000804 HP 3530-500 NON CORROSIVE 3000 0 - 500 600 - 
⅛” - NPT (F) ⅛” - NPT (F)

ULTRA HIGH FLOW PIPELINE
DESCRIPTION
The Model 3540 is a single-stage, neoprene diaphragm, brass barstock regulator. It is designed specifically for applications demanding extremely high gas flows even at low incoming pressures. The 3540 features 8 functional body ports, two ⅜” NPT and six ¼” NPT that can be used for a wide variety of inlet/outlet and gauge location configurations.

DETAILS
Capacity: Ultra high flow
Cv: 1.0
Gauges: 2.5” Brass psi/bar
Pressure Regulation: 5.5 PSIG/100 PSIG
Seats: One-piece encapsulated valve design with internal filter and neoprene seats

Certifications: CGA E-4
Where Used: High flow pipeline, manifold systems and bulk systems
Related Items: Stainless steel bushing ¼” NPT (F) x ⅜” MNPT (M)
P/N: 9005806
Panel Mount: Rear panel mountable
Weight: 6.9 lbs./3.13 kg.

PART NO. MODEL NO. GAS MAX. INLET PSIG DELIVERY PRESSURE RANGE PSIG DELIVERY PRESSURE GAUGE PSIG/BAR SUPPLY PRESSURE GAUGE PSIG/BAR INLET CONNECTION OUTLET CONNECTION
4000950 HP 3540-15 NON CORROSIVE 500 0 - 15 30 600/40 
⅛” - NPT (F) ⅛” - NPT (F)
4000951 HP 3540-50 NON CORROSIVE 500 0 - 50 100 600/40 
⅛” - NPT (F) ⅛” - NPT (F)
4000952 HP 3540-125 NON CORROSIVE 500 0 - 125 200 600/40 
⅛” - NPT (F) ⅛” - NPT (F)
4000953 HP 3540-250 NON CORROSIVE 500 0 - 250 400 600/40 
⅛” - NPT (F) ⅛” - NPT (F)
### DESCRIPTION
The Model 3560 is a single-stage neoprene diaphragm brass barstock regulator. It is designed specifically for applications demanding extremely high gas flows at low incoming pressures. The 3560 features eight functional body ports, two 1/2" and six 1/4" ports allowing for a wide selection of inlets/outlets and gauge location configurations. It's auxiliary HP gauge port allows the 3560 be used for low pressure cylinder applications.

### DETAILS
- **Capacity:** Ultra high flow
- **Cv:** 1.0
- **Gauges:** 2.5" Brass psi/bar
- **Pressure Regulation:** 5.5 PSIG/100 PSIG
- **Seat:** One-piece encapsulated valve design with internal filter and neoprene seats
- **Certifications:** CGA E-4

### Where Used:
High flow pipeline, manifold systems and bulk systems

### Related Items:
- Brass bushing ¼" NPT (F) x ½"MNPT (M) P/N: 9005806
- Plug ¼" NPT hex socket P/N: 9000495

### Panel Mount:
Rear panel mountable

### Weight:
6.7 lbs./3.04 kg.

### PART NO. | MODEL NO. | GAS | MAX. INLET PSIG | DELIVERY PRESSURE RANGE PSIG | DELIVERY PRESSURE GAUGE PSIG | SUPPLY PRESSURE GAUGE PSI/BAR | INLET CONNECTIONS (F) | OUTLET CONNECTIONS (F) |
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### ULTRA HIGH FLOW PIPELINE WITH STAINLESS STEEL DIAPHRAGM AND BODY
The Model 3590 is a pipeline type stainless steel diaphragm regulator with a stainless steel barstock body. It is designed specifically for applications demanding extremely high flows at low incoming pressures. The 3560 features eight functional body ports, two 1/2" and six 1/4" ports allowing for a wide selection of inlets/outlets and gauge location configurations. It’s auxiliary HP gauge port allows the 3560 be used for low pressure cylinder applications.

### DETAILS
- **Capacity:** Ultra high flow
- **Cv:** 1.0
- **Gauges:** 2" Stainless steel psi/bar
- **Pressure Regulation:** 5.5 PSIG rise/100 PSIG
- **Seat:** One-piece encapsulated valve design with internal filter and PTFE® seats
- **Certifications:** CGA E-4

### Where Used:
Manifold and pipeline systems, bulk systems

### Related Items:
- Brass bushing ¼" NPT (F) x ½"MNPT (M) P/N: 9005806
- Stainless steel plug ¼" NPT hex socket P/N: 9000553

### Panel Mount:
Rear panel mountable

### Weight:
6.9 lbs./3.13 kg.

### PART NO. | MODEL NO. | GAS | MAX. INLET PSIG | DELIVERY PRESSURE RANGE PSIG | DELIVERY PRESSURE GAUGE PSIG | SUPPLY PRESSURE GAUGE PSI/BAR | INLET CONNECTIONS (F) | OUTLET CONNECTIONS (F) |
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<td>–</td>
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PRO INFO
HARRIS MANUFACTURES A COMPLETE LINE OF SPECIALTY GAS EQUIPMENT.

CONTACT CUSTOMER SERVICE OR YOUR HARRIS REPRESENTATIVE AND ASK FOR CATALOG PN: 9505646

GAS PRESSURE & FLOW CONTROL EQUIPMENT CATALOG

AT A GLANCE
- SPECIALTY GAS REGULATORS
- HIGH PURITY SWITCHOVERS
- SPECIALTY GAS ACCESSORIES
- MEDICAL EQUIPMENT
DESCRIPTION
The economically priced Model 247 provides high gas flow for gas distribution systems. It is available in both pipeline and station models. They feature chrome plated zinc die-cast bonnets.

DETAILS
Capacity: Heavy duty
Cv: 0.53
Gauge: 2" Steel
Pressure Regulation: 1.6 PSIG/100 PSIG
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat, low pressure versions feature a neoprene seat (NC)

Certifications: CGA E-4
Related Equipment:
Station Drops p.164
Station Valves p.163
Weight: 3.6 lbs./1.63 kg.

MODEL SHOWN:
247-125-CR

PIPELINE ¼ NPT Inlet

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<th>MODEL #</th>
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<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
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<td>30</td>
<td>¼&quot; - NPT (F)</td>
<td>¼&quot; - 18RH</td>
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<tr>
<td>4000819</td>
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<td>OXYGEN</td>
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<td>500</td>
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<td>247-200-½”R</td>
<td>OXYGEN</td>
<td>500</td>
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<td>20 PRESET</td>
<td>N/A</td>
<td>¼&quot; - NPT (F)</td>
<td>¼&quot; - 18RH (F)</td>
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</table>

Note: “C” or station CGA inlet connection - fuel gas - 025, oxygen - 024, inert gas - 034

STATION “C” Inlet

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>GAS</th>
<th>MAX. INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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<td>15</td>
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<td>FUEL GAS</td>
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<td>¾&quot; - 14LH (F) - 025</td>
<td>¾&quot; - 18LH</td>
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<td>4000823</td>
<td>247-50-CL</td>
<td>FUEL GAS</td>
<td>200</td>
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<td>100</td>
<td>¾&quot; - 14LH (F) - 025</td>
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<td>0 - 125</td>
<td>150</td>
<td>¾&quot; - 14RH (M) - 034</td>
<td>¾&quot; - 18RH (F)</td>
</tr>
</tbody>
</table>

Note: “C” or station CGA inlet connection - fuel gas - 025, oxygen - 024, inert gas - 034
DESCRIPTION
The Model 447 regulators are designed to deliver high gas flows from piping systems that are equipped with standard pipe connection outlets or with station regulator connections. The 447 also has a brass bonnet and gauge.

DETAILS
Capacity: Heavy duty, high flow
Cv: 0.53
Gauge: 2.5" Brass
Pressure Regulation: 1.6 PSIG/100 PSIG
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat, low pressure models feature neoprene seats (NC)

Certifications: CGA E-4
Weight: 3.6 lbs./1.63 kg.
Related Equipment:
Station Drops p.164
Station Valves p.163

Additional Technical Information: PG. 195

### PIPELINE 1/4" NPT Inlet

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>MAX INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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<td>FUEL</td>
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<td>1/8&quot; NPT (F)</td>
<td>9/16&quot; - 18 LH</td>
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<td>FUEL</td>
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<td>1/8&quot; NPT (F)</td>
<td>9/16&quot; - 18 LH</td>
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<td>4000571</td>
<td>447-50-1/4&quot; L</td>
<td>FUEL</td>
<td>500</td>
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<td>1/8&quot; NPT (F)</td>
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<td>FUEL</td>
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<td>0 - 200</td>
<td>400</td>
<td>1/8&quot; NPT (F)</td>
<td>9/16&quot; - 18 LH</td>
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<td>4000573</td>
<td>447-50-1/4&quot; R</td>
<td>OXYGEN</td>
<td>500</td>
<td>0 - 50</td>
<td>100</td>
<td>1/8&quot; NPT (F)</td>
<td>9/16&quot; - 18 RH</td>
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<tr>
<td>4000575</td>
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<td>OXYGEN</td>
<td>500</td>
<td>0 - 125</td>
<td>200</td>
<td>1/8&quot; NPT (F)</td>
<td>9/16&quot; - 18 RH</td>
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<tr>
<td>4000577</td>
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<td>OXYGEN</td>
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<td>400</td>
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<td>OXYGEN</td>
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<tr>
<td>4000579</td>
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<td>1/8&quot; NPT (F)</td>
<td>9/16&quot; - 18 RH</td>
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<td>4000588</td>
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<td>AIR, INERT</td>
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<td>15</td>
<td>1/8&quot; NPT (F)</td>
<td>9/16&quot; - 18 RH</td>
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Note: "C" or station CGA inlet connection - fuel gas - 025, oxygen - 024, inert gas - 034

### STATION "C" Inlet (5/8" - 14")

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>MAX INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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</thead>
<tbody>
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<td>0 - 1</td>
<td>15</td>
<td>5/8&quot; - 14 LH (F) - 025</td>
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<td>447NC-15-CL</td>
<td>FUEL</td>
<td>200</td>
<td>0 - 15</td>
<td>30</td>
<td>5/8&quot; - 14 LH (F) - 025</td>
<td>9/16&quot; - 18 LH</td>
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<td>4000551</td>
<td>447-50-CL</td>
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<td>200</td>
<td>0 - 50</td>
<td>100</td>
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<td>447NC-15-CR</td>
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<td>5/8&quot; - 14 RH (M) - 034</td>
<td>9/16&quot; - 18 RH</td>
</tr>
</tbody>
</table>

Note: "C" or station CGA inlet connection - fuel gas - 025, oxygen - 024, inert gas - 034
DESCRIPTION

The Model 547 high flow station regulator is designed to deliver high gas flows from piping systems that are equipped with station regulator connections.

DETAILS

Capacity: Heavy duty, high flow
Cv: 0.53
Gauge: 2.5" brass
Pressure Regulation: 1.6 PSIG/100 PSIG
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat, low pressure models feature neoprene seats (NC).

Certifications: CGA E-4
Weight: 3.6 lbs./1.63 kg.
Related Equipment:
Station Drops p.164
Station Valves p.163

PART NO.  MODEL NO.  GAS  MAX. INLET PSIG  DELIVERY PRESSURE RANGE PSIG  DELIVERY PRESSURE GAUGE PSIG  SUPPLY PRESSURE GAUGE PSIG  INLET CONNECTION  OUTLET CONNECTION

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>MAX. INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
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<td>200</td>
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<td>100</td>
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<td>¾&quot;-14-RH-034</td>
<td>¾&quot; - 18 RH</td>
</tr>
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<td>4000613</td>
<td>547-125-CRM</td>
<td>AIR, INERT OIL FREE</td>
<td>200</td>
<td>0 - 125</td>
<td>200</td>
<td>-</td>
<td>¾&quot;-14-RH-034</td>
<td>¾&quot; - 18 RH</td>
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<td>400</td>
<td>-</td>
<td>¾&quot;-14-RH-034</td>
<td>¾&quot; - 18 RH</td>
</tr>
</tbody>
</table>

PRO INFO

WHAT IS THE DIFFERENCE BETWEEN A STATION AND A PIPELINE REGULATOR?

"A" Nut

A station regulator is essentially a pipeline regulator with a "C" hose connection installed on the inlet to prevent the regulator from being used on a pressure source higher than its intended use.

"B" Nut

Visually, a "C" nut and stem is a little larger (¼"-14"), than the more popular "B" size (5/8"-18"), found on the majority of regulators and torches in the welding industry. Both "B" and "C" hoses are limited to a maximum gas pressure of 200 PSIG according to the standard set by The Compressed Gas Association.

"C" Nut and Stem

The station regulator with the "C" inlet connection is, therefore, limited to a maximum gas pressure of 200 PSIG. A pipeline regulator, on the other hand, has no inlet pressure limit other than that specified by its manufacturer. For example, Harris Models 247, 447 and 547 pipeline regulators are limited by Harris to a stated maximum of 500 PSIG, unless equipped with a "C" inlet, thus limiting them to 200 PSIG.

The intent of the "C" connection station regulator standard is to prevent the use of a low pressure design regulator on a high pressure source, causing an accident and/or possible injury.
**DESCRIPTION**

The Model 2548 high flow pipeline regulator is ideal for special gas applications requiring stainless steel diaphragms at inlet pressures up to 3000 PSIG with a variety of inlet/outlet port configurations. High pressure (3000 PSIG) models feature an internal high pressure relief valve.

**DETAILS**

**Capacity:** Heavy duty, high flow  
**Cv:** 0.4  
**Gauge:** 2.5" brass  
**Pressure Regulation:** 0.9 PSIG/100 PSIG  
**Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat  
**Certifications:** CGA E-4  
**Weight:** 3.8 lbs./1.72 kg.

**PART # | MODEL # | GAS | MAX. INLET PSIG | DELIVERY PRESSURE RANGE PSIG | DELIVERY PRESSURE GAUGE PSIG | INLET CONNECTION | OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | ---
4000701 | 2548-15-1/4" | FUEL GAS | 500 | 0 - 15 | 30 RZ | 1/4" NPT | 1/4" NPT
4000702 | 2548-50-1/4" | FUEL GAS | 500 | 0 - 50 | 100 | 1/4" NPT | 1/4" NPT
4000705 | 2548-125-1/4" | FUEL GAS | 500 | 0 - 125 | 200 | 1/4" NPT | 1/4" NPT
4000708 | 2548-200-1/4" | FUEL GAS | 500 | 0 - 200 | 400 | 1/4" NPT | 1/4" NPT
4000704 | 2548-50-3/4" | OXYGEN | 3000 | 0 - 50 | 100 | 1/4" NPT | 1/4" NPT
4000707 | 2548-125-3/4" | OXYGEN | 3000 | 0 - 125 | 200 | 1/4" NPT | 1/4" NPT
4000710 | 2548-200-3/4" | OXYGEN | 3000 | 0 - 200 | 400 | 1/4" NPT | 1/4" NPT
4000703 | 2548-50-3/4" | AIR, INERT GAS OIL FREE | 3000 | 0 - 50 | 100 | 1/4" NPT | 1/4" NPT
4000706 | 2548-125-3/4" | AIR, INERT GAS OIL FREE | 3000 | 0 - 125 | 200 | 1/4" NPT | 1/4" NPT
4000709 | 2548-200-3/4" | AIR, INERT GAS OIL FREE | 3000 | 0 - 200 | 400 | 1/4" NPT | 1/4" NPT

**DESCRIPTION**

The Model 647 is a panel mount pipeline regulator for accurate, repeatable delivery pressures. It is available in four pressure ranges that can be further customized to specific lower pressures. Panel mount nut is included.

**DETAILS**

**Capacity:** Heavy duty  
**Cv:** 0.17  
**Gauge:** 2" Steel  
**Pressure Regulation:** 0.6 PSIG/100 PSIG  
**Seat:** One-piece encapsulated seat designed with internal filter and neoprene seat  
**Certifications:** CGA E-4  
**Weight:** 3.8 lbs./1.72 kg.

**PART NO. | MODEL NO. | GAS | MAX. INLET PSIG | DELIVERY PRESSURE RANGE PSIG | DELIVERY PRESSURE GAUGE PSIG | INLET CONNECTION | OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | ---
4000680 | 647PM-015-000 | NON-CORROSIVE | 500 | 0 - 15 | 60 | 1/4" NPT (F) | 1/4" NPT (F)
4000681 | 647PM-050-000 | NON-CORROSIVE | 500 | 0 - 50 | 60 | 1/4" NPT (F) | 1/4" NPT (F)
4000682 | 647PM-125-000 | NON-CORROSIVE | 500 | 0 - 125 | 150 | 1/4" NPT (F) | 1/4" NPT (F)
4000683 | 647PM-175-000 | NON-CORROSIVE | 500 | 0 - 175 | 400 | 1/4" NPT (F) | 1/4" NPT (F)

Additional Technical Information: PG. 196

**DESCRIPTION**

The Model 647 high flow pipeline regulator for accurate, repeatable delivery pressures. It is available in four pressure ranges that can be further customized to specific lower pressures. Panel mount nut is included.

**DETAILS**

**Capacity:** Heavy duty  
**Cv:** 0.4  
**Gauge:** 2.5" brass  
**Pressure Regulation:** 0.9 PSIG/100 PSIG  
**Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat  
**Certifications:** CGA E-4  
**Weight:** 3.8 lbs./1.72 kg.

**MODEL SHOWN:**

2548-125-1/4"  
647PM-125-000

Additional Technical Information: PG. 196
TWO-STAGE PRESSURE CONTROL REGULATORS

FOR DEMANDING APPLICATIONS WHERE CONSTANT OUTLET PRESSURE OVER A WIDE RANGE OF INLET PRESSURES IS REQUIRED. HARRIS DELIVERS WITH A COMPREHENSIVE OFFERING OF TWO-STAGE INDUSTRIAL REGULATORS.

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QUICK SELECTION GUIDE

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<td>HEAVY DUTY</td>
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www.harrisproductsgroup.com
OVERVIEW
The basic function of a gas pressure regulator is to reduce unusable high pressure from the source to a lower usable delivery pressure. Two-stage regulators are designed to lower the high pressure in two stages. They require less readjustment and provide a more constant delivery pressure despite changes in inlet pressure. They are exceptionally well suited for high pressure cylinder applications.

TYPICAL APPLICATIONS
- Oxy-Fuel Welding and Brazing
- Oxy-Fuel Cutting
- Other allied processes

PRO INFO
Visit www.harrisproductsgroup.com for complete details on our entire product line.

WHEN IS A TWO-STAGE REGULATOR REQUIRED?
CHECKLIST

1. Applications where the delivery pressure rise from cylinder pressure decay cannot be tolerated.

2. Situations where proper pressure is critical and the cylinders in use are in a remote or difficult to monitor location.

3. Typically are not required when using gases from low pressure (<500 PSIG) sources.
**DESCRIPTION**

The Model 2561 is an economical two-stage regulator for welding and similar applications where neoprene diaphragms are acceptable. It is used when constant delivery pressure is required over a wide range of inlet pressures.

**DETAILS**

- **Capacity:** Medium to heavy duty
- **Cv:** 0.15
- **Gauges:** 2” Steel
- **Pressure Regulation:** 0.04 PSIG/100 PSIG
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Certifications:** CGA E-4
- **Weight:** 4.8 lbs./2.18 kg.

### PART NO. MODEL NO. GAS MAX. INLET PSIG DELIVERY PRESSURE RANGE PSIG DELIVERY PRESSURE GAUGE PSIG SUPPLY PRESSURE GAUGE PSIG INLET CONNECTION OUTLET CONNECTION

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>MAX. INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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<tbody>
<tr>
<td>3300910</td>
<td>2561-15C-300</td>
<td>ACETYLENE</td>
<td>500</td>
<td>0 - 15</td>
<td>30RZ</td>
<td>400</td>
<td>CGA 300</td>
<td>9⁄16” - 18LH</td>
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<tr>
<td>3300909</td>
<td>2561-15C-510</td>
<td>ACETYLENE</td>
<td>500</td>
<td>0 - 15</td>
<td>30RZ</td>
<td>400</td>
<td>CGA 510</td>
<td>9⁄16” - 18LH</td>
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<td>3300911</td>
<td>2561-50C-510P</td>
<td>LPG*</td>
<td>500</td>
<td>0 - 50</td>
<td>60</td>
<td>400</td>
<td>CGA 510</td>
<td>9⁄16” - 18LH</td>
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<td>3300916</td>
<td>2561-125C-540</td>
<td>OXYGEN</td>
<td>3000</td>
<td>0 - 125</td>
<td>200</td>
<td>4000</td>
<td>CGA 540</td>
<td>9⁄16” - 18RH</td>
</tr>
<tr>
<td>3300912</td>
<td>2561-125C-580</td>
<td>Ar, He, N₂</td>
<td>3000</td>
<td>0 - 125</td>
<td>200</td>
<td>4000</td>
<td>CGA 580</td>
<td>9⁄16” - 18RH**</td>
</tr>
</tbody>
</table>

*Regulators designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.

**PRO INFO**

### TYPICAL CYLINDER SIZE WEIGHT AND CONTENT DATA

The data below, along with the oxy-acetylene tip charts in this catalog, can aid in estimating the minimum cylinder size requirements and/or the maximum tip size recommended for a particular oxy-acetylene application.

**Acetylene consumption rate from tip chart x 7 = Minimum Cylinder Size in cubic feet (@60°F).**

**Cylinder size in cubic feet/7 = Maximum Cylinder Withdrawal Rate in SCFH (@60°F).**

#### OXYGEN

<table>
<thead>
<tr>
<th>SIZE</th>
<th>CU. FT.</th>
<th>HEIGHT</th>
<th>WEIGHT FULL</th>
</tr>
</thead>
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<tr>
<td>R</td>
<td>20</td>
<td>14&quot;</td>
<td>14 lbs.</td>
</tr>
<tr>
<td>AXL</td>
<td>58</td>
<td>41&quot;</td>
<td>54 lbs.</td>
</tr>
<tr>
<td>Q</td>
<td>92</td>
<td>35&quot;</td>
<td>70 lbs.</td>
</tr>
<tr>
<td>D</td>
<td>125</td>
<td>48&quot;</td>
<td>124 lbs.</td>
</tr>
<tr>
<td>S</td>
<td>155</td>
<td>51&quot;</td>
<td>92 lbs.</td>
</tr>
<tr>
<td>K</td>
<td>251</td>
<td>56&quot;</td>
<td>153 lbs.</td>
</tr>
<tr>
<td>H</td>
<td>281</td>
<td>56&quot;</td>
<td>162 lbs.</td>
</tr>
<tr>
<td>T</td>
<td>337</td>
<td>60&quot;</td>
<td>172 lbs.</td>
</tr>
</tbody>
</table>

#### ACETYLENE

<table>
<thead>
<tr>
<th>SIZE</th>
<th>CU. FT.</th>
<th>HEIGHT</th>
<th>WEIGHT FULL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC</td>
<td>8 - 10</td>
<td>14&quot;</td>
<td>8 lbs.</td>
</tr>
<tr>
<td>B</td>
<td>33 - 40</td>
<td>23&quot;</td>
<td>26 lbs.</td>
</tr>
<tr>
<td>2AWQ</td>
<td>55 - 60</td>
<td>31&quot;</td>
<td>61 lbs.</td>
</tr>
<tr>
<td>NO.4</td>
<td>90 - 150</td>
<td>36&quot;</td>
<td>113 lbs.</td>
</tr>
<tr>
<td>NO.4</td>
<td>151 - 230</td>
<td>37.5&quot;</td>
<td>150 lbs.</td>
</tr>
<tr>
<td>NO.5WK</td>
<td>250 - 380</td>
<td>43.5&quot;</td>
<td>200 lbs.</td>
</tr>
</tbody>
</table>

Data above may vary slightly because of ambient temperature, cylinder conditions, etc.
**DESCRIPTION**

The Model 9296 is a standard for general purpose, laboratory, industrial and welding applications where neoprene diaphragms are acceptable. It is designed for applications where a constant delivery pressure is required over a wide range of inlet pressures. Low pressure models feature neoprene seats (NC).

**DETAILS**

- **Capacity:** Heavy duty
- **Cv:** 0.15
- **Gauges:** 2" steel
- **Pressure Regulation:** 0.04 PSIG/100 PSIG
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® or neoprene seats (NC)
- **Certifications:** CGA E-4
- **Weight:** 4.8 lbs./2.18 kg.

**PART NO.**  | **MODEL NO.**  | **GAS**  | **MAX. INLET PSIG** | **DELIVERY PRESSURE RANGE PSIG** | **DELIVERY PRESSURE GAUGE PSIG** | **SUPPLY PRESSURE GAUGE PSIG** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3302600 | 9296NC-15-300 | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 300 | ½" - 18 LH
3302601 | 9296NC-15-510 | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 510 | ½" - 18 LH
3302602 | 9296-50-510P | LPG* | 500 | 0 - 50 | 60 | 400 | CGA 510P | ½" - 18 LH
3302610 | 9296NC-15-350 | H₂, METHANE | 3000 | 0 - 15 | 30 | 4000 | CGA 350 | ½" - 18 LH
3302611 | 9296-50-350 | H₂, METHANE | 3000 | 0 - 50 | 60 | 4000 | CGA 350 | ½" - 18 LH
3302612 | 9296-125-350 | H₂, METHANE | 3000 | 0 - 125 | 150 | 4000 | CGA 350 | ½" - 18 LH
3302613 | 9296-250-350 | H₂, METHANE | 3000 | 0 - 250 | 400 | 4000 | CGA 350 | ½" NPT (F)
3302603 | 9296-50-540 | OXYGEN | 3000 | 0 - 50 | 60 | 4000 | CGA 540 | ½" - 18 RH
3302604 | 9296-125-540 | OXYGEN | 3000 | 0 - 125 | 150 | 4000 | CGA 540 | ½" - 18 RH
3302605 | 9296-250-540 | OXYGEN | 3000 | 0 - 250 | 400 | 4000 | CGA 540 | ½" NPT (F)
3302606 | 9296NC-15-580 | Ar, He, N₂ | 3000 | 0 - 15 | 30 | 4000 | CGA 580 | ½" - 18 RH (F)
3302607 | 9296-50-580 | Ar, He, N₂ | 3000 | 0 - 50 | 60 | 4000 | CGA 580 | ½" - 18 RH (F)
3302608 | 9296-125-580 | Ar, He, N₂ | 3000 | 0 - 125 | 150 | 4000 | CGA 580 | ½" - 18 RH (F)
3302609 | 9296-250-580 | Ar, He, N₂ | 3000 | 0 - 250 | 400 | 4000 | CGA 580 | ½" NPT (F)
3302614 | 9296-50-320 | CO₂ | 3000 | 0 - 50 | 60 | 4000 | CGA 320 | ½" - 18 RH (F)
3302615 | 9296-125-320 | CO₂ | 3000 | 0 - 125 | 150 | 4000 | CGA 320 | ½" - 18 RH (F)
3302616 | 9296-250-320 | CO₂ | 3000 | 0 - 250 | 400 | 4000 | CGA 320 | ½" NPT (F)

*Regulators designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.
DETAILS
Capacity: Heavy duty
Cv: 0.15
Gauges: 2" Brass
Pressure Regulation: 0.04 PSIG/100 PSIG

Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Certifications: CGA E-4
Weight: 5.4 lbs./2.45 kg.

**PART NO.** | **MODEL NO.** | **GAS** | **MAX. INLET PSIG** | **DELIVERY PRESSURE RANGE PSIG** | **DELIVERY PRESSURE GAUGE PSIG** | **SUPPLY PRESSURE GAUGE PSIG** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3302681 | 9296SS-15-510 | ACETYLENE | 500 | 0 - 15 | 30RZ | 400 | CGA 510 | 9⁄16" - 18 LH
3302693 | 9296SS-15-350 | H₂, METHANE | 3000 | 0 - 15 | 30 | 400 | CGA 350 | 9⁄16" - 18 LH
3302694 | 9296SS-50-350 | H₂, METHANE | 3000 | 0 - 50 | 60 | 400 | CGA 350 | 9⁄16" - 18 LH
3302695 | 9296SS-125-350 | H₂, METHANE | 3000 | 0 - 125 | 150 | 400 | CGA 350 | 9⁄16" - 18 LH
3302696 | 9296SS-250-350 | H₂, METHANE | 3000 | 0 - 250 | 400 | 400 | CGA 350 | ¼” NPT (F)
3302683 | 9296SS-50-540 | OXYGEN | 3000 | 0 - 50 | 60 | 400 | CGA 540 | 9⁄16" - 18 RH
3302684 | 9296SS-125-540 | OXYGEN | 3000 | 0 - 125 | 150 | 400 | CGA 540 | 9⁄16" - 18 RH
3302685 | 9296SS-250-540 | OXYGEN | 3000 | 0 - 250 | 400 | 400 | CGA 540 | ¼” NPT (F)
3302697 | 9296SS-50-590 | IND. AIR | 3000 | 0 - 50 | 60 | 400 | CGA 590 | ¼” NPT (M)
3302698 | 9296SS-125-590 | IND. AIR | 3000 | 0 - 125 | 150 | 400 | CGA 590 | ¼” NPT (M)
3302699 | 9296SS-250-590 | IND. AIR | 3000 | 0 - 250 | 400 | 400 | CGA 590 | ¼” NPT (M)
3302701 | 9296SS-50-346 | MEDICAL AIR | 3000 | 0 - 50 | 60 | 400 | CGA 346 | ½" - 18 RH (F)
3302702 | 9296SS-125-346 | MEDICAL AIR | 3000 | 0 - 125 | 150 | 400 | CGA 346 | ½" - 18 RH (F)
3302703 | 9296SS-250-346 | MEDICAL AIR | 3000 | 0 - 250 | 400 | 400 | CGA 346 | ¼” NPT (F)
3302686 | 9296SS-15-580 | Ar, He, N₂ | 3000 | 0 - 15 | 30 | 400 | CGA 580 | ½" - 18 RH (F)
3302687 | 9296SS-50-580 | Ar, He, N₂ | 3000 | 0 - 50 | 60 | 400 | CGA 580 | ½" - 18 RH (F)
3302688 | 9296SS-125-580 | Ar, He, N₂ | 3000 | 0 - 125 | 150 | 400 | CGA 580 | ½" - 18 RH (F)
3302689 | 9296SS-250-580 | Ar, He, N₂ | 3000 | 0 - 250 | 400 | 400 | CGA 580 | ¼” NPT (F)
3302690 | 9296SS-50-320 | CO₂ | 3000 | 0 - 50 | 60 | 400 | CGA 320 | ½" - 18 RH (F)
3302691 | 9296SS-125-320 | CO₂ | 3000 | 0 - 125 | 150 | 400 | CGA 320 | ½" - 18 RH (F)
3302692 | 9296SS-250-320 | CO₂ | 3000 | 0 - 250 | 400 | 400 | CGA 320 | ¼” NPT (F)

*Regulators designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.

**HARRIS MAKES PRODUCTS THAT ARE DURABLE AND BUILT TO LAST, THAT’S WHY WE OFFER A 7-YEAR WARRANTY ON OUR MOST POPULAR INDUSTRIAL REGULATORS.**
DESCRIPTION
The Model 9200 is a standard for general purpose laboratory, industrial and welding applications. It is designed for applications where a constant delivery pressure is required over a wide range of inlet pressures. The model 9200 has neoprene diaphragms and is equipped with a self-reseating relief valve.

DETAILS
Capacity: Heavy duty
\[ C_v = 0.53 \text{ for LP fuel models; } 0.37 \text{ for other models} \]
Gauges: 2.5\textprime; brass
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® or neoprene seats (NC)
Pressure Regulation:
- 0.05 PSIG/100 PSIG LP models
- 0.03 PSIG/100 PSIG other models
Certifications: CGA E-4
Weight: 6.8 lbs./3.08 kg.

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<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>MAX. INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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<td>9200NC-15-300</td>
<td>ACETYLENE</td>
<td>500</td>
<td>0 - 15</td>
<td>30RZ</td>
<td>400</td>
<td>CGA 300</td>
<td>9⁄16” - 18 LH</td>
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<td>3302211</td>
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<td>500</td>
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<td>400</td>
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<td>100</td>
<td>400</td>
<td>CGA 510P</td>
<td>9⁄16” - 18 LH</td>
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<td>3302215</td>
<td>9200-200-540</td>
<td>OXYGEN</td>
<td>540</td>
<td>0 - 200</td>
<td>400</td>
<td>400</td>
<td>CGA 580</td>
<td>9⁄16” - 18 RH (M)</td>
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<td>5</td>
<td>400</td>
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<td>1⁄4” NPT VALVE (M)</td>
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<td>30</td>
<td>400</td>
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<td>200</td>
<td>400</td>
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<td>3000</td>
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<td>CGA 350</td>
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<td>400</td>
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<td>400</td>
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<td>3302231</td>
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<td>9200-15-320</td>
<td>CO₂</td>
<td>3000</td>
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<td>CGA 320</td>
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<td>3302273</td>
<td>9200-50-320</td>
<td>CO₂</td>
<td>3000</td>
<td>0 - 50</td>
<td>100</td>
<td>400</td>
<td>CGA 320</td>
<td>9⁄16” - 18 RH (F)</td>
</tr>
<tr>
<td>3302274</td>
<td>9200-125-320</td>
<td>CO₂</td>
<td>3000</td>
<td>0 - 125</td>
<td>200</td>
<td>400</td>
<td>CGA 320</td>
<td>9⁄16” - 18 RH (F)</td>
</tr>
<tr>
<td>3302275</td>
<td>9200-200-320</td>
<td>CO₂</td>
<td>3000</td>
<td>0 - 250</td>
<td>400</td>
<td>400</td>
<td>CGA 320</td>
<td>9⁄16” - 18 RH (F)</td>
</tr>
</tbody>
</table>

*Regulators designed specifically for propane service can be used with any of the other welding grade liquid petroleum gases. NOT FOR USE WITH ACETYLENE.
**DESCRIPTION**

The Model 9235 is a high flow two-stage manifold regulator. Typical applications for the 9235 are gas purging, gas blanketing, pressure testing and other high flow applications. Outlet body port is \( \frac{3}{4}\)" NPT (F).

**DETAILS**

- **Capacity:** Heavy duty
- **Cv:** 0.40
- **Gauges:** 2.5" brass
- **Pressure Regulation:** .05 PSIG/100 PSIG
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Certifications:** CGA E-4
- **Weight:** 6.9 lbs./3.13 kg.

**MODEL SHOWN:**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>MAX INLET PSIG</th>
<th>DELIVERY PRESSURE RANGE PSIG</th>
<th>DELIVERY PRESSURE GAUGE PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3302300</td>
<td>9235-350-350</td>
<td>H₂, METHANE</td>
<td>3000</td>
<td>0-350</td>
<td>600</td>
<td>4000</td>
<td>CGA 350</td>
<td>( \frac{3}{4}) NPT (M)</td>
</tr>
<tr>
<td>3302301</td>
<td>9235-350-540</td>
<td>OXYGEN</td>
<td>3000</td>
<td>0-350</td>
<td>600</td>
<td>4000</td>
<td>CGA 540</td>
<td>( \frac{3}{4}) NPT (M)</td>
</tr>
<tr>
<td>3302302</td>
<td>9235-350-580</td>
<td>Ar, He, N₂</td>
<td>3000</td>
<td>0-350</td>
<td>600</td>
<td>4000</td>
<td>CGA 580</td>
<td>( \frac{3}{4}) NPT (M)</td>
</tr>
</tbody>
</table>

---

**DESCRIPTION**

The Model HP705 is an electrically heated two-stage regulator used for non-corrosive liquefied gases or gas mixtures with up to 3000 PSIG inlet pressure. It has a stainless steel diaphragm and is suitable for chemical storage blanketing, CO₂ incubators, inert gas purging and pH control. Chrome plated brass construction.

**DETAILS**

- **Capacity:** Heavy duty
- **Cv:** 0.15
- **Gauges:** 2.5" Chrome-plated brass
- **Pressure Regulation:** 0.9 PSIG/100 PSIG
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Certifications:** CGA E-4, electrical components UL® listed
- **Flow Capacity:** CO₂ - up to 500 SCFH peak flow, up to 100 SCFH continuous
- **Heater:** 200 watt 120 or 240 VAC
- **Weight:** 6.8 lbs./3.08 kg.

**MODEL SHOWN:**

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>DELIVERY PRESSURE</th>
<th>CGA/INLET FITTING</th>
<th>ACCESSORIES</th>
<th>VOLTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 705</td>
<td>DELIVERY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 - 125 PSIG</td>
<td>Outlet Gauge (200 psi/14 bar)</td>
<td>A – ( \frac{3}{4})&quot; MNPT Needle Valve</td>
<td>1 – 120 VAC</td>
</tr>
<tr>
<td></td>
<td>0 - 200 PSIG</td>
<td>(400 psi / 28 bar)</td>
<td>B – ( \frac{3}{4})&quot; NPT (F) Diaph. Valve</td>
<td>2 – 240 VAC*</td>
</tr>
</tbody>
</table>

**SPECIFY CATALOG ▼ ORDER CODE**

| HP705 | 125 | 320 | A | 1 |

**SAMPLE CODE:** HP705-125-320-A-1

*HP 705-200 not available in 240 VAC

---

**ADDITIONAL TECHNICAL INFORMATION:** PG. 200
OPERATION OF TWO-STAGE REGULATORS

Two-stage regulators are two regulators built into a single regulator body. The first regulator (first stage) is preset at a non-adjustable pressure to reduce the incoming pressure to a lower pressure referred to as the intermediate pressure. The second regulator (second stage) is adjustable within the desired delivery range.

These regulators incorporate all components of a single-stage regulator. They also contain an additional stage to include a second pressure adjusting spring, diaphragm, and valve seat assembly. The first stage is not user adjustable. The pressure adjusting spring is “pre-compressed” at the factory. This allows the first stage to feed pressure to the second (adjustable) stage. The normal maximum delivery pressure for two-stage regulators is 500 PSI.

The second stage then performs in a manner similar to that of a single-stage regulator, except that the inlet pressure to the second stage is relatively constant. The two-step pressure reduction produces a final delivery pressure showing little effect from changes in cylinder pressure.
OVERVIEW
There are two basic types of flow control devices, generally referred to as “fixed pressure/variable orifice” and “variable pressure/fixed orifice”. A typical flowmeter regulator is a “fixed pressure/variable orifice” device, pressure fixed at the factory to a “compensated” or “calibrated” pressure, depending on the flow range desired and the gases being used.

A third type of flow regulator is called a "zero" or "non-compensated" flowmeter regulator. It shares some features and advantages of both flow meter and flow gauge regulators. It uses a flowmeter as an indicator, but generally functions as a variable pressure flowgauge regulator.

PRO INFO
Visit www.harrisproductsgroup.com for complete details on our entire product line.
### DESCRIPTION

The Harris Model 32 flowmeter is calibrated for use with three different gases: argon, carbon dioxide and nitrogen. No tools are required to change to a different gas. The outer tube contains calibrated scales for each gas. To select the gas, simply rotate the outer tube until the proper gas is displayed. The Model 32 flowmeter is compensated at 50 PSIG with flows up to 80 SCFH. The flowmeter is designed so that it can be rotated to have the inlet/outlet to the right or left depending on the configuration needed. Inlet/outlets for the Model 32 are sold separately. See the related items below to select the proper inlet/outlet.

### DETAILS

**Capacity:** Heavy Duty  
**Gauges:** None  
**Seat:** Bronze  
**Body:** Brass  
**Certifications:** E-8  
**Accuracy:** +/- 5% of full range  
**Where Used:** Gas-shielded welding and other industrial applications

### RELATED ITEMS

**Inlets/Outlets**  
- 1/4" – NPT (M) X 1/4" – NPT (M)  
- 1/4" – NPT (M) X 5/8" – 18 (M)  
- 1/4" – NPT (M) X 5/8" – 18 (F)

### TABLE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GASES</th>
<th>MAX. FLOW CAPACITY</th>
<th>COMPENSATED PSIG</th>
<th>MAX. INLET PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>5400839</td>
<td>32</td>
<td>Ar, CO₂, and N₂</td>
<td>Ar 10-70, CO₂ 10-60, N₂/Air 10-80</td>
<td>50</td>
<td>200</td>
<td>1/4&quot; NPT (F)</td>
<td>1/4&quot; NPT (F)</td>
</tr>
</tbody>
</table>

### BACK PURGING REGULATOR

### DESCRIPTION

The Model FM520 is specifically designed for HVAC back purging. It is a zero compensated device allowing full and accurate flow control at varying inlet pressures up to 100 PSIG.

### DETAILS

**Capacity:** 20 SCFH  
**Gauges:** None  
**Seat:** N/A  
**Body:** Lexan®

### RELATED ITEMS

**Certifications:** None  
**Accuracy:** N/A  
**Where Used:** HVAC  
**Weight:** 1.2 lbs. / .544 kg.

### TABLE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GASES</th>
<th>MAX. FLOW CAPACITY</th>
<th>COMPENSATED PSIG</th>
<th>MAX. INLET PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>5401201</td>
<td>FM520</td>
<td>AIR, N₂</td>
<td>20</td>
<td>0</td>
<td>100</td>
<td>1/8&quot; NPT (M)</td>
<td>1/8&quot; NPT (F)</td>
</tr>
</tbody>
</table>

*The Model 32 is shipped without inlet or outlet. Select desired fittings from inlets / outlets above and use PTFE teflon tape.*
**DESCRIPTION**
This pipeline version of the Model 351 is zero-compensated for more efficient shielding gas use. It is a compact flowmeter regulator at the price and size of most competitive flowmeters. It is designed to give an accurate consistent flow despite wide fluctuations in pipeline pressure.

**DETAILS**
- **Capacity:** Heavy duty
- **Gauges:** None
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Body:** Brass
- **Certifications:** CGA E-4
- **Where Used:** Gas-shielded welding and other pipeline applications
- **Related Items:** ¼” x 10’ Inert Hose
- **Related Items:** P/N: 4300138
- **Weight:** 2 lbs. / 0.91 kg.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>FLOW CAPACITY SCFH</th>
<th>COMPENSATED PSIG</th>
<th>MAX. INLET PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100332</td>
<td>351-70Ar/CD-¼M</td>
<td>Ar/CO₂</td>
<td>10-70</td>
<td>0</td>
<td>200</td>
<td>½” NPT (M)</td>
<td>½” - 18 (F)</td>
</tr>
<tr>
<td>3100333</td>
<td>351-70Ar/CD-⅜F</td>
<td>Ar/CO₂</td>
<td>10-70</td>
<td>0</td>
<td>200</td>
<td>⅜” - 18 (F)</td>
<td>½” - 18 (F)</td>
</tr>
<tr>
<td>3100334</td>
<td>351-70Ar/CD-⅜M</td>
<td>Ar/CO₂</td>
<td>10-70</td>
<td>0</td>
<td>200</td>
<td>⅜” - 18 (M)</td>
<td>⅜” - 18 (F)</td>
</tr>
</tbody>
</table>

**DESCRIPTION**
This version of the Model 351 is designed for cylinder applications. Its unique design makes it more resistant to CO₂ freeze up than comparable competitive models. The Model 351 is zero-compensated for more efficient gas use.

**DETAILS**
- **Capacity:** Heavy duty
- **Gauges:** 50mm ABS
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Body:** Brass
- **Certifications:** CGA E-4
- **Where Used:** Gas-shielded arc welding and other industrial applications
- **Related Items:** ¼” x 10’ Inert Hose
- **Related Items:** P/N: 4300138
- **Weight:** 2.3 lbs. / 1.04 kg.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>FLOW CAPACITY SCFH</th>
<th>COMPENSATED PSIG</th>
<th>MAX. INLET PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100331</td>
<td>351-60Ar-580</td>
<td>Ar, CO₂</td>
<td>10-70</td>
<td>0</td>
<td>3000</td>
<td>4000</td>
<td>CGA 580</td>
<td>¼” - 18 (F)</td>
</tr>
<tr>
<td>3100330</td>
<td>351-60CD-320</td>
<td>Ar, CO₂</td>
<td>10-70</td>
<td>0</td>
<td>3000</td>
<td>4000</td>
<td>CGA 320</td>
<td>¼” - 18 (F)</td>
</tr>
</tbody>
</table>
**DESCRIPTION**

The Model 355-2 flowmeter is designed to give precise flow control in SCFH. They are compensated at 20 or 50 PSIG and calibrated for most common industrial gases. The 55-2 is equipped with a 70 PSIG relief value. RH versions have left hand inlets.

**DETAILS**

- **Capacity:** Heavy duty
- **Gauges:** N/A
- **Seat:** N/A
- **Body:** Brass
- **Certifications:** CGA E-8
- **Where Used:** Gas shielded welding and other pipeline applications

### Related Items:

- Relief Valve: 90 PSIG

**COMPACT PRESSURE COMPENSATED FLOWMETER REGULATOR**

The Model 355-2 incorporates a regulator and flowmeter into one compact unit. The flow tube and float are easily changed for different gases. As supplied, the flow tube has dual calibration. It includes a sensitive needle valve for finger tip control.

**DETAILS**

- **Capacity:** Up to 140 SCFH
- **Gauges:** 1.5" Steel
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Body:** Brass
- **Certifications:** UL® listed/CGA E-4

**Related Items:**

- 447-20 Pipeline Reg-¼ RH P/N: 4000584, ½" x 10' Inert Hose P/N: 4300138, Adapter: 3/4"-18(M) x ¼"-NPT (M) P/N: 8800527

**Where Used:** Gas shielded welding and other industrial applications

**COMPENSATED PSIG**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>FLOW CAPACITY (SCFH)</th>
<th>COMPENSATED</th>
<th>MAX. INLET PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100200</td>
<td>355-2-Ar-580</td>
<td>Ar, CO₂</td>
<td>10 - 70 (10 - 70)</td>
<td>20</td>
<td>3000</td>
<td>0 - 4000</td>
<td>CGA 580</td>
<td>½&quot; - 18 (F)</td>
</tr>
<tr>
<td>3100201</td>
<td>355-2-CO₂-320</td>
<td>CO₂</td>
<td>10 - 70 * (10 - 70)</td>
<td>20</td>
<td>3000</td>
<td>0 - 4000</td>
<td>CGA 320</td>
<td>½&quot; - 18 (F)</td>
</tr>
<tr>
<td>3100206</td>
<td>355-2-He-580</td>
<td>He, H₂</td>
<td>10 - 100 (0 - 140)</td>
<td>20</td>
<td>3000</td>
<td>0 - 4000</td>
<td>CGA 580</td>
<td>½&quot; - 18 (F)</td>
</tr>
<tr>
<td>3100207</td>
<td>355-2-N₂/Air-580</td>
<td>N₂, Air</td>
<td>10 - 100 (10 - 100)</td>
<td>20</td>
<td>3000</td>
<td>0 - 4000</td>
<td>CGA 580</td>
<td>½&quot; - 18 (F)</td>
</tr>
<tr>
<td>3100204</td>
<td>355-2-Ar-He-580</td>
<td>Ar, He</td>
<td>5 - 45 (0 - 140)</td>
<td>20</td>
<td>3000</td>
<td>0 - 4000</td>
<td>CGA 580</td>
<td>½&quot; - 18 (F)</td>
</tr>
<tr>
<td>3100546</td>
<td>355-2-CO₂/AR</td>
<td>Ar, CO₂</td>
<td>20 - 100 (20 - 100)</td>
<td>50</td>
<td>3000</td>
<td>0 - 4000</td>
<td>CGA 580</td>
<td>½&quot; - 18 (F)</td>
</tr>
<tr>
<td>3104201</td>
<td>355-2-He-H₂</td>
<td>He, H₂</td>
<td>20 - 140 (10 - 100)</td>
<td>20</td>
<td>3000</td>
<td>0 - 4000</td>
<td>CGA 350</td>
<td>½&quot; - 18 (F)</td>
</tr>
</tbody>
</table>

*On maximum continuous duty cycle, CO₂ flows to 20 SCFH
**DESCRIPTION**

The Model 6CD is a multi-stage designed flowmeter regulator specifically designed to deliver CO₂ flow rates of up to 100 SCFH continuously without freeze-up. This multi-stage design spreads out the cooling effect of CO₂ pressure reduction. Multi-finned black aluminum body design provides a high rate of heat transfer into the regulator. It requires no electrical power.

**DETAILS**

- **Capacity:** Heavy duty
- **Gauges:** 2.5” Brass
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

**Where Used:** High flow CO₂/CO₂ mix shielded-gas welding & other industrial applications

**Related Items:** \( \frac{3}{16} ” \times 10’ \) Inert Hose P/N: 4300138

**Weight:** 6 lbs./2.72 kg.

---

**DESCRIPTION**

This flowmeter is designed to be compact and economical, but with features typically available in more expensive regulators. It is used where weight, cost and size are factors.

**DETAILS**

- **Capacity:** Light to medium duty
- **Gauges:** 50mm Steel
- **Body:** Forged Brass
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

**Where Used:** High CO₂/CO₂ mix shielded-gas welding & other industrial applications

**Related Items:** \( \frac{3}{16} ” \times 10’ \) Inert Hose P/N: 4300138

**Weight:** 2.4 lbs./1.1 kg.
**DESCRIPTION**

The Model 356 is a dual flowmeter, capable of providing two separate independent flows from one common gas source. It is equipped with two Model 55 flowmeters that can be set at different flow rates. It is ideal for back purging, trail purging and/or other dual applications.

**DETAILS**

- **Capacity:** Dual heavy duty
- **Gauges:** 2" Brass
- **Seat:** One-piece encapsulated seat design with internal filter and Teflon® seat
- **Body:** Brass
- **Certifications:** UL® listed/CGA E-4
- **Where Used:** Gas-shielded welding and other industrial applications
- **Related Items:** ½" x 10' Inert Hose P/N: 4300138
- **Flowmeters:**
  - RH - P/N: 5400619
  - LH - P/N: 5400620
- **Weight:** 4.8 lbs./2.18 kg.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>FLOW CAPACITY SCFH</th>
<th>COMPENSATED PSIG</th>
<th>MAX. INLET PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>3100140</td>
<td>356-Ar/He-580</td>
<td>Ar, He</td>
<td>10 - 45 (10 - 140)</td>
<td>20</td>
<td>3000</td>
<td>4000</td>
<td>CGA 580</td>
<td>½&quot; - 18 (F)</td>
</tr>
</tbody>
</table>

**PERFORMANCE FOCUS**

**CO₂ FREEZE-UP**

Carbon Dioxide (CO₂) gas can, under certain conditions of temperature and pressure, freeze-up and form a solid (dry ice). If this condition occurs, for example, within a MIG shielding gas system, the required CO₂ gas flow can be restricted or blocked entirely producing a costly adverse affect on weld quality.

Harris offers an extensive line of flow-control equipment, manufactured specifically for welding or other similar high-flow CO₂ applications. They are designed to prevent CO₂ freeze-up and deliver continuous flows to 100 SCFH without regulator freeze-up.

If you use CO₂ in a critical application that can be, or has been, adversely affected by an interruption in gas flow, contact your Harris gas flow experts for an extensive list of preventive options to CO₂ freeze-up.
DESCRIPTION
The Model 2555 was specifically designed to provide precise flow control of gases from ultra-high pressure (5500 PSIG) cylinders.

DETAILS
Capacity: Heavy duty
Gauges: 2.5" brass
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Body: Brass

Certifications: CGA E-4
Where Used: Gas shielded welding and other industrial applications
Related Items: ½" x 10' inert hose P/N: 4300138
Weight: 4.5 lbs./ 2.04 kg.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>FLOW CAPACITY SCFH</th>
<th>COMPENSATED PSIG</th>
<th>MAX. INLET PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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<tbody>
<tr>
<td>3102555</td>
<td>2555-Ar70-680</td>
<td>Ar, CO₂</td>
<td>10 - 70</td>
<td>50</td>
<td>5500</td>
<td>0 - 6000</td>
<td>CGA 680</td>
<td>½&quot;-18 (F)</td>
</tr>
</tbody>
</table>

ELECTRICALLY HEATED FLOWMETER REGULATOR
MODEL SHOWN: HP725-100SCFH-320 120

DESCRIPTION
The Model HP725 is a two-stage electrically heated flowmeter regulator designed to resist CO₂ regulator freeze up. It has stainless steel diaphragms and it is well suited for shielding arc welding, chemical blanketing, purging and Ph control.

DETAILS
Capacity: Heavy duty
Gauges: 2.5" chrome plated brass
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Body: Brass

WHERE USED: High flow CO₂/CO₂ mix gas-shielded welding and other industrial applications
Heater: 200 watt 120v or 240v
Weight: 4.6 lbs./ 2.09 kg.
Adaptor: 5/8" - 18 RH (M) x 1/4" NPT (M) P/N: 8800527

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>FLOW CAPACITY SCFH</th>
<th>COMPENSATED PSIG</th>
<th>MAX. INLET PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
<th>ELECTRICAL POWER REQUIREMENTS</th>
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</thead>
<tbody>
<tr>
<td>3100405</td>
<td>HP725-100SCFH-580 120</td>
<td>Ar, CO₂</td>
<td>10 - 70</td>
<td>50</td>
<td>3000</td>
<td>4000</td>
<td>CGA 580</td>
<td>½&quot; - 18 (F)</td>
<td>120V</td>
</tr>
<tr>
<td>3100406</td>
<td>HP725-100SCFH-580 240</td>
<td>Ar, CO₂</td>
<td>10 - 100</td>
<td>50</td>
<td>3000</td>
<td>4000</td>
<td>CGA 580</td>
<td>½&quot; - 18 (F)</td>
<td>240V</td>
</tr>
<tr>
<td>3100402</td>
<td>HP725-100SCFH-320 120</td>
<td>CO₂</td>
<td>10 - 100</td>
<td>50</td>
<td>3000</td>
<td>4000</td>
<td>CGA 320</td>
<td>½&quot; - 18 (F)</td>
<td>120V</td>
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<tr>
<td>3100404</td>
<td>HP725-100SCFH-320 240</td>
<td>CO₂</td>
<td>10 - 100</td>
<td>50</td>
<td>3000</td>
<td>4000</td>
<td>CGA 320</td>
<td>½&quot; - 18 (F)</td>
<td>240V</td>
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</tbody>
</table>
### 351 ECONOMICAL SHIELDING GAS KIT

**DESCRIPTION**
The Model 351 flowmeter regulator kits are designed to control argon, CO₂ mix shielding gases. The kit is supplied with a 3/16” x 10’ approved inert gas hose.

**DETAILS**
- **Capacity:** Heavy Duty
- **Gauges:** 1.5” ABS
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body:** Brass
- **Certifications:** UL® listed/CGA E-4
- **Where Used:** Gas-shielded welding & other industrial applications
- **Weight:** 3.5 lbs./1.59 kg.
- **Packaging:** Clamshell

### 355-2 COMPENSATED SHIELDING GAS KIT

**DESCRIPTION**
The Model 355-2 flowmeter regulator kits are designed to control argon and or argon CO₂ mix shielding gases. The 355-2Ar-58010 shielding gas kit is supplied with a 3/16” x 10’ approved inert gas hose.

**DETAILS**
- **Capacity:** Heavy Duty
- **Gauges:** 1.5” Steel
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body:** Brass
- **Certifications:** UL® listed/CGA E-4
- **Where Used:** Gas-shielded welding & other industrial applications
- **Replacement Hose:** 1/8” x 10’ inert hose P/N: 4300138
- **Weight:** 4.1 lbs./1.86 kg.
- **Packaging:** Clamshell

### PART NO. MODEL NO. GAS FLOW CAPACITY SCFH COMPENSATED PSIG MAX. INLET PSIG SUPPLY PRESSURE GAUGE PSIG INLET CONNECTION OUTLET CONNECTION

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>FLOW CAPACITY SCFH</th>
<th>COMPENSATED PSIG</th>
<th>MAX. INLET PSIG</th>
<th>SUPPLY PRESSURE GAUGE PSIG</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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<tr>
<td>3100353</td>
<td>351-60Ar-58010</td>
<td>Ar</td>
<td>70</td>
<td>0</td>
<td>3000</td>
<td>4000</td>
<td>CGA 580</td>
<td>1/8” - 18 (F)</td>
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<tr>
<td>3100401</td>
<td>351-60CD-32010</td>
<td>CO₂</td>
<td>70</td>
<td>0</td>
<td>3000</td>
<td>4000</td>
<td>CGA 320</td>
<td>1/8” - 18 (F)</td>
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<tr>
<td>4400235</td>
<td>355-2Ar-58010</td>
<td>Ar/CO₂</td>
<td>70</td>
<td>20</td>
<td>3000</td>
<td>4000</td>
<td>CGA 580</td>
<td>1/8” - 18 (F)</td>
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<td>4400234</td>
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<td>70</td>
<td>20</td>
<td>3000</td>
<td>4000</td>
<td>CGA 320</td>
<td>1/8” - 18 (F)</td>
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</tbody>
</table>
HARRIS FLOWGAUGE REGULATORS ARE MADE IN GAINESVILLE, GEORGIA. THEY ARE 100% TESTED AND MANUFACTURED TO THE SAME EXACTING STANDARDS AS OUR OTHER GAS CONTROL EQUIPMENT.

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To learn more about the most complete line of industrial grade tools in the world, visit us online.
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WHY DO PEOPLE USE FLOWGAUGE REGULATORS?

The most common use for gas flow control devices in the industrial gas market is to control shielding gases for GTAW (TIG) and GMAW (MIG) welding. Harris has the most complete line in the industry. Harris offers many designs and models of flowmeters, flowmeter regulators and flowgauge regulators for all gas supply systems, high-pressure cylinders, liquid cylinders and pipelines.

Contact your Harris representative for the devices that have the features and benefits that best fit your application(s).
**301**

**COMPACT GENERAL PURPOSE**

**DESCRIPTION**
This single-stage flow gauge regulator is designed to be compact, lightweight and rugged. It is time-proven to give accurate flow-control to 60 SCFH using the most common welding shielding gases.

**DETAILS**
- **Capacity:** Medium/Heavy Duty
- **Gauges:** 2” Steel
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body:** Brass
- **Certifications:** UL® listed / CGA E-4
- **Where Used:** Gas-shielded welding and other industrial gas applications
- **Related Items:** ½” x 10’ Inert Hose P/N: 4300138
- **Weight:** 2.2 lbs./1.0 kg.

**PART NO.** | **MODEL NO.** | **GAS** | **FLOW CAPACITY SCFH** | **MAX. INLET PSIG** | **SUPPLY PRESSURE GAUGE PSIG** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | ---
3000163 | 301-Ar60-580 | Ar + Mixes | 60 | 3000 | 4000 | CGA 580 | ½” - 18 (F)
3000232 | 301-Ar30-580 | Ar + Mixes | 30 | 3000 | 4000 | CGA 580 | ½” - 18 (F)
3000244 | 301-Ar60-680 | Ar + Mixes | 60 | 5500 | 6000 | CGA 680 | ½” - 18 (F)
3000164 | 301-CD60-320 | CO₂ | 60 | 3000 | 4000 | CGA 320 | ½” - 18 (F)

= DO NOT WRITE =

**801**

**MEDIUM DUTY**

**DESCRIPTION**
This flow gauge regulator is designed to be compact, lightweight and rugged. It provides accurate gas flow control to 100 PSIG.

**DETAILS**
- **Capacity:** Light to medium duty
- **Gauges:** 2” Steel
- **Body:** Forged Brass
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Certifications:** CGA E-4
- **Weight:** 2.4 lbs./1.1 kg.

**PART NO.** | **MODEL NO.** | **GAS** | **FLOW CAPACITY SCFH** | **MAX INLET PSIG** | **DELIVERY FLOW GAUGE** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | ---
3002193 | 801-AR60-580 | Ar + Mixes | 60 | 3000 | 0-60SCFH | CGA 580 | 5/8”-18RH (F)
3002194 | 801-CD60-320 | CO₂ | 60 | 3000 | 0-60SCFH | CGA 320 | 5/8”-18RH (F)
GENERAL PURPOSE BEST FEATURES

DESCRIPTION
The Model 425-AR/CD flowgauge regulator is based upon our premium Model 425 single-stage pressure regulator. It is a rugged, long lasting performer capable of 100 SCFH flow and it features an internal, self-seating high pressure safety valve.

DETAILS
Capacity: Heavy Duty
Gauges: 2.5" brass
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
Body: Brass

Certifications: UL® listed/CGA E-4
Where Used: Gas shielded welding and other industrial gas applications
Related Items: 3/8" x 10' Inert Hose P/N: 4300138
Weight: 3.7 lbs./1.69 kg.

PART NO. | MODEL NO. | GAS | FLOW CAPACITY SCFH | MAX. INLET PSIG | SUPPLY PRESSURE GAUGE PSIG | DELIVERY FLOW GAUGE | INLET CONNECTION | OUTLET CONNECTION
---|---|---|---|---|---|---|---|---
3000774 | 425-Ar100-580 | Ar + Mixes | 100 | 3000 | 4000 | 0-100 SCFH | CGA 580 | 3/8" - 18RH (F)
3000776 | 425-CD100-320 | CO₂ | 100 | 3000 | 4000 | 0-100 SCFH | CGA 320 | 3/8" - 18RH (F)

LIQUID CYLINDER GAS WITHDRAWAL

DESCRIPTION
The Model 330 Ar/CD is a single-stage flowgauge regulator designed specifically for liquid cylinders. It features a stainless steel diaphragm. The Harris exclusive self-seating, tamper-proof internal safety allows it to be used on high pressure cylinders of up to 3000 PSIG.

DETAILS
Capacity: Heavy Duty
Gauges: 2.5" brass
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
Body: Brass

Diaphragm: Stainless Steel
Certifications: UL® listed/CGA E-4
Where Used: Gas-shielded welding and other industrial gas applications
Related Items: 3/8" x 10' Inert Hose P/N: 4300138
Weight: 3.7 lbs./1.68 kg.

PART NO. | MODEL NO. | GAS | FLOW CAPACITY SCFH | MAX. INLET PSIG | DELIVERY FLOW GAUGE | INLET CONNECTION | OUTLET CONNECTION
---|---|---|---|---|---|---|---
3001089 | 330-Ar100-580 | Ar + Mixes | 100 | 3000 | 0-100 SCFH | CGA 580 | 3/8" - 18RH (F)
3001096 | 330-CD100-320 | CO₂ | 100 | 3000 | 0-100 SCFH | CGA 320 | 3/8" - 18RH (F)
**DESCRIPTION**

Harris Model 247 flowmeter regulator is designed to deliver high gas flows from low pressure piping systems. The 247 features a brass body and chrome-plated bonnet. For installations requiring back entry equipment.

**DETAILS**

- **Capacity**: Medium Duty
- **Gauges**: 2" steel
- **Seat**: One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body**: Brass
- **Bonnet**: Chrome-Plated Zinc
- **Certifications**: CGA E-4

**Where Used**: Gas-shielded welding and other industrial applications

**Related Items**: ¼" x 10' Inert Hose P/N: 4300138

**Weight**: 3.6 lbs./1.63 kg.

---

**HEAVY DUTY BACK ENTRY**

The Harris Model 447 flowmeter regulator was designed to deliver high gas flows from low pressure piping systems. The 447 features a solid brass body and bonnet. For installations requiring back entry equipment.

**DETAIL**

- **Capacity**: Heavy Duty
- **Gauges**: 2.5" Brass
- **Seat**: One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body**: Brass
- **Bonnet**: Brass
- **Certifications**: CGA E-4

**Where Used**: Gas-shielded welding and other industrial gas applications

**Related Items**: ⅝" x 10' Inert Hose P/N: 4300138

**Weight**: 3.6 lbs./1.63 kg.
**DESCRIPTION**

The Harris Model 547 flowmeter regulator was designed to deliver high gas flows from low pressure piping systems. The 547 features a brass body and bonnet. For installations requiring side entry equipment.

**DETAILS**

- **Capacity:** Light/Medium Duty
- **Gauges:** 2.5" Brass
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body:** Brass
- **Featured In:** 601-Ar/CD shielding gas kits

- **Certifications:** CGA E-4
- **Where Used:** Gas-shielded welding and other industrial gas applications
- **Related Items:** ¼" x 10" Inert Hose P/N: 4300138
- **Weight:** 3.6 lbs./1.63 kg.

**PART NO.** | **MODEL NO.** | **GAS** | **MAXIMUM INLET PSIG** | **DELIVERY PRESSURE RANGE** | **DELIVERY PRESSURE GAUGE** | **INLET CONNECTION** | **OUTLET CONNECTION**
--- | --- | --- | --- | --- | --- | --- | ---
4000617 | 547-FG-¼" | Ar, CO₂ | 500 | 10-100 SCFH | 100 SCFH | ¼"NPT (F) | ¼" - 18RH (F)

---

**ELECTRICALLY HEATED FLOWGAUGE REGULATOR**

**DESCRIPTION**

The Model HP715 is an electrically heated two-stage flow gauge regulator designed to resist high-flow CO₂ regulator freeze-up. It is perfectly suited for gas shielded welding, Ph control, blanketing and purging.

**DETAILS**

- **Capacity:** Heavy Duty
- **Gauges:** 2.5" Chrome-Plated Brass
- **Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® Seat
- **Body:** Brass
- **Diaphragm:** Stainless Steel
- **Certifications:** CGA E-4
- **Where Used:** Gas-shielded welding and other industrial gas applications
- **Related Items:** Heater - 200 watts, 120V or 240V
- **Adaptor:** 5/8" - 18 (M) x 1/4" NPT (M) P/N: 8800527
- **Weight:** 6.8 lbs./3.08 kg.

**PART NO.** | **MODEL NO.** | **GAS** | **FLOW CAPACITY SCFH** | **MAX. INLET PSIG** | **SUPPLY PRESSURE GAUGE PSIG** | **INLET CONNECTION** | **OUTLET CONNECTION** | **ELECTRICAL POWER REQUIREMENTS**
--- | --- | --- | --- | --- | --- | --- | --- | ---
3100220 | HP715-100CD-320-120 | CO₂ | 100 | 3000 | 4000 | CGA 320 | ¼" - 18RH (F) | 120V
3100221 | HP715-100CD-320-240 | CO₂ | 100 | 3000 | 4000 | CGA 320 | ¼" - 18RH (F) | 240V
DESCRIPTION
The Model 601Ar/CD shielding gas kits are ideal for low amperage MIG welders with built-in wire feeders. Designed to give precise flow-control at an economical price. Includes a ½” x 10’ inert hose with fittings.

DETAILS
Capacity: Light Duty
Gauges: 50mm ABS plastic
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Body: Brass
Certifications: CGA E-4

Where Used: Gas-shielded welding
Related Items: ½” x 10’ Inert Hose P/N: 4300138
Weight: 2.6 lbs./1.18 kg.

SHIELDING GAS KIT
MODEL SHOWN: 601Ar-60-58010

SHIELDING GAS KIT
MODEL SHOWN: 301Ar-58010

DESCRIPTION
The Model 301Ar/CD shielding gas kits include 10’ of ½” ID approved hose with inert fittings. They feature the Harris time proven 301 flowgauge regulators to give precise control of the most common welding shielding gases up to 60 SCFH.

DETAILS
Capacity: Medium/Heavy Duty
Gauges: 2” Steel
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Body: Brass
Diaphragm: Neoprene
Certifications: UL® listed/CGA E-4
Where Used: Gas-shielded welding and other industrial gas applications
Related Items: ½” x 10’ Inert Hose P/N: 4300138
Weight: 3.9 lbs./1.77 kg.
Packaging: Clamshell

SHIELDING GAS KIT

SHIELDING GAS KIT

PART NO. MODEL NO. GAS FLOW CAPACITY SCFH COMPENSATED PSIG MAX. INLET PSIG SUPPLY PRESSURE GAUGE PSIG INLET CONNECTION OUTLET CONNECTION

3000322 601Ar-60-58010 Ar + Mixes 60 (N/A) 3000 4000 CGA 580 ½” - 18 RH (F)
3000988 601CD-60-32010 CO2 60 (N/A) 3000 4000 CGA 320 ½” - 18 RH (F)

PART NO. MODEL NO. GAS FLOW CAPACITY SCFH COMPENSATED PSIG MAX. INLET PSIG SUPPLY PRESSURE GAUGE PSIG INLET CONNECTION OUTLET CONNECTION

4400229 301Ar-58010 - CS Ar + Mixes 60 (N/A) 3000 4000 CGA 580 ½” - 18 RH (F)
4400231 301CD-32010 - CS CO2 60 (N/A) 3000 4000 CGA 320 ½” - 18 RH (F)
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FOR THE DEVICES THAT HAVE THE FEATURES AND BENEFITS THAT BEST FIT YOUR APPLICATION(S)

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INERT GAS GUARDS

HARRIS HAS A SOLID UNDERSTANDING OF THE IMPORTANCE OF GAS FLOW IN WELDING APPLICATIONS. THIS EXPERTISE, COMBINED WITH OUR KNOWLEDGE OF GAS EQUIPMENT, HAS RESULTED IN THE INDUSTRY’S MOST COMPREHENSIVE RANGE OF SURGE CONTROL REGULATION EQUIPMENT. THE HARRIS INERT GAS GUARD LINE OF FLOWGAUGE REGULATORS VIRTUALLY ELIMINATES THE GAS WASTE ASSOCIATED WITH ALL GAS-SHIELDED ARC WELDING.

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ECONOMICAL
447 IGG MODEL PIPELINE SHIELDING GASES p.55

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HARRIS INERT GAS GUARD REGULATORS ARE DESIGNED TO SAVE SHIELDING GASES IN TWO WAYS.

First, Inert Gas Guard Regulators reduce gas surge when a MIG gun or TIG torch is activated. Gas surge is created by excess pressure trapped in the supply hose between the pressure control system and the valve or solenoid. Inert Gas Guard regulators lower the excess pressure on the supply hose and reduce the surge or gas waste when the gas system is activated.

Secondly, Inert Gas Guard Regulators deliver a more controlled flow rate. Operators tend to set shielding gas rates much higher than necessary for a welding operation. Inert Gas Guard Regulators are tamper-proof and can be set to deliver the precise amount of flow for the operation, eliminating the needless waste of shielding gas.

GAS SAVINGS WITH HARRIS IGG REGULATORS

If preferred, you can set a flow limit. Remove set screw A and crossbar B. With gas flowing, set inner set screw C to desired flow rate. To prevent tampering, replace crossbar and install customer supplied padlock.

Shown with a customer supplied padlock to prevent tampering.
FOR CYLINDER APPLICATIONS

DESCRIPTION
The Model 25GX Inert Gas Guard Regulator are special cylinder-mounted flowgauge regulators for argon and argon-mix shielding gases, now with a brass plated bonnet. These are designed to save shielding gases by controlling surge. Models are available for MIG and TIG.

DETAILS
Capacity: Heavy Duty
Gauges: 2” Steel
Seat: One-piece encapsulated seat designed with internal filter and PTFE Teflon® seat

Certifications: UL® listed/CGA E-4
Where Used: Gas-shielded welding
Weight: 2.9 lbs./1.32 kg.

PART NO. | MODEL NO. | GAS | MAX. INLET PSIG | DELIVERY FLOW RANGE SCFH | DELIVERY FLOWGUAGE SCFH | SUPPLY PRESSURE GAUGE PSIG | INLET CONNECTION | OUTLET CONNECTION
--- | --- | --- | --- | --- | --- | --- | --- | ---
3000433 | 25GX-40-IGG-580 | Ar, CO₂ | 3000 | 0 - 40 | 40 | 4000 | CGA 580 | ¼” - 18RH (F)
3000432 | 25GX-60-IGG-320 | CO₂ | 3000 | 0 - 60 | 60 | 4000 | CGA 320 | ¼” - 18RH (F)
3000431 | 25GX-80-IGG-580 | Ar, CO₂ | 3000 | 0 - 80 | 80 | 4000 | CGA 580 | ¼” - 18RH (F)

ADD-ON TO ELIMINATE SURGE IN EXISTING EQUIPMENT

DESCRIPTION
The Model 301 Inert Gas Guard Regulator is a special regulator designed to correct surge and provide full flow control when added to existing flow control equipment. Models available will mount to flowmeter, regulator or wire feeder. A feeder mount is available with a flowgauge.

DETAILS
Capacity: Heavy Duty
Gauges: 2” Steel
Seat: One-piece encapsulated seat designed with internal filter and PTFE Teflon® seat

Certifications: UL® listed/CGA E-4
Where Used: Gas-shielded welding

PART NO. | MODEL NO. | GAS | MAX. INLET PSIG | DELIVERY FLOW RANGE SCFH | DELIVERY FLOWGUAGE SCFH | INLET CONNECTION | OUTLET CONNECTION | MOUNTING LOCATION
--- | --- | --- | --- | --- | --- | --- | --- | ---
3000326 | 301-80-IGG-032 | Ar, CO₂ | 200 | 0 - 80 | - | ½” - 18RH (M) | ½” - 18RH (F) | Flowmeter Outlet
3000328 | 301-80-IGGRF-032 | Ar, CO₂ | 200 | 0 - 80 | 80 | ½” - 18RH (F) | ½” - 18RH (M) | Feeder Inlet
3000340 | 301-80-IGGRFNG-032 | Ar, CO₂ | 200 | 0 - 80 | - | ½” - 18RH (F) | ½” - 18RH (M) | Feeder Inlet
3000342 | 301-80-IGGRF-032 | Ar, CO₂ | 200 | 0 - 80 | 80 | ½” - 18RH (F) | ½” - 18RH (M) | Feeder Inlet

Weight: 2.1 lbs./0.95 kg.

301-80-IGGRF-032
P/N:3000340
Weight: 2.1 lbs./0.95 kg.

301-80-IGGRF-032
P/N:3000328
with Flowgauge
Weight: 2.4 lbs./1.09 kg.
DESCRIPTION
The Model 447 is a special pipeline flow control device with a brass plated bonnet, designed to deliver shielding gases more economically than other flow control devices, thus eliminates wasteful “surge”. Available models for MIG and TIG.

DETAILS
Capacity: Heavy Duty
Gauges: 2” Steel
Seat: One-piece encapsulated seat designed with internal filter and PTFE Teflon® seat
Certifications: CGA E-4
Where Used: Gas-shielded welding
Weight: 3.37 lbs./ 1.53 kg.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>MAX. INLET PSIG</th>
<th>DELIVERY FLOW RANGE SCFH</th>
<th>DELIVERY FLOW GAUGE SCFH</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
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<td>447-40-IGG-1/4</td>
<td>Ar, CO₂</td>
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<td>0 - 40</td>
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<td>¼” FNTP</td>
<td>¼” - 18RH (F)</td>
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<td>447-80-IGG-1/4</td>
<td>Ar, CO₂</td>
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<td>0 - 80</td>
<td>80</td>
<td>¼” FNTP</td>
<td>¼” - 18RH (F)</td>
</tr>
</tbody>
</table>

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OVERVIEW
Most Harris combination torch handles have silver-brazed twin inner tube construction for strength and are light weight. For special applications, where weight can be compromised, Harris features tube-within-a-tube construction to provide optimum flow performance.

TYPICAL APPLICATIONS
- Metal fabrication
- Shipbuilding
- Maintenance
- Construction

PRO INFO
Visit www.harrisproductsgroup.com for complete details on our entire product line.
WHEN CONSTRUCTION MATTERS USING HARRIS MAKES THE DIFFERENCE.

For most applications Harris combination torch handles have silver-brazed twin inner tube construction for strength, light weight and maximum leak integrity.

For special applications where gas flow requirements are critical and light weight can be compromised, Harris uses tube-within-a-tube construction to fulfill those requirements while still maintaining the strength and leak integrity that these applications require.

WHAT IS THE DIFFERENCE BETWEEN BRAZING, SOLDERING & GAS WELDING?

1. **BRAZING** is a metal joining process utilizing a filler metal which melts above 840°F (450°C) and below the melting point of the base metal(s). The filler metal is drawn into the joint by capillary attraction producing a sound, leak-proof connection.

2. **SOLDERING** has the same definition as brazing except for the fact that the filler metal(s) melts below 840°F (450°C).

3. **GAS WELDING** is a joining process in which the base metal(s) actually melt and flow together along with the filler metal if used. Filler metal(s) are used when the joint size or properties of the joint require it.
# Heavy-Duty Automatic Torch Handle

## Description
The Model 18-5 is a heavy-duty automatic torch handle. The thumb-operated on/off control can be used for welding, brazing, cutting and light heating with all fuel gases. The pilot light feature can be used for acetylene welding and brazing only. The 18-5 is not recommended for heavy heating.

## Details
- **Capacity:** Welds to \( \frac{1}{2}"/12.7\text{mm} \); cuts to \( 5"/127.0\text{mm} \)
- **Length:** \( 10\frac{1}{2}"/266.7\text{mm} \)
- **Weight:** 1.4 lbs. / 0.64 kg.
- **Equipped with:** FlashGuard® check valves

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<th>COMPATIBLE TIP TUBE(S) (PG. 124)</th>
<th>ACET/H₂ (SIZE) (PG. 122)</th>
<th>ALT. FUEL (SIZE) (PG. 126)</th>
<th>ACET/H₂ (PG. 132)</th>
<th>ALT. FUEL (PG. 124)</th>
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<td>18-5</td>
<td>E-43</td>
<td>8593</td>
<td>23A90 (1-10)</td>
<td>1390-N (2-10)</td>
<td>1390 (HA)</td>
<td>1390 (B&amp;H)</td>
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<td>E-43</td>
<td>8593</td>
<td>1390 (0-10)</td>
<td>1390-N (2-10)</td>
<td>1390 (HA)</td>
<td>1390 (B&amp;H)</td>
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<td>E2-43</td>
<td>23A90 (13 &amp; 15)</td>
<td>1390-N (13, 15, 20, 30, 80)</td>
<td>1390-N (13, 15, 20, 30, 80)</td>
<td>1390 (3H)</td>
<td>1390 (3H)</td>
</tr>
</tbody>
</table>

**Example of Brazing Combination:** 18-5 + E-43 + 23A90

### Cutting Details

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE CUTTING ATTACHMENT (PG. 74)</th>
<th>CUTTING TIP STYLE (PG. 109)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1401820</td>
<td>18-5</td>
<td>73-3</td>
<td>6290, 6290AC &amp; S, 6290 NX, NXP, NXM, &amp; NFF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>49-3F*</td>
<td>6290 NX, NXP, NXM, &amp; NFF</td>
</tr>
</tbody>
</table>

**Example of Cutting Combination:** 18-5 + 73-3 + 6290

*For alternate fuels only.
### HIGH-CAPACITY COMBINATION HANDLE

#### DESCRIPTION
The Model 43-2 high-capacity combination handle with the capacity to maximize the performance of the largest Harris tips. The 43-2 is Harris’ premium heavy-duty combination torch handle.

#### DETAILS
- **Capacity:** Welds to 1"/25.4mm; cuts to 5"/127mm
- **Length:** 9½"/241.3mm
- **Weight:** 1.4 lbs. / 0.64 kg.
- **Certification:** UL® listed
- **Equipped with:** FlashGuard® check valves

*Featured in Pipeliner®, Alternate Fuel Classic and HardHat™ kits*

---

<table>
<thead>
<tr>
<th>WELDING/BRAZING/HEATING</th>
<th>MIXERS</th>
<th>TIP TUBE</th>
<th>WELDING/BRAZING TIP STYLE</th>
<th>HEATING TIP STYLE</th>
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</thead>
<tbody>
<tr>
<td>PART NO.</td>
<td>MODEL NO.</td>
<td>COMPATIBLE MIXER(S) (PG. 82)</td>
<td>COMPATIBLE TIP TUBE(S) (PG. 124)</td>
<td>ACET/H, (SIZE) (PG. 122)</td>
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<tr>
<td>1401150</td>
<td>43-2</td>
<td>E-43</td>
<td>–</td>
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<td>E-43</td>
<td>8593</td>
<td>1390 (0-10)</td>
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<td>E2-43</td>
<td>2393</td>
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<td></td>
<td>E3-43</td>
<td>T-43</td>
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<td>E3-43</td>
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<td>E3-43</td>
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<td>B-43-N</td>
<td>T-43</td>
<td>–</td>
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<td>B-43-N</td>
<td>2393</td>
<td>–</td>
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<td></td>
<td>B-43-N</td>
<td>2393</td>
<td>–</td>
</tr>
</tbody>
</table>

Example of Brazing Combination: 43-2 + E2-43 + T-43 + 1390-N

---

### CUTTING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE CUTTING ATTACHMENT (PG. 74)</th>
<th>CUTTING TIP STYLE (PG. 109)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>43-2</td>
<td>73-3</td>
<td>6290, 6290 S, 6290 AC, 6290 NX, NXP, NXM &amp; NFF</td>
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<tr>
<td></td>
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<td></td>
<td>49-3F *</td>
</tr>
</tbody>
</table>

Example of Cutting Combination: 43-2 + 49-3F + 6290 NX

*For alternate fuels only.*
ON THE HUNT FOR AN ALL-AROUND TORCH HANDLE?
CHECK OUT THE HARRIS **MODEL V-315C**.

Convert your Victor® oxy-fuel equipment to Harris "V" Series and get all the features, advantages and benefits of Harris designed equipment.

1. Harris V-315C supplied with Harris Flashguard® high-capacity check valves
2. Equipped with Harris high-volume, long-lasting ball valves.
3. Tube-within-a-tube construction for the highest heating capacity.
4. Selecting the proper Harris V-W series mixer allows use of Harris tips for welding, brazing or heating.
5. Harris also offers a V-2460 cutting attachment, compatible with Victor® style cutting tips (PG. 63).
6. Guaranteed UL® listed

WHAT IS V-SERIES?

The Harris "V" Series products allow users of Victor® style cutting torches, handles, cutting attachments, mixers and tips to inexpensively convert to and enjoy the benefits of genuine Harris designed gas apparatus.

Only Harris "V" Series V-315C handles, V-2460 cutting attachments and Type V-W, V-W-2 and V-W-3 mixers have genuine UL® listing—the industry's most trusted standard of quality.
**DESCRIPTION**

The Model V-315C is a Victor® compatible combination handle for welding, brazing, heating and cutting. This heavy-duty handle is compatible with all fuel gases and features tube-within-a-tube construction.

**DETAILS**

**Capacity:**
Welds to 1”/25.4mm; cuts to 5”/127.0mm

**Length:** 9½”/241.3mm

**Weight:** 1.4 lbs./0.64 kg.

**Certification:** UL® listed

**Equipped with:** FlashGuard® check valves

*Featured in “V” Series Pipeliner®, Alternate Fuel Combo and HardHat™ kits*

---

**WELDING/BRAZING/HEATING**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>MIXERS</th>
<th>TIP TUBE</th>
<th>WELDING/BRAZING TIP STYLE</th>
<th>HEATING TIP STYLE</th>
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<td>1400315</td>
<td>V-315C</td>
<td>V-W</td>
<td>8593</td>
<td>23A90 (0-10)</td>
<td>J-63 (1 &amp; 2)</td>
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<td>V-W</td>
<td>8593</td>
<td>1390 (0-10)</td>
<td>1390 (B&amp;H)</td>
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<tr>
<td></td>
<td></td>
<td>V-W</td>
<td>8593</td>
<td>1390 (13 &amp; 15)</td>
<td>J-63 (3 &amp; 4)</td>
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<tr>
<td></td>
<td></td>
<td>V-W</td>
<td>2393</td>
<td>1390 (13)</td>
<td>1390 (3H)</td>
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<tr>
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<td></td>
<td>V-W</td>
<td>2393</td>
<td>1390 (20,30,80)</td>
<td>2290-H &amp; HPM (1-3)</td>
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<td>2393</td>
<td>1390-N (13)</td>
<td>RBA (2, 4, 6)</td>
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<td>V-W</td>
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<td>1390 (3H)</td>
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<td>V-W</td>
<td>2393</td>
<td>1390-N (13, 15, 20, 30, 80)</td>
<td>1390 (3H)</td>
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</table>

**Example of Brazing Combination:** V-315C + V-W-2 + T-43 + 1390-N

**CUTTING**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE CUTTING ATTACHMENT (PG. 72)</th>
<th>CUTTING TIP STYLE (PG. 111)</th>
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<tr>
<td>1400315</td>
<td>V-315C</td>
<td>V-2460 V1-101, V1-101AC</td>
<td>T-GPP, T-GPP*</td>
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</tbody>
</table>

**Example of Cutting Combination:** V-315C + V-2460 + V1-101

*For alternate fuels only.*
**DESCRIPTION**

The model VH31 is a Victor® compatible heavy duty combination handle for welding, brazing, heating and cutting. It is designed to offer the highest flow possible allowing the use of larger tips. The handle is designed with a tube within a tube construction and is o-ring sealed for greater strength and higher capacity.

**DETAILS**

- **Capacity:** Welds to 1/2” / 12.7mm; cuts to 8” / 203.2mm
- **Length:** 11” / 279.4mm
- **Weight:** 1.91 lbs. / 0.86 kg.
- **Hose Connection:** 9/16-18 “B” FITTING

**FEATURES**

- All VH31 handles include model 88-5N FBTL&R flashback arrestors installed.

---

### WELDING/BRAZING/HEATING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>Model NO.</th>
<th>MIXERS</th>
<th>TIP TUBE</th>
<th>WELDING/BRAZING TIP STYLE</th>
<th>HEATING TIP STYLE</th>
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</thead>
<tbody>
<tr>
<td>1400422</td>
<td>VH31</td>
<td>V-W</td>
<td>8593</td>
<td>23A90-3 (0-10)</td>
<td>1390-N (2-80N)</td>
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<td></td>
<td></td>
<td>J-63 (1-3)</td>
<td>1390 (H, 3H, B)</td>
</tr>
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</table>

**Example of Heating Combination:** VH31 + V-W + 23A90-3

### CUTTING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>Model NO.</th>
<th>COMPATIBLE CUTTING ATTACHMENT (PG. 77)</th>
<th>CUTTING TIP STYLE (PG. 111)</th>
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<tbody>
<tr>
<td>1400422</td>
<td>VH31</td>
<td>VH24</td>
<td>V1-101</td>
</tr>
</tbody>
</table>

**Example of Cutting Combination:** VH31+VH24+ V1-101
**DESCRIPTION**

The Models 19-6 and 19-6A are combination handles for medium-duty welding, brazing, heating and cutting. They can be used with oxy-acetylene or any of the alternate fuel gases. The Model 19 features silver brazed twin-tube construction. Both Models 19-6 and 19-6A have front valves for easier adjustment while welding and brazing. The 19-6A features ¾”-24 class “A” hose fittings.

**DETAILS**

Capacity: Welds to ¼”/7.9mm; cuts to 2”/50.8 mm

Lengths: 7½”/190.5mm

Weight: 0.7 lbs./0.32 kg.

Certification: UL® listed

Equipped with: FlashGuard® check valves

Inlet connections:

19-6: ½” - 18

19-6A: ¾” - 24

---

**WELDING/BRAZING/HEATING**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE MIXER(S) (PG. 80)</th>
<th>COMPATIBLE TIP TUBE(S) (PG. 124)</th>
<th>ACET/H2 (SIZE) (PG. 123)</th>
<th>ALT. FUEL (SIZE) (PG. 124)</th>
<th>ACET/H2 (PG. 123)</th>
<th>ALT. FUEL (PG. 124)</th>
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</tr>
</tbody>
</table>

Example of Welding Combination: 19-6 + H-16-E + 5090

---

**CUTTING**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE CUTTING ATTACHMENT (PG. 78)</th>
<th>CUTTING TIP STYLE (PG. 108)</th>
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<tr>
<td>1401143</td>
<td>1401156</td>
<td>19-6</td>
<td>3690, 3690AC</td>
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<td>19-6</td>
<td>36-2</td>
<td>3690, 3690AC</td>
<td></td>
</tr>
<tr>
<td>19-6A</td>
<td>36-2A</td>
<td>3690-P</td>
<td></td>
</tr>
<tr>
<td>19-6</td>
<td>36-2</td>
<td>3690, 3690AC</td>
<td></td>
</tr>
<tr>
<td>19-6A</td>
<td>36-2A</td>
<td>3690-P</td>
<td></td>
</tr>
</tbody>
</table>

Example of Cutting Combination: 19-6 + 36-2 + 3690AC

*For alternate fuels only.*
# MEDIUM-DUTY AUTOMATIC TORCH HANDLE

## DESCRIPTION

The Model 50-9 is an automatic medium-duty handle. The handle features a lever control on/off for welding, brazing and cutting; and a unique pilot light for welding and brazing with acetylene. The on/off feature is not recommended for acetylene heating applications.

## DETAILS

- **Capacity:** Welds to ¼”/12.7mm; cuts to 3”/76.2mm
- **Length:** 8”/203.2mm
- **Weight:** 0.8 lbs./0.36 kg.
- **Equipped with:** FlashGuard® check valves
- **Gas service:** Acetylene & hydrogen

## WELDING/BRAZING/HEATING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>MIXERS</th>
<th>TIP TUBE</th>
<th>WELDING/BRAZING TIP STYLE</th>
<th>HEATING TIP STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50-9</td>
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<tr>
<td>1401585</td>
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</table>

### COMPATIBLE MIXERS

(PG. 86)

### COMPATIBLE TIP TUBE(S)

(PG. 123)

### ACET/H2 (SIZE)

(PG. 124)

### ALT. FUEL (SIZE)

(PG. 124)

### ACET/H2

(PG. 124)

### ALT. FUEL

(PG. 124)

### Example of Welding Combination: 50-9 + H-16-E + 8593 + 1390

## CUTTING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE CUTTING ATTACHMENT</th>
<th>CUTTING TIP STYLE</th>
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<tr>
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<td>50-9</td>
<td>36-2, 36-2N</td>
<td>3690, 3690AC</td>
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</tbody>
</table>

**Example of Cutting Combination:** 50-9 + 36-2 + 3690
# MEDIUM-DUTY AUTOMATIC TORCH HANDLE

## DESCRIPTION
The Model 50-10 is an automatic medium-duty handle. The handle features a lever control on/off for welding, brazing and cutting, and a unique pilot light for brazing. The Model 50-10 is not recommended for any acetylene heating applications.

## DETAILS
- **Capacity:** Welds to \( \frac{1}{2}''/12.7\text{mm}, \) cuts to \( 3''/76.2\text{mm} \)
- **Length:** 8''/203.2mm
- **Weight:** 0.8 lbs./0.36 kg.
- **Equipped with:** FlashGuard® check valves
- **Gas service:** Propane, propylene, natural gas/methane

## WELDING/BRAZING/HEATING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE MIXER(S) (PG. 88)</th>
<th>COMPATIBLE TIP TUBE(S)</th>
<th>BRAZING TIP STYLE</th>
<th>HEATING TIP STYLE</th>
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<tbody>
<tr>
<td>H-16-S</td>
<td>50-10</td>
<td>D-50-C</td>
<td>1390-N (2-10)</td>
<td>1390 (B&amp;H)</td>
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</tr>
<tr>
<td>H-16-S</td>
<td>50-10</td>
<td>D-50-CXL</td>
<td>1390-N (2-10)</td>
<td>1390 (B&amp;H)</td>
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<tr>
<td>H-16-S</td>
<td>50-10</td>
<td>TH-50-2</td>
<td>8490-N (4-8)</td>
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<tr>
<td>H-16-S</td>
<td>50-10</td>
<td>TH-50-2XL</td>
<td>8490-N (4-8)</td>
<td>8490-6-65</td>
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<tr>
<td>H-16-E</td>
<td>50-10</td>
<td>D-50-C</td>
<td>1390-N (2-10)</td>
<td>1390 (B&amp;H)</td>
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<tr>
<td>H-16-E</td>
<td>50-10</td>
<td>D-50-CXL</td>
<td>1390-N (2-10)</td>
<td>1390 (B&amp;H)</td>
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</tr>
<tr>
<td>H-16-E</td>
<td>50-10</td>
<td>TH-50-2</td>
<td>8490-N (4-8)</td>
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<tr>
<td>H-16-2E</td>
<td>50-10</td>
<td>TH-50-2XL</td>
<td>8490-N (4-8)</td>
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</tr>
</tbody>
</table>

**Example of Brazing Combination:** 50-10 + H-16-E + D-50-C + 1390-N

## CUTTING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE CUTTING ATTACHMENT (PG. 78)</th>
<th>CUTTING TIP STYLE (PG. 109)</th>
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<tbody>
<tr>
<td>1401590</td>
<td>50-10</td>
<td>36-2N</td>
<td>3690-P</td>
</tr>
</tbody>
</table>

**Example of Cutting Combination:** 50-10 + 36-2N + 3690-P

*For alternate fuels only.
DESCRIPTION
The Model 85 is a medium-duty combination handle designed for welding, brazing, cutting or heating with acetylene or alternate fuels. The 85 features twin-tube silver-brazed connections for safety and durability. The Model 85 is Harris' most popular torch handle.

DETAILS
Capacity: Welds to ¼”/12.7mm; cuts to 5”/127.0mm
Length: 8½”/215.9mm
Weight: 1 lb./.45 kg.
Certification: UL® listed
Equipped with: FlashGuard®
Check Valves
Featured in Expert®, Steelworker®, Alternate Fuel Combo and Port-A-Torch® Classic kits

<table>
<thead>
<tr>
<th>WELDING/BRAZING/HEATING</th>
<th>MIXERS</th>
<th>TIP TUBE</th>
<th>WELDING/BRAZING TIP STYLE</th>
<th>HEATING TIP STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART NO.</td>
<td>MODEL NO.</td>
<td>COMPATIBLE MIXER(S)</td>
<td>COMPATIBLE TIP TUBE(S)</td>
<td>ACET/H₂ (SIZE)</td>
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<td>D-85</td>
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<td>23A90 (0-10)</td>
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<td>8593</td>
<td>1390 (0-10)</td>
</tr>
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</table>

Example of Welding Combination: 85 + D-85 + 23A90

<table>
<thead>
<tr>
<th>CUTTING</th>
<th>ATTACHMENT</th>
<th>TIP STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART NO.</td>
<td>MODEL NO.</td>
<td>COMPATIBLE CUTTING ATTACHMENT</td>
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<td>72-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39-3F*</td>
</tr>
</tbody>
</table>

Example of Cutting Combination: 85 + 72-3 + 6290AC

*For alternate fuels only.
THE HARRIS V-SERIES® ADVANTAGE

1. SOLID FORGED HEAD WITH MIXER
   - Resist flashback damage
   - Readily accessible mixer
   - Alternate fuel injector mixer available

2. BRAZED CONSTRUCTION
   - Superior strength
   - Cannot loosen

3. TRIANGULAR TUBE CONSTRUCTION
   - Lightweight with strength and rigidity

4. CUTTING OXYGEN VALVE
   - Ease-on for smoother starts
   - Easily accessible for service

5. SOLID BRASS FORGED LEVER
   - Exceptional strength and durability
   - Flips forward for safety and convenience

"V" SERIES CUTTING ATTACHMENTS MAKE IT POSSIBLE FOR VICTOR® TORCH HANDLE USERS TO ENJOY THE UNIQUE FEATURES AND BENEFITS OF HARRIS CUTTING ATTACHMENTS.

FEATURES AND ADVANTAGES OF HARRIS V-SERIES® EQUIPMENT

The heavy duty construction of the Harris V-Series® components will deliver years of superior performance.

- Harris V-Series® handles feature Harris flashguard replaceable check valves
- Harris V-Series® cutting attachment features:
  - Solid forged head for long service life
  - Brazed triangular tube construction for added strength and rigidity
  - Protected torch unions to reduce damage from abuse
  - Head mixing design for safety and efficiency
  - Use Victor® or Harris V-Series® cutting tips available in both acetylene and alternate fuels
  - Cutting lever flips away for safety and ease of service
  - Cutting oxygen valve has ease-on for smoother starts
- Harris V-Series® welding and brazing mixers are compatible with high-performance Harris welding, brazing and heating tips
**DESCRIPTION**

The Model V-100C-2 is a Victor® compatible combination handle for welding, brazing, heating and cutting. It is a medium duty handle compatible with all fuel gases. It has silver-brazed twin-tube construction. Select the Harris V-W-1 mixer to use Harris welding, brazing and heating tips.

**DETAILS**

- **Capacity:** Welds to \( \frac{1}{2} \)/12.7mm; cuts to 5'/127.0mm
- **Length:** 8 \( \frac{1}{2} \)/215.9mm
- **Weight:** 1 lb./0.45 kg
- **Equipped with:** FlashGuard® check valves
- **Featured in:** “V” Series Steelworker®, Expert®, HardHat™ and “V” Port-A-Torch® kits

### WELDING/BRAZING/HEATING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>MIXERS</th>
<th>TIP TUBE</th>
<th>WELDING/BRAZING TIP STYLE</th>
<th>HEATING TIP STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400402</td>
<td>V-100C-2</td>
<td>V-W-1</td>
<td>8593</td>
<td>23A90 (0-10)</td>
<td>J-63 (1 &amp; 2)</td>
</tr>
</tbody>
</table>

**Example of Heating Combination:** V-100C + V-W-1 + J-63

### CUTTING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>CUTTING ATTACHMENT</th>
<th>CUTTING TIP STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400402</td>
<td>V-100C</td>
<td>V-1350</td>
<td>V3-101</td>
</tr>
</tbody>
</table>

**Example of Cutting Combination:** V-100C + V-1350 + V3-101
**DESCRIPTION**

The Model VH10 is a Victor® compatible combination handle for welding, brazing, heating and cutting. It is a medium duty handle compatible with all fuel gases. It has a tube within a tube construction. With threaded connections and o-ring seals. The VH10 is equipped with easy to replace Harris Flash-Guard® high capacity check valves.

**DETAILS**

- **Capacity:** Welds to ½”/12.7mm; cuts to 5”/127.0mm
- **Length:** 8¼”/222.2 mm
- **Weight:** 1 lb./0.45 kg.
- **Equipped with:** FlashGuard® check valves
- **Featured in Ironworker® V SERIES® VMD kits**

**WELDING/BRAZING/HEATING**

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>MIXERS</th>
<th>TIP TUBE</th>
<th>WELDING/BRAZING TIP STYLE</th>
<th>HEATING TIP STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>COMPATIBLE MIXER(S) (PG. 86)</td>
<td>COMPATIBLE TIP TUBE(S) (PG. 124)</td>
<td>ACET/H₂ (SIZE) (PG. 122)</td>
<td>ALT. FUEL (SIZE) (PG. 126)</td>
</tr>
<tr>
<td>1400424</td>
<td>VH10</td>
<td>V-W-1</td>
<td>8593</td>
<td>23A90 (0-10)</td>
<td>1390 (0-10)</td>
</tr>
</tbody>
</table>

Example of Heating Combination: VH10 + V-W-1 + J-63

**CUTTING**

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>COMPATIBLE CUTTING ATTACHMENT (PG. 74)</th>
<th>CUTTING TIP STYLE (PG. 114)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400424</td>
<td>VH10</td>
<td>VH13</td>
<td>V3-101, 3-GPN, 3-GPP</td>
</tr>
</tbody>
</table>

Example of Cutting Combination: VH10 + VH13 + V3-101
DESCRIPTION

The Model 15 is a lightweight aircraft-style (Class “A” ¾”-24 hose connection) handle with front valves for more convenient adjustment while welding or brazing. The Model 15 is compatible with all fuel gases. The Model 15 can be used for welding, brazing and light heating. Seals and seats compatible with gas flux.

DETAILS

Capacity: Welds to ¾”/7.9mm
Length: 5 ¾”/146.0mm
Weight: 0.5 lb./0.23 kg.
Hose connections: ¾” - 24 “A”
Optional Equipment: ¾” - 24 check valves P/N: 4300835

Example of Brazing Combination: 15-3 + B-15-3S + 8493-N + 8490-6-65

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QUICK SELECTION GUIDE

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ALTERNATE FUEL INJECTOR
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V-2460 MODEL
VICTOR COMPATIBLE ALL FUEL
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LIGHT DUTY

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36-2 MODEL
ALL FUELS
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Orders: 1.800.733.4043
OVERVIEW
All Harris Cutting Attachments share these great features:
• Brazed triangular tube construction for safety and durability
• Solid forged brass heads for performance and long service life
• Flip-up oxygen cutting lever for convenience and ease of operation
• Captive union nut protects connections from damage
• Ease-on cutting valve for safety and cutting control

TYPICAL APPLICATIONS
• Metal fabrication
• Shipbuilding
• Maintenance
• Construction

PRO INFO
Visit www.harrisproductsgroup.com for complete details on our entire product line.

MODEL SHOWN:
73-3

TOUGH JOBS DEMAND RUGGED EQUIPMENT
THAT'S WHY PROS CHOOSE HARRIS
CUTTING ATTACHMENT – FOR USE WITH ALTERNATE* FUELS

MODEL SHOWN: 49-3F

DESCRIPTION
The Model 49-3F is a classic design Harris cutting attachment with brazed triangular stainless steel tubes, making it light in weight while still providing exceptional strength and rigidity. The captive union nut protects the seats and "O" rings from damage. It features a fold forward cutting lever allowing easier connection, even with gloves on. The ease-on cutting valve provides smoother controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions. This model also features a unique low pressure injector mixing system for the hottest preheat flame and the most efficient use of alternate fuels.

DETAILS
- **Capacity:** 6”/152.4mm
- **Duty:** Heavy
- **Length:** 10 ¾”/260.3mm
- **Weight:** 1.5 lbs./0.68 kg.
- **Mixer Type:** Low pressure injector
- **Certification:** UL® listed

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>COMPATIBLE HANDLES</th>
<th>ALTERNATE FUEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300440</td>
<td>49-3F</td>
<td>90°</td>
<td>43-2, 18-5</td>
<td>6290-NX, 6290-NXP, NFF</td>
</tr>
<tr>
<td>1300430</td>
<td>49-3AF</td>
<td>70°</td>
<td>43-2, 18-5</td>
<td>6290-NX, 6290-NXP, NFF</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas. NOT FOR USE WITH ACETYLENE.

CUTTING ATTACHMENT – FOR USE WITH ALL FUEL GASES

MODEL SHOWN: 73-3

DESCRIPTION
The Model 73-3 is a classic design Harris cutting attachment with brazed triangular stainless steel tubes, making it light in weight while still providing exceptional strength and rigidity. The captive union nut protects the seats and "O" rings from damage. It features a fold forward cutting lever allowing easier connection, even with gloves on. The ease-on cutting valve provides smoother controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions.

DETAILS
- **Capacity:** 6”/152.4mm
- **Duty:** Heavy
- **Length:** 9½”/241.3mm
- **Weight:** 1.5 lbs./0.68 kg
- **Mixer Type:** Equal pressure
- **Certification:** UL® listed

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>COMPATIBLE HANDLES</th>
<th>ACET/H₂</th>
<th>ALTERNATE FUEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300340</td>
<td>73-3</td>
<td>90°</td>
<td>43-2, 18-5</td>
<td>6290, 6290AC, 6290S</td>
<td>6290-NX, NXP, &amp; NFF</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas.
## Cutting Attachment – For Use With All Fuel Gases

**Model Shown:** V-2460

### Description

The Model V-2460 is a classic design Harris cutting attachment with brazed triangular stainless steel tubes, making it light in weight while still providing exceptional strength and rigidity. The captive union nut protects the seats and “O” rings from damage. It features a fold forward cutting lever allowing easier connection, even with gloves on. The ease-on cutting valve provides smoother controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions.

### Details

**Capacity:** 6”/152.4mm  
**Duty:** Heavy  
**Length:** 10 1/4”/260.3mm  
**Weight:** 1.5 lbs./0.68 kg.  
**Mixer Type:** Equal pressure  
**Certification:** UL® listed  
**Where Used:** Fabrication, construction, shipbuilding, etc.  
**Featured in:** “V” Series Pipeliner® and Alternate Fuel kits

### Tip Styles

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Model No.</th>
<th>Head Angle</th>
<th>Compatible Handles</th>
<th>Acet/H₂</th>
<th>Alternate* Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300512</td>
<td>V-2460</td>
<td>90°</td>
<td>V-315C</td>
<td>V-101, V-101AC</td>
<td>1-GPN, GAP</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas.

## Cutting Attachment – For Use With Alternate* Fuels

**Model Shown:** 39-3F

### Description

The Model 39-3F is a classic design Harris cutting attachment with brazed triangular stainless steel tubes, making it light in weight but still providing exceptional strength and rigidity. The captive union nut protects the seats and “O” rings from damage. It features a fold forward cutting lever allowing easier connection, even with gloves on. The ease-on cutting valve provides smoother controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions. This model also features a unique low pressure injector mixing system for the hottest preheat flame and the most efficient use of alternate fuels.

### Details

**Capacity:** 4”/152.4mm  
**Duty:** Medium  
**Length:** 10 1/4”/260.3mm  
**Weight:** 1.5 lbs./0.68 kg.  
**Mixer Type:** Low pressure injector  
**Certification:** UL® listed  
**Where Used:** Fabrication, construction, maintenance, etc.  
**Related Equipment:** Circle cutting attachment – R-69-3B  
**P/N:** 4300200  
**Featured in:** Classic Alternate Fuel kits

### Tip Styles

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Model No.</th>
<th>Head Angle</th>
<th>Compatible Handle</th>
<th>Alternate* Fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300405</td>
<td>39-3F</td>
<td>90°</td>
<td>85</td>
<td>6290NX, 6290NXP, 6290NFF</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas. NOT FOR USE WITH ACETYLENE.
**DESCRIPTION**

The Model 72-3 is a classic design Harris cutting attachment with brazed triangular stainless steel tubes, making it light in weight while still providing exceptional strength and rigidity. The captive union nut protects the seats and "O" rings from damage. It features a fold forward cutting lever allowing easier connection, even with gloves on. The ease-on cutting valve provides smoother controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions.

**DETAILS**

- **Capacity:** Cuts to 5'/127.0mm
- **Duty:** Medium
- **Length:** 9'2"/241.3mm
- **Weight:** 1.5 lbs./0.68 kg.
- **Mixer Type:** Equal pressure
- **Certification:** UL® listed

- **Where Used:** Construction, maintenance, agriculture

**Related Equipment:**
- Circle cutting attachment – R-69-3B
- P/N: 4300200
- Featured in Classic Steelworker® and Expert® kits

### TIP STYLES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>COMPATIBLE HANDLES</th>
<th>ACETYLENE / H₂</th>
<th>ALTERNATE* FUEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300380</td>
<td>72-3</td>
<td>90°</td>
<td>85</td>
<td>6290, 6290AC, 6290S</td>
<td>6290-NX, NXP, NFF</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas.

---

**DESCRIPTION**

The Model V-1350 is a classic design Harris cutting attachment with brazed triangular stainless steel tubes, making it light in weight while still providing exceptional strength and rigidity. The captive union nut protects the seats and "O" rings from damage and it features a fold forward cutting lever allowing easier connection, even with gloves on. The ease-on cutting valve provides smoother controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions.

**DETAILS**

- **Capacity:** Cuts to 4'/101.6mm
- **Duty:** Medium
- **Length:** 10'1/4'/260.3mm
- **Weight:** 1.5 lbs./0.68 kg.
- **Mixer Type:** Equal pressure

**Where Used:** Construction, maintenance, agriculture

**Related Equipment:**

- Featured in “V” Series Steelworker® and Expert® kits

### TIP STYLES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>COMPATIBLE HANDLES</th>
<th>ACETYLENE / H₂</th>
<th>ALTERNATE* FUEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300506</td>
<td>V-1350</td>
<td>90°</td>
<td>V-100C</td>
<td>V3-101</td>
<td>3-GPN, GPP</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas.
VICTOR® COMPATIBLE CUTTING ATTACHMENT

DESCRIPTION
The Model VH24 is a Victor® compatible heavy duty cutting attachment. The mixer design resists damage due to flashback. It is equipped with a durable stainless steel lever, has a coupling nut with locking ring to protect cutting attachment seat, and the cutting oxygen valve has an ease-on feature for more precise control.

DETAILS
Capacity: Cuts to 8" / 203.2mm  Where Used: Heavy fabrication, construction, ship building, pipeline connection
Duty: Heavy
Length: 12 1/8" / 307.9mm
Weight: 2.41 lbs / 1.09 kg.
Mixer Type: Equal pressure

MODEL SHOWN:

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>COMPATIBLE HANDLES</th>
<th>ACETYLENE / H₂</th>
<th>ALTERNATE* FUEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300452</td>
<td>VH24</td>
<td>90°</td>
<td>VH31</td>
<td>V-101, V-101AC</td>
<td>1-GPN, GPP</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas.

MODEL SHOWN:

DESCRIPTION
The Model VH13 is a Victor® compatible medium duty cutting attachment. It is equipped with a durable stainless steel lever, an in-tube mixer, and threaded connections for easy repair.

DETAILS
Capacity: Cuts to 4" / 101.6 mm  Where Used: Construction, maintenance, agriculture
Duty: Medium
Length: 8" / 203.2mm
Weight: .896 lbs / .41 kg.
Mixer Type: Equal pressure

MODEL SHOWN:

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>COMPATIBLE HANDLES</th>
<th>ACETYLENE / H₂</th>
<th>ALTERNATE* FUEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300048</td>
<td>VH13</td>
<td>90°</td>
<td>VH10</td>
<td>V3-101</td>
<td>3-GPN, 3-GPP</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas.
CUTTING ATTACHMENT – FOR USE WITH ALTERNATE* FUELS

MODEL SHOWN: 36-2N

DESCRIPTION
The Model 36-2N is a classic design Harris cutting attachment with brazed triangular stainless steel tubes, making it light in weight while still providing exceptional strength and rigidity. The captive union nut protects the seats and “O” rings from damage and it features a fold forward cutting lever allowing easier connection, even with gloves on. The ease-on cutting valve provides smoother controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions. This model also features a unique low pressure injector mixing system for the hottest preheat flame and the most efficient use of alternate fuels.

DETAILS
Capacity: Cuts to 1"/25.4mm
Duty: Light
Length: 8"/203.2mm
Weight: 0.75 lbs. /0.34 kg.
Mixer Type: Low pressure injector

Where Used: HVAC, maintenance, metal art, etc.

CUTTING ATTACHMENT – FOR USE WITH ALL FUEL GASES

MODEL SHOWN: 36-2

DESCRIPTION
The Model 36-2 is a classic design Harris cutting attachment with brazed triangular stainless steel tubes, making it light in weight while still providing exceptional strength and rigidity. The captive union nut protects the seats and “O” rings from damage. It features a fold forward cutting lever allowing easier connection, even with gloves on. The ease-on cutting valve provides smoother controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions.

DETAILS
Capacity: Cuts to 3"/76.2mm acetylene; 1"/25.4mm alternate fuels
Duty: Light
Length: 7½"/190.5mm
Weight: 0.75 lbs./0.34 kg.
Mixer Type: Equal pressure

Where Used: HVAC, maintenance, metal art, etc.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>COMPATIBLE HANDLES</th>
<th>ACETYLENE / H₂</th>
<th>ALTERNATE* FUEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1300020</td>
<td>36-2</td>
<td>90°</td>
<td>50-9, 19-6, 19-6A</td>
<td>3690, 3690AC</td>
<td>3690-P</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas.
HERE'S A TIP:
WHEN PROS USE HARRIS, THEY USE THE BEST

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MIXERS

HARRIS COMBINATION TORCH MIXERS ARE DESIGNED TO PROVIDE OPTIMUM PERFORMANCE FROM HARRIS WELDING, BRAZING AND HEATING TIPS. HARRIS MIXERS ARE VARIABLE-PRESSURE TYPE MIXERS ALLOWING THE USE OF THE SAME MIXER ON A FULL RANGE OF WELDING OR BRAZING TIPS ELIMINATING ADDITIONAL EXPENSES FOR SEPARATE MIXERS OF EACH TIP SIZE.

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QUICK SELECTION GUIDE

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- **B-15-3S MODEL**
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OVERVIEW
Harris mixers are available in either "equal pressure" or "injector styles." Equal pressure injectors are recommended for acetylene-oxygen, but also work well on alternate fuels when low or inconsistent pressure is not an issue. Harris recommends equal pressure mixers when absolute control of the oxy-fuel ration is a must—as in critical brazing applications.

TYPICAL APPLICATIONS
• Metal fabrication
• Shipbuilding
• Maintenance
• Construction

PRO INFO
Visit www.harrisproductsgroup.com for complete details on our entire product line.

MODEL SHOWN:
B-15-3
HEAVY DUTY EQUAL PRESSURE MIXER

**DESCRIPTION**
The Model E-43 is an "E" or positive pressure mixer for welding, brazing or light heating. It can be used with all fuel gases. The E-43 is for use with all fuel gases.

**DETAILS**
- **Capacity:** Welds to ½"/12.7mm; Heats to 100,000 BTU
- **Duty:** Heavy
- **Thread size:** Mixer to tip tube ¾" - 26
- **Certification:** UL® listed
- **Where Used:** Metal fabrication, maintenance

*18-5 handle is recommended for light alternate fuel heating only.

---

HEAVY DUTY EQUAL PRESSURE MIXER

**DESCRIPTION**
The Model V-W is a "V" Series "E" or positive pressure mixer for welding, brazing or light heating. It is for use with all fuel gases. The V-W is for use with all fuel gases.

**DETAILS**
- **Capacity:** Welds to ½"/12.7mm; Heats to 100,000 BTU
- **Duty:** Heavy
- **Thread size:** Mix to tip or tube ¾" - 26
- **Certification:** UL® listed
- **Where Used:** Metal fabrication, maintenance, etc.

*The V-W is also compatible with Victor® 315C Series handles.

---

**PART NO.** | **MODEL NO.** | **COMPATIBLE HANDLE(S)** | **TIP TUBE MODEL NO.** | **ACETYLENE BRAZING/WELDING TIPS (SIZES)** | **ALTERNATE FUEL BRAZING TIPS (SIZES)** | **ACETYLENE HEATING TIPS (SIZES)** | **ALTERNATE FUEL HEATING TIPS (SIZES)**
---|---|---|---|---|---|---|---
9100312 | E-43 | 43-2 | – | 23A90 (0-10) | – | J-63-1 & 2 | –
9100312 | E-43 | 43-2 | 8593 | 1390 (0-10) | 1390-N (2-10) | 1390-HA | 1390 (B&H)
9100312 | E-43 | 18-5* | 8593 | 1390 (0-10) | 1390-N (2-10) | – | 1390 (B&H)

---

**PART NO.** | **MODEL NO.** | **COMPATIBLE HANDLE(S)** | **TIP TUBE MODEL NO.** | **ACETYLENE BRAZING/WELDING TIPS (SIZES)** | **ALTERNATE FUEL BRAZING TIPS (SIZES)** | **ACETYLENE HEATING TIPS (SIZES)** | **ALTERNATE FUEL HEATING TIPS (SIZES)**
---|---|---|---|---|---|---|---
9105214 | V-W | V-315C | – | 23A90 (0-10) | – | J-63-1 & 2 | –
9105214 | V-W | V-315C | 8593 | 1390 (0-10) | 1390-N (2-10) | 1390-HA | 1390 (B&H)

*The V-W is also compatible with Victor® 315C Series handles.*
The Model E2-43 is an "E" equal or positive pressure mixer for use with all fuel gases. The E2-43 mixer is recommended for light to medium duty welding, brazing and heating tip applications.

**Details**
- **Capacity:** Welds to 1″/25.4mm; Heats to 590,000 BTU
- **Duty:** Light to medium
- **Thread Size:** Mixer to tip tube ½" - 25
- **Certification:** UL® listed
- **Where Used:** Metal fabrication, shipbuilding, etc.

### E2-43

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ACETYLENE HEATING TIPS (SIZES)</th>
<th>ALTERNATE FUEL HEATING TIPS (SIZES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9100314</td>
<td>E2-43</td>
<td>43-2</td>
<td>–</td>
<td>23A90 (13 &amp; 15)</td>
<td>–</td>
<td>J-63 (3 &amp; 4)</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td></td>
<td>43-2</td>
<td>T-43</td>
<td>1390 (13)</td>
<td>1390-N (13 &amp; 15)</td>
<td>–</td>
<td>1390 (3H)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>43-2</td>
<td>2393</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>2290 H&amp;HPM (1-3)</td>
</tr>
</tbody>
</table>

The Model V-W-2 is V-Series "E" equal or positive pressure mixer for use with all fuel gases. The V-W-2 mixer is recommended for light to medium duty welding, brazing and heating tip applications.

**Details**
- **Capacity:** Welds to 1″/25.4mm; Heats to 590,000 BTU
- **Duty:** Heavy
- **Thread Size:** Mixer to tip tube ½" - 25
- **Certification:** UL® listed
- **Where Used:** Metal fabrication, shipbuilding, etc.

### V-W-2

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)*</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ACETYLENE HEATING TIPS (SIZES)</th>
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<td>9105217</td>
<td>V-W-2</td>
<td>V-315C</td>
<td>–</td>
<td>23A90 (13 &amp; 15)</td>
<td>–</td>
<td>J-63 (3 &amp; 4)</td>
<td>–</td>
</tr>
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<td></td>
<td></td>
<td>V-315C</td>
<td>T-43</td>
<td>1390 (13 &amp; 15)</td>
<td>1390-N (13 &amp; 15)</td>
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<td>1390 (3H)</td>
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<tr>
<td></td>
<td></td>
<td>V-315C</td>
<td>2393</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>2290 H&amp;HPM (1-3)</td>
</tr>
</tbody>
</table>

*The V-W-2 is also compatible with Victor® 315C Series handles.
### HIGH FLOW EQUAL PRESSURE MIXER

**DESCRIPTION**
The Model E3-43 is an “E” equal or positive pressure mixer for welding, brazing and heating with all fuel gases. The E3-43 mixer can be used to supply Harris largest welding, brazing and heating tips.

**DETAILS**
- **Capacity:** Welds to 3/4”/19.0mm; Heats to 1,025,000 BTU
- **Duty:** Heavy
- **Thread Size:** Mixer to tip tube 1/4” - 25
- **Certification:** UL® listed
- **Where Used:** Metal fabrication, shipbuilding

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ACETYLENE HEATING TIPS (SIZES)</th>
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<tbody>
<tr>
<td></td>
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<td>43-2</td>
<td>T-43</td>
<td>1390 (13 &amp; 15)</td>
<td>1390-N (13-80)</td>
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<td>1390 (3H)</td>
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<tr>
<td></td>
<td></td>
<td>43-2</td>
<td>2393</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>2290 (1 thru 5 H&amp;HPM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18-5”</td>
<td>T-43</td>
<td>23A90 (13 &amp; 15)</td>
<td>–</td>
<td>–</td>
<td>1390 (3H)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18-5”</td>
<td>T-43</td>
<td>1390 (13 &amp; 15)</td>
<td>1390-N (13-80)</td>
<td>–</td>
<td>1390 (3H)</td>
</tr>
</tbody>
</table>

*18-5 handle is recommended for light alternate fuel heating only.

### HIGH FLOW EQUAL PRESSURE MIXER

**DESCRIPTION**
The Model V-W-3 is a V-Series “E” equal or positive pressure mixer for welding, brazing or heating with all fuel gases. The V-W-3 mixer can be used with Harris largest welding, brazing and heating tips.

**DETAILS**
- **Capacity:** Welds to 3/4”/19.0mm; Heats to 1,025,000 BTU
- **Duty:** Heavy
- **Thread Size:** Mixer to tip tube 1/4” - 25
- **Certification:** UL® listed
- **Where Used:** Metal fabrication, shipbuilding

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)*</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ACETYLENE HEATING TIPS (SIZES)</th>
<th>ALTERNATE FUEL HEATING TIPS (SIZES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>V-315C</td>
<td>T-43</td>
<td>1390 (13 &amp; 15)</td>
<td>1390-N (13-80)</td>
<td>–</td>
<td>1390 (3H)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V-315C</td>
<td>2393</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>2290 (1 thru 5 H&amp;HPM)</td>
</tr>
</tbody>
</table>

*The V-W-3 is also compatible with Victor® 315C Series handles.
**B-43-N**

**DESCRIPTION**
The Model B-43-N is an “F” injector or low pressure mixer for brazing and heating, providing maximum performance from alternate fuels. The B-43-N is for medium to heavy heating and brazing with alternate fuels only.

**DETAILS**
- **Capacity:** Heats to 590,000 BTU
- **Duty:** Medium to heavy
- **Thread size:** Mixer to tip tube ½” - 25

**Certification:** UL® listed

**Where Used:** Metal fabrication, ship building, etc.

### TABLE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)</th>
<th>TIP TUBE MODEL NO.</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ALTERNATE FUEL HEATING TIPS (SIZES)</th>
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</thead>
<tbody>
<tr>
<td>9100306</td>
<td>B-43-N</td>
<td>43-2, 18-5</td>
<td>T-43</td>
<td>1390-20N, 30N &amp; 80N</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>43-2</td>
<td>2393-1 thru 5</td>
<td>–</td>
<td>2290 (1 thru 3, H &amp; HPM)</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas. NOT FOR USE WITH ACETYLENE.*

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**D-85**

**DESCRIPTION**
The Model D-85 is an “E” equal or positive pressure mixer for welding, brazing and heating with all fuel gases.

**DETAILS**
- **Capacity:** Welds to ½”/12.7mm; Heats to 100,000 BTU
- **Duty:** Medium
- **Thread size:** Mixer to tip tube ⁷⁄₁₆” - 26

**Certification:** UL® listed

**Where Used:** Metal fabrication, maintenance, etc.

**Featured in Steelworker®, Expert® and Port-A-Torch® Classic kits**

### TABLE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ACETYLENE HEATING TIPS (SIZES)</th>
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<td>9100614</td>
<td>D-85</td>
<td>85</td>
<td>–</td>
<td>23A90 (0-10)</td>
<td>–</td>
<td>J-16 (1 &amp; 2)</td>
<td>–</td>
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<tr>
<td></td>
<td></td>
<td>85</td>
<td>6593</td>
<td>1390 (0-10)</td>
<td>1390-N (2-10)</td>
<td>–</td>
<td>1390 (B&amp;H)</td>
</tr>
</tbody>
</table>
**MEDIUM DUTY EQUAL PRESSURE MIXER**

**DESCRIPTION**
The Model V-W-1 is a V-Series “E” equal or positive pressure mixer for welding, brazing and heating with all fuel gases.

**DETAILS**
- **Capacity:**
  - Welds to ½”/12.7mm
  - Heats to 100,000 BTU
- **Duty:** Medium
- **Thread size:** Mixer to tip or tube ⅜” - 26
- **Where Used:** Metal fabrication, maintenance, etc.
- **Featured in Steelworker®, Expert® and Port-A-Torch® V-Series kits**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)*</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ACETYLENE HEATING TIPS (SIZES)</th>
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<tr>
<td>9105213</td>
<td>V-W-1</td>
<td>V-100C – V-100C</td>
<td>2390 (0-10) – 8593</td>
<td>1390 (0-10) – 1390-N (2-10)</td>
<td>J-63 (1 or 2) – 1390 (B&amp;H)</td>
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</tr>
</tbody>
</table>

*The V-W-1 is also compatible with Victor® 100C handles.

**MEDIUM DUTY EQUAL PRESSURE MIXER**

**DESCRIPTION**
The Model H-16-E is an “E” equal or positive pressure mixer for welding, brazing or heating and is for use with all fuel gas.

**DETAILS**
- **Capacity:**
  - Welds to ½”/12.7mm
  - Heats to 100,000 BTU
- **Duty:** Medium
- **Thread size:** Mixer to tip or tip tube ⅛” - 26
- **Certification:** UL® listed
- **Where Used:** Metal art, maintenance, production brazing

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ACETYLENE HEATING TIPS (SIZES)</th>
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<td>910096</td>
<td>H-16-E</td>
<td>50-9 – 50-9</td>
<td>5090 (0-10) – 5090 (0-10)</td>
<td>1390 (0-10) – 1390-N (2-10)</td>
<td>1390-HA – 1390-HA</td>
<td>1390 (B&amp;H) – 1390 (B&amp;H)</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>50-9</td>
<td>D-50-C (All Sizes)</td>
<td>1390 (0-10) – 1390-N (2-10)</td>
<td>1390-HA – 1390-HA</td>
<td>1390 (B&amp;H) – 1390 (B&amp;H)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50-10</td>
<td>D-50-C (All Sizes)</td>
<td>1390-N (2-10) – 1390-N (4-8)</td>
<td>8490-6-65 – 8490-6-65</td>
<td>8490-6-65 – 8490-6-65</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>19-6 &amp; 6A</td>
<td>TH-50-2 &amp; 2XL</td>
<td>8490 (2, 4, 6 &amp; 8) – 8490-N (4-8)</td>
<td>8490-6-65 – 8490-6-65</td>
<td>8490-6-65 – 8490-6-65</td>
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<tr>
<td></td>
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<td>19-6 &amp; 6A</td>
<td>D-50-C &amp; CXL</td>
<td>1390 (0-10) – 1390-N (2-10)</td>
<td>1390-HA – 1390-HA</td>
<td>1390 (B&amp;H) – 1390 (B&amp;H)</td>
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</tr>
<tr>
<td></td>
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<td>19-6 &amp; 6A</td>
<td>– 5090 (0-10) – 5090 (0-10)</td>
<td>1390-HA – 1390-HA</td>
<td>1390 (B&amp;H) – 1390 (B&amp;H)</td>
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</tr>
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</table>
# MEDIUM DUTY EQUAL PRESSURE MIXER

**DESCRIPTION**
The Model H-16-2E is an “E” equal or positive pressure mixer for welding, brazing or heating with all fuel gas.

**DETAILS**
- **Capacity:**
  - Welds to 1/2”/12.7mm
  - Heats to 100,000 BTU
- **Duty:** Medium to heavy
- **Thread size:** Mixer to tip or tip tube 5/8” - 26
- **Certification:** UL® listed
- **Where Used:** Metal art, maintenance, production brazing

### PART NO. MODEL NO. COMPATIBLE HANDLE(S) TIP TUBE MODEL NO. ACETYLENE BRAZING/WELDING TIPS (SIZES) ALTERNATE FUEL BRAZING TIPS (SIZES) ACETYLENE HEATING TIPS (SIZES) ALTERNATE FUEL HEATING TIPS (SIZES)

| 50-9 | H-16-2E | 23A90 (0-10) | - | J-63 (1&2) | - |
| 50-10 | 8593 | 1390-N (2-10) | 1390-HA | 1390 (B&H) |
| 19-6 & 6A | 8593 | 1390 (2, 4, 6 & 8) | 1390-N (2-10) | 1390-HA | 1390 (B&H) |
| 19-6 & 6A | - | 23A90 (0-10) | - | J-63 (1&2) | - |

# MEDIUM DUTY ALTERNATE FUEL INJECTOR MIXER

**DESCRIPTION**
The Model H-16-S is an “F” injector or low pressure mixer for brazing and heating with alternate fuels.*

**DETAILS**
- **Capacity:**
  - Heats to 100,000 BTU
- **Duty:** Medium
- **Thread size:** Mixer to tip tube 3/8” - 27
- **Certification:** UL® listed
- **Where Used:** Metal art, maintenance, production brazing, etc.

### PART NO. MODEL NO. COMPATIBLE HANDLE(S) TIP TUBE MODEL NO. ACETYLENE BRAZING/WELDING TIPS (SIZES) ALTERNATE FUEL BRAZING TIPS (SIZES) ACETYLENE HEATING TIPS (SIZES) ALTERNATE FUEL HEATING TIPS (SIZES)

| 50-9 | H-16-S | D-50-C (All Sizes) | - | 1390-N (2-10) | - | 1390 (B&H) |
| 50-10 | D-50-C (All Sizes) | - | 1390 (2-10) | - | 1390 (B&H) |
| 19-6 & 6A | TH-50-2 & 2XL | 8490-N (4-8) | - | 8490-6-65 |
| 19-6 & 6A | D-50-C & CXL | 1390-N (2-10) | - | 1390 (B&H) |

*Propylene or propane-based fuels and natural gas. NOT FOR USE WITH ACETYLENE.
**LIGHT DUTY EQUAL PRESSURE MIXER**

**DESCRIPTION**
The Model B-15-3 is an “E” equal or positive pressure mixer for welding, brazing and heating with all fuel gases.

**DETAILS**
- **Capacity:** Welds to ½”/12.7mm
  Heats to 60,000 BTU
- **Duty:** Light
- **Thread size:** Mixer to tip or tube – ⅜” - 27
- **Where Used:** Metal art, maintenance, production brazing

**MODEL SHOWN:** B-15-3

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
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<td>1390 (HA)</td>
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<td>15-5</td>
<td>D-50-C (All Sizes)</td>
<td>1390 (0-10)</td>
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<td>1390 (HA)</td>
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<td>15-5</td>
<td>TH-50-2 &amp; 2XL</td>
<td>8490 (2, 4, 6 &amp; 8)</td>
<td>8490-N (4-8)</td>
<td>8490-6-65</td>
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</tbody>
</table>

**LIGHT DUTY ALTERNATE FUEL INJECTOR MIXER**

**DESCRIPTION**
The Model B-15-3S is an “F” injector or low-pressure mixer for brazing and heating, providing maximum performance with alternate fuels.* Primarily for using 8493-N tip tube and 8490-N tips.

**DETAILS**
- **Capacity:** Heats to 30,000 BTU
- **Duty:** Light
- **Thread size:** Mixer to tip or tip tube ¼” - 32
- **Where Used:** Metal art, maintenance, production brazing

**MODEL SHOWN:** B-15-3S

<table>
<thead>
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<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
<th>ALTERNATE FUEL BRAZING TIPS (SIZES)</th>
<th>ACETYLENE HEATING TIPS (SIZES)</th>
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<td>8493-N</td>
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</table>

*Propylene or propane-based fuels and natural gas. NOT FOR USE WITH ACETYLENE.*
DESCRIPTION
The Model B-15-3F is an “F” injector or low-pressure mixer primarily for brazing and or heating with alternate fuel gases.

DETAILS
Capacity: Heats to 100,000 BTU
Duty: Light to Medium
Thread size: Mixer to tip or tip tube ¼” - 27
Where Used: Metal art, maintenance, production brazing

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>COMPATIBLE HANDLE(S)</th>
<th>TIP TUBE MODEL NO.</th>
<th>ACETYLENE BRAZING/WELDING TIPS (SIZES)</th>
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<td>TH-50-2 (All Sizes)</td>
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<td>8490-N (4-8)</td>
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<td>8490-N</td>
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</tbody>
</table>

*Propylene or propane-based fuels and natural gas. NOT FOR USE WITH ACETYLENE.
CHANGING TO ALTERNATE FUELS

GET THE RIGHT TORCH
Use an injector style torch to maximize your performance with alternate fuel.

GET THE RIGHT TIP
There are tips designed for the alternate fuel of your choice.

GET THE RIGHT REGULATOR
A Harris Model 25GX-50-510P is a great option.

GET THE RIGHT HOSE
Grade “T” hose should always be used with all alternate fuels.

WARNING
MIXING DIFFERENT FUEL GASES CAN CAUSE FIRE OR EXPLOSION.

- Do not change over equipment used with acetylene, like the regulator, tip or hose, to a different fuel gas.
- Be sure your equipment is rated for the fuel gas you plan to use and, if not, replace it with the proper equipment.
HAND CUTTING TORCHES

HARRIS CUTTING TORCHES FEATURE BRAZED CONNECTIONS FOR STRENGTH AND DURABILITY. ALL FEATURED TORCHES ARE AVAILABLE FOR USE WITH ALL FUEL GASES AND ARE AVAILABLE WITH CUTTING CAPACITIES OF UP TO 50".

QUICK SELECTION GUIDE

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MEDIUM DUTY
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980E MODEL
MEDIUM DUTY
ACETYLENE FUEL
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980F MODEL
MEDIUM DUTY
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V242-2 MODEL
VICTOR COMPATIBLE
ALL FUELS
p.95

V42-4E MODEL
VICTOR COMPATIBLE
ALL FUELS
p.95

HEAVY DUTY

62-5E MODEL
HEAVY DUTY
ALL FUELS
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62-5F MODEL
HEAVY DUTY
ALTERNATE FUEL
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V-62-5F MODEL
VICTOR COMPATIBLE
ALTERNATE FUEL
p.98

62-5SSFL MODEL
HEAVY CAPACITY
ALTERNATE FUEL
p.100

136 MODEL
EXTRA HIGH CAPACITY ALT. FUEL
p.101

LOOKING FOR AN EXTENDED LENGTH TORCH OR A HIGH CUTTING CAPACITY TORCH?

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THE HARRIS PRODUCTS GROUP
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OVERVIEW
Harris specializes in straight cutting torches that use readily available, low cost and safe alternate fuels. Harris pioneered and perfected the low-pressure injector mixer that maximizes performance when using alternate fuels.

TYPICAL APPLICATIONS
- Metal fabrication
- Shipbuilding
- Maintenance
- Construction

PRO INFO
Visit www.harrisproductsgroup.com for complete details on our entire product line.

MODEL SHOWN: 62-5F

FOR ADDITIONAL EQUIPMENT SEE OUR HEAVY INDUSTRIES CATALOG (P/N: 9502736)
WWW.HARRISPRODUCTSGROUP.COM
**DESCRIPTION**

The Model 42-4E is a medium duty straight cutting torch designed to use all fuel gases. The 42-4E is lightweight, has a solid forged head, brazed triangular tubes and a solid forged brass cutting lever.

**DETAILS**

- **Capacity:** 6”/152.4mm
- **Duty:** Medium
- **Mixer Type:** Equal or positive pressure
- **Lengths:** 17” and 20”
- **Certifications:** UL® listed

**Where Used:** Fabrication, maintenance

**Related Items:** Flashback arrestors

**Equipped with:** FlashGuard® check valves

**PART NO.** | **MODEL NO.** | **HEAD ANGLE** | **LENGTH** | **WEIGHT** | **TIP STYLES**
--- | --- | --- | --- | --- | ---
1001204 | 42-4E | 90° | 17” / 431.8 mm | 2.4 lbs. / 1.1 kg. | 6290, 6290AC, 6290NX, 6290NXP, 6290NFF
1001218 | 42-4EL-20 | 90° | 20” / 508.0 mm | 2.5 lbs. / 1.2 kg. |

**DESCRIPTION**

The Model 42-4F is a medium duty straight cutting torch designed to provide maximum performance using low-cost alternate fuel gases. Our special “F” injector can produce the hottest flame possible at the lowest gas pressures (4 oz.-2 lbs.), making it the safest, most efficient design in the industry.

**DETAILS**

- **Capacity:** 6”/152.4mm
- **Duty:** Medium
- **Mixer Type:** Injector
- **Lengths:** 17” and 20”
- **Certifications:** UL® listed

**Where Used:** Fabrication, maintenance

**Related Items:** Flashback Arrestors

**Equipped with:** FlashGuard® check valves

**PART NO.** | **MODEL NO.** | **HEAD ANGLE** | **LENGTH** | **WEIGHT** | **TIP STYLES**
--- | --- | --- | --- | --- | ---
1001210 | 42-4F | 90° | 17” / 431.8 mm | 2.4 lbs. / 1.1 kg. | 6290 NX
1001212 | 42-4AF | 70° | 17” / 431.8 mm | 2.4 lbs. / 1.1 kg. | 6290 NXP
1001214 | 42-4FL | 90° | 20” / 508 mm | 2.5 lbs. / 1.2 kg. | 6290 NFF
1001216 | 42-4AFL | 70° | 20” / 508 mm | 2.5 lbs. / 1.2 kg. |

*NOT FOR USE WITH ACETYLENE* *Propane or propylene-based fuel gases and natural gas.*
### MEDIUM DUTY CUTTING TORCH FOR ACETYLENE FUEL

**DESCRIPTION**
The 980E is a medium duty straight cutting torch designed to be used with acetylene. The 980E features a unique patented head mixing system and a top rear cutting lever with locking clip. It’s ease-on cutting valve allows for easy piercing and its solid forged head provides years of reliable performance.

**DETAILS**
- **Capacity:** 8”/203 mm
- **Mixer Type:** Equal Pressure
- **Duty:** Medium
- **Where Used:** Fabrication, maintenance, construction
- **Related Items:** Flashback arrestors
- **Equipped with:** Flash Guard® check values
- **Mixer Replacement Kit:** 9100813

**PART # | MODEL # | HEAD | LENGTH | WEIGHT | TIP STYLES**
---|---|---|---|---|---
1001981 | 980E | 90° | 19” / 482 mm | 2.6 lbs. / 1.11kg. | 6290, 6290AC, 6290S

### MEDIUM DUTY CUTTING TORCH FOR ALTERNATE FUELS

**DESCRIPTION**
The 980F is a medium duty straight cutting torch designed to be used with alternate fuel gases. The 980F features a unique patented head mixing system and a top rear cutting lever with locking clip. It’s ease-on cutting valve allows for smooth, easy piercing and its solid forged head provides years of reliable performance.

**DETAILS**
- **Capacity:** 8”/200mm
- **Mixer Type:** Semi-Injector
- **Duty:** Medium
- **Where Used:** Fabrication, maintenance, construction
- **Related Items:** Flashback arrestors
- **Equipped with:** Flash Guard® check values
- **Mixer Replacement Kit:** 9100812

**PART # | MODEL # | HEAD | LENGTH | WEIGHT | TIP STYLES**
---|---|---|---|---|---
1001983 | 980F | 90° | 19” / 480mm | 2.6 lbs. / 1.11kg. | 6290-NX, NXP, NFF
**DESCRIPTION**

The Model V242 is a Victor® compatible medium duty straight cutting torch designed for use with all fuel gases. The V242 features stainless steel cutting lever, ease on cutting valve and triangular tube design.

**DETAILS**

- **Capacity:** 6"/152.4 mm
- **Duty:** Medium
- **Mixer Type:** Equal pressure
- **Lengths:** 18" and 21"
- **Certification:** UL® listed

**Where Used:** Fabrication, maintenance

**Related Items:** Flashback arrestor

**P/N:** 4302202

**Cutting Tip Style:** Victor®

**Equipped with:** FlashGuard® check valves

---

**MODEL SHOWN:** V2422HV

---

**V42-4E**

**VICTOR® COMPATIBLE CUTTING TORCH FOR USE WITH ALL FUEL GASES**

**DESCRIPTION**

The Model V42-4E is a medium duty, Victor® compatible straight cutting torch designed to use all fuel gases. The 42-4E has a solid forged head, brazed triangular tubes and a flip up solid forged brass cutting lever. Also features visible, easily replaceable, external FlashGuard® flashback arrestors.

**DETAILS**

- **Capacity:** 6"/152.4 mm
- **Duty:** Medium
- **Mixer Type:** Equal or positive pressure
- **Lengths:** 20"
- **Where Used:** Fabrication, maintenance, etc.

**Related Items:** FlashGuard® check valves

**Cutting Tip Style:** Victor®

**Equipped with:** Flashback arrestors P/N: 4302202

---

**MODEL SHOWN:** V42-4EL

---

**TIP STYLES**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>LENGTH</th>
<th>WEIGHT</th>
<th>ACETYLENE</th>
<th>ALT. FUELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001263</td>
<td>V42-4 EL</td>
<td>90°</td>
<td>20° / 508.0 mm</td>
<td>2.5 lbs. / 1.13 kg.</td>
<td>V-101, 1-GPN</td>
<td>V-101AC, 1-GPP</td>
</tr>
</tbody>
</table>

---

*Victor® is a registered trademark of ESAB.*
DESCRIPTION
The Model 62-5E is a heavy duty straight cutting torch designed to use any fuel gas. The 62 is an industry standard that is less expensive to own and operate, and is safer to use. Its triangular tube design and brazed connections offer strength, safety and a long service life.

DETAILS
Capacity: 12”/304.8mm
Duty: Heavy
Mixer Type: Equal pressure
Lengths: 18”, 21”, 36”*
Certifications: UL® listed
Where Used: Fabrication, demolition, etc.

Cutting Tip Style: Harris 6290
Related Items: Flashback arrestors
P/N: 4302202, 9302202
Equipped with:
FlashGuard® check valves
Featured in Harris Classic and HardHat™
Cutter Pac®

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>LENGTH</th>
<th>WEIGHT</th>
<th>**TIP STYLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1003350</td>
<td>62-5AE</td>
<td>70°</td>
<td>18″/457.2 mm</td>
<td>3 lbs. / 1.3 kg.</td>
<td>6290</td>
</tr>
<tr>
<td>1003430</td>
<td>62-5E</td>
<td>90°</td>
<td>18″/457.2 mm</td>
<td>3 lbs. / 1.3 kg.</td>
<td>6290 AC</td>
</tr>
<tr>
<td>1003464</td>
<td>62-5AE</td>
<td>70°</td>
<td>21″/533.4 mm</td>
<td>3.1 lbs. / 1.4 kg.</td>
<td>6290 NX</td>
</tr>
<tr>
<td>1003440</td>
<td>62-5EL</td>
<td>90°</td>
<td>21″/533.4 mm</td>
<td>3.1 lbs. / 1.4 kg.</td>
<td>6290 NXP</td>
</tr>
<tr>
<td>1003351</td>
<td>62-5AE</td>
<td>70°</td>
<td>36″/914.4 mm</td>
<td>4.5 lbs. / 2.1 kg.</td>
<td>6290 NFF</td>
</tr>
<tr>
<td>1003441</td>
<td>62-5EL</td>
<td>90°</td>
<td>36″/914.4 mm</td>
<td>4.5 lbs. / 2.1 kg.</td>
<td>Acetylene Specialty Tips</td>
</tr>
</tbody>
</table>
| 1003365  | 62-5EL    | 90°        | 48″/1219.2 mm | 4.8 lbs. / 2.2 kg. | | *Also available in other lengths as a special. **All tips fit all torches

HEAD ANGLES

ACCESSORIES

| 70°/90° Skid | P/N: QC1HZSTK2
| 180° Slitting Skid | P/N: QC1HZSTK5
| Torch Type Flashback Arrestors | P/N: 4302202 ~ (Sold in pairs only) See P. 159
DESCRIPTION
The 62-5F is a heavy-duty straight cutting torch designed to give maximum performance using low-cost alternate fuel gases. Our special “F” injector can produce the hottest flame possible at the lowest gas pressures, making it the safest, most efficient design in the industry.

DETAILS
Capacity: 12”/304.8mm
Duty: Heavy
Mixer Type: Injector
Lengths: 18", 21", 27", 36” & 48”**
Certifications: UL® listed
Where Used: Fabrication, shipbuilding, maintenance

Related Items:
Flashback arrestor
P/N: 4302202
Slitting skid P/N: QC1HZSTK5
70°/90° Skid P/N: QC1HZSTK2

Equipped with:
FlashGuard® check valves
Featured in Classic and HardHat™
Cutter Pac ™

HEAD ANGLES

70° Head
90° Head
180° Head

ACCESSORIES

70°/90° Skid
P/N: QC1HZSTK2

180° Slitting Skid
P/N: QC1HZSTK5

Torch Type Flashback Arrestors
P/N: 4302202 – (Sold in pairs only)
See P. 159

NOT FOR USE WITH ACETYLENE.
*Propane or Propylene based fuels and natural gas
**Available in other lengths as a “special order.”

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>LENGTH**</th>
<th>WEIGHT</th>
<th>TIP STYLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1003360</td>
<td>62-5AF</td>
<td>70°</td>
<td>18” / 457.2 mm</td>
<td>3 lbs. / 1.3 kg.</td>
<td>6290 NX</td>
</tr>
<tr>
<td>1003450</td>
<td>62-5F</td>
<td>90°</td>
<td>18” / 457.2 mm</td>
<td>3 lbs. / 1.3 kg.</td>
<td></td>
</tr>
<tr>
<td>1003460</td>
<td>62-5BF</td>
<td>180°</td>
<td>18” / 457.2 mm</td>
<td>3 lbs. / 1.3 kg.</td>
<td></td>
</tr>
<tr>
<td>1003370</td>
<td>62-5AFL</td>
<td>70°</td>
<td>21” / 533.4 mm</td>
<td>3.1 lbs. / 1.4 kg.</td>
<td></td>
</tr>
<tr>
<td>1003470</td>
<td>62-5FL</td>
<td>90°</td>
<td>21” / 533.4 mm</td>
<td>3.1 lbs. / 1.4 kg.</td>
<td></td>
</tr>
<tr>
<td>1003400</td>
<td>62-5AFL</td>
<td>70°</td>
<td>36” / 914.4 mm</td>
<td>3.8 lbs. / 1.7 kg.</td>
<td></td>
</tr>
<tr>
<td>1003480</td>
<td>62-5FL</td>
<td>90°</td>
<td>36” / 914.4 mm</td>
<td>3.8 lbs. / 1.7 kg.</td>
<td></td>
</tr>
<tr>
<td>1003426</td>
<td>62-5BFL</td>
<td>180°</td>
<td>36” / 914.4 mm</td>
<td>3.8 lbs. / 1.7 kg.</td>
<td></td>
</tr>
<tr>
<td>1003411</td>
<td>62-5AFL</td>
<td>70°</td>
<td>48” / 1219.2 mm</td>
<td>4.4 lbs. / 1.9 kg.</td>
<td></td>
</tr>
<tr>
<td>1003481</td>
<td>62-5FL</td>
<td>90°</td>
<td>48” / 1219.2 mm</td>
<td>4.4 lbs. / 1.9 kg.</td>
<td></td>
</tr>
<tr>
<td>1003421</td>
<td>62-5BFL</td>
<td>180°</td>
<td>48” / 1219.2 mm</td>
<td>4.4 lbs. / 1.9 kg.</td>
<td></td>
</tr>
</tbody>
</table>

THE HARRIS PRODUCTS GROUP
A LINCOLN ELECTRIC COMPANY
www.harrisproductsgroup.com
Orders: 1.800.733.4043
Hand Cutting Torches 97
DESCRIPTION

The V-62-5F is a Victor® compatible heavy-duty straight cutting torch designed to give maximum performance using low-cost alternate fuel gases.* Our special "F" injector can produce the hottest flame possible at the lowest gas pressures, making it the safest and most efficient design in the industry. All the features of the classic Harris 62-5F Torch but compatible with Victor® style cutting tips.

DETAILS

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>HEAD ANGLE</th>
<th>LENGTH*</th>
<th>WEIGHT</th>
<th>TIP STYLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1003261</td>
<td>V-62-5FL</td>
<td>90°/VICTOR® STYLE</td>
<td>21&quot; / 533.4 mm</td>
<td>3.7 lbs. / 1.7 kg.</td>
<td>1-GPP, 1-GPN (000 THRU 6)</td>
</tr>
<tr>
<td>1003266</td>
<td>V-62-5AFL</td>
<td>70°/VICTOR® STYLE</td>
<td>21&quot; / 533.4 mm</td>
<td>3.4 lbs. / 1.6 kg.</td>
<td></td>
</tr>
<tr>
<td>1003287</td>
<td>V-62-5AFL</td>
<td>70°/VICTOR® STYLE</td>
<td>36&quot; / 914.4 mm</td>
<td>4.5 lbs. / 2.0 kg.</td>
<td></td>
</tr>
<tr>
<td>1003274</td>
<td>V-62-5FL</td>
<td>90°/VICTOR® STYLE</td>
<td>36&quot; / 914.4 mm</td>
<td>4.5 lbs. / 2.0 kg.</td>
<td></td>
</tr>
</tbody>
</table>

Related Items:
Flashback arrestor
P/N: 4302202
Slitting skid P/N: QC1HZSTK5
70°/90° Skid P/N: QC1HZSTK2

Equipped with:
FlashGuard® check valves

NOT FOR USE WITH ACETYLENE.
*Propane or Propylene based fuels and natural gas
**Available in other lengths as a "special order."

HEAD ANGLES

70° Head
90° Head

ACCESSORIES

70°/90° Skid
P/N: QC1HZSTK2

180° Slitting Skid
P/N: QC1HZSTK5

Torch Type Flashback Arrestors
P/N: 4302202 - (Sold in pairs only)
See P. 159

Orders: 1.800.733.4043
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NEED HELP SETTING UP A PROPER FLAME

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DESCRIPTION
Model 62-5SSAFL is an extra capacity (14") heavy duty straight cutting torch with full-length handle for added strength and operator comfort. Features solid forged head, triangular tube design and brazed connections and is equipped with FlashGuard® check valves. * SPECIAL ORDER ONLY

DETAILS
Capacity: 14"/355.6mm
Mixer Type: Injector
Duty: Extra heavy
Lengths: 36" and 48"
Certifications: UL® listed
Where Used: Demolition, Steel Mills
Related Items: 70°/90° Skid, tube guard, 180° Slitting skid
Equipped with: FlashGuard® check valves

MODEL SHOWN:
62-5SSAFL

EXTRA HEAVY CUTTING WHEN USING ALTERNATE FUELS**

HEAD ANGLES

ACCESSORIES

70°/90° Skid
P/N: QC1HZSTK2

Tube Guard
P/N: QC1WH625031P

180° Slitting Skid
P/N: QC1HZSTK5

*Also available as a special in other lengths.
**Propane or Propylene based fuels and natural gas. Not for use with acetylene.
DESCRIPTION
The Model 136 is a very high capacity (36") designed cutting torch for use with alternate fuels. The 136 features brazed triangular SS tubes, SS head and an internal tip nut for long service life under the most abusive working conditions. Special order only.

DETAILS
Capacity: 36"/914.4mm
Mixer Type: Equal pressure head mix
Duty: High capacity (extra heavy duty)
Lengths: To 12'
Where Used: Demolition, foundries, etc.

Related Items:
75°/90° Skid (special order torch with welded bracket required)
P/N: QC1HZSTK1
180° Slitting skid P/N: QC1HZSTK6

MODEL SHOWN:
136
(See P. 117)

ACCESSORIES

75°/90° Skid
P/N: QC1HZSTK1
(Only for Model 136 Torches with special order welded on brackets.)
(Special order only.)

180° Slitting Skid
P/N: QC1HZSTK6
(For 180° heads only)
GAS APPARATUS EQUIPMENT
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FOUNDRIES, SCRAP & RECYCLING
INDUSTRIES

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P/N: 9502736

WE’VE GOT YOUR BACK™
HEATING TORCHES AND ASSEMBLIES

PROPA/ NATURAL GAS AIR FUEL HEATING TORCH

DESCRIPTION
The Model 89-3 heating and soldering torch is designed to operate with natural gas or propane 4 oz.-2 lbs. and compressed air 50-100 PSIG. The 89-3 is automatic. Once adjusted to the proper flame a pilot light can be retained during down time and a full flame returned instantly by pressing the hand lever. The pilot light can also be adjusted to a lower secondary flame when desired for applications like soldering. The tip can be adjusted in any direction. Order tip separately.

DETAILS
Capacity: BTU – natural gas, 85,000; propane, 130,000
Duty: Heavy
Related Items: Heating tip – 81-12
P/N: 1601950

Where Used:
- Large area soldering
- Preheat metal for welding
- Heating pipes in chemical plants
- Mold drying
- Burning vegetation
- Removing paint
- Heating forming dies prior to hand facing
- Stress relieving die shoes
- Metal cleaning: Brewery vats, rubber molds, etc.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400382</td>
<td>89-3</td>
<td>Torch and Tube</td>
</tr>
<tr>
<td>1601950</td>
<td>81-12</td>
<td>Tip*</td>
</tr>
</tbody>
</table>

*Tip sold separately.

81-12 Tip P/N: 1601950
- Bell shaped design has wick flame adjustment eliminating the need for numerous sizes
- Stainless steel construction for long life and heat resistance
**ALTERNATE FUELS* HEATING TORCH ASSEMBLY**

**DESCRIPTION**
The Model K-43 Heating Torch Assemblies features the heavy duty 42-3 heating handle, 2393 SS tip tube and the high-flow E3-43 (F-43) mixer. It is designed to use the Harris 2290-H and HPM high-performance multi-flame heating tips. Ideal for use with RBA and RBP flame cleaning heads. Tips ordered separately P.133

**DETAILS**
Capacity: 1,025,000 BTU
Mixer Type: “E” or positive pressure
Duty: Heavy
Lengths: 20” - 46”

**Where Used:** Shipbuilding, fabrication, etc.

**Related Items:** Model 2290-H or HPM tips

**Fuel gas pressure requirements:** Minimum 10 PSIG **

**For fuel gas pressures of 10 PSIG or less order B-43-N mixer (P/N 9100306) Model 43-2 Handle (P/N 1401150) and select 2393 Tip Tube + Tip below. Limited to Tip sizes 2290 1-3H or HPM

### MODEL SHOWN:
K-43

#### PART NO. | MODEL NO. | HANDLE | MIXER | TIP TUBE | HEATING TIP RECOMMENDATIONS **
--- | --- | --- | --- | --- | ---
1801350 | K-43-1 | 43-2 | E3-43 | 2393-1F 36” / 914.4mm | 2290-H or HPM Size 1-5
1801360 | K-43-2 | 43-2 | E3-43 | 2393-2F 28” / 711.2mm | 2290-H or HPM Size 1-5
1801370 | K-43-3 | 43-2 | E3-43 | 2393-3F 16” / 406.4mm | 2290-H or HPM Size 1-5
1801380 | K-43-4 | 43-2 | E3-43 | 2393-4F 10” / 254.0mm | 2290-H or HPM Size 1-5

*Propylene or propane-based fuels or natural gas **B-43-N mixer is limited to sizes 1 thru 3 2290-H or HPM tip. NOTE: Assembly does NOT include heating tip.

### 2290-H and HPM PERFORMANCE DATA

<table>
<thead>
<tr>
<th>Tip Size</th>
<th>CLASSIC E-3-43/(F43) MIXER</th>
<th>BTU/HR. RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.1</td>
<td></td>
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<tr>
<td>10</td>
<td>160</td>
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<tr>
<td>25</td>
<td>320</td>
<td>80</td>
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<tr>
<td>No.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>220</td>
<td>7</td>
</tr>
<tr>
<td>45</td>
<td>520</td>
<td>130</td>
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<tr>
<td>No.3</td>
<td></td>
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<tr>
<td>25</td>
<td>340</td>
<td>8</td>
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<tr>
<td>70</td>
<td>920</td>
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<tr>
<td>No.4</td>
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<tr>
<td>50</td>
<td>640</td>
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<tr>
<td>110</td>
<td>1,300</td>
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<td>No.5</td>
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<tr>
<td>60</td>
<td>720</td>
<td>14</td>
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<tr>
<td>135</td>
<td>1,600</td>
<td>40</td>
</tr>
</tbody>
</table>

**NOTES:** 1. For maximum flow and BTU output use 3⁄8” hose. 2. On continuous duty, withdrawal manifolding of cylinders may be required. 3. For additional heating tip information see pages 133-135

### 2393 HEATING TIP TUBES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800200</td>
<td>2393-1F</td>
<td>36” Curved</td>
</tr>
<tr>
<td>1800210</td>
<td>2393-2F</td>
<td>28” Curved</td>
</tr>
<tr>
<td>1800220</td>
<td>2393-3F</td>
<td>16” Curved</td>
</tr>
<tr>
<td>1800230</td>
<td>2393-4F</td>
<td>101⁄2” Curved</td>
</tr>
<tr>
<td>1800240</td>
<td>2393-5F</td>
<td>60” Curved</td>
</tr>
<tr>
<td>1800241</td>
<td>2393-F</td>
<td>60” Curved</td>
</tr>
<tr>
<td>1800240</td>
<td>2393-5F</td>
<td>36” Straight</td>
</tr>
<tr>
<td>1800211</td>
<td>2393-2F</td>
<td>28” Straight</td>
</tr>
<tr>
<td>1800221</td>
<td>2393-3F</td>
<td>16” Straight</td>
</tr>
<tr>
<td>1800231</td>
<td>2393-4F</td>
<td>101⁄2” Straight</td>
</tr>
<tr>
<td>1800206</td>
<td>2393-6F</td>
<td>48” Straight</td>
</tr>
</tbody>
</table>

Multiple arrangements of 2290-H Heating Tips can be assembled using Harris coupling 2327, nipple 2357 and standard 1⁄4” pipe fittings when wider bands of heat are necessary. Capacity of K-43 heating torch is 5 NO.1-H tips. Use coupling 2343-3 to couple 2393 Tip Tubes for extended reach. For extended tube and tip life, use adaptor 2357-3.

---

**NOTES:**
1. For maximum flow and BTU output use 3⁄8” hose.
2. On continuous duty, withdrawal manifolding of cylinders may be required.
3. For additional heating tip information see pages 133-135

---

**COUPLINGS & ADAPTORs**

- 1⁄2” - 25
  - 2357-3
  - P/N: 9000738
  - P/N: 8800985

- 1⁄2” - 25
  - 2354-3
  - P/N: 8800584

- 1⁄4” - NPT
  - 2327
  - P/N: 9000720

- 1⁄4” - NPT
  - 2357
  - P/N: 9000734
  - P/N: 8800985

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PROPANE TORCH

MAKING HOME, FARM, INDUSTRIAL AND CONSTRUCTION WORK EASIER.

- Repairing road surfaces.
- Removing paint.
- Burning brush, weeds and stumps.
- Melting snow and ice.
- Roofing, melts tar and asphalt.

FEATURES
- 500,000 BTU Output
- Excess flow safety valve
- Brass valve for flame adjustment
- 10’ LP Gas hose
- Flint striker

P/N.: KH825-01
WHEN PROS USE HARRIS, THEY USE THE BEST.
THERMITE HEATING AND CUTTING SYSTEM
The New Harris Products Group Thermite Heating and Cutting Torch Systems are purposely designed for one of railroads most special and critical applications. Product designs and materials of construction were selected to maximize operator safety, performance and service life. They promise to reduce costs associated with repair and or replacement even in extremely hostile work environments like those found in the railroad industry.

TWO SEPARATE SYSTEMS:

Thermite Heating Systems:

1. Thermite rail preheating system
   Includes tip/tube assembly, mixer, hand and gauge set.
   - Specifically designed for the application
   - Maximizes performance
   - Maximizes gas efficiency
   - Maximizes service life
   - Maximizes safety

2. Rail Cutting System With Guide Wheels
   Includes handle, gauge set, cutting attachment, guide wheels and tip.
   - Specifically designed and selected
   - Maximizes performance
   - Maximizes gas efficiency
   - Maximizes service life
   - Maximizes safety
QUICK SELECTION GUIDE

ACETYLENE HAND CUTTING TIPS

3690 MODEL
ONE-PIECE
GENERAL PREHEAT
p.110

3690-AC MODEL
TWO-PIECE
GENERAL PREHEAT
p.110

V-SERIES® CUTTING TIPS

6290-NFF MODEL
TWO-PIECE
HEAVY PREHEAT
p.114

6290-NXP MODEL
TWO-PIECE
GENERAL PREHEAT
p.114

ALTERNATE FUEL HAND CUTTING TIPS

6290-NFF MODEL
TWO-PIECE
HEAVY PREHEAT
p.114

6290-NXP MODEL
TWO-PIECE
GENERAL PREHEAT
p.114

V1-101 MODEL
TWO-PIECE
GENERAL PREHEAT
p.115

V1-101AC MODEL
TWO-PIECE
GENERAL PREHEAT
p.115

1-GPN MODEL
ONE-PIECE
GENERAL PREHEAT
p.116

1-GPP MODEL
ONE-PIECE
HEAVY PREHEAT
p.117

ALTERNATE FUEL MACHINE CUTTING TIPS

6290-VVC MODEL
PREMIUM NAT. GAS/PROPANE HIGH SPEED TIP
p.120

6290-VVCU MODEL
NATURAL GAS/PROPANE HIGH SPEED TIP
p.121

6290-VVCP MODEL
PREMIUM PROPYLENE HIGH SPEED TIP
p.122

8090 MODEL
NATURAL GAS/PROPANE HEAVY MACHINING CUTTING
p.123
FOR LONGER TIP LIFE AND A BETTER CUT, CHOOSE HARRIS

HARRIS TIPS ARE MANUFACTURED TO THE HIGHEST STANDARD IN THE INDUSTRY. EVERY HARRIS TIP IS 100% FLAME TESTED AT THE FACTORY TO ENSURE A PERFECT FLAME FOR YOUR PARTICULAR APPLICATION. THEY ARE MANUFACTURED UTILIZING THE HIGHEST GRADE METALS AVAILABLE. HARRIS TIPS DESIGNED TO OFFER A SIGNIFICANTLY LONGER TIP LIFE THAN COMPETITIVE OR AFTERMARKET TIPS.

HEAVY HAND CUTTING TIPS

136 MODEL
HIGH CAPACITY CAPTIVE NUT
p.123

140 MODEL
HIGH CAPACITY
p.124

140-HS MODEL
HIGH CAPACITY DIVERGENT BORE
p.124

WELDING AND BRAZING TIPS

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STANDARD TIP
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5090 MODEL
LIGHT DUTY TIP
p.127

1390 MODEL
SEPARABLE TIP
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8490 MODEL
LIGHT DUTY SEPARABLE TIP
p.129

WELDING AND BRAZING TIPS

1390-N MODEL
SEPARABLE TIP
p.130

8490-N MODEL
LIGHT DUTY SEPARABLE TIP
p.132

HEATING TIPS

2290-H&HPM MODEL
ALTERNATE FUEL HEATING
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J&H-SERIES MODEL
ACYLENE HEATING
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RBA MODEL
ACETYLENE CLEANING HEAD
p.137

RBP MODEL
ALTERNATE FUEL CLEANING HEAD
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ALTERNATE FUEL SPECIALTY TIPS

6290 MODEL
p.139

ACETYLENE FUEL SPECIALTY TIPS

6290 MODEL
p.140

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### GENERAL PREHEAT SINGLE-PIECE HAND CUTTING TIPS

**DESCRIPTION**  
Acetylene cutting tips specifically used with the light duty Harris Model 36 series of cutting attachments.

**DETAILS**  
- **Construction:** One-piece  
- **Preheat Type:** General  
- **Where Used:** HVAC, maintenance, metal art, etc.  
- **Compatible Equipment:** C-9 Tip cleaner P/N: 9000156

### HEAVY PREHEAT TWO-PIECE HAND CUTTING TIPS

**DESCRIPTION**  
Acetylene cutting tips specifically used with the Harris Model 36 cutting attachment. Heavy preheat facilitates cutting of steel that is rusted, painted and or heavy scaled.

**DETAILS**  
- **Construction:** Two-piece  
- **Preheat Type:** Heavy  
- **Where Used:** HVAC, maintenance, metal art, etc.  
- **Compatible Equipment:** E-9 Tip cleaner P/N: 9000160

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>DEPTH OF CUT</th>
<th>O&lt;sub&gt;2&lt;/sub&gt; PSIG</th>
<th>O&lt;sub&gt;2&lt;/sub&gt; FLOW SCFH</th>
<th>FUEL PSIG</th>
<th>FUEL SCFH</th>
<th>CUTTING DRILL SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500050</td>
<td>3690-0</td>
<td>1/4” - 1/2”</td>
<td>20 - 25</td>
<td>70 - 80</td>
<td>5</td>
<td>10 - 15</td>
<td>NO. 60</td>
</tr>
<tr>
<td>1500060</td>
<td>3690-1</td>
<td>1/2” - 1”</td>
<td>25 - 40</td>
<td>95 - 105</td>
<td>5</td>
<td>15 - 25</td>
<td>NO. 56</td>
</tr>
<tr>
<td>1500070</td>
<td>3690-2</td>
<td>1” - 3”</td>
<td>40 - 60</td>
<td>180 - 215</td>
<td>5</td>
<td>20 - 30</td>
<td>NO. 52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>DEPTH OF CUT</th>
<th>O&lt;sub&gt;2&lt;/sub&gt; PSIG</th>
<th>O&lt;sub&gt;2&lt;/sub&gt; FLOW SCFH</th>
<th>FUEL PSIG</th>
<th>FUEL SCFH</th>
<th>DRILL CUT SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3690000AC</td>
<td>3690-0AC</td>
<td>1/4” - 1/2”</td>
<td>20-25</td>
<td>70-85</td>
<td>5</td>
<td>10-15</td>
<td>NO. 60</td>
</tr>
<tr>
<td>3690101AC</td>
<td>3690-1AC</td>
<td>1/2” - 1”</td>
<td>25-45</td>
<td>95-105</td>
<td>5</td>
<td>15-25</td>
<td>NO. 56</td>
</tr>
<tr>
<td>3690202AC</td>
<td>3690-2AC</td>
<td>1” - 2”</td>
<td>40-60</td>
<td>180-215</td>
<td>5</td>
<td>20-30</td>
<td>NO. 52</td>
</tr>
</tbody>
</table>
GENERAL PREHEAT SINGLE PIECE HAND CUTTING TIPS

DESCRIPTION
A single-piece acetylene cutting tip for cutting relatively clean steel.

DETAILS
Construction: One-piece
Preheat Type: General
Where Used: Fabrication, maintenance, etc.
Compatible Equipment: C-9 Tip cleaner P/N: 9000156

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>SIZE</th>
<th>DEPTH OF CUT</th>
<th>O₂ PSIG</th>
<th>TOTAL O₂ SCFH</th>
<th>ACETYLENE FUEL PSIG</th>
<th>FUEL SCFH</th>
<th>CUTTING DRILL SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500810</td>
<td>00</td>
<td>Light gauge to 3/8&quot;</td>
<td>15 - 20</td>
<td>35 - 40</td>
<td>5 - 15</td>
<td>10 - 15</td>
<td>NO. 68</td>
</tr>
<tr>
<td>1500820</td>
<td>00</td>
<td>3/8&quot; - 3/4&quot;</td>
<td>20 - 25</td>
<td>45 - 50</td>
<td>5 - 15</td>
<td>10 - 15</td>
<td>NO. 64</td>
</tr>
<tr>
<td>1500830</td>
<td>0</td>
<td>3/4&quot; - 5/8&quot;</td>
<td>35 - 40</td>
<td>45 - 50</td>
<td>5 - 15</td>
<td>10 - 15</td>
<td>NO. 60</td>
</tr>
<tr>
<td>1500840</td>
<td>1</td>
<td>5/8&quot; - 1&quot;</td>
<td>35 - 40</td>
<td>100 - 110</td>
<td>5 - 15</td>
<td>15 - 25</td>
<td>NO. 56</td>
</tr>
<tr>
<td>1500850</td>
<td>2</td>
<td>1&quot; - 2&quot;</td>
<td>40 - 45</td>
<td>180 - 195</td>
<td>10 - 15</td>
<td>20 - 30</td>
<td>NO. 52</td>
</tr>
<tr>
<td>1500860</td>
<td>3</td>
<td>2&quot; - 3&quot;</td>
<td>45 - 50</td>
<td>270 - 290</td>
<td>10 - 15</td>
<td>20 - 35</td>
<td>NO. 48</td>
</tr>
<tr>
<td>1500870</td>
<td>4</td>
<td>3&quot; - 6&quot;</td>
<td>50 - 75</td>
<td>450 - 600</td>
<td>10 - 15</td>
<td>25 - 40</td>
<td>NO. 42</td>
</tr>
</tbody>
</table>

*To provide proper gas flow, use 3/8" ID hose for size 4 tip and larger.

HEAVY PREHEAT SINGLE PIECE TIPS

DESCRIPTION
A single-piece acetylene tip with a heavy preheat to facilitate cutting steel that is painted, rusted or has a heavily scaled surface.

DETAILS
Construction: One-piece
Preheat Type: Heavy
Where Used: Demolition, maintenance, repair, etc.
Compatible Equipment: C-9 Tip cleaner P/N: 9000156

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>SIZE</th>
<th>DEPTH OF CUT</th>
<th>O₂ PSIG</th>
<th>TOTAL O₂ SCFH</th>
<th>ACETYLENE FUEL PSIG</th>
<th>FUEL SCFH</th>
<th>CUTTING DRILL SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1501470</td>
<td>1S</td>
<td>3/8&quot; - 1&quot;</td>
<td>35 - 40</td>
<td>100 - 110</td>
<td>5 - 15</td>
<td>15 - 25</td>
<td>NO. 56</td>
</tr>
<tr>
<td>1501480</td>
<td>2S</td>
<td>1&quot; - 2&quot;</td>
<td>40 - 45</td>
<td>190 - 205</td>
<td>5 - 15</td>
<td>20 - 30</td>
<td>NO. 52</td>
</tr>
<tr>
<td>1501490</td>
<td>3S</td>
<td>2&quot; - 3&quot;</td>
<td>45 - 50</td>
<td>285 - 305</td>
<td>5 - 15</td>
<td>20 - 35</td>
<td>NO. 48</td>
</tr>
<tr>
<td>1501500</td>
<td>4S</td>
<td>3&quot; - 6&quot;</td>
<td>50 - 75</td>
<td>465 - 615</td>
<td>10 - 15</td>
<td>25 - 40</td>
<td>NO. 42</td>
</tr>
<tr>
<td>1501510</td>
<td>5S</td>
<td>6&quot; - 8&quot;</td>
<td>65 - 80</td>
<td>700 - 850</td>
<td>10 - 15</td>
<td>35 - 40</td>
<td>NO. 35</td>
</tr>
<tr>
<td>1501520</td>
<td>6S</td>
<td>8&quot; - 12&quot;</td>
<td>70 - 90</td>
<td>960 - 1160</td>
<td>10 - 15</td>
<td>40 - 60</td>
<td>NO. 30</td>
</tr>
</tbody>
</table>

*To provide proper gas flow, use 3/8" ID hose for size 4 tip and larger.
**HEAVY PREHEAT TWO-PIECE TIPS**

**DESCRIPTION**
A two-piece acetylene tip with a heavy preheat to facilitate cutting steel that is painted, rusted or has a heavily scaled surface.

**DETAILS**
- **Construction:** Two-piece
- **Preheat Type:** Heavy
- **Where Used:** Demolition, maintenance acetylene machine cutting
- **Compatible Equipment:** E-9 Tip cleaner P/N: 9000160

**DESCRIPTION**
A two-piece acetylene tip with a heavy preheat to facilitate cutting steel that is painted, rusted or has a heavily scaled surface.

**DETAILS**
- **Construction:** Two-piece
- **Preheat Type:** Heavy
- **Where Used:** Demolition, maintenance acetylene machine cutting
- **Compatible Equipment:** E-9 Tip cleaner P/N: 9000160

**WHAT ARE THE ADVANTAGES OF HARRIS AC TWO-PIECE ACETYLENE TIPS?**
Two-piece acetylene tips are less expensive, easier to clean, and produce a special high pre-heat for fast cutting of dirty, scaled and/or heavily rusted plate. AC tips are also highly recommended for acetylene machine cutting.

Available for both Harris and Victor® style torches.
### DESCRIPTION

Propane/natural gas cutting tips specifically designed for Harris Model 36 series cutting attachments.

### DETAILS

- **Construction:** Two-piece
- **Preheat Type:** General
- **Where Used:** HVAC, metal art, maintenance, etc.
- **Compatible Equipment:** E-9 Tip cleaner P/N: 9000160

#### FUEL PSIG

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>DEPTH OF CUT</th>
<th>O₂ PSIG</th>
<th>O₂ FLOW SCFH</th>
<th>EQUAL</th>
<th>INJECTOR OR LOW</th>
<th>FUEL SCFH</th>
<th>CUTTING DRILL SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>150070</td>
<td>000N</td>
<td>LIGHT GAUGE</td>
<td>15 - 30</td>
<td>50 - 60</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>7.5</td>
<td>NO. 68</td>
</tr>
<tr>
<td>1501200</td>
<td>000NX</td>
<td>LIGHT GAUGE</td>
<td>10 - 30</td>
<td>50 - 60</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>7.5</td>
<td>NO. 68</td>
</tr>
<tr>
<td>1501210</td>
<td>00NX</td>
<td>1⁄4&quot; - 1⁄2&quot;</td>
<td>20 - 30</td>
<td>65 - 75</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>7.5</td>
<td>NO. 64</td>
</tr>
<tr>
<td>1501220</td>
<td>0NX</td>
<td>1⁄4&quot; - 3⁄4&quot;</td>
<td>20 - 30</td>
<td>85 - 100</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>7.5</td>
<td>NO. 60</td>
</tr>
<tr>
<td>1501230</td>
<td>1NX</td>
<td>1⁄4&quot; - 1&quot;</td>
<td>35 - 50</td>
<td>100 - 135</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>8.7</td>
<td>NO. 56</td>
</tr>
<tr>
<td>1501240</td>
<td>2NX</td>
<td>1&quot; - 2&quot;</td>
<td>40 - 55</td>
<td>200 - 250</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>10</td>
<td>NO. 52</td>
</tr>
<tr>
<td>1501250</td>
<td>3NX</td>
<td>2&quot; - 3&quot;</td>
<td>45 - 60</td>
<td>290 - 365</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>10</td>
<td>NO. 48</td>
</tr>
<tr>
<td>1501260</td>
<td>4NX</td>
<td>3&quot; - 4&quot;</td>
<td>50 - 70</td>
<td>475 - 625</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>12.5</td>
<td>NO. 42</td>
</tr>
<tr>
<td>1501270</td>
<td>5NX</td>
<td>5&quot; - 6&quot;</td>
<td>65 - 80</td>
<td>710 - 860</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>15</td>
<td>NO. 35</td>
</tr>
<tr>
<td>1501280</td>
<td>6NX</td>
<td>8&quot; - 12&quot;</td>
<td>70 - 90</td>
<td>970 - 1100</td>
<td>5</td>
<td>4 oz. - 2 lbs.</td>
<td>17.5</td>
<td>NO. 30</td>
</tr>
</tbody>
</table>
# Heavy Preheat Two Piece Hand Cutting Tips

## Description
Propane/natural gas cutting tips with a heavy preheat for hand cutting steel with rusted, painted or heavily scaled surfaces.

## Details
- **Construction:** Two-piece  
- **Preheat Type:** Heavy  
- **Where Used:** Demolition, maintenance, etc.  
- **Compatible Equipment:** E-9 Tip cleaner P/N: 9000160

### Table: Heavy Preheat Two Piece Hand Cutting Tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Model No.</th>
<th>Depth of Cut</th>
<th>O₂ PSIG</th>
<th>O₂ Flow SCFH</th>
<th>Fuel SCFH</th>
<th>Cutting Drill Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1501020</td>
<td>1NFF</td>
<td>TO ¾”</td>
<td>20 - 35</td>
<td>115 - 140</td>
<td>5 - 15</td>
<td>17.5</td>
</tr>
<tr>
<td>1501030</td>
<td>2NFF</td>
<td>½” - 2”</td>
<td>30 - 55</td>
<td>170 - 230</td>
<td>5 - 15</td>
<td>17.5</td>
</tr>
<tr>
<td>1501040</td>
<td>3NFF</td>
<td>2” - 4”</td>
<td>45 - 65</td>
<td>355 - 420</td>
<td>5 - 15</td>
<td>17.5</td>
</tr>
<tr>
<td>1501050</td>
<td>4NFF</td>
<td>4” - 7”</td>
<td>55 - 75</td>
<td>520 - 645</td>
<td>5 - 15</td>
<td>17.5</td>
</tr>
<tr>
<td>1501060</td>
<td>5NFF</td>
<td>7” - 10”</td>
<td>60 - 80</td>
<td>660 - 870</td>
<td>10 - 15</td>
<td>17.5</td>
</tr>
<tr>
<td>1501070</td>
<td>6NFF</td>
<td>10” - 13”</td>
<td>80 - 90</td>
<td>870 - 1020</td>
<td>10 - 15</td>
<td>17.5</td>
</tr>
<tr>
<td>1501080</td>
<td>7NFF</td>
<td>12” - 13½”</td>
<td>80 - 90</td>
<td>1050 - 1205</td>
<td>10 - 15</td>
<td>17.5</td>
</tr>
</tbody>
</table>

*High fuel PSIG - “E” or positive pressure torches

---

# General Preheat Two Piece Hand Cutting Tips

## Description
A general preheat hand cutting tip designed for long life and excellent performance when using propylene gas.

## Details
- **Construction:** Two-piece  
- **Preheat Type:** General  
- **Where Used:** Fabrication, ship building, etc.  
- **Compatible Equipment:** E-9 Tip cleaner P/N: 9000160

### Table: General Preheat Two Piece Hand Cutting Tips

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Model No.</th>
<th>Depth of Cut</th>
<th>O₂ PSIG</th>
<th>O₂ Flow SCFH</th>
<th>Fuel SCFH</th>
<th>Cutting Drill Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1502150</td>
<td>000NXP</td>
<td>LIGHT GAUGE - ⅛”</td>
<td>15 - 30</td>
<td>20 - 30</td>
<td>5 - 15</td>
<td>11.5</td>
</tr>
<tr>
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<tr>
<td>1502154</td>
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<td>11.5</td>
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<tr>
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<td>⅝” - 1”</td>
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<td>75 - 100</td>
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<tr>
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<tr>
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*High fuel PSIG - “E” or positive pressure torches
V-SERIES® GENERAL PREHEAT ACETYLENE SINGLE PIECE HAND CUTTING TIP

DESCRIPTION
A single piece acetylene hand cutting tip for relatively clean steel. The V1-101 is compatible with V-Series and Victor® style torches.

DETAILS
Construction: One-piece
Preheat Type: General
Where Used: Metal fabrication, shipbuilding
Compatible Equipment: C9 Tip cleaner P/N: 9000156

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE</th>
<th>DEPTH OF CUT</th>
<th>OXYGEN PSIG</th>
<th>ACETYLENE PSIG</th>
<th>CUTTING DRILL SIZE</th>
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<tbody>
<tr>
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<tr>
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<td>00</td>
<td>⅛” - ⅜”</td>
<td>20-30</td>
<td>5</td>
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</tr>
<tr>
<td>1502090</td>
<td>0</td>
<td>⅜” - ⅜”</td>
<td>30-40</td>
<td>7</td>
<td>NO.61</td>
</tr>
<tr>
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<td>1</td>
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<td>1502094</td>
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<td>60-75</td>
<td>10</td>
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<tr>
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<td>5</td>
<td>4” - 6”</td>
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<td>6</td>
<td>6”</td>
<td>75-80</td>
<td>15</td>
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*For best performance use ⅜” I.D. hose for tip sizes 6 and larger
DESCRIPTION
A two piece acetylene handcutting tip for scaled, painted or rusted plate. The V1-101AC is compatible with V-Series and Victor® style torches.

DETAILS
Construction: Two piece
Preheat Type: Heavy
Where Used: Construction, demolition maintenance
Compatible Equipment: E-9 Tip cleaner P/N: 9000160

OPERATING PRESSURES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>DEPTH OF CUT</th>
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<th>CUTTING DRILL SIZE</th>
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<tbody>
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<td>NO. 68</td>
</tr>
<tr>
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<td>0</td>
<td>⅛” - ⅜”</td>
<td>20-25</td>
<td>3-5</td>
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<tr>
<td>1502071</td>
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<td>3-5</td>
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</tr>
<tr>
<td>1502073</td>
<td>2</td>
<td>⅞” - 1 ⅛”</td>
<td>35-45</td>
<td>3-7</td>
<td>NO. 53</td>
</tr>
<tr>
<td>1502074</td>
<td>3</td>
<td>1 ⅛” - 2 ½”</td>
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<tr>
<td>1502075</td>
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<td>2 ¼” - 3”</td>
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</tr>
<tr>
<td>1502076</td>
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<td>45-55</td>
<td>5-13</td>
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<tr>
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<td>5” - 8”</td>
<td>45-55</td>
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<td>NO. 31</td>
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</tbody>
</table>

*For best performance use ⅜” I.D. hose for tip sizes 6 and larger
V-SERIES® GENERAL PREHEAT PROPANE / NATURAL GAS
TWO PIECE HAND CUTTING TIP

DESCRIPTION
A two piece propane/natural gas hand cutting tip for relatively clean steel.

DETAILS
Construction: Two-piece
Preheat Type: General
Where Used: Metal fabrication, shipbuilding, construction
Compatible Equipment: E-9 Tip cleaner P/N: 9000160

OPERATING PRESSURES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>DEPTH OF CUT</th>
<th>OXYGEN PSIG</th>
<th>FUEL GAS</th>
<th>CUTTING DRILL SIZE</th>
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<tbody>
<tr>
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<td>00</td>
<td>1/4&quot;</td>
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<td>3-5</td>
<td>NO. 60</td>
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<tr>
<td>1502302</td>
<td>0</td>
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<td>25-35</td>
<td>3-5</td>
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</tr>
<tr>
<td>1502303</td>
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<td>1/8&quot;</td>
<td>30-35</td>
<td>4-6</td>
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</tr>
<tr>
<td>1502304</td>
<td>2</td>
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<td>4-9</td>
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<tr>
<td>1502305</td>
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<td>2 - 2 1/4&quot;</td>
<td>40-50</td>
<td>5-10</td>
<td>NO. 50</td>
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<tr>
<td>1502306</td>
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<td>3&quot;</td>
<td>45-50</td>
<td>8-12</td>
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<tr>
<td>1502307</td>
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<td>4-5&quot;</td>
<td>45-55</td>
<td>8-12</td>
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<tr>
<td>1502308</td>
<td>6*</td>
<td>6&quot;</td>
<td>45-55</td>
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</table>

*For best performance use 3/8" I.D. hose for sizes 6 and larger

V-SERIES® GENERAL PREHEAT PROPYLENE
TWO PIECE HAND CUTTING TIP

DESCRIPTION
A two piece propylene gas hand cutting tip for relatively clean steel.

DETAILS
Construction: Two-piece
Preheat Type: General
Where Used: Metal Fabrication, shipbuilding, maintenance
Compatible Equipment: E-9 Tip cleaner P/N: 9000160

OPERATING PRESSURES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>DEPTH OF CUT</th>
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<th>CUTTING DRILL SIZE</th>
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<tbody>
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<tr>
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<td>1/8&quot;</td>
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<td>3-5</td>
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<tr>
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<tr>
<td>1502320</td>
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<td>3-5</td>
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</tr>
<tr>
<td>1502321</td>
<td>2</td>
<td>1/4&quot; - 1 1/4&quot;</td>
<td>35-45</td>
<td>3-7</td>
<td>NO. 53</td>
</tr>
<tr>
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<td>40-50</td>
<td>4-10</td>
<td>NO. 57</td>
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<tr>
<td>1502323</td>
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<td>3&quot;</td>
<td>40-50</td>
<td>5-10</td>
<td>NO. 42</td>
</tr>
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<td>1502324</td>
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<td>4 - 5&quot;</td>
<td>45-55</td>
<td>5-13</td>
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<tr>
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<td>6 - 8&quot;</td>
<td>45-55</td>
<td>7-14</td>
<td>NO. 31</td>
</tr>
</tbody>
</table>

*For best performance use 3/8" I.D. hose for sizes 6 and larger
V-SERIES® GENERAL PREHEAT SINGLE PIECE ACETYLENE HAND CUTTING TIP

MODEL SHOWN: V3-101

DESCRIPTION
A single piece acetylene hand cutting tip for relatively clean plate. The V3-101 is compatible with V-Series and Victor® style torches.

DETAILS
Construction: One piece
Preheat Type: General
Where Used: Maintenance, metal art construction
Compatible Equipment:
C-9 Tip cleaner P/N: 9000156

OPERATING PRESSURES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>DEPTH OF CUT</th>
<th>OXYGEN PSIG</th>
<th>ACETYLENE PSIG</th>
<th>CUTTING DRILL SIZE</th>
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<tbody>
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<tr>
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<td>5</td>
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<tr>
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<tr>
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<td>8</td>
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<tr>
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<tr>
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<tr>
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<td>6&quot;</td>
<td>75-80</td>
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</tbody>
</table>

*For best performance use ¾" I.D. hose for tip sizes 6 and larger
**3-GPN**

**V-SERIES® GENERAL PREHEAT TWO PIECE PROPANE/NATURAL GAS HAND CUTTING TIP**

**DESCRIPTION**
A two piece propane/natural gas hand cutting tip for relatively clean steel.

**DETAILS**
- **Construction:** Two-piece
- **Preheat Type:** General
- **Where Used:** Maintenance, metal sculpture construction
- **Compatible Equipment:** E-9 Tip cleaner P/N: 9000160

**OPERATING PRESSURES**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>DEPTH OF CUT</th>
<th>OXYGEN PSIG</th>
<th>FUEL GAS</th>
<th>CUTTING DRILL SIZE</th>
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<td>3-5</td>
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<tr>
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<td>00</td>
<td>¼&quot;</td>
<td>20-25</td>
<td>3-5</td>
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</tr>
<tr>
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<td>⅛&quot; - ¼&quot;</td>
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<td>3-5</td>
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<tr>
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<td>4-6</td>
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<tr>
<td>1502313</td>
<td>2</td>
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<td>5-10</td>
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<tr>
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<td>8-12</td>
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<td>1502316</td>
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<td>8-12</td>
<td>NO.39</td>
</tr>
</tbody>
</table>

*For best performance use ⅛" I.D. hose for tip sizes 5 and larger

---

**3-GPP**

**V-SERIES® GENERAL PREHEAT SINGLE PIECE PROPYLENE HAND CUTTING TIP**

**DESCRIPTION**
A two piece propylene hand cutting tip for relatively clean steel.

**DETAILS**
- **Construction:** Two-piece
- **Preheat Type:** General
- **Where Used:** Maintenance, Metal Art, Construction
- **Compatible Equipment:** E-9 Tip cleaner P/N: 9000160

**OPERATING PRESSURES**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>DEPTH OF CUT</th>
<th>OXYGEN PSIG</th>
<th>FUEL GAS</th>
<th>CUTTING DRILL SIZE</th>
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</thead>
<tbody>
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<td>8-12</td>
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</table>
**DESCRIPTION**

High-speed oxy-propane/natural gas cutting tip with a chrome-plated shell (.088 cup depth).

**DETAILS**

- Minimizes kerf
- Increased cutting speeds, reduces heat input
- High-quality cut, reduces after work
- Used with low-cost fuel gases
- NH tips listed are not plated and have heat-resistant heavy shell

**COMPATIBLE EQUIPMENT:**

E-9 Tip cleaner P/N: 9000160

**TABLE:**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE</th>
<th>PLATE THICKNESS INCHES</th>
<th>CUTTING SPEED I.P.M</th>
<th>CUTTING OXYGEN PSIG</th>
<th>PREHEAT OXYGEN PSIG</th>
<th>LOW PREHEAT OXYGEN CONSUMPTION SCFH</th>
<th>LOW PREHEAT OXYGEN CONSUMPTION SCFH</th>
<th>PROPA GE CONSUMPTION SCFH</th>
<th>NATURAL GAS CONSUMPTION SCFH</th>
<th>APPROXIMATE KERF INCHES</th>
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<td>25 - 35</td>
<td>7</td>
</tr>
<tr>
<td>1501360</td>
<td>0 1/2</td>
<td>¼</td>
<td>14</td>
<td>100</td>
<td>35</td>
<td>12</td>
<td>4 oz.-2</td>
<td>170</td>
<td>25 - 40</td>
<td>8</td>
</tr>
<tr>
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<td>1</td>
<td>2</td>
<td>13</td>
<td>100</td>
<td>35</td>
<td>12</td>
<td>4 oz.-2</td>
<td>200</td>
<td>25 - 40</td>
<td>8</td>
</tr>
<tr>
<td>1501380</td>
<td>1 1/2</td>
<td>3</td>
<td>9</td>
<td>100</td>
<td>35</td>
<td>12</td>
<td>4 oz.-2</td>
<td>250</td>
<td>25 - 40</td>
<td>8</td>
</tr>
<tr>
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<td>4</td>
<td>7</td>
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<td>35</td>
<td>12</td>
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<td>325</td>
<td>25 - 40</td>
<td>8</td>
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<tr>
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<td>5</td>
<td>6</td>
<td>100</td>
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<td>4 oz.-2</td>
<td>395</td>
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<td>100</td>
<td>40</td>
<td>30</td>
<td>4 oz.-2</td>
<td>425</td>
<td>25 - 40</td>
<td>8</td>
</tr>
<tr>
<td>1501420</td>
<td>4</td>
<td>8</td>
<td>5</td>
<td>100</td>
<td>40</td>
<td>35</td>
<td>4 oz.-2</td>
<td>525</td>
<td>25 - 40</td>
<td>8</td>
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<td>40</td>
<td>30</td>
<td>4 oz.-2</td>
<td>580</td>
<td>50 - 100</td>
<td>20</td>
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<tr>
<td>1501440</td>
<td>5 1/2</td>
<td>10</td>
<td>4</td>
<td>90</td>
<td>40</td>
<td>30</td>
<td>4 oz.-2</td>
<td>600</td>
<td>50 - 100</td>
<td>20</td>
</tr>
<tr>
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<td>5NH</td>
<td>10</td>
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<td>60</td>
<td>40</td>
<td>30</td>
<td>4 oz.-2</td>
<td>600</td>
<td>50 - 100</td>
<td>20</td>
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<tr>
<td>1501130</td>
<td>6NH</td>
<td>11</td>
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<td>60</td>
<td>40</td>
<td>30</td>
<td>4 oz.-2</td>
<td>690</td>
<td>50 - 100</td>
<td>20</td>
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<td>7NH</td>
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<td>60</td>
<td>50</td>
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<td>825</td>
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<td>40</td>
<td>4 oz.-2</td>
<td>925</td>
<td>50 - 100</td>
<td>20</td>
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</tbody>
</table>

**NOTES:**

(1) Use next size larger tip with same PSIG for contour or intricate cutting.
(2) For thin-plate cutting use a highly carburizing preheat flame.
(3) Cutting oxygen pressures should be measured at torch entry.
(4) When using two hose machine torches set oxygen pressure at cutting oxygen PSIG above.

* NH TIPS are not plated
AS MANUFACTURERS STRIVE TO REDUCE OVERALL COSTS, HARRIS CAN ASSIST IN THOSE EFFORTS. OUR TECHNICAL TEAM IS FOCUSED ON COST REDUCTION SOLUTIONS FOR SPECIFIC APPLICATIONS IN YOUR PLANT.

DESCRIPTION

High-speed oxygen propane/natural gas cutting tip with an unplated shell (.062 cup depth).

DETAILS

- Minimizes kerf
- Increased cutting speeds, reduces heat input
- High-quality cut, reduces after work
- Used with low-cost fuel gases

Compatible Equipment:
E-9 Tip cleaner P/N: 9000160

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>PLATE THICKNESS INCHES</th>
<th>CUTTING SPEED I.P.M</th>
<th>CUTTING OXYGEN PSIG</th>
<th>HIGH</th>
<th>LOW</th>
<th>PREHEAT FUEL PSIG</th>
<th>CUTTING OXYGEN CONSUMPTION SCFH</th>
<th>LOW PREHEAT OXYGEN CONSUMPTION SCFH</th>
<th>PROPAINE CONSUMPTION SCFH</th>
<th>NATURAL GAS CONSUMPTION SCFH</th>
<th>APPROXIMATE KERF INCHES</th>
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<tbody>
<tr>
<td>1502120</td>
<td>5/0</td>
<td>3/4</td>
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<td>40</td>
<td>15</td>
<td>8</td>
<td>4 oz.-2PSIG</td>
<td>15</td>
<td>30</td>
<td>6</td>
<td>15</td>
<td>.05</td>
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<tr>
<td>1502121</td>
<td>4/0</td>
<td>3/8</td>
<td>20</td>
<td>50</td>
<td>15</td>
<td>10</td>
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<td>40</td>
<td>35</td>
<td>7</td>
<td>18</td>
<td>.06</td>
</tr>
<tr>
<td>1502122</td>
<td>3/0</td>
<td>3/8</td>
<td>18</td>
<td>75</td>
<td>35</td>
<td>10</td>
<td>4 oz.-2PSIG</td>
<td>80</td>
<td>35</td>
<td>7</td>
<td>18</td>
<td>.07</td>
</tr>
<tr>
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<td>3/8</td>
<td>18</td>
<td>75</td>
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<td>10</td>
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<td>90</td>
<td>35</td>
<td>7</td>
<td>18</td>
<td>.07</td>
</tr>
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<td>90</td>
<td>35</td>
<td>10</td>
<td>4 oz.-2PSIG</td>
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<td>35</td>
<td>7</td>
<td>18</td>
<td>.07</td>
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<td>40</td>
<td>8</td>
<td>20</td>
<td>.09</td>
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<td>2</td>
<td>13</td>
<td>100</td>
<td>35</td>
<td>12</td>
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<td>40</td>
<td>8</td>
<td>20</td>
<td>.09</td>
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<td>3</td>
<td>9</td>
<td>100</td>
<td>30</td>
<td>25</td>
<td>4 oz.-2PSIG</td>
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<td>20</td>
<td>.11</td>
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<td>100</td>
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<td>35</td>
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<td>325</td>
<td>40</td>
<td>8</td>
<td>20</td>
<td>.12</td>
</tr>
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<td>5</td>
<td>6</td>
<td>100</td>
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<td>35</td>
<td>4 oz.-2PSIG</td>
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<td>20</td>
<td>.13</td>
</tr>
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<td>6</td>
<td>5</td>
<td>100</td>
<td>50</td>
<td>40</td>
<td>4 oz.-2PSIG</td>
<td>425</td>
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<td>8</td>
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<td>.14</td>
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<td>1502131</td>
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<td>8</td>
<td>5</td>
<td>100</td>
<td>50</td>
<td>40</td>
<td>4 oz.-2PSIG</td>
<td>525</td>
<td>40</td>
<td>8</td>
<td>20</td>
<td>.16</td>
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<tr>
<td>1502132</td>
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<td>4</td>
<td>90</td>
<td>50</td>
<td>40</td>
<td>4 oz.-2PSIG</td>
<td>580</td>
<td>100</td>
<td>20</td>
<td>50</td>
<td>.20</td>
</tr>
</tbody>
</table>

NOTES:
(1) Use next size larger tip with same PSIG for contour or intricate cutting.
(2) For thin plate cutting use a highly carburizing preheat flame.
(3) Cutting oxygen pressures should be measured at torch entry.
(4) When using two hose machine torches set oxygen pressure at cutting oxygen PSIG above.
## DESCRIPTION

High speed oxygen propylene cutting tips with a chrome-plated shell (.034 cup depth). Ideal for machining cutting using propylene-based fuel gases.

## DETAILS

- Minimizes kerf
- Increases cutting speed
- Reduces heat input
- High-quality cut reduces after work
- Uses lower-cost fuel gases

**Compatible Equipment:**
E-9 Tip cleaner P/N: 900160

---

### MODEL SHOWN:
6290-VVCP

---

### TABLE: PREMIUM MACHINE CUTTING TIPS FOR PROPYLENE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>PLATE THICKNESS INCHES</th>
<th>CUTTING SPEED I.F.M</th>
<th>CUTTING OXYGEN PSIG</th>
<th>HIGH</th>
<th>LOW</th>
<th>PREHEAT FUEL PSIG</th>
<th>CUTTING OXYGEN CONSUMPTION</th>
<th>LOW PREHEAT OXYGEN CONSUMPTION</th>
<th>PROPYLENE CONSUMPTION SCFH</th>
<th>APPROX. KERP IN.</th>
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<tr>
<td>1502200</td>
<td>5/0</td>
<td>¾</td>
<td>20</td>
<td>40</td>
<td>12</td>
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<td>32</td>
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<td>.05</td>
</tr>
<tr>
<td>1502202</td>
<td>4/0</td>
<td>¾</td>
<td>20</td>
<td>50</td>
<td>12</td>
<td>8</td>
<td>4 oz - 2</td>
<td>40</td>
<td>32</td>
<td>13</td>
<td>.06</td>
</tr>
<tr>
<td>1502204</td>
<td>3/0</td>
<td>¾</td>
<td>16</td>
<td>75</td>
<td>25</td>
<td>8</td>
<td>4 oz - 2</td>
<td>80</td>
<td>32</td>
<td>13</td>
<td>.08</td>
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<tr>
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<td>¾</td>
<td>18</td>
<td>90</td>
<td>25</td>
<td>8</td>
<td>4 oz - 2</td>
<td>90</td>
<td>32</td>
<td>13</td>
<td>.07</td>
</tr>
<tr>
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<td>¼</td>
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<td>100</td>
<td>25</td>
<td>8</td>
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<td>125</td>
<td>32</td>
<td>13</td>
<td>.08</td>
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<td>14</td>
<td>100</td>
<td>25</td>
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<td>4 oz - 2</td>
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<td>100</td>
<td>25</td>
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<td>40</td>
<td>16</td>
<td>.09</td>
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<td>100</td>
<td>25</td>
<td>10</td>
<td>4 oz - 2</td>
<td>250</td>
<td>40</td>
<td>16</td>
<td>.11</td>
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<td>25</td>
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<td>4 oz - 2</td>
<td>325</td>
<td>40</td>
<td>16</td>
<td>.12</td>
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<td>100</td>
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<td>10</td>
<td>4 oz - 2</td>
<td>395</td>
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<td>.13</td>
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<td>5</td>
<td>100</td>
<td>30</td>
<td>10</td>
<td>4 oz - 2</td>
<td>425</td>
<td>40</td>
<td>16</td>
<td>.14</td>
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<td>1502222</td>
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<td>8</td>
<td>5</td>
<td>100</td>
<td>30</td>
<td>10</td>
<td>4 oz - 2</td>
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<td>90</td>
<td>30</td>
<td>10</td>
<td>4 oz - 2</td>
<td>580</td>
<td>40</td>
<td>16</td>
<td>.20</td>
</tr>
</tbody>
</table>

**NOTES:**
(1) Use next size larger tip with same PSIG for contour or intricate cutting.
(2) For thin plate cutting use a highly carburizing preheat flame.
(3) Cutting oxygen pressures should be measured at torch entry.
(4) When using two hose machine torches set oxygen pressure at cutting oxygen PSIG above.

---

Orders: 1.800.733.4043 | www.harrisproductsgroup.com
HEAVY CUTTING MACHINE TIPS

DESCRIPTION
For Model 8090 Jumbo Machine Torch (see p. 138) used with propane and natural gas.* Operates on fuel pressures of 10 to 15 PSIG.

DETAILS

Construction: Screw in/Tip mix
Where Used: For heavy cutting 8’-30”

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>METAL THICKNESS INCHES</th>
<th>SPEED INCHES PER MINUTE</th>
<th>OPERATING PRESSURES PSIG</th>
<th>ORIFICE DIA. INCHES</th>
<th>GAS FLOW CUBIC FEET PER HOUR</th>
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</thead>
<tbody>
<tr>
<td>1501910</td>
<td>0</td>
<td>8 - 12</td>
<td>6 - 3</td>
<td>CUT. OXYGEN - 30-60</td>
<td>%a</td>
<td>600 - 1500</td>
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<tr>
<td>1501920</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>P.H. OXYGEN - 20-40</td>
<td>%a</td>
<td>200 - 375</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PROPANE - 10-15</td>
<td>–</td>
<td>55 - 105</td>
</tr>
<tr>
<td>1501920</td>
<td>1</td>
<td>12 - 16</td>
<td>6 - 3</td>
<td>CUT. OXYGEN - 30-60</td>
<td>%a</td>
<td>1900 - 3600</td>
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<tr>
<td>1501930</td>
<td>2</td>
<td>–</td>
<td>–</td>
<td>P.H. OXYGEN - 25-50</td>
<td>%a</td>
<td>250 - 425</td>
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<td></td>
<td></td>
<td></td>
<td>PROPANE - 10-20</td>
<td>–</td>
<td>55 - 125</td>
</tr>
<tr>
<td>1501930</td>
<td>2</td>
<td>16 - 20</td>
<td>4 - 2</td>
<td>CUT. OXYGEN - 25-50</td>
<td>%a</td>
<td>1900 - 3600</td>
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<tr>
<td>1501940</td>
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<td>–</td>
<td>–</td>
<td>P.H. OXYGEN - 25-50</td>
<td>%a</td>
<td>250 - 425</td>
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<td>PROPANE - 10-20</td>
<td>–</td>
<td>55 - 125</td>
</tr>
<tr>
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<td>20 - 25</td>
<td>3 - 1½</td>
<td>CUT. OXYGEN - 25-50</td>
<td>%a</td>
<td>2100 - 4400</td>
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<td>1501950</td>
<td>4</td>
<td>–</td>
<td>–</td>
<td>P.H. OXYGEN - 25-50</td>
<td>%a</td>
<td>250 - 425</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td>PROPANE - 10-20</td>
<td>–</td>
<td>55 - 125</td>
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<td>1501950</td>
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<td>OVER 25</td>
<td>3 - 1</td>
<td>CUT/ OXYGEN - 40-90</td>
<td>%a</td>
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<td>4 ½</td>
<td>–</td>
<td>–</td>
<td>P.H. OXYGEN - 25-50</td>
<td>½a</td>
<td>250 - 425</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>PROPANE - 10-20</td>
<td>–</td>
<td>55 - 125</td>
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</tbody>
</table>

*NOTE: Propylene style available as SPECIAL ORDER.

HEAVY-DUTY HAND CUTTING TIPS

DESCRIPTION
Propane/natural gas* cutting tips specifically for Harris Model 136 (see p. 99) cutting torches.

DETAILS
- Heavy shell with shroud
- Captive nut
- General preheat

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>DEPTH OF CUT</th>
<th>O2 PSIG</th>
<th>O2 FLOW SCFH</th>
<th>FUEL PSIG</th>
<th>FUEL SCFH</th>
<th>DRILL CUT SIZE</th>
<th>TORCH MODEL</th>
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<tbody>
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<td>136-11</td>
<td>12 - 19”</td>
<td>60 - 80</td>
<td>950 - 2900</td>
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<td>130 - 350</td>
<td>⅛”</td>
<td>136</td>
</tr>
<tr>
<td>QC13613</td>
<td>136-13</td>
<td>19 - 28”</td>
<td>60 - 80</td>
<td>2100 - 4000</td>
<td>10 - 15</td>
<td>150 - 400</td>
<td>⅛”</td>
<td>136</td>
</tr>
<tr>
<td>QC13615</td>
<td>136-15</td>
<td>20 - 36”</td>
<td>80 - 100</td>
<td>2500 - 4800</td>
<td>15 - 20</td>
<td>180 - 450</td>
<td>⅛”</td>
<td>136</td>
</tr>
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</table>

*NOT FOR USE WITH ACETYLENE.
HEAVY-DUTY HAND CUTTING TIPS

DESCRIPTION
Propane/natural gas* cutting tips specifically for Harris Model 136 cutting torches.

DETAILS
- Low cost
- Straight bore
- Heavy preheat
- Single-piece: requires separate tip nut
  P/N: QC1WHP13601P

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>DEPTH OF CUT</th>
<th>O₂ PSIG</th>
<th>O₂ FLOW SCFH</th>
<th>FUEL PSIG</th>
<th>FUEL SCFH</th>
<th>DRILL CUT SIZE</th>
<th>TORCH MODEL</th>
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<tr>
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<td>140-09</td>
<td>15&quot;</td>
<td>65 - 85</td>
<td>1300 - 1500</td>
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<td>100 - 120</td>
<td>⅜&quot;</td>
<td>136</td>
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<td>19&quot;</td>
<td>65 - 85</td>
<td>1700 - 1950</td>
<td>12 - 15</td>
<td>130 - 160</td>
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<tr>
<td>QC14012</td>
<td>140-12</td>
<td>20&quot;</td>
<td>65 - 85</td>
<td>1800 - 2250</td>
<td>12 - 15</td>
<td>165 - 180</td>
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<tr>
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<td>25&quot;</td>
<td>65 - 85</td>
<td>2100 - 2500</td>
<td>15 - 18</td>
<td>175 - 210</td>
<td>⅜&quot;</td>
<td>136</td>
</tr>
</tbody>
</table>

*NOT FOR USE WITH ACETYLENE.

HEAVY-DUTY HIGH SPEED MACHINE CUTTING TIPS

DESCRIPTION
Propane/natural gas* cutting tips specifically for Harris Model 136 cutting torches.

DETAILS
- High-speed divergent bore
- General preheat
- Single-piece: requires separate tip nut
  P/N: QC1WHP13601P

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>DEPTH OF CUT</th>
<th>O₂ PSIG</th>
<th>O₂ FLOW SCFH</th>
<th>FUEL PSIG</th>
<th>FUEL SCFH</th>
<th>DRILL SIZE</th>
<th>TORCH MODEL</th>
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<td>90 - 130</td>
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<td>165 - 180</td>
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<td>136</td>
</tr>
</tbody>
</table>

*NOT FOR USE WITH ACETYLENE.
THE HARRIS ADVANTAGE OUR MOST POPULAR WELDING & BRAZING TIPS

23A90 AND 5090 WELDING & BRAZING TIPS

1. Are made from lead-free, environmentally friendly tellurium copper that has excellent machinability characteristics resulting in a higher quality tip with more precise flames.

2. Are swaged for more precise and consistent flames.

3. Use a universal mixer that fits the complete line of sizes (0-10) eliminating the extra expense of requiring a special mixer for each tip size.

4. Have a metal to metal mixer contact seat virtually eliminating thread leaks and the need for thread sealants.
ACETYLENE WELDING AND BRAZING TIPS

DESCRIPTION

Model 23A90 tips are manufactured using environmentally-friendly tellurium copper that has excellent machining properties resulting in a higher quality tip. They are swaged for more precise and consistent flames. They use a universal mixer for sizes 0-10, eliminating the expense of using a different mixer for every tip size. All 23A90 tips have a metal-to-metal seat, virtually eliminating possible leaks and the need for thread sealants.

DETAILS

Warranty: 1 year
Where Used: Fabricating, maintenance
Compatible Equipment:
C-9 Tip cleaner P/N: 9000156

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>METAL THICKNESS INCHES</th>
<th>OXYGEN PSIG</th>
<th>ACETYLENE PSIG</th>
<th>ACETYLENE SCFH *</th>
<th>RECOMMENDED HOSE ID **</th>
<th>TIP THREAD</th>
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<tbody>
<tr>
<td>1600840</td>
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<td>21/32 - 26</td>
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<td>3/16&quot;</td>
<td>21/32 - 26</td>
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<td>1600870</td>
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<td>1/8&quot;</td>
<td>3</td>
<td>3</td>
<td>5 - 11</td>
<td>3/16&quot;</td>
<td>21/32 - 26</td>
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<tr>
<td>1600880</td>
<td>4</td>
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<td>4</td>
<td>4</td>
<td>6 - 14</td>
<td>3/16&quot;</td>
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<td>5/32&quot;</td>
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<td>1/8&quot;</td>
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<td>13</td>
<td>30 - 50</td>
<td>3/16&quot;</td>
<td>1/2 - 25</td>
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<tr>
<td>1600970</td>
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<td>1&quot;</td>
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<td>15</td>
<td>35 - 65</td>
<td>3/16&quot;</td>
<td>1/2 - 25</td>
</tr>
</tbody>
</table>

* Oxygen SCFH is equal to 1.1 times acetylene for neutral flame.
** Hose sizes are suitable for hoses up to 25'; for longer hoses higher pressures should be used.
Observe 1/7th acetylene rule when determining gas supply.

HEAVY DUTY EQUAL PRESSURE MIXERS FOR MODEL 43-2 HANDLE

MEDIUM DUTY EQUAL PRESSURE MIXERS FOR MODEL 85 HANDLE

LIGHT DUTY EQUAL PRESSURE MIXERS FOR MODEL 16, 19 AND 50-9 HANDLES
ACETYLENE WELDING AND BRAZING TIPS

DESCRIPTION
Model 5090 tips are manufactured using environmentally-friendly tellurium copper that has excellent machining properties resulting in a higher quality tip. They are swaged for more precise and consistent flames. They use a universal mixer for sizes 0-10, eliminating the expense of using a different mixer for every tip size. All 5090 tips have a metal-to-metal mixer seat virtually eliminating the possibility of leaks and the need for thread sealants.

DETAILS
Where Used: Maintenance, metal art production, brazing
Compatible Equipment: C-9 Tip Cleaner P/N: 900156

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>METAL THICKNESS INCHES</th>
<th>OXYGEN PSIG</th>
<th>ACETYLENE PSIG</th>
<th>ACETYLENE SCFH *</th>
<th>RECOMMENDED HOSE ID **</th>
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<td>1</td>
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<tr>
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<td>⅛&quot;</td>
<td>2</td>
<td>2</td>
<td>3 - 8</td>
<td>½&quot;</td>
<td>½&quot; - 27</td>
</tr>
<tr>
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<td>4</td>
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<tr>
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<td>⅛&quot;</td>
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<td>5</td>
<td>8 - 18</td>
<td>½&quot;</td>
<td>½&quot; - 27</td>
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<tr>
<td>1601780</td>
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<td>6</td>
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<td>½&quot;</td>
<td>½&quot; - 27</td>
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<td>½&quot; - 27</td>
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<td>10</td>
<td>24 - 42</td>
<td>½&quot;</td>
<td>½&quot; - 27</td>
</tr>
</tbody>
</table>

*Oxygen SCFH is equal to 1.1 times acetylene for neutral flame.
**Hose sizes are suitable for hoses up to 25'. For longer hoses, higher pressures should be used. Observe 1/8th acetylene rule when determining gas supply.

MEDIUM DUTY EQUAL PRESSURE MIXERS FOR MODEL 16, 19 AND 50-9 HANDLES

LIGHT DUTY EQUAL PRESSURE MIXERS FOR MODEL 15 HANDLE

H-16-E
½" - 27

B-15-3
½" - 27

Orders: 1.800.733.4043
**DESCRIPTION**

Model 1390 tips are manufactured using environmentally friendly tellurium copper that has excellent machining properties resulting in a higher quality tip. They are precision drilled for more precise and consistent flames. They use a universal separable tip tube and mixer system for tip sizes 0-10 eliminating the expense of using special mixers for each tip. All 1390 tips have a metal to metal tip contact seat virtually eliminating the possibility of leaks and the need for thread sealants.

**DETAILS**

**Where Used:** Maintenance, metal art production, brazing, etc.

**Compatible Equipment:** C-9 Tip Cleaner P/N: 9000156

Threaded Pattern: Standard: 3/8"-24, 1390-13 and 15N - 1/2"-25

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>METAL THICKNESS INCHES</th>
<th>OXYGEN PSIG</th>
<th>ACETYLENE PSIG</th>
<th>ACETYLENE SCFH *</th>
<th>RECOMMENDED HOSE ID **</th>
<th>TIP THREAD</th>
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<tbody>
<tr>
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<td>1</td>
<td>1 - 3</td>
<td>1/8&quot;</td>
<td>5/16&quot; - 24</td>
</tr>
<tr>
<td>1600030</td>
<td>1</td>
<td>1/16&quot;</td>
<td>1</td>
<td>1</td>
<td>2 - 5</td>
<td>1/8&quot;</td>
<td>5/16&quot; - 24</td>
</tr>
<tr>
<td>1600040</td>
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<td>1/16&quot;</td>
<td>2</td>
<td>2</td>
<td>3 - 8</td>
<td>1/8&quot;</td>
<td>5/16&quot; - 24</td>
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<td>5/16&quot; - 24</td>
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<td>1600060</td>
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<td>5</td>
<td>8 - 18</td>
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<td>5/16&quot; - 24</td>
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<td>5/16&quot; - 24</td>
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<td>10</td>
<td>10</td>
<td>24 - 42</td>
<td>1/4&quot;</td>
<td>1/2&quot; - 24</td>
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<tr>
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<td>13</td>
<td>30 - 50</td>
<td>3/8&quot;</td>
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<td>15</td>
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<tr>
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<td>Heating</td>
<td>5 - 10</td>
<td>5 - 10</td>
<td>35 - 52</td>
<td>1/8&quot;</td>
</tr>
</tbody>
</table>

*Oxygen SCFH is equal to 1.1 times acetylene for neutral flame.

**HEAVY DUTY EQUAL PRESSURE MIXERS FOR MODEL 43-2 HANDLE**

E-43
E3-43/(F-43)

**MEDIUM DUTY EQUAL PRESSURE MIXER FOR MODEL 85 HANDLE**

D-85

**LIGHT DUTY EQUAL PRESSURE MIXERS FOR MODEL 16, 19 AND 50-9 HANDLES**

H-16-E
H-16-2E

**COMPATIBLE TIP TUBES - MATCH THREAD SIZE**

- E-43
- E3-43/(F-43)
- D-85
- H-16-E
- H-16-2E

8593
P/N: 9003678
Length: 4"

D-50-C
P/N: 9100379
Length: 4"

DC-50-CXL
P/N: 9100872
Length: 7"

D-50-C12
P/N: CD50C12
Length: 12"

T-43
P/N: 9100322
Length: 9.8"
DESCRIPTION
The Model 8490 series separable welding and brazing tips are made of high-quality brass bar stock. The 8490 tips include a special compact multi-flame heating tip using standard mixer and tip tube combinations.

DETAILS
Where Used: Metal art, maintenance and production brazing
Compatible Equipment:
C-9 Tip Cleaner P/N: 9000156

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>TIP SIZE NO.</th>
<th>METAL THICKNESS INCHES</th>
<th>OXYGEN PSIG</th>
<th>ACETYLENE PSIG</th>
<th>ACETYLENE SCFH *</th>
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<td>1602010</td>
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<td>6 - 14</td>
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<td>¼” - 27</td>
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<td>¼” - 27</td>
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<td>⅜”</td>
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<td>8</td>
<td>16 - 32</td>
<td>⅛”</td>
<td>¼” - 27</td>
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<td>8</td>
<td>45 - 56</td>
<td>¼”</td>
<td>¼” - 27</td>
</tr>
</tbody>
</table>

*Oxygen SCFH is equal to 1.1 times acetylene for neutral flame.
**Hose sizes are suitable for hoses up to 25'. For longer hoses, higher pressures should be used.
Observe ⅛th acetylene rule when determining gas supply.

COMPATIBLE TIP TUBES - MATCH THREAD SIZE

TH-50-2
P/N: 1601590
Length: 5/16”

TH-50-2XL
P/N: 1601596
Length: 7/16”

8493B
P/N: 0C8493B
Length: 4’
**1390-N BRAZING TIPS AND TIP TUBE ADVANTAGES**

- **1390-N** tips are designed with a counter-bored tip end for maximum performance using alternate fuels. They produce flames that are stable over an extremely broad BTU range. One tip size can cover a very wide range of joint sizes.

- The 1390-N tips and tip tubes use a special universal size mixer covering a broad range of sizes. This unique design reduces initial equipment costs and storage space requirements.

- The mass of the bell-shaped tip tubes for the 1390 series tips help dissipate much of the reflective heat from the flame, allowing the tip tube to run cooler and last longer.

- The 1390-N brazing equipment also includes special compact multi-flame heating tips that can produce up to 100,000 BTUs using the standard mixer and tip-tube configuration.

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**DESCRIPTION**

Model 1390-N separable brazing/heating tips are made from environmentally-friendly tellurium copper. They are designed to be used with a Harris universal tip tube and mixer system for tip sizes 2-10 and sizes 15-80N eliminating the expense of using a special mixer for each size tip. The 1390-N series are designed with a counter-bored tip end for maximum performance using alternate fuels. They are stable over an extremely broad BTU range, consequently one tip size can be used over a very wide range of joint sizes. A unique metal to metal seat reduces leaks eliminating the need for joint sealants.

**DETAILS**

**Where Used:** Production brazing, arts and crafts, HVAC, maintenance, etc.

**Thread Pattern:** Standard - 3/8” 24

**13N Through 80N and 3H-1/2” - 25**

**Compatible Equipment:** E-9 Two-piece Tip cleaner

P/N: 9000160

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**MODELS SHOWN:**

1390-N, 1390-B, 1390-H

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**PERFORMANCE FOCUS**

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## MIXERS AND TIP TUBES FOR 1390-N TIPS FOR PROPANE AND NATURAL GAS

### HEAVY DUTY
**EQUAL PRESSURE FOR MODEL 43-2 AND 18-5 HANDLES**

<table>
<thead>
<tr>
<th>Tip Tubes</th>
<th>Compatibility</th>
<th>Description</th>
</tr>
</thead>
<tbody>
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<td>23/64&quot; - 26</td>
<td>1/2&quot; - 25</td>
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<tr>
<td>E2-43</td>
<td>1/2&quot; - 25</td>
<td>23/64&quot; - 26</td>
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<tr>
<td>E3-43/(F-43)</td>
<td>1/2&quot; - 25</td>
<td>23/64&quot; - 26</td>
</tr>
<tr>
<td>T-43</td>
<td>1/2&quot; - 25</td>
<td>23/64&quot; - 26</td>
</tr>
<tr>
<td>B-43-N</td>
<td>1/2&quot; - 25</td>
<td>23/64&quot; - 26</td>
</tr>
<tr>
<td>T-43</td>
<td>1/2&quot; - 25</td>
<td>23/64&quot; - 26</td>
</tr>
</tbody>
</table>

### MEDIUM DUTY
**EQUAL PRESSURE FOR MODEL 85 HANDLE**

<table>
<thead>
<tr>
<th>Tip Tubes</th>
<th>Compatibility</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-85</td>
<td>23/64&quot; - 26</td>
<td>1/2&quot; - 24</td>
</tr>
<tr>
<td>D-50-C</td>
<td>1/2&quot; - 24</td>
<td>23/64&quot; - 26</td>
</tr>
<tr>
<td>D-50-C12</td>
<td>P/N: QC50C12</td>
<td>1/2&quot; - 25</td>
</tr>
<tr>
<td>T-43</td>
<td>1/2&quot; - 25</td>
<td>23/64&quot; - 26</td>
</tr>
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</table>

### LIGHT DUTY
**EQUAL PRESSURE FOR MODEL 16, 19 AND 50 HANDLES**

<table>
<thead>
<tr>
<th>Tip Tubes</th>
<th>Compatibility</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-16-2E</td>
<td>23/64&quot; - 26</td>
<td>3/8&quot; - 24</td>
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<tr>
<td>H-16-E</td>
<td>3/8&quot; - 27</td>
<td>3/8&quot; - 24</td>
</tr>
<tr>
<td>H-16-S</td>
<td>3/8&quot; - 27</td>
<td>3/8&quot; - 24</td>
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</tbody>
</table>

### LIGHT DUTY INJECTOR MIXER COMPATIBLE WITH MODEL 16, 19 AND 50 HANDLES

<table>
<thead>
<tr>
<th>Tip Tubes</th>
<th>Compatibility</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-50-C</td>
<td>3/8&quot; - 24</td>
<td>5/16&quot; - 27</td>
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<tr>
<td>D-50-C12</td>
<td>P/N: QC50C12</td>
<td>5/16&quot; - 27</td>
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</table>

### VERY LIGHT DUTY
**EQUAL PRESSURE MIXER FOR MODEL 15-5 HANDLE**

<table>
<thead>
<tr>
<th>Tip Tubes</th>
<th>Compatibility</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-15-3</td>
<td>3/8&quot; - 27</td>
<td>1/2&quot; - 25</td>
</tr>
<tr>
<td>D-50-C</td>
<td>3/8&quot; - 27</td>
<td>1/2&quot; - 25</td>
</tr>
</tbody>
</table>

### COMPATIBLE TIP TUBES - MATCH THREAD SIZE

<table>
<thead>
<tr>
<th>Tip Tubes</th>
<th>Compatibility</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8593 P/N: 9003678 Length: 4&quot;</td>
<td>23/64&quot; - 26</td>
<td>3/8&quot; - 24</td>
</tr>
<tr>
<td>T-43 P/N: 9100322 Length: 9.8&quot;</td>
<td>1/2&quot; - 25</td>
<td>3/8&quot; - 24</td>
</tr>
<tr>
<td>Injector mixer H-16-F P/N: 9505660</td>
<td>1/2&quot; - 27</td>
<td>3/8&quot; - 27</td>
</tr>
</tbody>
</table>

---

**THE HARRIS PRODUCTS GROUP**

[www.harrisproducts.com](http://www.harrisproducts.com)  | Orders: 1.800.733.4043  | TIPS 131
ALTERNATE FUELS SEPARABLE BRAZING TIPS

DESCRIPTION

The Model 8490-N series separable brazing tips are made of high-quality brass bar stock. The 8490-N series tips are designed with a counter bored tip end for maximum performance with alternate fuels. They are stable over a broad BTU range, consequently, one tip size can be used over a wide range of joint sizes. The 8490-N series includes a special multi-flame heating tip, 8490-6-65.

DETAILS

Where Used: Production brazing, maintenance, arts and crafts, HVAC, etc.

Compatible Equipment:
E-9 Two-piece tip cleaner
P/N: 9000160

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>OXYGEN PSIG</th>
<th>FUEL GAS PSIG</th>
<th>NATURAL GAS SCFM</th>
<th>OXYGEN PSIG</th>
<th>PROPANE PSIG</th>
<th>PROPANE SCFM</th>
<th>THREAD SIZE &quot;F&quot;</th>
<th>HOSE ID</th>
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</thead>
<tbody>
<tr>
<td>1602090</td>
<td>4N</td>
<td>20</td>
<td>4 oz. - 2 lbs</td>
<td>12</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>3⁄16&quot;</td>
</tr>
<tr>
<td>1602100</td>
<td>5N</td>
<td>25</td>
<td>4 oz. - 2 lbs</td>
<td>13</td>
<td>2</td>
<td>1</td>
<td>10</td>
<td>2.5</td>
<td>3⁄16&quot;</td>
</tr>
<tr>
<td>1602110</td>
<td>6N</td>
<td>25</td>
<td>4 oz. - 2 lbs</td>
<td>15</td>
<td>3</td>
<td>1</td>
<td>12</td>
<td>3</td>
<td>3⁄16&quot;</td>
</tr>
<tr>
<td>1602120</td>
<td>7N</td>
<td>30</td>
<td>4 oz. - 2 lbs</td>
<td>20</td>
<td>4</td>
<td>1</td>
<td>20</td>
<td>4</td>
<td>3⁄16&quot;</td>
</tr>
<tr>
<td>1602130</td>
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<td>30</td>
<td>4 oz. - 2 lbs</td>
<td>25</td>
<td>5</td>
<td>2</td>
<td>24</td>
<td>6</td>
<td>1⁄4&quot;</td>
</tr>
<tr>
<td>1602040</td>
<td>6-65 (heating)</td>
<td>50</td>
<td>4 oz. - 2 lbs</td>
<td>30</td>
<td>8</td>
<td>8</td>
<td>30</td>
<td>8</td>
<td>3⁄16&quot;</td>
</tr>
</tbody>
</table>

*NOTE: Low-pressure F injector-type mixers

LIGHT DUTY EQUAL PRESSURE MIXERS FOR MODEL 16, 19 AND 50 HANDLES

H-16-E  
1⁄4" - 27

MEDIUM DUTY EQUAL PRESSURE MIXERS FOR MODEL 15-5 HANDLE

B-15-3  
1⁄4" - 27

LIGHT DUTY INJECTOR MIXER COMPATIBLE WITH MODEL 16, 19, 50-9 AND 50-10

Injector mixer H-16-S  
1⁄4" - 27

LIGHT DUTY INJECTOR MIXER COMPATIBLE WITH MODEL 15 HANDLE

Injector mixer B-15-3S  
1⁄4" - 32

LIGHT DUTY INJECTOR MIXER COMPATIBLE WITH MODEL 15-5 HANDLE

Injector mixer H-16-F  
1⁄4" - 27

COMPATIBLE TIP TUBES - MATCH THREAD SIZE

TH-50-2  
P/N: 1601590  
Length: 51⁄4"

TH-50-2XL  
P/N: 1601596  
Length: 71⁄4"

8493-N  
P/N: 9003656  
Length: 5"

8493B  
P/N: QC8493B  
Length: 4"
ALTERNATE FUEL HEAVY HEATING TIPS

DESCRIPTION
Model 2290 heating tips are capable of producing more than 1 million BTU per hour using low-cost, readily available, safe alternate fuels. They are available in five sizes. Each size is adjustable over a broad heat range.

DETAILS
Warranty: 1 year
Where used: Fabrication, shipbuilding, etc.
Related items:
Adaptors P/N: 2373-9000738
P/N: 2357-9000734
P/N: 2327-9000720
P/N: 2543-9000584

2290-H and HPM PERFORMANCE DATA

<table>
<thead>
<tr>
<th>Tip Size</th>
<th>Oxyn</th>
<th>Oxyn</th>
<th>FLG</th>
<th>FLG</th>
<th>Propane</th>
<th>Propane</th>
<th>Mapp</th>
<th>Natural</th>
<th>CLASSIC 43 MIXER</th>
<th>BTU/HR. RATING</th>
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<tr>
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<tr>
<td>10</td>
<td>160</td>
<td>320</td>
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<td>12</td>
<td>40</td>
<td>80</td>
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<td>15</td>
<td>220</td>
<td>520</td>
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<td>340</td>
<td>920</td>
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<td>25</td>
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<td>110</td>
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<tr>
<td>60</td>
<td>720</td>
<td>135</td>
<td>14</td>
<td>40</td>
<td>180</td>
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<td>950,000</td>
<td>960,000</td>
</tr>
</tbody>
</table>

NOTES: 1. For maximum flow and BTU output use 3⁄8" hose.
2. On continuous duty, withdrawal manifolding of cylinders may be required.

COUPLINGS & ADAPTORS

2393 HEATING TIP TUBES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800200</td>
<td>2393-1F</td>
<td>36&quot; Curved</td>
</tr>
<tr>
<td>1800210</td>
<td>2393-2F</td>
<td>28&quot; Curved</td>
</tr>
<tr>
<td>1800220</td>
<td>2393-3F</td>
<td>15&quot; Curved</td>
</tr>
<tr>
<td>1800230</td>
<td>2393-4F</td>
<td>101⁄2&quot; Curved</td>
</tr>
<tr>
<td>1800241</td>
<td>2393-F</td>
<td>60&quot; Curved</td>
</tr>
<tr>
<td>1800240</td>
<td>2393-5F</td>
<td>36&quot; Straight</td>
</tr>
<tr>
<td>1800221</td>
<td>2393-2F</td>
<td>28&quot; Straight</td>
</tr>
<tr>
<td>1800221</td>
<td>2393-3F</td>
<td>15&quot; Straight</td>
</tr>
<tr>
<td>1800231</td>
<td>2393-4F</td>
<td>101⁄2&quot; Straight</td>
</tr>
<tr>
<td>1800206</td>
<td>2393-6F</td>
<td>48&quot; Straight</td>
</tr>
</tbody>
</table>

Multiple arrangements of 2290-H Heating Tips can be assembled using Harris coupling 2327, nipple 2357 and standard 3⁄8" pipe fittings when wider bands of heat are necessary. Capacity of 43-2 heating torch is 5 NO.1-H tips. Use coupling 2543-3 to couple 2393 Tip Tubes for extended reach. For extended tube and tip life, use adaptor 2357-3.
**2290 H TIPS FOR PROPANE OR NATURAL GAS**

**FOR EQUAL (POSITIVE) PRESSURE MIXING SYSTEMS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>MODEL NUMBER</th>
<th>OXYGEN PRESSURE</th>
<th>PROPANE PRESSURE</th>
<th>FLAME CONE LENGTH</th>
<th>OXYGEN CFH</th>
<th>PROPANE CFH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800130</td>
<td>2290 1-H</td>
<td>10 - 25</td>
<td>4 - 12</td>
<td>1/4&quot; - 3/4&quot;</td>
<td>160 - 320</td>
<td>40 - 80</td>
</tr>
<tr>
<td>1800140</td>
<td>2290 2-H</td>
<td>15 - 45</td>
<td>7 - 22</td>
<td>1/4&quot; - 3/4&quot;</td>
<td>220 - 520</td>
<td>55 - 130</td>
</tr>
<tr>
<td>1800150</td>
<td>2290 3-H</td>
<td>25 - 70</td>
<td>8 - 25</td>
<td>1&quot;</td>
<td>340 - 920</td>
<td>85 - 230</td>
</tr>
<tr>
<td>1800160</td>
<td>2290 4-H</td>
<td>50 - 110</td>
<td>10 - 30</td>
<td>1/4&quot; - 1&quot;</td>
<td>640 - 1300</td>
<td>160 - 325</td>
</tr>
<tr>
<td>1800170</td>
<td>2290 5-H</td>
<td>60 - 135</td>
<td>14 - 40</td>
<td>5/16&quot; - 1-1/4&quot;</td>
<td>720 - 1600</td>
<td>180 - 400</td>
</tr>
</tbody>
</table>

**2290 HPM TIPS FOR PROPYLENE**

**FOR EQUAL (POSITIVE) PRESSURE MIXING SYSTEMS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>MODEL NUMBER</th>
<th>OXYGEN PRESSURE</th>
<th>PROPYLENE PRESSURE</th>
<th>FLAME CONE LENGTH</th>
<th>OXYGEN CFH</th>
<th>PROPYLENE CFH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800136</td>
<td>1H-PM</td>
<td>10 - 25</td>
<td>4 - 12</td>
<td>1/4&quot; - 3/4&quot;</td>
<td>160 - 320</td>
<td>40 - 80</td>
</tr>
<tr>
<td>1800146</td>
<td>2H-PM</td>
<td>15 - 45</td>
<td>7 - 22</td>
<td>1/4&quot; - 3/4&quot;</td>
<td>220 - 520</td>
<td>55 - 130</td>
</tr>
<tr>
<td>1800156</td>
<td>3H-PM</td>
<td>25 - 70</td>
<td>8 - 25</td>
<td>1&quot;</td>
<td>340 - 920</td>
<td>85 - 230</td>
</tr>
<tr>
<td>1800166</td>
<td>4H-PM</td>
<td>50 - 110</td>
<td>10 - 30</td>
<td>1/4&quot; - 1&quot;</td>
<td>640 - 1300</td>
<td>160 - 325</td>
</tr>
<tr>
<td>1800176</td>
<td>5H-PM</td>
<td>60 - 135</td>
<td>14 - 40</td>
<td>5/16&quot; - 1-1/4&quot;</td>
<td>720 - 1600</td>
<td>180 - 400</td>
</tr>
</tbody>
</table>

Note: When using natural gas, fuel flow rates of Propane or Propylene will double.

BTU/CF. - Propane = 2560 • Propylene = 2370 • Nat. GAS = 1000

For LPG cylinder withdrawal rates see chart on next page.

**USE MODEL 43-2 HANDLE, PN: 1401150 • MODEL V-315C, PN: 1400315 FOR 2290 H & HPM HEATING TIPS**

**HARRIS 2393 TIP TUBE**

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>LENGTH</th>
<th>STYLE</th>
<th>THREAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800200</td>
<td>2393-1F</td>
<td>36&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>1/4&quot; - 25</td>
</tr>
<tr>
<td>1800210</td>
<td>2393-2F</td>
<td>28&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>1/4&quot; - 25</td>
</tr>
<tr>
<td>1800220</td>
<td>2393-3F</td>
<td>16&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>1/4&quot; - 25</td>
</tr>
<tr>
<td>1800230</td>
<td>2393-4F</td>
<td>10 1/2&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>1/4&quot; - 25</td>
</tr>
<tr>
<td>1800241</td>
<td>2393-F</td>
<td>60&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>1/4&quot; - 25</td>
</tr>
<tr>
<td>1800240</td>
<td>2393-5F</td>
<td>36&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>1/4&quot; - 25</td>
</tr>
<tr>
<td>1800211</td>
<td>2393-2F</td>
<td>28&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>1/4&quot; - 25</td>
</tr>
<tr>
<td>1800221</td>
<td>2393-4F</td>
<td>10 1/2&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>1/4&quot; - 25</td>
</tr>
<tr>
<td>1800231</td>
<td>2393-6F</td>
<td>48&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>1/4&quot; - 25</td>
</tr>
</tbody>
</table>

**HARRIS EQUAL (POSITIVE PRESSURE) MIXERS**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>HARRIS® MODEL NUMBER</th>
<th>OXYGEN MAX CAPACITY</th>
<th>LPG</th>
<th>V-SERIES®</th>
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<tbody>
<tr>
<td>9100310</td>
<td>E3-43</td>
<td>1600 CFH</td>
<td>400 CFH</td>
<td>V-W-3</td>
</tr>
<tr>
<td>9100314</td>
<td>E2-43</td>
<td>920 CFH</td>
<td>230 CFH</td>
<td>V-W-2</td>
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**HARRIS INJECTOR (LOW PRESSURE) MIXERS**

<table>
<thead>
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<th>PART NUMBER</th>
<th>HARRIS® MODEL NUMBER</th>
<th>OXYGEN MAX CAPACITY</th>
<th>LPG</th>
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<tr>
<td>9100306</td>
<td>B-43-N</td>
<td>920 CFH</td>
<td>230 CFH</td>
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</table>
For special heating tip assemblies featuring multiple heating tips, Harris recommends the Harris Model 43-2 handle, E3-43 mixer, 2393 tip tubes, 2290 heating tips, model 2327 couplings and Model 2357 nipples. These Harris parts and standard 1/4” NPT steel pipe and couplings can be used to create special multiple heating tip assemblies (example shown below) with certain restrictions.

- Use only tips specified for the gas being used.
- Multiple tips must be the same size to insure equal flame length.
- Maximum BTU output or fuel gas flow cannot exceed the flow capacity listed for the mixer being used.
- Operating /Lighting procedures: Same as those for single heating tips.
- Maximum aggregate fuel flow capacity should not exceed 400 SCFH of LPG.
- Calculate total fuel requirements by multiplying number of tips by individual tip flow rate from tip charts.
- Total assembly flow rate requirements may necessitate manifolding of multiple cylinders to insure safe equipment operation and to control cylinder residual.

All though Chart is specifically for Propane fuel gas it can be used to closely approximate rates for other LPG liquid petroleum gases such as Propylene and Propane blend.
The Model “J” heating tips are a single-piece, all copper tip tube and tip combination specifically used for oxygen acetylene heating applications. The Model “H” series heating tips are a tip tube, tip and mixer combination that are available for the most popular Harris torch handles.

**Warranty:** 1 year

**Where used:** Fabrication, shipbuilding, maintenance, etc.

**Related Items:** C-9 Tip cleaner

P/N: 9000156

---

**TIPS**

**DESCRIPTION**

**MODELS SHOWN:** "J" & "H"

**DETAILS**

**Series**

Series J & H

Series Oxy-Acetylene Equal Pressure Acetylene SCFH

Series Acetylene SCFH

Series Heat Output BTU/HR

**Handle Model No.**

<table>
<thead>
<tr>
<th>Handle Model No.</th>
<th>Mixer Model No.</th>
<th>Tip No.</th>
<th>Hole Pattern Drawing</th>
<th>Orifice (Number) &amp; Size</th>
<th>Oxy-Acetylene Equal Pressure</th>
<th>Acetylene SCFH</th>
<th>Heat Output BTU/HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>43-2</td>
<td>E-43</td>
<td>J-63-1</td>
<td>N.60(6) (.040)</td>
<td>2</td>
<td>6</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>43-2</td>
<td>E-43</td>
<td>J-63-2</td>
<td>N.60(6) (.040)</td>
<td>3</td>
<td>7</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>43-2</td>
<td>E-2-43</td>
<td>J-63-3</td>
<td>N.56(12) (.065)</td>
<td>4</td>
<td>8</td>
<td>50*</td>
<td>80*</td>
</tr>
<tr>
<td>43-2</td>
<td>E-2-43</td>
<td>J-63-4</td>
<td>N.56(12) (.065)</td>
<td>5</td>
<td>15</td>
<td>80*</td>
<td>140*</td>
</tr>
<tr>
<td>V-315-C</td>
<td>V-W</td>
<td>J-63-1</td>
<td>N.52(13) (.0635)</td>
<td>1</td>
<td>Oxy-12 Acet-8</td>
<td>160*</td>
<td>300*</td>
</tr>
<tr>
<td>V-315-C</td>
<td>V-W</td>
<td>J-63-2</td>
<td>Oxy-20 Acet-15</td>
<td>1</td>
<td>Oxy-20 Acet-15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Minimum pressure – neutral flame with no flame blow-off (lowest stable flame)
2. Maximum pressure – neutral flame with no flame pop-out (highest stable flame)
3. Acetylene flow shown – oxygen flow theoretically 1.1 of acetylene for neutral flame
4. Heat output calculated with 1,475 BTU/cu.ft.

**NOTE:** Hose size recommendations – 1⁄4" ID for sizes 1 and 2; 3⁄8" ID for sizes 3, 4 and 5

*Caution: Exceeds the withdrawal capacity of one standard 320 CF acetylene cylinder 1/16th Rule*
### DESCRIPTION

Model RBA flame cleaning heads are designed specifically for cleaning rust, mill scale and paint from metal surfaces prior to welding, painting, etc. They can also be used for general surface heating or spalling using oxy-acetylene\(^{(1)}\). Features steel-scraping plate on either side of the tip.

### DETAILS

- **Warranty:** 1 year
- **Where used:** Flame cleaning and general heating
- **Related items:** Tip tubes – select from 2393 chart below

#### Recommended Mixers and Flame Cleaning Heads

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>43-2</td>
<td>E3-43</td>
<td>9100312</td>
<td>RBA-2</td>
<td>1800440</td>
<td>2&quot;</td>
<td>6 - 10</td>
<td>6 - 10</td>
<td>29 - 40</td>
<td>25 - 35</td>
</tr>
<tr>
<td></td>
<td>E2-43</td>
<td>9100314</td>
<td>RBA-4</td>
<td>1800450</td>
<td>4&quot;</td>
<td>10 - 12</td>
<td>10 - 12</td>
<td>55 - 59</td>
<td>49 - 53</td>
</tr>
<tr>
<td>V-315-C</td>
<td>V-W-3</td>
<td>9105220</td>
<td>RBA-2</td>
<td>1800440</td>
<td>2&quot;</td>
<td>6 - 10</td>
<td>6 - 10</td>
<td>29 - 40</td>
<td>25 - 35</td>
</tr>
<tr>
<td></td>
<td>V-W-2</td>
<td>9105217</td>
<td>RBA-4</td>
<td>1800450</td>
<td>4&quot;</td>
<td>10 - 12</td>
<td>10 - 12</td>
<td>55 - 59</td>
<td>49 - 53</td>
</tr>
</tbody>
</table>

\(^{(1)}\) Multiply acetylene SCFH times 1470 to calculate BTU/hr. Observe \(\frac{1}{8}\)" rule of acetylene when determining acetylene supply required.

### 2393 HEATING TIP TUBES

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Model No.</th>
<th>Length</th>
<th>Style</th>
<th>Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800200</td>
<td>2393-1F</td>
<td>36&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800210</td>
<td>2393-2F</td>
<td>28&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800220</td>
<td>2393-3F</td>
<td>15&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800230</td>
<td>2393-4F</td>
<td>10(\frac{1}{4})&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800241</td>
<td>2393-F</td>
<td>60&quot;</td>
<td>&quot;Curved&quot; 70°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800240</td>
<td>2393-5F</td>
<td>36&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800211</td>
<td>2393-2F</td>
<td>28&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800221</td>
<td>2393-3F</td>
<td>15&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800231</td>
<td>2393-4F</td>
<td>10(\frac{1}{4})&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
<tr>
<td>1800206</td>
<td>2393-6F</td>
<td>48&quot;</td>
<td>&quot;Straight&quot; 180°</td>
<td>(\frac{1}{8}) - 25</td>
</tr>
</tbody>
</table>

### 2393 Tip Tube

2393 Tip Tube \(\frac{1}{2}\" - 25(M) X \(\frac{1}{2}\" - 25(M)

For additional heating tip adaptors and instructions refer to page 101 or page 127.
FLAME CLEANING HEADS

DESCRIPTION
Model RBP flame cleaning heads are designed specifically for removing rust, paint and mill scale from metal surface before welding, painting, etc. They are also used for general surface heating and spalling using oxy-propane or natural gas. Features steel scraping plates on either side of tip.

DETAILS
Duty: Heavy
Related items: Select 2393 tip tube length and style from chart below

<table>
<thead>
<tr>
<th>CLEANING HEAD</th>
<th>TIP WIDTH</th>
<th>RECOMMENDED HANDLE</th>
<th>MIXER</th>
<th>PSIG MIN/MAX</th>
<th>SCFH MIN/MAX</th>
<th>FUEL</th>
<th>BTU PER HOUR (PROPANE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART NO.</td>
<td>MODEL NO.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1800470</td>
<td>RBP-43-2</td>
<td>2&quot;</td>
<td>43-2</td>
<td>E3-43 or E2-43</td>
<td>5 - 10</td>
<td>90 - 120</td>
<td>4 - 8</td>
</tr>
<tr>
<td>1800480</td>
<td>RBP-43-4</td>
<td>4&quot;</td>
<td>43-2</td>
<td>E3-43 or E2-43</td>
<td>10 - 22</td>
<td>225 - 300</td>
<td>6 - 12</td>
</tr>
<tr>
<td>1800490</td>
<td>RBP-43-6</td>
<td>6&quot;</td>
<td>43-2</td>
<td>E3-43 or E2-43</td>
<td>25 - 55</td>
<td>490 - 640</td>
<td>10 - 20</td>
</tr>
<tr>
<td>1800470</td>
<td>RBP-43-2</td>
<td>2&quot;</td>
<td>V-315-C</td>
<td>V-W-2 or V-W-3</td>
<td>5 - 10</td>
<td>90 - 120</td>
<td>4 - 8</td>
</tr>
<tr>
<td>1800480</td>
<td>RBP-43-4</td>
<td>4&quot;</td>
<td>V-315-C</td>
<td>V-W-2 or V-W-3</td>
<td>10 - 22</td>
<td>225 - 300</td>
<td>6 - 12</td>
</tr>
<tr>
<td>1800490</td>
<td>RBP-43-6</td>
<td>6&quot;</td>
<td>V-315-C</td>
<td>V-W-2 or V-W-3</td>
<td>25 - 55</td>
<td>490 - 640</td>
<td>10 - 20</td>
</tr>
</tbody>
</table>

To calculate BTU/hr using Propylene, multiply fuel gas flow by 2375.
To calculate BTU/hr using Natural Gas, multiply BTU/hour by 1000.

2393 HEATING TIP TUBES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>LENGTH</th>
<th>STYLE</th>
<th>THREAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800200</td>
<td>2393-1F</td>
<td>36&quot;</td>
<td>“Curved” 70°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800210</td>
<td>2393-2F</td>
<td>28&quot;</td>
<td>“Curved” 70°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800220</td>
<td>2393-3F</td>
<td>15&quot;</td>
<td>“Curved” 70°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800230</td>
<td>2393-4F</td>
<td>10½&quot;</td>
<td>“Curved” 70°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800241</td>
<td>2393-5F</td>
<td>60&quot;</td>
<td>“Curved” 70°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800240</td>
<td>2393-1F</td>
<td>36&quot;</td>
<td>“Straight” 180°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800211</td>
<td>2393-2F</td>
<td>28&quot;</td>
<td>“Straight” 180°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800221</td>
<td>2393-3F</td>
<td>15&quot;</td>
<td>“Straight” 180°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800231</td>
<td>2393-4F</td>
<td>10½&quot;</td>
<td>“Straight” 180°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
<tr>
<td>1800206</td>
<td>2393-5F</td>
<td>48&quot;</td>
<td>“Straight” 180°</td>
<td>1⁄4&quot; - 25(M)</td>
</tr>
</tbody>
</table>

2393 TIP TUBES
1⁄4" - 25(M) X 1⁄4" - 25(M)

For additional heating tip adaptors and instructions refer to page 101 or page 127.
**DESCRIPTION**

Model 6290 alternate fuel specialty tips are designed to allow additional performance from our straight cutting torches. Applications like heating, rivet washing, rivet cutting, gouging and extended reach cutting can be performed using standard cutting torches eliminating the need for separate handles, tip tubes etc. Tips are designed for use with alternate fuels. Especially useful where storage space is at a premium.

**DETAILS**

**Duty:** Heavy

**Where used:** Metal heating, beam cutting and weld repair

**Related items:** 62-5F, 62-SSSF and 98-6 torches

**HEATING, CUTTING AND WASHING TIPS**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>APPLICATION</th>
<th>O(_2) PSIG</th>
<th>O(_2) FLOW SCFH</th>
<th>EQUAL PRESSURE</th>
<th>INJECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>9100516</td>
<td>H-62-1P</td>
<td>HEATING TIP</td>
<td>45</td>
<td>160*</td>
<td>5 - 15</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>9100518</td>
<td>H-62-2P</td>
<td>HEATING TIP</td>
<td>50</td>
<td>220*</td>
<td>5 - 15</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>9100520</td>
<td>H-62-3P</td>
<td>HEATING TIP</td>
<td>55</td>
<td>340*</td>
<td>5 - 15</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>1501090</td>
<td>6290-NFFR</td>
<td>RIVET CUTTING</td>
<td>45</td>
<td>–</td>
<td>–</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>1501100</td>
<td>6290-NFW</td>
<td>RIVET WASHING</td>
<td>50</td>
<td>–</td>
<td>–</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>1501110</td>
<td>6290-8NFW</td>
<td>RIVET WASHING</td>
<td>50</td>
<td>–</td>
<td>–</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>1501054</td>
<td>6290-ONNFL</td>
<td>8&quot; CUTTING TIP</td>
<td>80</td>
<td>75 - 100</td>
<td>5 - 15</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>1501055</td>
<td>6290-1NFFL</td>
<td>8&quot; CUTTING TIP</td>
<td>80</td>
<td>100 - 150</td>
<td>5 - 15</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>1501053</td>
<td>6290-2NFFL</td>
<td>8&quot; CUTTING TIP</td>
<td>80</td>
<td>175 - 200</td>
<td>5 - 15</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>1501051</td>
<td>6290-4NFFL</td>
<td>8&quot; CUTTING TIP</td>
<td>80</td>
<td>350 - 400</td>
<td>5 - 15</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
<tr>
<td>1501052</td>
<td>6290-6NFFL</td>
<td>8&quot; CUTTING TIP</td>
<td>80</td>
<td>500 - 650</td>
<td>5 - 15</td>
<td>4 oz. 2 lbs. PRESSURE</td>
</tr>
</tbody>
</table>

**PROPANE GOUGING TIPS**

<table>
<thead>
<tr>
<th>GOUGE SIZE</th>
<th>MODEL NO.</th>
<th>PART NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8&quot; - 1/4&quot; WIDE</td>
<td>6290-1GG</td>
<td>1500940</td>
</tr>
<tr>
<td>1/4&quot; - 3/4&quot; WIDE</td>
<td>6290-2GG</td>
<td>1500950</td>
</tr>
</tbody>
</table>

**PROPYLENE GOUGING TIPS**

<table>
<thead>
<tr>
<th>GOUGE SIZE</th>
<th>MODEL NO.</th>
<th>PART NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8&quot; - 1/4&quot; WIDE</td>
<td>6290-1GGM</td>
<td>1500944</td>
</tr>
<tr>
<td>1/4&quot; - 3/4&quot; WIDE</td>
<td>6290-2GGM</td>
<td>1500954</td>
</tr>
<tr>
<td>1/4&quot; - 3/4&quot; WIDE</td>
<td>6290-3GGM</td>
<td>1500964</td>
</tr>
</tbody>
</table>

For maximum performance use straight torch
NOT FOR USE WITH ACETYLENE.

* Fuel SCFH - Oxy: Fuel ratio at neutral should be - Natural Gas 1.5:1, Propane 3.7:1, Propylene: 2.6:1
# Acetylene Specialty Tips for Harris Cutting Torches

## Description
Acetylene tips are made available to add more versatility to the Harris cutting torch line. Specialty tips allow the use of existing torches to heat gouge and rivet cut without the need to purchase additional equipment.

## Details
- **Duty:** Heavy
- **Where used:** Metal heating, gouging, rivet cutting

### Model Shown:
- 6290-G, -HA & -R

### Table: Acetylene Specialty Tips

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>APPLICATION</th>
<th>O₂ PSIG</th>
<th>O₂ FLOW SCFH</th>
<th>FUEL PSIG</th>
<th>Equal Pressure</th>
<th>Fuel SCFH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500910</td>
<td>6290-1G</td>
<td>GOUGE - 1/8&quot; - 1/4&quot;</td>
<td>35</td>
<td>-</td>
<td>5 - 15</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1500920</td>
<td>6290-2G</td>
<td>GOUGE - 3/16&quot; - 3/8&quot;</td>
<td>50</td>
<td>-</td>
<td>5 - 15</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1500930</td>
<td>6290-3G</td>
<td>GOUGE - 1/4&quot; - 1/2&quot;</td>
<td>50</td>
<td>-</td>
<td>5 - 15</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1501290</td>
<td>6290-R</td>
<td>RIVET CUTTING</td>
<td>45</td>
<td>-</td>
<td>5 - 15</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1800495</td>
<td>6290-1HA</td>
<td>HEATING</td>
<td>12</td>
<td>90</td>
<td>5 - 15</td>
<td>28 ***</td>
<td></td>
</tr>
<tr>
<td>1800496</td>
<td>6290-2HA</td>
<td>HEATING</td>
<td>14</td>
<td>170</td>
<td>5 - 15</td>
<td>40 ***</td>
<td></td>
</tr>
</tbody>
</table>

*For maximum performance Harris recommends the use of tips only with straight cutting torches.

**6290-HA cannot be used with "V" Series torches.

*** Estimated Maximum
CAN'T FIND THE BRAZING EQUIPMENT YOU LIKE?
CHECK OUT OUR CUSTOM BRAZING EQUIPMENT SOLUTIONS
Contact your Harris Products Group Representative in your area: 1-800-241-0804

MODEL 50-10P PISTOL TORCH
It is an ergonomically designed, full featured Model 50-10P automatic torch with a pistol grip. The new design retains all the features of the original Model 50-10P but with greater operator comfort to help eliminate the unnatural hand position that causes fatigue and often results in carpal tunnel syndrome.

The original Harris Model 50-10P automatic torch handles feature a unique gas control system to reduce operating cost and improve safety and convenience. The thumb operated on/off gas control and adjustable pilot light eliminates relighting and flame readjustment each time the torch is used. The on/off feature can be used for welding, brazing and heating.

MODEL 19-6AP PISTOL TORCH
The newly designed Model 19-AP Pistol torch is an ergonomically designed, light weight, front valve medium duty torch for welding, brazing and heating. The pistol grip, “A” class hose fittings and light weight are for operator comfort and to help eliminate the unnatural hand position that causes fatigue and often results in carpal tunnel syndrome.

The Model 19-6AP also features silver brazed twin tube construction and front valves for more precise control while welding, soldering and brazing. The 19-6AP is suitable for use with any fuel gas.

CUSTOM BRAZING TIPS TO MEET YOUR SPECIFICATIONS
Contact your Harris Products Group Representative in your area: 1-800-241-0804
MACHINE CUTTING TORCHES

NOBODY IN THE INDUSTRY KNOWS MORE ABOUT OXY-FUEL MACHINE CUTTING THAN HARRIS. WHETHER YOU ARE SHAPE CUTTING, STRIP CUTTING, OR BEVELING, HARRIS MACHINES TORCHES ALLOW YOU TO DO IT BETTER, FASTER, AND MORE ECONOMICALLY.

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QUICK SELECTION GUIDE

MACHINE CUTTING TORCHES

98-6F MODEL
HEAVY DUTY, ALTERNATE FUEL
p.144

98-6E MODEL
HEAVY DUTY, ACETYLENE
p.144

80 MODEL
JUMBO, HIGH CAPACITY, ALT FUEL
p.146

524 MODEL
ALTERNATE FUEL MACHINE CUTTING TORCH
p.146

622 MODEL
TRAKMAX™
PORTABLE CUTTING AND WELDING TRACTOR

TURN TO THE PROS – TURN TO HARRIS.
To learn more about the most complete line of industrial grade tools in the world, visit us online.

www.harrisproductsgroup.com

Orders: 1.800.733.4043
MODEL 98 MACHINE TORCHES
Harris machine cutting torches are designed to handle all types of machine cutting applications. Rugged and dependable, these torches provide up to 15” cutting capacity. The Model 98 torches are available in two-hose and three-hose design for all fuel gases.

MODEL 98 FEATURES
- Solid head for maximum strength
- Standard 1¾” diameter barrel
- Use with 6290 high speed machine cutting tips
- Equipped with Flash Guard® check valves
- Rack supplied is 32 pitch (10.12 teeth/in.)

98-6TAFR-32
THREE-HOSE TORCHES
- Quick opening cutting oxygen valve for immediate full flow
- Separate preheat and cutting oxygen valves for high and low preheat control
- Cutting capacity to 15”
- 98-6 torches supplied with check valves on preheat oxygen and preheat fuel

MODEL SHOWN:
98-6TAFR-32

98-6FR-32
TWO-HOSE TORCHES
- Cutting capacity to 8”
- 98-6 torches supplied with check valves on preheat oxygen and preheat fuel

MODEL SHOWN:
98-3TFR-32

98-3TFR-32
THREE-HOSE TORCHES
- Three-hose valveless design for pipe beveling, multiple beveling and similar applications
- Cutting capacity to 15”

MODEL SHOWN:
98-6FR-32

BV-98-2 Beveling Head
P/N: 1200124
Increases speed of quality bevel cuts. Preheat tip swivels for either left or right travel. Equipped with 1390-3H heating tip. Use with natural gas or propane 6290 tips (not included).

S-98-C Adjustable Tip Adapter
P/N: 1200080
Adjust tip to any angle without moving the torch. Use with any 6290 tips (not included).

Model TH-98
Adjustable Twin Tip Holder
P/N: 1200090
For making two cuts simultaneously with one torch. Adjust from 1½” to 12” width. Use with any 6290 tips (not included).

HAVING THE RIGHT TOOLS FROM HARRIS WILL RESULT IN A JOB WELL DONE, EVERY TIME
**ALTERNATE FUEL MACHINE CUTTING TORCH**

**DESCRIPTION**
The Model 98-6F machine cutting torch features a “F” or low pressure type injector mixer for maximum performance using alternate fuels. Model 98 three-hose machine cutting torches have a cutting capacity of 15". Two-hose 98-6 torches have a barrel diameter of 13/8" with a 32 pitch, 10.12 TPI rack that will fit any industry standard torch holder. Model 98 10" barrel torches have a cutting lever and 18" barrel torches have a separate valve knob to actuate the cutting oxygen. The 98-6F is also available in a three-hose valveless design for pipe beveling and multiple torch beveling.

**DETAILS**
- **Capacity:** 2 hose - 8"; 3 hose - 15"
- **Mixer Type:** "F" or low pressure injector
- **Duty:** Heavy
- **Length:** 10", 18" and 5½"
- **Certifications:** UL® listed
- **Where used:** Straight and contour machine cutting
- **Related Items:** BV-98-2 P/N: 1200124
  S-98-C P/N: 1200080
  TH-98 P/N: 1200090

**RECOMMENDED TIP STYLES**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>STYLE</th>
<th>CUTTING VALVE TYPE</th>
<th>BARREL LENGTH</th>
<th>WEIGHT (LBS.)</th>
<th>ACETYLENE-H₂</th>
<th>ALTERNATE FUELS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1101455</td>
<td>98-6FR-32</td>
<td>2 Hose</td>
<td>Lever</td>
<td>10&quot;</td>
<td>3.3</td>
<td></td>
<td>6290 VVC</td>
</tr>
<tr>
<td>1101465</td>
<td>98-6TFR-32</td>
<td>3 Hose</td>
<td>Knob</td>
<td>10&quot;</td>
<td>3.3</td>
<td></td>
<td>6290 VVCU</td>
</tr>
<tr>
<td>1101475</td>
<td>98-6TAFR-32</td>
<td>3 Hose</td>
<td>Knob</td>
<td>18&quot;</td>
<td>4.2</td>
<td></td>
<td>6290 VVCP</td>
</tr>
<tr>
<td>1100231</td>
<td>98-3TFR-32</td>
<td>3 Hose</td>
<td>None</td>
<td>5½&quot;</td>
<td>2.2</td>
<td></td>
<td>66290 VVCM</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas. NOT FOR USE WITH ACETYLENE.

**ACETYLENE MACHINE CUTTING TORCH**

**DESCRIPTION**
The Harris Model 98-6E machine cutting torch features an “E” or positive equal pressure mixer for all fuel gases. Harris Model 98-6 three hose cutting torches have a cutting capacity of 15" and two hose torches cut to 8". All machine torches have a barrel diameter of 13/8" and 32 pitch, 10.12 TPI rack that will fit any industry standard torch holder. Model 98 10" barrel torches have a cutting lever and 18" barrel torches have a separate valve knob to actuate the cutting oxygen.

**DETAILS**
- **Capacity:** 2 hose - 8"; 3 hose - 15"
- **Mixer Type:** "E" or positive pressure
- **Duty:** Heavy
- **Length:** 10"-18"
- **Certifications:** UL® listed
- **Where used:** Straight and contour cutting
- **Related Items:** S-98-C – P/N: 1200080
  TH-98 – P/N: 1200090

**RECOMMENDED TIP STYLES**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>STYLE</th>
<th>CUTTING VALVE TYPE</th>
<th>BARREL LENGTH</th>
<th>WEIGHT (LBS.)</th>
<th>ACETYLENE-H₂</th>
<th>ALTERNATE FUELS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1101425</td>
<td>98-6ER-32</td>
<td>2 Hose</td>
<td>Lever</td>
<td>10&quot;</td>
<td>3.3</td>
<td></td>
<td>6290</td>
</tr>
<tr>
<td>1101435</td>
<td>98-6TER-32</td>
<td>3 Hose</td>
<td>Knob</td>
<td>10&quot;</td>
<td>3.3</td>
<td></td>
<td>6290AC</td>
</tr>
<tr>
<td>1101445</td>
<td>98-6TAFR-32</td>
<td>3 Hose</td>
<td>Knob</td>
<td>18&quot;</td>
<td>4.2</td>
<td></td>
<td>6290S</td>
</tr>
<tr>
<td>1100231</td>
<td>98-3TFR-32</td>
<td>3 Hose</td>
<td>None</td>
<td>5½&quot;</td>
<td>2.2</td>
<td></td>
<td>66290 VVCM</td>
</tr>
</tbody>
</table>

*Recommended for Acetylene.
**MACHINE CUTTING GUIDE**

**CORRECT CUTS**

**PERFECT CUT** - Regular surface with slightly sloping drag lines indicates a perfect cut. A slight amount of scale at the top of the cut is caused by preheat flames and is easily removed. This surface can be used for many purposes without machining.

**PRODUCTION CUT** - Moderately sloping drag lines and a reasonably smooth surface characterize a production cut. For production operations a cut of this type represents the best combination of quality and economy.

**DIRTY TIP** - Dirt or scale in the tip will deflect the oxygen stream and cause one or more of the following problems: Excess slag on the steel, an irregular cut surface, pitting and undercutting.

**EXTREMELY FAST** - Rake angle of drag lines shows extremely fast cutting speed. Top edge is good and cut face is smooth. However, slag adheres to the bottom side and there is danger of losing the cut. Not enough time is allowed for slag to blow out of the kerf. Cut face often slightly concave.

**EXTREMELY SLOW** - Pressure marks indicate too much oxygen for cutting conditions. Either the tip is too big, cutting oxygen pressure too high, or speed is too slow as shown by a rounded or beaded top edge as in this case. As oxygen volume nears correct proportions, pressure marks appear closer to the bottom edge until they finally disappear.

**SLIGHTLY TOO FAST** - Drag lines incline backwards, but a "drop cut" is still attained. Top edge is good. Cut face is smooth and slag free. Quality is satisfactory for most production work.

**SLIGHTLY TOO SLOW** - Cut is high quality although there is some surface roughness caused by vertical drag lines. Top edge is usually slightly beaded. Quality is generally acceptable, faster speeds are more desirable.

**TOO CLOSE** - Grooves and deep drag lines caused by unstable cutting action. Part of preheat cone burns inside kerf where normal gas expansion deflects oxygen cutting stream.

**TOO HIGH** - Top edge is beaded or rounded, cut face is not smooth and often is slightly beveled when preheat effectiveness is partially lost due to the tip being held too high. Cutting speed is reduced because of the danger of losing the cut.

**TOO MUCH CUTTING OXYGEN** - Pressure marks are caused by too much cutting oxygen. When more oxygen is supplied than can be consumed in oxidation, the remainder goes around the slag creating gouges, or pressure marks. Correct this fault by lowering cutting oxygen pressure, increasing speed, or using a smaller tip. As oxygen volume nears correct proportion, pressure marks appear closer to the bottom edge until they finally disappear.

**TOO HOT PREHEAT** - Rounded top edge caused by too much preheat. Excess preheat does not increase cutting speed, it only wastes gases.

**WHAT TO LOOK FOR IN BEVEL CUTTING**

**GOOD QUALITY** - Top edge is excellent and cut face extremely smooth. Slag should be easy to remove and the cut part dimensionally accurate. Cutting speed is slower than vertical cutting because preheat effect is partially deflected from plate.

**POOR QUALITY** - Gouging is the most common fault. It is caused by either a speed that is too fast or preheat flames that are too mild. Another fault is a rounded top edge, caused by too much preheat, indicating excessive gas consumption.
DESCRIPTION

The 524 series machine torch is used in all types of applications from general to heavy cutting. The primary design feature of the 524 torch series is positive pressure tip mix design. This design allows for greater flow rates while enhancing safety and maximizing versatility. Torches can be used with alternate fuels (above 5 psi) and are available in two hose and three hose models. Two hose models have a cutting range up to 15 inches, while three hose models have a cutting range up to 30". It has a standard barrel diameter of 1 3/8" and a 32 pitch, 10.12 TPI rack.

DETAILS

Capacity: 30"
Mixer Type: "E" equal or positive pressure
Duty: Heavy
Length: 8"-30"
Where used: Heavy straight or contour cutting

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>STYLE</th>
<th>CUTTING VALVE TYPE</th>
<th>BARREL LENGTH</th>
<th>WEIGHT (LBS.)</th>
<th>FUEL TYPE</th>
<th>CUT CAPACITY</th>
<th>TIP STYLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC1HS524R</td>
<td>3 Hose</td>
<td>1/4 Turn Ball</td>
<td>20&quot;</td>
<td>6.5 lbs</td>
<td>Alternate</td>
<td>30&quot;</td>
<td>136/139/140</td>
</tr>
<tr>
<td>QC1HS524RB-2</td>
<td>2 Hose</td>
<td>B</td>
<td>20&quot;</td>
<td>5.5 lbs</td>
<td>Alternate</td>
<td>15&quot;</td>
<td>136/139/140</td>
</tr>
<tr>
<td>QC1HS524RS-2</td>
<td>3 Hose</td>
<td>1/4 Turn Ball</td>
<td>10&quot;</td>
<td>4 lbs</td>
<td>Alternate</td>
<td>30&quot;</td>
<td>136/139/140</td>
</tr>
<tr>
<td>QC1HS524RRSB-2</td>
<td>2 Hose</td>
<td>B</td>
<td>10&quot;</td>
<td>3.5 lbs</td>
<td>Alternate</td>
<td>15&quot;</td>
<td>136/139/140</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas

ALTERNATE FUEL MACHINE CUTTING TORCH

DESCRIPTION

The Model 80 Jumbo Machine Cutting Torch has a recommended cutting range of 8" to 30". (See P. 117 for Model 8090 tips) It operates on fuel pressures of 10-15 PSIG. It features a solid head for maximum strength, and requires ½" oxygen cutting hose with "C" or 7/8" - 14 connections. Equipped with standard barrel diameter of 1 3/8" and a 32 pitch, 10.12 TPI rack.

DETAILS

Capacity: 30"
Mixer Type: "E" equal or positive pressure
Duty: Heavy
Length: 8"-30"
Where used: Heavy straight or contour cutting

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>STYLE</th>
<th>HOSE FITTING</th>
<th>CUTTING VALVE TYPE</th>
<th>BARREL LENGTH</th>
<th>WEIGHT (LBS.)</th>
<th>FUEL TYPE</th>
<th>CUT CAPACITY</th>
<th>TIP STYLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100010</td>
<td>80</td>
<td>3 Hose, no rack</td>
<td>Lever</td>
<td>8090</td>
<td>6.5 lbs</td>
<td>Alternate</td>
<td>30&quot;</td>
<td>136/139/140</td>
</tr>
<tr>
<td>1100030</td>
<td>80-R</td>
<td>3 Hose, w/ rack</td>
<td>Lever</td>
<td>8090</td>
<td>5.5 lbs</td>
<td>Alternate</td>
<td>15&quot;</td>
<td>136/139/140</td>
</tr>
</tbody>
</table>

*Propylene or propane-based fuels and natural gas

MACHINE CUTTING TORCHES

Orders: 1.800.733.4043
www.harrisproductsgroup.com
TRAKMAX™ TRACTOR

DESCRIPTION
The Trakmax™ features all metal construction including steel, aluminum, brass, and stainless steel. It has a welded steel, uni-body construction and a frame that is integral to the design of the machine. Its stainless steel drive wheels and casters are corrosion and abrasion resistant resulting in longer lasting wheels. The large diameter drive wheels are knurled for positive traction. The caster wheels can be locked into position in-line with the drive wheels for track free straight line cutting or left free wheeling for circles.

DETAILS
Cutting Capacity: 30"/762 mm* (with appropriate torch equipment)
Weight: 32 lbs/14.5 kg. (Tractor Only)
Length: 15" / 381 mm
Height: 6 3/8" / 161.92 mm
Width: 7 ¼ / 184.15 mm
Circle Cutting Range: 2 - 96" / 50.8 - 1371.6 mm with optional radius rod kit

LBS. (KG)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WEIGHT LBS. (KG)</th>
<th>CARRYING LOAD MAXIMUM LBS.</th>
<th>SPEED RANGE IPM</th>
<th>POWER REQUIREMENTS</th>
<th>STANDARD PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC2SCM1000</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-40/0-110</td>
<td>120 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Portable track machine</td>
</tr>
<tr>
<td>QC2SCM2500</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-40/0-110</td>
<td>120 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine and standard rigging kit (cross slide &amp; 24&quot; gear rack, torch holder, connecting block, 3' hose set, flippy style hose block)</td>
</tr>
<tr>
<td>QC2SCM2502</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-40/0-110</td>
<td>120 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine and standard rigging kit (cross slide &amp; 24&quot; gear rack, torch holder, connecting block, 3' hose set, flippy style hose block)</td>
</tr>
<tr>
<td>QC2SCM2503</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-40/0-110</td>
<td>120 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine and standard rigging kit (cross slide &amp; 24&quot; gear rack, torch holder, connecting block, 3' hose set, flippy style hose block)</td>
</tr>
<tr>
<td>QC2SCM2504</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-40/0-110</td>
<td>120 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine and standard rigging kit (cross slide &amp; 24&quot; gear rack, torch holder, connecting block, 3' hose set, flippy style hose block)</td>
</tr>
<tr>
<td>QC2SCM2505</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-40/0-110</td>
<td>120 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine, welding/plasma rigging kit (cross slide &amp; 24&quot; gear rack, welding/plasma holder, connecting block (staggered), extension block (4&quot; - ¾&quot;F x ¾&quot;M) and 6ft track, cable guide clamp and torch holder</td>
</tr>
</tbody>
</table>

INTERNATIONAL (220VAC)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>WEIGHT LBS. (KG)</th>
<th>CARRYING LOAD MAXIMUM LBS.</th>
<th>SPEED RANGE IPM</th>
<th>POWER REQUIREMENTS</th>
<th>STANDARD PACKAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC2SCM2518</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-350/0-100</td>
<td>220 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Portable track machine</td>
</tr>
<tr>
<td>QC2SCM2520</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-350/0-100</td>
<td>220 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine and standard rigging kit (cross slide &amp; 24&quot; gear rack, torch holder, connecting block, 3' hose set, flippy style hose block)</td>
</tr>
<tr>
<td>QC2SCM2522</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-350/0-100</td>
<td>220 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine and standard rigging kit (cross slide &amp; 24&quot; gear rack, torch holder, connecting block, 3' hose set, flippy style hose block)</td>
</tr>
<tr>
<td>QC2SCM2523</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-350/0-100</td>
<td>220 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine and standard rigging kit (cross slide &amp; 24&quot; gear rack, torch holder, connecting block, 3' hose set, flippy style hose block)</td>
</tr>
<tr>
<td>QC2SCM2524</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-350/0-100</td>
<td>220 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine and standard rigging kit (cross slide &amp; 24&quot; gear rack, torch holder, connecting block, 3' hose set, flippy style hose block)</td>
</tr>
<tr>
<td>QC2SCM2525</td>
<td>32lbs. (14.5 kg)</td>
<td>500</td>
<td>*0-350/0-100</td>
<td>220 VAC, 1 AMP (Maximum) 50/60 HZ, 1PH</td>
<td>Includes portable track machine, welding/plasma rigging kit (cross slide &amp; 24&quot; gear rack, welding/plasma holder, connecting block (staggered), extension block (4&quot; - ¾&quot;F x ¾&quot;M) and 6ft track, cable guide clamp and torch holder</td>
</tr>
</tbody>
</table>

* High/low range

Torch packages do not include tips.

Orders: 1.800.733.4043
# Machine Cutting Accessories

## Diamond Drive Gear Rack
**Model Shown:** P/N: QC2SCM2630

<table>
<thead>
<tr>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC2SCM2630</td>
<td>Gear, 524 30&quot; rack</td>
</tr>
<tr>
<td>QC2SCM2648</td>
<td>Gear, 524 48&quot; rack</td>
</tr>
<tr>
<td>QC2SCM2650</td>
<td>Gear, 524 24&quot; rack</td>
</tr>
</tbody>
</table>

## Hose Blocks
**Model Shown:** P/N: QC2SCM2655

<table>
<thead>
<tr>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC2SCM2655</td>
<td>Hose block, 2 hose with flip-valve</td>
</tr>
<tr>
<td>QC2SCM2660</td>
<td>Hose block, 3 hose, without valves</td>
</tr>
<tr>
<td>QC2SCM2661</td>
<td>Hose block, 3 hose &amp; flip valves</td>
</tr>
<tr>
<td>QC2SCM2662</td>
<td>Hose block, 3 hose rack mount</td>
</tr>
<tr>
<td>QC2SCM2663</td>
<td>Hose block, 3 hose with flip-valves and rack mount</td>
</tr>
</tbody>
</table>

## Welding/Plasma Holder*
**P/N:** QC2SCM0815

Universal holder that securely clamps most shapes, brands and or types of plasma and MIG torches.

## Torch Holder
**P/N:** QC2SCM0800

For mounting 1 3/8" diameter machine cutting torches and controlling the vertical movement of the torch.

## Counter Weight
**P/N:** QC2SCM2700

May be attached to opposite side of gear rack when off balance loading of equipment is encountered such as when running two torches on one side. Standard operation does not require counterweights.

## Connecting Block*
**P/N:** QC2SCM0518

Attaches torch or welding/plasma holders to gear rack.

Connections: 3/4" dia. (F) x 3/4" dia. (F)

## Extension Block (4")*
**P/N:** QC2SCM0521

Attaches welding/plasma holder to connecting block.

Connections: 3/4" dia. (F) x 3/4" dia. (M)

## Radius Rod Kit
**P/N:** QC2SCM2710

18" radius bar, sliding pivot pin – cuts 2 – 54" diameter circles. For larger diameter circle cutting contact Harris Products Group.

## 50' 3/8" T Grade Hose
**P/N:** 4300847

For all fuel gases

## 100' 3/8" T Grade Hose
**P/N:** 4300848

For all fuel gases

## 3' Twin T-Grade Hose
**P/N:** QC2SCM0400

3' twin, grade T, hose to connect the torch to the hose block

## Universal* Connectible Track System

<table>
<thead>
<tr>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC2SCM2600</td>
<td>Track, 6'</td>
</tr>
<tr>
<td>QC2SCM2601</td>
<td>Track, 7.5'</td>
</tr>
<tr>
<td>QC2SCM2602</td>
<td>Track, 9'</td>
</tr>
<tr>
<td>QC2SCM2603</td>
<td>Track, 12'</td>
</tr>
</tbody>
</table>

*Compatible with other domestic track systems

## Power Cord, with connector and plug

<table>
<thead>
<tr>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC2SCM2735</td>
<td>Cord, 25' TRC 622 power</td>
</tr>
<tr>
<td>QC2SCM2737</td>
<td>Cord, 50' TRC 622 power</td>
</tr>
<tr>
<td>QC2SCM2739</td>
<td>Cord, 100' TRC 622 power</td>
</tr>
</tbody>
</table>

*Component of welding/plasma rigging kit (P/N: QC2SCM2570)
HARRIS OFFERS THREE STYLES OF KITS.

HARRIS Combination Kits are equipped with a handle, cutting attachment, welding/brazing mixer and cylinder regulators. These kits contain all the basic equipment necessary to cut, weld/braze and heat. Choose kits with or without accessories such as hose, striker, goggles/glasses, tool bag, etc. Deluxe kits include a selection of welding/brazing tips and “Plus” kits include a multi-flame heating tip. Combination kits are available for use with acetylene specific, all gases or alternate fuels (LPG). Alternate fuel combination kits generally do not include a welding/brazing mixer or tips. These kits are available in both Harris® “Classic” and “V”-Series® designs.

Cutter Pac® Kits are equipped with a straight cutting torch and cylinder regulators. The Cutter Pac® kits are specifically for cutting and specialty cutting/heating applications. Order the Cutter Pac® Kits by specific gas type (acetylene, propane, propylene, LPG, or all fuel gases). These kits are available in both Harris® “Classic” and “V”-Series® designs.

Port-A-Torch® Kits are generally combination-style kits including a cylinder tote putting an emphasis on portability and convenience. All Port-A-Torch® Kits come equipped with torch handle, cutting attachment, mixer, regulators, hose and other accessories including cutting and welding tips. They can be ordered with or without cylinders.
COMBINATION KITS—ALL FUEL GASES

DESCRIPTION
This combination Pipeliner® Classic standard kit contains all the major components needed for cutting, welding, brazing and heating using all fuel gases. As supplied, the outfit is capable of cutting up to a 1” plate and welding up to a 1/8” plate. The outfit can also cut up to a 5” plate and weld up to a 1” plate with optional larger tips.

DETAILS
- Capacity: Cuts to 1” (25.4mm) plate with supplied tips. Cuts to 5” (127.0mm) plate with larger tips.
- Welds to 1/8” (3.2mm) plate with supplied tips. Welds to 1” (25.4mm) plate with larger tips.
- Regulator Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- Mixer Type: Equal pressure
- Handle equipped with: FlashGuard® Check Valves
- Warranty: 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/BRAZING TIPS</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>

COMBINATION KITS—ALL FUEL GASES

DESCRIPTION
This combination Steelworker® Classic deluxe kit contains all the major components needed for cutting, welding, brazing and heating using all fuel gases. As supplied, the outfit is capable of cutting up to a 1” plate and welding up to a 1/8” plate. The outfit can also cut up to a 5” plate and weld up to a 1/2” plate with optional larger tips.

DETAILS
- Capacity: Cuts to 1” (25.4mm) plate with supplied tips. Cuts to 5” (127.0mm) plate with larger tips.
- Welds to 1/8” (3.2mm) plate with supplied tips. Welds to 1” (25.4mm) plate with larger tips.
- Duty: Medium
- Gauges: 2.5” Steel
- Regulator Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- Mixer Type: Injector
- Handle equipped with: FlashGuard® Check Valves
- Warranty: 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/BRAZING TIPS</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>
COMBINATION KITS-ALL FUEL GASES

DESCRIPTION
Expert® Cutting, Welding and Brazing Kits are available with or without Hose Striker, Goggle & Tool Bag

DETAILS
Capacity: Cuts to 1" (25.4mm) plate with supplied tips. Cuts to 4" (101.6mm) plate with larger tips. Welds to 1/8" (3.2mm) plate with supplied tips. Welds to 1/2" (12.7mm) plate with larger tips.

Regulator Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Mixer Type: Equal pressure
Handle equipped with: FlashGuard® Check Valves
Warranty: 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/BRAZING TIPS</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
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<tr>
<td>4403229</td>
<td>85601-300 DLX</td>
<td>85</td>
<td>D-85</td>
<td>6290-1AC</td>
<td>72-3</td>
<td>23A90-5</td>
<td>601-80-540</td>
<td>601-15-300</td>
<td>12.9 lbs./5.85 kg.</td>
</tr>
</tbody>
</table>
COMBINATION KITS-ALTERNATE FUEL GASES

DESCRIPTION
This combination Pipeliner® Classic deluxe kit contains all the major components needed for cutting, welding, brazing and heating using alternate fuels/propane. With supplied propane tip, this outfit is capable of cutting up to a 1" plate. The outfit can also cut up to a 5" plate with optional larger tips.

DETAILS
Capacity: Cuts to 1" (25.4mm) plate with supplied tips. Cuts to 5" (127.0mm) plate with larger tips.
Duty: Heavy
Gauges: 2.5" Brass
Regulator Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

Mixer Type: Equal pressure
Handle equipped with: FlashGuard® Check Valves
Warranty: 7 years - Regulator; 1 year - All other components

MODEL SHOWN:
43425F-510P DLX

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4403240</td>
<td>43425F-510P DLX</td>
<td>43-2</td>
<td>–</td>
<td>6290-1NX</td>
<td>49-3F</td>
<td>425-125-540 425-50-510P</td>
<td>• Goggles 20' x 1/4&quot; &quot;T&quot; Hose • Striker • Tool Bag • Tip</td>
<td>15.8 lbs./ 7.08 kg.</td>
</tr>
</tbody>
</table>

*Supplied with Propane/Natural Gas or Propylene tips.

CLASSIC COMBINATION PIPELINER® ALL FUELS/PROPANE
CLASSIC COMBINATION STEELWORKER® ALL FUELS/PROPANE

COMBINATION KITS-ALTERNATE FUEL GASES

DESCRIPTION
This combination Pipeliner® Classic deluxe kit contains all the major components needed for cutting using alternate fuels/propane. With supplied propane tip, this outfit is capable of cutting up to a 1" plate. The outfit can also cut up to a 4" plate with optional larger tips.

DETAILS
Capacity: Cuts to 1" (25.4mm) plate with supplied tips. Cuts to 4" (101.6mm) plate with larger tips.
Duty: Medium
Gauges: 2.5" Steel
Regulator Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Mixer Type: Equal pressure
Handle equipped with: FlashGuard® Check Valves
Warranty: 7 years - Regulator; 1 year - All other components

MODEL SHOWN:
8525FGX-510P DLX

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>

*Supplied with Propane/Natural Gas or Propylene tips.
COMBINATION KITS - ALTERNATE FUEL GASES

DESCRIPTION
This combination Pipeliner® Classic deluxe kit contains all the major components needed for cutting using alternate fuels/propane. With supplied propylene tip, this outfit is capable of cutting up to a 1” plate. The outfit can also cut up to a 5” plate with optional larger tips.

DETAILS
Capacity: Cuts to 1” (25.4mm) plate with supplied tips. Cuts to 5” (127.0mm) plate with larger tips.
Regulator Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Handle equipped with: FlashGuard® Check Valves
Warranty: 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>OXYGEN</th>
<th>FUEL</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>

*Supplied with Propane/Natural Gas or Propylene tips.
CUTTER PAC®

Cutter Pac® Kits are equipped with a straight cutting torch and cylinder regulators. The Cutter Pac® kits are specifically for cutting and specialty cutting/heating applications. Order the Cutter Pac® Kits by specific gas type (acetylene, propane, propylene, LPG, or all fuel gases). These kits are available in both Harris® “Classic” and “V”-Series® designs.

CUTTER PAC® - ACETYLENE

DESCRIPTION
This Cutter Pac® Classic kit contains all the major components needed for cutting and special applications using acetylene gas. This outfit is capable of cutting up to 12" plate with optional larger tips. (Sold Separately)

DETAILS
Capacity: Cuts to 12" (304.8mm) plate with optional larger tips. (Sold Separately)
Gauges: 2.5" Steel
Mixer Type: Equal pressure
Typical Application: Demolition, Construction, Fabrication, Shipbuilding, and Railroads
Warranty: 7 years - Regulator; 1 year - All other components

MODEL SHOWN: 6225EGX-300

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH</th>
<th>TORCH LENGTH</th>
<th>TORCH HEAD ANGLE</th>
<th>CUTTING TIP</th>
<th>REGULATORS</th>
<th>OXYGEN</th>
<th>FUEL</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>

*Includes Acetylene tip—other tips available.

CUTTER PAC® - ACETYLENE

DESCRIPTION
This Cutter Pac® Classic kit contains all the major components needed for cutting and special applications using acetylene gas. With supplied acetylene tip, this outfit is capable of cutting up to 1" plate, and can cut up to 12" plate with optional larger tips. (Sold Separately)

DETAILS
Capacity: Cuts to 1" (25.4mm) plate with supplied tip. Cuts to 12" (304.8mm) plate with optional larger tips.
Mixer Type: Equal pressure
Typical Application: Demolition, Construction, Fabrication, Shipbuilding, and Railroads
Warranty: 7 years - Regulator; 1 year - All other components

MODEL SHOWN: 6225EGX-510

<table>
<thead>
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<th>PART NO.</th>
<th>MODEL NO.</th>
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<th>TORCH LENGTH</th>
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<th>CUTTING TIP</th>
<th>REGULATORS</th>
<th>OXYGEN</th>
<th>FUEL</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>

Orders: 1.800.733.4043
www.harrisproductsgroup.com
**DESCRIPTION**

This Cutter Pac® Classic kit contains all the major components needed for cutting and special applications using alternate fuels/propane gas. With supplied propane tip, this outfit is capable of cutting up to 1" plate, and can cut up to 12" plate with optional larger tips. (Sold Separately)

**DETAILS**

**Capacity:** Cuts to 1" (25.4mm) plate with supplied tip. Cuts to 12" (304.8mm) plate with optional larger tips.

**Mixer Type:** Injector

**Warranty:** 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH</th>
<th>TORCH LENGTH</th>
<th>TORCH HEAD ANGLE</th>
<th>CUTTING TIP*</th>
<th>REGULATORS</th>
<th>OXYGEN</th>
<th>FUEL</th>
</tr>
</thead>
</table>

*Includes Propane tip—other alternate fuel tips available.
CLASSIC PORT-A-TORCH® WITH CYLINDERS

DESCRIPTION
This Classic Port-A-Torch® deluxe kit with cylinders contains all the quality equipment needed for cutting, welding and brazing packaged in a rugged, molded plastic carrying case. The outfit is designed to carry one MC acetylene cylinder and one 20 cu. ft. oxygen cylinder. As supplied, the outfit is capable of cutting up to a 1” plate and welding up to a 1/16” plate. The outfit can also cut up to a 4” plate and weld up to a 1/2” plate with optional larger tips and an acetylene cylinder.

DETAILS
Capacity: Cuts to 1” (25.4mm) with supplied tip(s). Cuts to 4” (101.6mm) with optional larger tip(s) and acetylene cylinder.
Welds to 1/16” (1.6mm) with supplied tip(s). Welds to 1/2” (12.7mm) with optional larger tip(s) and acetylene cylinder.
Duty: Light to Medium
Gauges: 50mm ABS plastic
Mixer Type: Equal pressure
Typical Application: HVAC, maintenance, hobby arts & crafts
Warranty: 7 years - Regulator; 1 year - All other components

CLASSIC PORT-A-TORCH® WITHOUT CYLINDERS

DESCRIPTION
This Classic Port-A-Torch® deluxe kit without cylinders contains all the quality equipment needed for cutting, welding and brazing packaged in a rugged, molded plastic carrying case. The outfit is designed to carry one MC acetylene cylinder and one 20 cu. ft. oxygen cylinder. As supplied, the outfit is capable of cutting up to a 1” plate and welding up to a 1/16” plate. The outfit can also cut up to a 4” plate and weld up to a 1/2” plate with optional larger tips and an acetylene cylinder.

DETAILS
Capacity: Cuts to 1” (25.4mm) with supplied tip(s). Cuts to 4” (101.6mm) with optional larger tip(s) and acetylene cylinder.
Welds to 1/16” (1.6mm) with supplied tip(s). Welds to 1/2” (12.7mm) with optional larger tip(s) and acetylene cylinder.
Mixer Type: Equal pressure
Typical Application: HVAC, maintenance, hobby arts & crafts
Warranty: 7 years - Regulator; 1 year - All other components
**V-SERIES® COMBINATION KIT - ALL FUEL GASES**

**DESCRIPTION**
This Combination V-Series® Deluxe All Gas/Acetylene Kit contains all the major components needed for cutting, welding and brazing.

**DETAILS**
- **Capacity:** Cuts to 1" (25.4mm) plate with supplied tips. Cuts to 6" (152.4mm) plate with larger tips. Welds to 1/8" (3.2mm) plate with supplied tips. Welds to 1" (25.4mm) plate with larger tips.
- **Duty:** Heavy
- **Regulator Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Mixer Type:** Equal pressure
- **Handle equipped with:** FlashGuard® Check Valves
- **Warranty:** 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/ BRAZING TIPS</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
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</thead>
<tbody>
<tr>
<td>4403223</td>
<td>V-315C 2500-300 DLX</td>
<td>V-315C</td>
<td>V-W</td>
<td>N/A</td>
<td>V-2460</td>
<td>23A90-5</td>
<td>2500-15-300</td>
<td>• Goggles</td>
<td>13.36 lbs. / 9.01 kg</td>
</tr>
</tbody>
</table>

**V-SERIES® COMBINATION KIT - ALL FUEL GASES**

**CLASSIC V SERIES COMBINATION STEELWORKER® ALL FUELS/ACETYLENE**

**DESCRIPTION**
This Combination V-Series® Deluxe All Gas/Acetylene Kit contains all the major components needed for cutting, welding and brazing.

**DETAILS**
- **Capacity:** Cuts to 1" (25.4mm) plate with supplied tips. Cuts to 4" (101.6mm) plate with optional larger tips. Welds to 1/8" (3.2mm) plate with supplied tips. Welds to 1/2" (12.7mm) plate with optional larger tips.
- **Duty:** Medium
- **Regulator Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Mixer Type:** Equal pressure
- **Handle equipped with:** FlashGuard® Check Valves
- **Warranty:** 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/ BRAZING TIPS</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>
### V-Series® Combination Kit - All Fuel Gases

**Description**
The Model V100601-510 DLX V-Series® Expert® combination outfit is designed for use with all fuel gases. The kit includes Model 601-80-540B oxygen regulator and Model 601-15-510B fuel gas regulator. The regulators are equipped with encapsulated Teflon® seats for safety and extended service life. They include Harris’ seven year warranty. The Model V-100C medium-duty Victor® compatible torch handle is ideal for welding, brazing, heating and cutting using all fuel gases. It features silver-brazed, twin-tube construction. The Model V-W-1 mixer is a V-Series “E” equal or positive pressure mixer for welding, brazing and heating with all fuel gases. The Model V-1350 cutting attachment is a Victor® compatible handle that features brazed triangular stainless steel tubes, making it lightweight, while still providing exceptional strength. The cutting attachment is 100% compatible with Victor® Series 3 tips. Also included are the 1-V3-101 cutting tip and 23A90-5 welding/brazing tip. The accessories include goggles, striker, and a 20” x 1/4” hose all packed in a convenient tool bag. The outfit cuts up to 1” plate and welds up to 1/8” plate with supplied tips. Cuts up to 4” plate and welds up to a 1/2” plate with larger optional tips (sold separately).

### Details
- **Capacity:** Cuts to 1” (25.4mm) plate with supplied tips. Cuts to 4” (101.6mm) plate with optional larger tips.
- **Welds:** to 1/8” (3.2mm) plate with supplied tips. Welds to 1/2” (12.7mm) plate with optional larger tips.
- **Duty:** Medium
- **Regulator Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Mixer Type:** Equal pressure
- **Handle equipped with:** FlashGuard® Check Valves
- **Warranty:** 7 years - Regulator; 1 year - All other components

<table>
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<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
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<th>MIXER</th>
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<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
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<tbody>
<tr>
<td>4403232</td>
<td>V-100601-300 DLX</td>
<td>V-100C</td>
<td>V-W-1</td>
<td>1-V3-101</td>
<td>V-1530</td>
<td>23A90-5</td>
<td>601-80-540 B 601-15-300 B</td>
<td>• Goggles  • Striker  • 20” x 1/4” Hose  • Tool Bag</td>
<td>13.16 lbs. / 5.97 kg.</td>
</tr>
<tr>
<td>4403232</td>
<td>V-100601-510 DLX</td>
<td>V-100C</td>
<td>V-W-1</td>
<td>1-V3-101</td>
<td>V-1530</td>
<td>23A90-5</td>
<td>601-80-540 B 601-15-510 B</td>
<td>• Goggles  • Striker  • Tool Bag</td>
<td>11.28 lbs. / 5.12 kg.</td>
</tr>
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</table>

### V-Series® Combination Kit - All Fuel Gases

**Description**
Model V315C2500Fit-510 DLX LPG Deluxe Pipeliner® (Plus) V-Series® LPG Combination Bag Kit for Welding, Cutting and Brazing Kit with Hose Striker, Goggle & Tool Bag

**Details**
- **Capacity:** Cuts to 1” (25.4mm) plate with supplied tips. Cuts to 6” (152.4mm) plate with larger tips.
- **Regulator Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Mixer Type:** Injector
- **Warranty:** 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/ BRAZING TIPS</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
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<tbody>
<tr>
<td>4403241</td>
<td>V-315C-2500-510P DLX</td>
<td>V-315C</td>
<td>–</td>
<td>–</td>
<td>V-2460-F</td>
<td>–</td>
<td>2500-125-540 2500-50-510 P</td>
<td>• Goggles  • Striker  • Tool Bag</td>
<td>15.56 lbs. / 7.06 kg.</td>
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</tbody>
</table>
**DESCRIPTION**

A V-Series® Port-A-Torch® contains all the quality equipment needed for cutting, welding and brazing packaged in a rugged, molded plastic carrying case. The outfit is designed to carry one MC acetylene cylinder and one 20 cu. ft. oxygen cylinder. As supplied, the outfit is capable of cutting up to a 1” plate and welding up to a 1/16” plate. The outfit can cut up to a 4” plate and weld up to a 1/2” plate with larger tips and acetylene cylinder.

**DETAILS**

**Capacity:** Cuts to 1” (25.4mm) plate with supplied tips. Cuts to 4” (101.6mm) plate with optional larger tips and acetylene cylinder.

Welds up to 1/16” (1.6mm) plate with supplied tips. Welds up to 1/2” (12.7mm) plate with larger tips and acetylene cylinder.

**Duty:** Medium

**Gauges:** 50mm ABS plastic

**Regulator Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat

**Mixer Type:** Equal pressure

**Handle equipped with:** FlashGuard® Check Valves

**Warranty:** 7 years - Regulator; 1 year - All other components

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<table>
<thead>
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<th>PART NO.</th>
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<th>CUTTING ATTACHMENT</th>
<th>WELDING/ BRAZING TIPS</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
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<tbody>
<tr>
<td>4403214</td>
<td>V-100601- 200 DLX</td>
<td>100C</td>
<td>V-W-1</td>
<td>1-V3-101</td>
<td>V-1350</td>
<td>23A90-3</td>
<td>601-80-540</td>
<td>601-15-200</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Goggles  • Striker  • Acet. Cylinder Wrench  • Tool Bag</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>* (Cylinders shipped empty)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>38.30 lbs. / 17.37 kg.</td>
</tr>
</tbody>
</table>

| 4403215  | V-100601- 200 STD. | 100C | V-W-1 | 1-V3-101 | V-1350 | 23A90-3 | 601-80-540 | 601-15-200 |
|          |           |              |       |             |                     |                        |            | • Goggles  • Striker  • Acet. Cylinder Wrench  • Tool Bag |
|          |           |              |       |             |                     |                        |            | 33 lbs. / 14.97 kg. |
All Harris® Ironworker® Kits feature a thermally insulated fabric tool bag that protects valuable equipment during storage and transportation. These kits are available in both Harris® “Classic” and “V”-Series® designs. Both designs are for use with acetylene for medium, heavy or extra-heavy duty applications. Harris® “V”-Series equipment is compatible with original Victor® cutting attachments, combination handles and welding/brazing acetylene mixers. Harris “V”-Series cutting attachments use Victor®-style seats and the “V”-Series® welding/brazing mixers use Harris®-style tips and tip tubes. All Harris® Ironworker® Combination Kits include a striker, goggles and 20’ R-Grade ¼” ID hose.

**MEDIUM DUTY ACETYLENE OUTFITS**

**DESCRIPTION**
The Harris HMD medium duty welding and cutting outfit features the new Model 801 regulators and Harris’ most popular combination torch handle and cutting attachment. The Model 801 regulators include one-piece encapsulated seats for longer service life, and a 7 year warranty. The Model 85 torch handle features twin-tube, silver-brazed connections for safety and durability when welding, brazing, cutting or heating with acetylene. It is equipped with FlashGuard® check valves. The Model 72-3 cutting attachment with brazed triangular stainless steel tubes makes it light in weight while providing exceptional strength and rigidity. The ease-on cutting valve provides smoother, controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions.

**DETAILS**

**Capacity:** Cuts up to 5” plate with optional tips, welds to ½” plate with optional tips  
**Duty:** Medium  
**Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat  
**Mixer Type:** Equal pressure  
**Torch equipped with:** FlashGuard® Check Valves  
**Warranty:** 7 years - Regulator  
1 year - All other components

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/ BRAZING TIPS</th>
<th>OXYGEN</th>
<th>FUEL</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>
• Striker  
• 20’ x ¼” Hose  
• Insulated tool bag | 12.3 lbs. / 5.6 kg. |
• Striker  
• 20’ x ¼” Hose  
• Insulated tool bag | 12.3 lbs. / 5.6 kg. |
HEAVY DUTY ACETYLENE OUTFITS

DESCRIPTION
The Harris HHD heavy duty welding and cutting outfit features Harris’ most popular regulators, combination torch handle and cutting attachment. The Model 25GX regulators include large, easy-to-read, 2½” dual gauges, an ergonomic adjusting knob for precise pressure adjustments, one-piece encapsulated seats for longer service life, and a 7 year warranty. The Model 85 torch handle features twin-tube, silver-brazed connections for safety and durability when welding, brazing, cutting or heating with acetylene. It is equipped with FlashGuard® check valves. The Model 72-3 cutting attachment with brazed triangular stainless steel tubes makes it light in weight while providing exceptional strength and rigidity. The ease-on cutting valve provides smoother, controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions.

DETAILS
Capacity: Cuts up to 5” plate with optional tips, welds to ½” plate with optional tips
Duty: Heavy
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Mixer Type: Equal pressure
Torch equipped with: FlashGuard® Check Valves
Warranty: 7 years - Regulator 1 year - All other components

EXTRA HEAVY DUTY ACETYLENE OUTFITS

DESCRIPTION
The Harris HXT is an extra-heavy duty welding and cutting outfit that includes Model 450 regulators, Model 43-2 combination torch handle and 73-3 cutting attachment. The industrial duty Model 450 regulator has many of the premium features found only in high priced regulators. Its stainless steel diaphragm and Harris’ exclusive tamper-proof, self-seating safety relief device, makes it standout for heavy duty welding applications. Model 43-2 features a stainless steel connection on the head to reduce galling and features tube-within-a-tube construction for use in the most severe applications. The Model 73-3 cutting attachment with brazed triangular stainless steel tubes makes it light in weight while providing exceptional strength and rigidity. The ease-on cutting valve provides smoother, controlled starts. The forged solid brass head provides years of safe, dependable service, even under the most abusive conditions.

DETAILS
Capacity: Cuts up to 6” plate with optional tips, welds to 1” plate with optional tips
Duty: Extra-heavy
Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Mixer Type: Equal pressure
Torch equipped with: FlashGuard® Check Valves
Warranty: 7 years - Regulator 1 year - All other components
The Harris “V” Series products allow users of Victor® style cutting torches, handles, cutting attachments, mixers and tips to convert to and enjoy the benefits of genuine Harris designed gas apparatus.

### MEDIUM DUTY ACETYLENE OUTFITS

**DESCRIPTION**
The Harris VMD medium duty welding and cutting outfit features the new Model 801 regulators, VH10 combination torch handle and VH13 cutting attachment. The Model 801 regulators include one-piece encapsulated seats for longer service life, and a 7 year warranty. The Model VH10 torch handle features a tube within a tube construction. It is equipped with FlashGuard® check valves. The Model VH13 cutting attachment features an all gas in-tube mixer which allows for easy maintenance.

**DETAILS**
- **Capacity:** Cuts up to 4”/101.6 mm plate with optional tips, welds to ½”/12.7 mm plate with optional tips
- **Duty:** Medium
- **Regulator Seat:** One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
- **Mixer Type:** Equal pressure
- **Torch equipped with:** FlashGuard® Check Valves
- **Warranty:** 7 years - Regulator Warranty
  - 1 year - all other components
  - 1 year - All other components

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/BRAZING TIPS</th>
<th>OXYGEN</th>
<th>FUEL</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4400372</td>
<td>VH10C801-510 DLX</td>
<td>VH10</td>
<td>V-W-1</td>
<td>1-V3-101</td>
<td>VH13</td>
<td>23A90-5</td>
<td>801-145-540</td>
<td>801-15-510</td>
<td>• Goggles</td>
<td>12.9 lbs. / 5.7 kg.</td>
</tr>
<tr>
<td>4400375</td>
<td>VH10C801-300 DLX</td>
<td>VH10</td>
<td>V-W-1</td>
<td>1-V3-101</td>
<td>VH13</td>
<td>23A90-5</td>
<td>801-145-540</td>
<td>801-15-300</td>
<td>• Goggles</td>
<td>12.9 lbs. / 5.7 kg.</td>
</tr>
</tbody>
</table>
HEAVY DUTY ACETYLENE OUTFITS

DESCRIPTION
The Harris VHD heavy duty welding and cutting outfit features Harris’ most popular V-Series regulators, combination torch handle and cutting attachment. The Model 25GX regulators include large, easy-to-read, 2 ½” dual gauges, an ergonomic adjusting knob for precise pressure adjustments, one-piece encapsulated seats for longer service life, and a 7 year warranty. The Model VH31 handle features a tube within a tube construction for high gas volume applications. It is equipped with FlashGuard® check valves. The Model VH24 cutting attachment features an all gas in-tube mixer for easy maintenance.

DETAILS
Capacity: Cuts up to 8”/203.2 mm plate with optional tips, welds to ½”/12.7 mm plate with optional tips
Duty: Heavy
Regulator Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Mixer Type: Equal pressure
Torch equipped with: FlashGuard® Check Valves
Warranty: 7 years - Regulator
1 year - All other components

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>TORCH HANDLE</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/BRAZING TIPS</th>
<th>REGULATORS</th>
<th>ACCESSORIES</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>

EXTRA HEAVY DUTY ACETYLENE OUTFITS

DESCRIPTION
The Harris VXT is an extra-heavy duty V-Series welding and cutting outfit that includes Model 450 regulators, Model VH31 combination torch handle and VH24 cutting attachment. The industrial duty Model 450 regulator has many of the premium features found only in high priced regulators. Its stainless steel diaphragm and Harris’ exclusive tamper-proof, self-seating safety relief device, makes it standout for heavy duty welding applications. The Model VH31 handle features a tube within a tube construction for high gas volume applications. It is equipped with FlashGuard® check valves. The Model VH24 cutting attachment features an all gas in-tube mixer for easy maintenance.

DETAILS
Capacity: Cuts up to 8”/203.2 mm plate with optional tips, welds to ½”/12.7 mm plate with optional tips
Duty: Extra-heavy
Regulator Seat: One-piece encapsulated seat design with internal filter and PTFE Teflon® seat
Mixer Type: Equal pressure
Torch equipped with: FlashGuard® Check Valves
Warranty: 7 years - Regulator
1 year - All other components

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
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<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
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<th>WEIGHT</th>
</tr>
</thead>
</table>

THE HARRIS PRODUCTS GROUP
www.harrisproducts.com
Orders: 1.800.733.4043
KITS
163
## DESCRIPTION

Model 62450F Cutter-Pac® outfit is designed for use with alternate fuels such as propane, propylene and natural gas. Its components are industrial grade for professional use. The outfit includes Model 450-125-540 oxygen regulator and Model 450-50-510P fuel gas regulator. The regulators are equipped with encapsulated Teflon® seats for safety and extended service life and stainless steel diaphragms. They include Harris’ seven year warranty. Also included are the Model 62-5FL-21 hand cutting torch featuring a solid forged head that resists flashback damage, triangular stainless steel tubes with brazed connections for added strength, a solid brass forged cutting oxygen lever for ease of operation, and a handle with non-slip grooves to provide maximum comfort and control. The torch-style flashback arrestors provide high capacity in a small, compact size while providing the user with maximum protection. Harris’ special “F” injector mixer produces the hottest flame possible at the lowest gas pressure (4 oz. – 2 PSIG) making it the safest, most efficient design in the industry. The outfit can cut up to 12” with optional tips (sold separately).

## DETAILS

| Capacity: Maximum capacity. Cuts to 12” (304.8mm) plate with optional larger tips. |
| Equipped with: Oxygen and fuel flashback arrestors. |
| Mixer Type: Injector |
| Warranty: 7 years Regulator; 1 year - All other components |

## CLASSIC HARDHAT® CUTTER PAC® - ALTERNATE FUELS

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH</th>
<th>FLASHBACK ARRESTORS</th>
<th>MIXER</th>
<th>CUTTING TIP</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/BRACING TIPS</th>
<th>REGULATORS</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4401743</td>
<td>43450F-510P</td>
<td>43-2</td>
<td>88-5N FBTR</td>
<td>88-5N FBTL</td>
<td>–</td>
<td>–</td>
<td>49-3F</td>
<td>–</td>
<td>450-125-540 450-50-510P</td>
</tr>
</tbody>
</table>

## CLASSIC HARDHAT® CUTTER PAC® - ALL FUEL GASES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH</th>
<th>FLASHBACK ARRESTORS</th>
<th>TORCH LENGTH</th>
<th>TORCH HEAD ANGLE</th>
<th>REGULATORS</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>
CLASSIC HARDHAT® CUTTER PAC® - ALTERNATE FUELS

DESCRIPTION
Model 62450F Cutter-Pac® outfit is designed for use with alternate fuels such as propane, propylene and natural gas. Its components are industrial grade for professional use. The outfit includes Model 450-125-540 oxygen regulator and Model 450-50-510P fuel gas regulator. The regulators are equipped with encapsulated Teflon® seats for safety and extended service life and stainless steel diaphragms. They include Harris’ seven year warranty. Also included are the Model 62-5FL-21 hand cutting torch featuring a solid forged head that resists flashback damage, triangular stainless steel tubes with brazed connections for added strength, a solid brass forged cutting oxygen lever for ease of operation, and a handle with non-slip grooves to provide maximum comfort and control. The torch-style flashback arrestors provide high capacity in a small, compact size while providing the user with maximum protection. Harris’ special “F” injector mixer produces the hottest flame possible at the lowest gas pressure (4 oz. – 2 PSIG) making it the safest, most efficient design in the industry. The outfit can cut up to 12” with optional tips (sold separately).

DETAILS
Capacity: Cuts to 12” (304.8mm) plate with optional larger tips.
Equipped with: Oxygen and fuel flashback arrestors.
Mixer Type: Injector
Warranty: 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH</th>
<th>FLASHBACK ARRESTORS</th>
<th>TORCH LENGTH</th>
<th>TORCH HEAD ANGLE</th>
<th>REGULATORS</th>
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CLASSIC HARDHAT® CUTTER PAC® - ALTERNATE FUELS

DESCRIPTION
Model 62450F Cutter-Pac® outfit is designed for use with alternate fuels such as propane, propylene and natural gas. Its components are industrial grade for professional use. The outfit includes Model 450-125-540 oxygen regulator and Model 450-50-510P fuel gas regulator. The regulators are equipped with encapsulated Teflon® seats for safety and extended service life and stainless steel diaphragms. They include Harris’ seven year warranty. Also included are the Model 62-5FL-21 hand cutting torch featuring a solid forged head that resists flashback damage, triangular stainless steel tubes with brazed connections for added strength, a solid brass forged cutting oxygen lever for ease of operation, and a handle with non-slip grooves to provide maximum comfort and control. The torch-style flashback arrestors provide high capacity in a small, compact size while providing the user with maximum protection. Harris’ special “F” injector mixer produces the hottest flame possible at the lowest gas pressure (4 oz. – 2 PSIG) making it the safest, most efficient design in the industry. The outfit can cut up to 6” with optional tips (sold separately).

DETAILS
Capacity: Cuts to 6” (152.4mm) plate with optional larger tips.
Equipped with: Oxygen and fuel flashback arrestors.
Mixer Type: Injector
Warranty: 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH</th>
<th>FLASHBACK ARRESTORS</th>
<th>TORCH LENGTH</th>
<th>TORCH HEAD ANGLE</th>
<th>REGULATORS</th>
<th>WEIGHT</th>
</tr>
</thead>
</table>
**CLASSIC HARDHAT® V-SERIES® - ALL FUEL GASES**

**DESCRIPTION**

Designed with contractors in mind, the new HardHat Metalworking Outfits contain regulators, torches and flashback arrestors – the ideal set for the professional looking to upgrade equipment. They contain Harris' most popular combinations of torches and regulators. The equipment delivers superior results for cutting, brazing and welding using oxy-acetylene or alternate fuels. The outfits include both classic style and the Harris “V” series, for those who utilize Victor®-style tips. While the classic outfit includes cutter-pacs, both outfits are combination - meant for a variety of applications. All of them include safety features, such as an encapsulated seat in the regulators and flashback arrestors that offer the user maximum protection.

**DETAILS**

**Capacity:** Cuts to 6” (152.4mm) plate with optional larger tips.
Welds to 1/2” (12.7mm) plate with optional larger tips.
**Equipped with:** Oxygen and fuel flashback arrestors.
**Mixer Type:** Injector
**Warranty:** 7 years - Regulator; 1 year - All other components

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>TORCH HANDLE</th>
<th>FLASHBACK ARRESTORS</th>
<th>CUTTING ATTACHMENT</th>
<th>WELDING/FRAZING TIPS</th>
<th>REGULATORS</th>
<th>OXYGEN</th>
<th>FUEL</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4401741</td>
<td>V-315450-300</td>
<td>V-315C</td>
<td>88-5N FBTR 88-5N FBTL</td>
<td>V-2460</td>
<td>450-125-540 450-15-300</td>
<td>V-1350</td>
<td>11.2 lbs. / 5.08 kg.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**LASER KITS**

**BASIC LASER GAS START-UP KITS**

**TYPICAL APPLICATION**
Harris Universal Basic Laser Start-Up Kits provide the most common equipment necessary for supplying resonator and assist gases to the laser. Basic kits contain high purity regulators for resonator gases, high-flow dome-loaded regulators for nitrogen and oxygen assist gases. Laser grade hose is included for the resonator gas, as well as, two high-capacity hoses for the assist gases and various fittings.

**DETAILS:**
- High purity laser gas regulator with purge for resonator kits
- High flow dome loaded regulators for \( \text{N}_2 \) and \( \text{O}_2 \) for assist kits
- High flow assist gas and high purity laser hose for assist kits
- Assorted fittings for easy hook-up

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4703521</td>
<td>Universal Basic Assist Gas Start-Up Kit</td>
</tr>
<tr>
<td>4703522</td>
<td>Harris Basic Resonator Laser Start-Up Kit, Premix Gas Universal</td>
</tr>
<tr>
<td>4703519</td>
<td>Harris Basic Resonator Laser Start-Up Kit, 3-Gas Universal</td>
</tr>
<tr>
<td>4703514</td>
<td>Mazak® Laser Start-Up Kit Resonator and Assist Gas</td>
</tr>
</tbody>
</table>

**PREMIUM LASER GAS START-UP KITS**

**TYPICAL APPLICATION**
Harris Universal Premium Laser Start-Up Kits provide the essential equipment for supplying resonator and assist gases from source to point-of-use. All premium kits include switchover systems for the resonator gases, high-flow dome-loaded regulators for the assist gases and cylinder process stations.

**DETAILS**
- High purity laser gas switchover with purges (Resonator kits only)
- High flow dome loaded regulators for \( \text{N}_2 \) and \( \text{O}_2 \)
- High flow assist gas and high purity laser hose
- T-Type particle filters to protect optics (Assist gas kits only)
- Assorted fittings for easy hook-up

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4703515</td>
<td>Universal Premium Assist Gas Start-Up Kit</td>
</tr>
<tr>
<td>4703518</td>
<td>Nitrogen Only Premium Assist Start-Up Gas Kit</td>
</tr>
<tr>
<td>4703516</td>
<td>Harris Premium Laser Start-Up Kit, Premix Universal</td>
</tr>
<tr>
<td>4703517</td>
<td>Harris Premium Laser Start-Up Kit, 3-Gas Universal</td>
</tr>
</tbody>
</table>
**TWO-GAS BLENDBERS**

**FOR WELDING GASES AND OTHER APPLICATIONS**

**DESCRIPTION**
Harris offers a full range of industrial gas blenders for a wide array of applications including welding processes, packaging and food service. These gas blenders are designed to create a custom gas mixture defined by the user with the turn of a single knob.

**FEATURES**
- Variable ratios up to 100% on some Models
- Flow ranges up to 2500 SCFH
- \( \frac{1}{4} " \) NPT or \( \frac{1}{2} " \) NPT inlet/outlet connection
- Accuracy +/- 2%

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS SERVICE</th>
<th>MAXIMUM FLOW</th>
<th>RANGE</th>
<th>RECEIVER TANK REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>4302053</td>
<td>US-S10-1</td>
<td>Ar/CO(_2)</td>
<td>500 SCFH</td>
<td>0-100% CO(_2) in Ar</td>
<td>No</td>
</tr>
<tr>
<td>4302054</td>
<td>US-S10-2</td>
<td>Ar/O(_2)</td>
<td>500 SCFH</td>
<td>0-25% O(_2) in Ar</td>
<td>No</td>
</tr>
<tr>
<td>4302063</td>
<td>US-S10-3</td>
<td>Ar/He</td>
<td>500 SCFH</td>
<td>0-100% He in Ar</td>
<td>No</td>
</tr>
<tr>
<td>4302068</td>
<td>US-S10-4</td>
<td>N(_2)/O(_2)</td>
<td>500 SCFH</td>
<td>0-25% O(_2) in N(_2)</td>
<td>No</td>
</tr>
<tr>
<td>4302067</td>
<td>MG 75-2 Fixed</td>
<td>Ar/CO(_2)</td>
<td>2500 SCFH</td>
<td>Custom Fixed Blend of Ar/CO(_2) (specify when ordering)</td>
<td>Not required</td>
</tr>
<tr>
<td>4302066</td>
<td>MG 75-2 Flex</td>
<td>Ar/CO(_2)</td>
<td>2500 SCFH</td>
<td>Variable Ratio of Ar/CO(_2) from 5-41%</td>
<td>Not required</td>
</tr>
</tbody>
</table>

**ACCESSORY**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>ACCESSORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>4302076</td>
<td>Oxybaby M+ CO(_2) and O(_2) Blends</td>
</tr>
<tr>
<td></td>
<td>CO(_2) and O(_2) Gas Analyzer</td>
</tr>
</tbody>
</table>

---

**GAS MANIFOLDS**

**BOXED SWITCHOVER MANIFOLDS**

**MODEL 220 AND 220HP — High pressure cylinder switchover systems**
The Models 220 and 220HP are automatic switchover systems designed to provide uninterrupted gas supply from high pressure gas cylinders.

**MODEL 240 AND 240HP — Liquid cylinder switchover systems**
The Models 240 and 240HP are automatic switchover systems designed to provide uninterrupted gas supply from liquid cylinders.

See our INDUSTRIAL MANIFOLD BROCHURE (P/N: 9503065)
Order online www.harrisproducts.com
GAS MANIFOLDS

OPEN SWITCHOVER SYSTEMS

MODEL 260 AND 260 LE (LIQUID CYLINDER) — High pressure/high flow cylinder switchover systems

The Model 260 and 260 LE are automatic switchover systems designed to deliver flows to 5500 SCFH and pressures up to 500 psig. Typical applications include laser assist gas supply, bulk gas back-up and high flow blanketing.

FEATURES
- Outlet line control regulator included
- Max inlet 3000 PSIG for Model 260 and 350 PSIG for Model 260 LE
- 72" pigtail with integral check valves
- Inlet/outlet ½" NPT
- Stainless steel panel
- Model 260 LE has built-in gas economizer circuit

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>GAS SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4701502</td>
<td>Model 260 Switchover (250 PSI)</td>
<td>Industrial High Purity</td>
</tr>
<tr>
<td>4701508</td>
<td>Model 260-IR42-1L72-580 (250 PSI)</td>
<td>Ar/He/N₂</td>
</tr>
<tr>
<td>4701525</td>
<td>Model 260-IR72-1L72-540</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

* For a complete listing, see the Gas Distribution systems catalog

MODEL 900 — High Purity or Industrial Switchover System

The Model 900 is an automatic switchover system designed to provide uninterrupted gas supply from cylinders.

FEATURES
- Outlet line control regulator included
- Max inlet 3000 PSIG
- Delivery pressure 0-125 PSIG
- Inlet/Outlet ¼" NPT
- Max flow up to 750 SCFH
- Can be used with industrial or high-purity gases

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>GAS SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4700232</td>
<td>Model 900 Switchover 125 PSI</td>
<td>Industrial High Purity</td>
</tr>
<tr>
<td>4700250</td>
<td>Model 900BR-IR-IL-580</td>
<td>Ar/He/N₂</td>
</tr>
<tr>
<td>4700247</td>
<td>Model 900BR-IR-IL-540</td>
<td>Oxygen</td>
</tr>
<tr>
<td>4700233</td>
<td>Model 900BR-IR-IL-320</td>
<td>CO₂</td>
</tr>
</tbody>
</table>

* For a complete listing, see the Gas Distribution systems catalog

MODEL 905 — Economical High Purity or Industrial Switchover System

The Model 905 is a compact economical automatic switchover system designed to provide uninterrupted gas supply from cylinders.

FEATURES
- Compact design
- Includes outlet line control regulator
- Delivery pressure 0-125 PSIG
- Inlet/Outlet ¼" NPT
- 24" or 36" pigtail available
- Can be used with industrial or high-purity gases

<table>
<thead>
<tr>
<th>PART NO.</th>
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<th>GAS SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4701204</td>
<td>SG905-125 Switchover</td>
<td>Industrial or High Purity</td>
</tr>
<tr>
<td>4701240</td>
<td>SG905-IR-IL-580</td>
<td>Ar/He/N₂</td>
</tr>
<tr>
<td>4701239</td>
<td>SG905-IR-IL-580</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

* For a complete listing, see the Gas Distribution systems catalog

For more information on Harris’ complete line of manifolds, see the Gas Distribution Systems catalog.
**MODEL 200** — Single Regulator
Simplex (R or L) or Duplex System

The Model 200 is a manual switchover system for single source or dual source gas supply. High flow Model 3510 line control regulator sold separately.

Right Simplex System (OL)

Left Simplex System (OR)

**MODEL 210*** — Duplex Automatic Switchover/Manual Reset System

The Model 210 is a basic automatic switchover system requiring manual resetting of cylinder tanks when empty.

*Line control regulator sold separately.

---

**LOOKING FOR SPECIALTY GAS REGULATORS OR MANIFOLDS?**

Contact your Harris Products Group Representative in your area:

1-800-241-0804

---

P/N: 9505646

P/N: 9505658
GAUGES

1½” DUAL SCALE STEEL (PSI/kPA)

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PRESSURE PSI/kPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>9006044</td>
<td>30/200 Red Zone</td>
</tr>
<tr>
<td>9006051</td>
<td>30/200</td>
</tr>
<tr>
<td>9006035</td>
<td>150/1,000</td>
</tr>
<tr>
<td>9006030</td>
<td>400/2,800</td>
</tr>
<tr>
<td>9006025</td>
<td>4,000/28,000</td>
</tr>
</tbody>
</table>

2” DUAL SCALE STEEL (PSI/kPA)

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PRESSURE PSI/kPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>9006127</td>
<td>30/200 Red Zone</td>
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<tr>
<td>9006128</td>
<td>30/200</td>
</tr>
<tr>
<td>9006120</td>
<td>60/400</td>
</tr>
<tr>
<td>9006125</td>
<td>150/1,000</td>
</tr>
<tr>
<td>9006130</td>
<td>400/2,800</td>
</tr>
<tr>
<td>9006131</td>
<td>1,000/700</td>
</tr>
<tr>
<td>9006135</td>
<td>4,000/28,000</td>
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2½” DUAL SCALE STEEL (PSI/kPA)

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PRESSURE PSI/kPA</th>
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</thead>
<tbody>
<tr>
<td>9006211</td>
<td>30/200 Red Zone</td>
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<td>9006212</td>
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<td>9006210</td>
<td>60/400</td>
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<tr>
<td>9006215</td>
<td>150/1,000</td>
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<tr>
<td>9006230</td>
<td>400/2,800</td>
</tr>
<tr>
<td>9006235</td>
<td>4,000/28,000</td>
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2½” DUAL SCALE BRASS PLATED (PSI/BAR)

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<thead>
<tr>
<th>PART NO.</th>
<th>PRESSURE PSI/BAR</th>
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</thead>
<tbody>
<tr>
<td>9006116</td>
<td>30/2</td>
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<tr>
<td>9006289</td>
<td>100/7</td>
</tr>
<tr>
<td>9006109</td>
<td>200/14</td>
</tr>
<tr>
<td>9006108</td>
<td>400/28</td>
</tr>
<tr>
<td>9006117</td>
<td>500/35</td>
</tr>
<tr>
<td>9006302</td>
<td>600/40</td>
</tr>
<tr>
<td>9006203</td>
<td>3,000/200</td>
</tr>
<tr>
<td>9006107</td>
<td>4,000/280</td>
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<tr>
<td>9006252</td>
<td>6,000/400</td>
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<tr>
<td>9006251</td>
<td>10,000/700</td>
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50MM DUAL SCALE ABS (PSI/BAR)

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PRESSURE PSI/BAR</th>
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</thead>
<tbody>
<tr>
<td>9006257</td>
<td>30/2</td>
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<td>9006255</td>
<td>100/7</td>
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<tr>
<td>9006256</td>
<td>400/28</td>
</tr>
<tr>
<td>9006254</td>
<td>4000/300</td>
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50MM DUAL SCALE ABS (SCFH/LPM)

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PRESSURE SCFH/LPM</th>
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<tr>
<td>9006253</td>
<td>60 SCFH/Ar/CO₂</td>
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<tr>
<td>9006303</td>
<td>30 SCFH/Ar</td>
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FLOWGAUGES* 1/4-NPT

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<th>PART NO.</th>
<th>SIZE</th>
<th>FLOW</th>
<th>(DRILL)</th>
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<tbody>
<tr>
<td>9006133</td>
<td>2”</td>
<td>0-60</td>
<td>(NO.59-P/N 9100408)</td>
</tr>
<tr>
<td>9006417</td>
<td>2”</td>
<td>5-30</td>
<td>(NO.64-P/N 9100408)</td>
</tr>
<tr>
<td>9006139</td>
<td>2½”</td>
<td>0-100</td>
<td>(NO.76-P/N 9100090)</td>
</tr>
<tr>
<td>9007252</td>
<td>2½”</td>
<td>0-60</td>
<td>(NO.59-P/N 9100090)</td>
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<td>9007254</td>
<td>2½”</td>
<td>0-40</td>
<td>(NO.64-P/N 9100090)</td>
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<tr>
<td>9007255</td>
<td>2½”</td>
<td>0-80</td>
<td>(NO.55-P/N 9100090)</td>
</tr>
</tbody>
</table>

GAUGE GUARDS

- Sturdy steel, heavy-duty gauge guard that can withstand multiple impacts
- 100% carbon steel construction
- Laser cut and hand TIG welded fabrication - not stamped.
- Easy gas identification with color coded exterior (green for oxygen and red for fuel)
- Powder coated surfaces that resist fading from exposure to sunlight and harsh environments
- Cork lined clamp band for contact with the regulator that will not damage regulator finish and dampens vibration that may cause guard to loosen
- Clear, unobstructed view of pressure readings with complete protection of the gauges
- Fits Harris Models 25GX, 425 and 45 regulators

THE HARRIS PRODUCTS GROUP
www.harrisproductsgroup.com

Orders: 1.800.733.4043
### TIP NUTS

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>DESCRIPTION</th>
<th>THREAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>9002560</td>
<td>6259-B</td>
<td>Tip Nut (for 98, 62, 72-3, 71-3, 39-3, 49-3 and 42-4)</td>
<td>INT</td>
</tr>
<tr>
<td>9005227</td>
<td>7259-2R</td>
<td>Tip Nut (for V-1350)</td>
<td>EXT</td>
</tr>
<tr>
<td>9005236</td>
<td>6259-V</td>
<td>Tip Nut (for V-2460, V-62 and V-242)</td>
<td>EXT</td>
</tr>
<tr>
<td>9002537</td>
<td>213159</td>
<td>Tip Nut (for 2101, 3101 and 880)</td>
<td>EXT</td>
</tr>
<tr>
<td>9002952</td>
<td>110059</td>
<td>Tip Nut (for 1000)</td>
<td>EXT</td>
</tr>
<tr>
<td>9008437</td>
<td>3659-1</td>
<td>Tip Nut (for 36 CAs)</td>
<td>INT</td>
</tr>
<tr>
<td>QC1WHP8001P</td>
<td>8059</td>
<td>Tip Nut (for 80 Torch)</td>
<td>INT</td>
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### NEEDLE VALVES - NPT

<table>
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<tr>
<th>PART NO.</th>
<th>INLET</th>
<th>OUTLET</th>
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<tr>
<td>9100412</td>
<td>¼&quot;</td>
<td>¼&quot;</td>
</tr>
<tr>
<td>9100416</td>
<td>¼&quot;</td>
<td>½&quot;-18 RH</td>
</tr>
<tr>
<td>9100414</td>
<td>¼&quot;</td>
<td>½&quot;-18 LH</td>
</tr>
</tbody>
</table>

### HOSES

<table>
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<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
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<tr>
<td>4300556</td>
<td>⅜&quot; x 12' twin hose</td>
</tr>
<tr>
<td>4300725</td>
<td>⅜&quot; x 12.5' twin hose, B &amp; B fittings, &quot;T&quot; grade</td>
</tr>
<tr>
<td>4300005</td>
<td>⅜&quot; x 12' twin hose, A &amp; B fittings</td>
</tr>
<tr>
<td>4300771</td>
<td>⅜&quot; x 12.5' twin hose, A &amp; B fittings, &quot;T&quot; grade*</td>
</tr>
<tr>
<td>4300499</td>
<td>⅜&quot; x 20' twin hose</td>
</tr>
<tr>
<td>4300532</td>
<td>⅜&quot; x 20' twin hose, &quot;T&quot; grade*</td>
</tr>
<tr>
<td>4300772</td>
<td>⅜&quot; x 20' twin hose, A &amp; B fittings,&quot;T&quot; grade*</td>
</tr>
<tr>
<td>4300583</td>
<td>¼&quot; x 12.5' twin hose,&quot;T&quot; grade*</td>
</tr>
<tr>
<td>4300683</td>
<td>¼&quot; x 20' twin hose</td>
</tr>
<tr>
<td>4300533</td>
<td>¼&quot; x 20' twin hose, &quot;T&quot; grade*</td>
</tr>
<tr>
<td>4300530</td>
<td>¼&quot; x 50' twin hose</td>
</tr>
<tr>
<td>4300138</td>
<td>¼&quot; x 10' single line inert gas hose</td>
</tr>
<tr>
<td>4300847</td>
<td>½&quot; x 50' twin hose,&quot;T&quot; grade*</td>
</tr>
<tr>
<td>4300848</td>
<td>½&quot; x 100' twin hose,&quot;T&quot; grade*</td>
</tr>
</tbody>
</table>

*Recommended for Alternate Fuels

### HOSE ADAPTORS - "A" AND "B"

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>9004418</td>
<td>Hose Adaptor - B x A (R)</td>
</tr>
<tr>
<td>9004419</td>
<td>Hose Adaptor - B x A (L)</td>
</tr>
<tr>
<td>9004688</td>
<td>Hose Adaptor - B x A (R)</td>
</tr>
<tr>
<td>9004718</td>
<td>Hose Adaptor - B x A (L)</td>
</tr>
</tbody>
</table>

### OTHER ACCESSORIES ARE AVAILABLE

Contact your Harris Products Group Representative in your area:
1-800-241-0804

- Welding Cable
- Soapstone
- Welding Helmets
- Brushes
- Gloves
- Cylinder Caps
- Chipping Hammers
- Welpers
- Lenses
- Anti-Spatter
- Flints & Lighters
- Gouging Carbons
- Electrode Holders

Orders: 1.800.733.4043
www.harrisproductsgroup.com
**REGULATOR AND TORCH ACCESSORIES**

**GAS BLOCK**

The lever on the Gas BlockTM acts as an on/off control which eliminates the need to reset the torch each time it is used and offers quick ignition. The Gas BlockTM comes equipped with a set screw and lock nut which allows the user to easily adjust the shut off lever. The Gas BlockTM is a safer option than other competitive models that pose a safety risk with open flames. It is available in two and three gas version. The three gas version offers control of the nitrogen purge line for brazing applications. Ask the Pros at Harris to help document a nitrogen gas cost savings today.

**2 GAS VERSION & 3 GAS VERSION**
- Heavy-duty rigid design with a laser cut and formed 10 gauge stainless steel base
- Welded stainless steel swivel bracket and stainless steel plunger
- Can be used with the LightPro Spark, Harris' electric ignitor and the valveless torches on the Perfect Flame.

**3 GAS VERSION**
- Offers control of the nitrogen purge line for brazing applications
- Ensures nitrogen use compliance – when the torch is lit, the nitrogen is on
- Offers nitrogen cost reduction – gas won't flow when the operator is away
- Offers more control of nitrogen usage with the ability to turn the purge line on and off with the flame.

**DETAILS**

**Capacity:** Heavy Duty

**Where Used:** Used at brazing stations, gas welding stations, test labs, schools and training centers

**Weight:**
- 3.5 lbs. / 1.59 kg. (2 gas P/N: 4300943)
- 4.9 lbs / 2.22 kg. (3 gas P/N: 4300944)

**Related Items:** Light Pro Spark P/N: 4304535

<table>
<thead>
<tr>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>GAS</th>
<th>INLET CONNECTION</th>
<th>OUTLET CONNECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300943</td>
<td>GAS BLOCK, 2 GAS ASY</td>
<td>Propane, Natural Gas, Hydrogen, Propylene, Acetylene</td>
<td>Fuel 9/16&quot; - 18 (LH)</td>
<td>Oxy 9/16&quot; - 18 (RH)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fuel 9/16&quot; - 18 (LH)</td>
<td>Oxy 9/16&quot; - 18 (RH)</td>
</tr>
<tr>
<td>4300944</td>
<td>GAS BLOCK, 3 GAS ASY</td>
<td>Propane, Natural Gas, Hydrogen, Propylene, Acetylene</td>
<td>Fuel 9/16&quot; - 18 (LH)</td>
<td>Oxy 9/16&quot; - 18 (RH)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nitrogen</td>
<td>5/8&quot; - 18 (F)</td>
<td>1/4&quot; NPT (M)</td>
</tr>
</tbody>
</table>

**LIGHT PRO SPARK II**

The LightPro Spark is a portable, hands-free piezoelectric ignitor for use in repetitive brazing operations. When the lever is depressed the piezoelectric ignitor is engaged and a spark is created. It offers a quicker and more reliable ignition compared to typical hand held strikers and offers greater safety than afforded by open pilot lights. The unit is battery powered and eliminates the need for an external power source.

- Safer and less expensive than an open pilot light*
- Replaces manual hand-held strikers
- Shock proof, metal housing
- Powered by two standard AA batteries (sold separately)

**DETAILS**

**Capacity:** Medium duty

**Housing:** Zinc die cast

**Where used:** Brazing and welding operations

**Weight:** 0.43 lbs / 0.20 kg.

<table>
<thead>
<tr>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>POWER REQUIREMENTS</th>
<th>OUTPUT</th>
<th>IGNITION RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>4304536</td>
<td>IGNITOR,LIGHTPRO SPARK</td>
<td>STANDARD AA BATTERIES</td>
<td>14K</td>
<td>100,000</td>
</tr>
</tbody>
</table>

* Estimated savings of $5.00/mo. For more information about gas cost savings please contact your Harris representative.
TIP CLEANERS

Always use the proper type and size tip cleaners. The right tip cleaner does the job more efficiently, maintaining the proper gas stream, and lessening the chance of permanent damage to more expensive torches and tips.

STANDARD TIP CLEANER

CLEANING INSTRUCTIONS: Care should be taken not to be too aggressive when cleaning tips. Always use the proper size tip cleaner and be careful not to enlarge or distort the original tip bore size.

C-9 Standard Tip Cleaner
MODEL SHOWN: P/N: 9000156

TWO-PIECE AND DIVERGENT BORE TIP CLEANER

CLEANING INSTRUCTIONS: The wire brush included with tip cleaner E-9 (P/N: 9000160) should be used for cleaning preheat slots and for removing spatter from the tip face. When cleaning the preheat slots, do not brush across the slots as this motion can damage the slots. Always brush along the length of the slot to remove dirt or spatter.

E-9 Two-piece Tip Cleaner
MODEL SHOWN: P/N: 9000160

CIRCLE CUTTING ATTACHMENT

MODEL R-69-3B CIRCLE CUTTING ATTACHMENT*

The Model R-69-3B can be used for cutting circles up to 30" in diameter, as well as straight line cutting. A swivel nut permits circle cutting without tangling hoses. Wheels are adjustable for individual torch height. The R-69-3B makes it possible to have better quality cuts with hand torches.

*Not for use with Pro Series equipment, Model 36 cutting attachment, Model 880 cutting torch or V-Series equipment.

GUIDE WHEELS ASSEMBLY

DESCRIPTION

The Harris Guide Wheel Assembly is specially designed to withstand extremely harsh environments such as rail road and ship yard maintenance and mining. The Guide Wheel Assembly is of all stainless steel and brass construction and is adjustable for bevel cutting. The Model QC2SCA770 fits Harris medium and heavy cutting attachments and straight cutting torches using 6200 series tips. It is adjustable for coupling distance and bevel cutting.

DETAILS

Duty: Heavy
Width: 4”/101.6 cm
Weight: 90 lbs./40 kg
Where Used: Fabrication, construction, shipbuilding, etc.
Related Equipment: Spare tip nuts P/N: 9SCA7762, 6290 Cutting tips

TIP STYLES

<table>
<thead>
<tr>
<th>PART #</th>
<th>MODEL #</th>
<th>CUTTING ATTACHMENT</th>
<th>COMPATIBLE HANDLES</th>
<th>ALTERNATE* FUEL</th>
<th>ACETYLENE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300995</td>
<td>QC2SCA7700</td>
<td>49-3F</td>
<td>43-2</td>
<td>6290-NX</td>
<td>6290, 6290-AC</td>
</tr>
</tbody>
</table>

*Not for use with Pro Series equipment, Model 36 cutting attachment, Model 880 cutting torch or V-Series equipment.
### INLET NUTS AND STEMS

<table>
<thead>
<tr>
<th>CGA CONN NO.</th>
<th>STANDARD CONN FOR (TYPE GAS)</th>
<th>NUT NO.</th>
<th>STEM NO. 1/4&quot; NPT</th>
<th>RING NO.</th>
<th>NUT</th>
<th>STEM NO. 15MM</th>
<th>CGA CONN NO.</th>
<th>STANDARD CONN OXYGEN</th>
<th>STEM NO. 1/4&quot; NPT</th>
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<tbody>
<tr>
<td>CGA 200</td>
<td>Acetylene</td>
<td>9100603</td>
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<td>CGA 320</td>
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<td>9002986</td>
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<td>Nitrous Oxide</td>
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<tr>
<td>CGA 540</td>
<td>Oxygen</td>
<td>9002950</td>
<td>9005110</td>
<td>9004030</td>
<td>9000671</td>
<td>9000673</td>
<td>9000673</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9005110</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGA 580</td>
<td>Nitrogen, Argon, Helium</td>
<td>9003048</td>
<td>9005109</td>
<td>-</td>
<td></td>
<td>9000645 (3½&quot;)</td>
<td>9000647</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9005109</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGA 590</td>
<td>Industrial Air (Argon, Helium, Nitrogen)</td>
<td>9003052</td>
<td>9005109</td>
<td>-</td>
<td></td>
<td>9000645 (3½&quot;)</td>
<td>9000647</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>9003052</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGA 600</td>
<td>LPG*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td>(Assembly 9101181)</td>
<td>9000647</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*LPG compatible with all Liquid Petroleum Gases

### SURGE GUARD PROTECTION

<table>
<thead>
<tr>
<th>CGA CONN NO.</th>
<th>STANDARD CONN OXYGEN</th>
<th>STEM NO. 1/4&quot; NPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>540</td>
<td>Oxygen</td>
<td>9105602</td>
</tr>
</tbody>
</table>

### REDUCING BUSHING

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>1/2&quot; NPT(M) x 1/4&quot; NPT (F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9005806</td>
<td></td>
</tr>
</tbody>
</table>

### HIGH PRESSURE 5500 PSIG INLET STEMS AND NUTS

<table>
<thead>
<tr>
<th>CGA CONN NO.</th>
<th>STANDARD CONN FOR (TYPE GAS)</th>
<th>NUT NO.</th>
<th>STEM NO. 1/4&quot; NPT</th>
<th>RING NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGA 347</td>
<td>Air</td>
<td>9003001</td>
<td>9005161</td>
<td>N/A</td>
</tr>
<tr>
<td>CGA 680</td>
<td>Argon, Helium, Nitrogen</td>
<td>9003000</td>
<td>9005160</td>
<td>N/A</td>
</tr>
<tr>
<td>CGA 695</td>
<td>Hydrogen</td>
<td>9002963</td>
<td>9005160</td>
<td>N/A</td>
</tr>
<tr>
<td>CGA 677</td>
<td>Argon, Helium, Nitrogen</td>
<td>9005197</td>
<td>9005196</td>
<td>N/A</td>
</tr>
</tbody>
</table>
OSHA COMPLIANT OXYGEN-FUEL QUICK CONNECTORS

FEATURES
- Long-lasting stainless steel pin connection
- Automatic gas cut-off feature to positively shut off the gas supply when disconnected
- Helps prevent theft by making it easier to take down and put away equipment
- Durable brass and stainless steel construction
- 9/16” - 18 "B" connections
- Meets OSHA 29CFR, 1926.350(f)(5) and ISO 7289

REGULATOR OUTLET MOUNT TYPE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4301653</td>
<td>26-QCR (R&amp;L)</td>
<td>Pairs only</td>
<td>Fuel and Oxygen</td>
</tr>
</tbody>
</table>

TORCH INLET TYPE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4301654</td>
<td>26-QCT (R&amp;L)</td>
<td>Pairs only</td>
<td>Fuel and Oxygen</td>
</tr>
</tbody>
</table>

INERT QUICK CONNECTORS

HARRIS REGULATOR TO HOSE OR MACHINE TO HOSE QUICK CONNECTORS

FEATURES
- Long-lasting stainless steel pin connection
- Automatic gas cut-off feature to positively shut off the gas supply when disconnected
- Durable brass and stainless steel construction
- Available for regulator or machine mount
- Makes moving equipment fast and easy
- Flow up to 200 SCFH; pressure up to 200 PSIG

REGULATOR TO HOSE TYPE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>CONNECTIONS</th>
<th>GAS TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4301613</td>
<td>IQC M-F</td>
<td>5/8” - 18</td>
<td>Inert</td>
</tr>
</tbody>
</table>

HOSE TO MACHINE TYPE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>CONNECTIONS</th>
<th>GAS TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4301614</td>
<td>IQC F-M</td>
<td>5/8” - 18</td>
<td>Inert</td>
</tr>
</tbody>
</table>

FLASHBACK QUICK CONNECTORS

HARRIS "B" HOSE TORCH TYPE FLASH ARRESTORS WITH QUICK CONNECTORS

FEATURES
This item includes both a flashback arrester with performance and features of the model 88-5FB (R+L) along with a quick connect feature similar to the Model 26-QCT Torch Type quick connect. Replacement Pins available. Flow capacity is similar to Harris 88-5FB R&L Flash Arrestors.

TORCH TO HOSE TYPE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PRESSURE RATINGS</th>
<th>GAS TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4302206</td>
<td>8826-FBT (R+L)</td>
<td>143 PSIG (985 KPA)</td>
<td>Oxygen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 PSIG (345 KPA)</td>
<td>Fuel Gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 PSIG (103 KPA)</td>
<td>Acetylene</td>
</tr>
</tbody>
</table>

REPLACEMENT PINS

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4302208</td>
<td>8826-FBTPR</td>
<td>Oxygen</td>
</tr>
<tr>
<td>4302207</td>
<td>8826-FBTPL</td>
<td>Fuel Gas</td>
</tr>
</tbody>
</table>
**REGULATOR AND TORCH SAFETY ACCESSORIES**

### HIGH FLOW TORCH FLASH ARRESTORS

**FEATURES**
- Prevents reverse flow of gases with built-in check valves
- Extinguishes flashback fire with stainless steel sintered element
- ⅝" - 18 connections CGA "B" size or ⅜" - 14 "C" size
- 100 Micron inlet filter helps keep dust and dirt out

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4302209</td>
<td>88-5 FBTL (B)</td>
<td>Fuel</td>
</tr>
<tr>
<td>4302210</td>
<td>88-5 FBTR (B)</td>
<td>Oxygen</td>
</tr>
<tr>
<td>4302211</td>
<td>88-5 FBTLC (C)</td>
<td>Fuel</td>
</tr>
<tr>
<td>4302212</td>
<td>88-5 FBTRC (C)</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

**MODEL SHOWN:**
- Model 88-5 FBTL (B) P/N: 4302209
- Model 88-5 FBTR (B) P/N: 4302210

### REGULATOR AND TORCH FLASHBACK ARRESTORS

**FEATURES**
- Prevents reverse flow of gases with built-in check valves
- Extinguishes flashback fire with stainless steel sintered element
- ⅝" - 18 connections CGA "B" size
- 100 Micron inlet filter helps keep dust and dirt out
- Flow Capacity: Models 88-5FBT (R&L) and 88-5FBR (R&L) arrestors should not be used with tip sizes larger than those noted below:
  - Hand Cutting Tips: NO.5 (except for NFF Tips - NO.4)
  - Machine Cutting Tips: NO.5 1/2
  - Acetylene Heating Tips: NO.4
  - Alternate Fuel Heating Tips: NO.2
  - Cleaning Heads: NO.2 RBP (no limitation with RBA)

- Same features as Model 88-5FBR (R&L) above, plus a thermal shut-off which positively shuts off the gas in case of hose fire, burn back or repeated flashbacks
- 100 Micron inlet filter helps keep dust and dirt out
- High flow capacity: can use all Harris tips featured in this catalog

**MODEL SHOWN:**
- Torch Type - Model 88-5FBT (R&L) P/N: 4302202 - (Sold in pairs only)
- Regulator Type - Model 88-5FBR (R&L) P/N: 4301651 - (Sold in pairs only)
- High-Flow Regulator Type - Model 88-5FBHFR (R&L) OXYGEN P/N: 4301652 - (Sold separately)
  FUEL P/N: 4301655 - (Sold separately)

### B" HOSE (⅝"-18) HIGH FLOW REGULATOR TYPE FLASHBACK ARRESTORS

**FEATURES**
- Same features as Model 88-5FBR (R&L) above, plus a thermal shut-off which positively shuts off the gas in case of hose fire, burn back or repeated flashbacks
- 100 Micron inlet filter helps keep dust and dirt out
- High flow capacity: can use all Harris tips featured in this catalog

**MODEL SHOWN:**
- Torch Type - Model 88-5FBT A (R&L) P/N: 4302205 - (Sold in pairs only)

### FLASHGUARD (¼"-24w) TORCH TYPE ARRESTORS FOR HVAC APPLICATIONS

**FEATURES**
- Automatically stops flashback fire at the torch with stainless steel sintered element, no resetting necessary
- 100 Micron inlet screen helps keep dust and dirt out
- Prevents reverse flow of gases with built-in check valves
- Fits Harris HVAC torches (¼" - 24 CGA "A" connections)

**MODEL SHOWN:**
- Torch Type - Model 88-5FBT A (R&L) P/N: 4302205 - (Sold in pairs only)
## REGULATOR AND TORCH SAFETY ACCESSORIES

### C" HOSE (¼"-14) HIGH FLOW REGULATOR TYPE FLASHBACK ARRESTORS

**FEATURES**
- Same features as Model 88-5FBHFR above except with ¼"-14 connections CGA "C" size
- 100 Micron inlet screen helps keep dust and dirt out
- High flow capacity: can supply all Harris tips featured in this catalog

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300389</td>
<td>88-6CVR (R&amp;L)</td>
<td>Pair</td>
<td>Fuel and Oxygen</td>
</tr>
<tr>
<td>4300384</td>
<td>88-6CVL</td>
<td>Individual</td>
<td>Fuel</td>
</tr>
<tr>
<td>4300383</td>
<td>88-6CVR</td>
<td>Individual</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

Regulator Type - Model 88-6CVR (R&L) - Mounts in the regulator, replacing the outlet nipple.

### FLASHGUARD® CHECK VALVES

Check valves fully open with only ounces of pressure. If reverse flow starts, the valve closes immediately for total shut-off.

**FEATURES**
- High capacity: Enough to cut up to 15" steel and for operating our largest heating torches
- Quality manufacture: valve spring made of stainless steel for long life
- 100% production tested: individually tested and packaged immediately to assure cleanliness
- ¾"-18 connections
- Conforms to OSHA regulations

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300389</td>
<td>88-6CVR (R&amp;L)</td>
<td>Pair</td>
<td>Fuel and Oxygen</td>
</tr>
<tr>
<td>4300384</td>
<td>88-6CVL</td>
<td>Individual</td>
<td>Fuel</td>
</tr>
<tr>
<td>4300383</td>
<td>88-6CVR</td>
<td>Individual</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

Model shown: 88-6CVR (R&L)

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300382</td>
<td>88-7CVRL</td>
<td>Individual</td>
<td>Fuel</td>
</tr>
<tr>
<td>4300381</td>
<td>88-7CVRR</td>
<td>Individual</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

Model shown: 88-7CVRL

### REGULATOR OUTLET CHECK VALVES

**REGULATOR OUTLET MOUNT TYPE**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300389</td>
<td>88-6CVR (R&amp;L)</td>
<td>Pair</td>
<td>Fuel and Oxygen</td>
</tr>
<tr>
<td>4300384</td>
<td>88-6CVL</td>
<td>Individual</td>
<td>Fuel</td>
</tr>
<tr>
<td>4300383</td>
<td>88-6CVR</td>
<td>Individual</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

Regulator Type - Model 88-6CVR (R&L) - Mounts on regulator outlet. P/N: 4300389 (Blister pack pair)

**REGULATOR OUTLET REPLACEMENT TYPE**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300382</td>
<td>88-7CVRL</td>
<td>Individual</td>
<td>Fuel</td>
</tr>
<tr>
<td>4300381</td>
<td>88-7CVRR</td>
<td>Individual</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

Regulator Type - Model 88-7CVR - Permanently mounts in the regulator, replacing the outlet nipple.

### TORCH TYPE CHECK VALVES

**TORCH INLET MOUNT TYPE**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300390</td>
<td>88-6CVT (R&amp;L)</td>
<td>Pair</td>
<td>Fuel and Oxygen</td>
</tr>
<tr>
<td>4300161</td>
<td>88-6CVT</td>
<td>Individual</td>
<td>Fuel</td>
</tr>
<tr>
<td>4300162</td>
<td>88-6CVTR</td>
<td>Individual</td>
<td>Oxygen</td>
</tr>
</tbody>
</table>

Torch Type - Model 88-6CVT (R&L) P/N: 4300390, Blister pack pair

**TORCH TYPE HVAC CHECK VALVES**

**"A" TYPE (¼" - 24) CHECK VALVES**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>PACK</th>
<th>FUEL/OXYGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300835</td>
<td>88-6CVTA (R&amp;L)</td>
<td>Pair</td>
<td>Fuel and Oxygen</td>
</tr>
</tbody>
</table>

Torch Type - Model 88-6CVTA (R&L)

Orders: 1.800.733.4043

{THE HARRIS PRODUCTS GROUP www.harrisproducts.com
PIPELINE AND MANIFOLD ACCESSORIES

REMOTE ALARM KITS NOT FOR FUEL GAS SERVICE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>USE WITH MANIFOLD SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300698</td>
<td>A/V Alarm Box</td>
<td>220 and 240 Systems</td>
</tr>
<tr>
<td>4300699</td>
<td>10ft Cable</td>
<td>220 and 240 Systems</td>
</tr>
<tr>
<td>4300709</td>
<td>50ft Cable</td>
<td>220 and 240 Systems</td>
</tr>
</tbody>
</table>

REMOTE ALARM KITS FOR FUEL GAS SERVICE

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>GAS SERVICE</th>
<th>DESCRIPTION</th>
<th>USE WITH MANIFOLD SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300343</td>
<td>Acetylene</td>
<td>Visual and audio</td>
<td>Optional on 220 Acetylene Systems</td>
</tr>
<tr>
<td>4300344</td>
<td>Hydrogen</td>
<td>Visual and audio</td>
<td>Optional on 220 Hydrogen Systems</td>
</tr>
<tr>
<td>4300345</td>
<td>LPG Gases</td>
<td>Visual and audio</td>
<td>Optional on 220 LPG Gas Systems</td>
</tr>
</tbody>
</table>

PIPELINE FLASHBACK ARRESTORS

8530 AND 147 MODELS DRY TYPE FLASHBACK ARRESTOR SYSTEMS
Flashback arrestors incorporate ASME relief valves and check valves in their design. They meet the requirements of NFPA 51 in oxy-fuel gas piping systems. Unlike hydraulic flash arrestors, dry arrestors are virtually maintenance free, do not require fluid, take up less space and provide continuous safe operation in fuel gas distribution systems. BAM/ABZ/003 Approved.

8530 AND 147 FEATURES
- High surface area stainless steel flash arrestor material extinguishes flashback
- Temperature sensitive shut-off valve extinguishes sustained flashbacks
- Check valve prevents reverse flow from forming explosive mixtures in the gas supply system
- Can be mounted in any position

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MODEL NO.</th>
<th>GAS</th>
<th>FLOW SCFH</th>
<th>INLET/OUTLET</th>
<th>RELIEF VALVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4300221</td>
<td>8530-A-1&quot;</td>
<td>Acetylene</td>
<td>750</td>
<td>1&quot; NPT</td>
<td>20 PSIG</td>
</tr>
<tr>
<td>4300222</td>
<td>8530-A-1/2&quot;</td>
<td>Acetylene</td>
<td>750</td>
<td>1/2&quot; NPT</td>
<td>20 PSIG</td>
</tr>
<tr>
<td>4300223</td>
<td>8530-FG-1&quot;</td>
<td>LPG, Natural Gas, H₂</td>
<td>1000</td>
<td>1&quot; NPT</td>
<td>40 PSIG</td>
</tr>
<tr>
<td>4300224</td>
<td>8530-FG-1/2&quot;</td>
<td>LPG, Natural Gas, H₂</td>
<td>1000</td>
<td>1/2&quot; NPT</td>
<td>40 PSIG</td>
</tr>
<tr>
<td>4300228</td>
<td>147-OX-1&quot;</td>
<td>Oxygen</td>
<td>5000</td>
<td>1&quot; NPT</td>
<td>225 PSIG</td>
</tr>
<tr>
<td>4300229</td>
<td>147-OX-1/2&quot;</td>
<td>Oxygen</td>
<td>5000</td>
<td>1/2&quot; NPT</td>
<td>225 PSIG</td>
</tr>
</tbody>
</table>
## PIPELINE AND MANIFOLD ACCESSORIES

### ADJUSTABLE WALL BRACKET

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>9103308</td>
<td>90°, Black, includes U-bolt and mounting clamp</td>
</tr>
</tbody>
</table>

### HEADER AND STATION VALVES

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MATERIAL</th>
<th>VALVE TYPE</th>
<th>INLET</th>
<th>OUTLET</th>
</tr>
</thead>
<tbody>
<tr>
<td>9005700</td>
<td>Brass</td>
<td>Packed Stem</td>
<td>¼” MNPT</td>
<td>580 CGA</td>
</tr>
<tr>
<td>9107062</td>
<td>Stainless Steel</td>
<td>Diaphragm</td>
<td>¼” MNPT</td>
<td>½” NPT (F)</td>
</tr>
<tr>
<td>9005706</td>
<td>Brass</td>
<td>Master Shut-off Valve</td>
<td>½” NPT (F)</td>
<td>½” NPT (F)</td>
</tr>
<tr>
<td>9005086</td>
<td>Brass</td>
<td>Station Oxygen</td>
<td>½” MNPT</td>
<td>½”-14 RH</td>
</tr>
<tr>
<td>9005088</td>
<td>Brass</td>
<td>Station Fuel</td>
<td>½” MNPT</td>
<td>½”-14 LH</td>
</tr>
</tbody>
</table>

### MANIFOLD CONNECTION FITTINGS

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>MATERIAL</th>
<th>VALVE TYPE</th>
<th>PRESSURE RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>9005701</td>
<td>Brass</td>
<td>1.00-11.5 NPS union nut, RH</td>
<td>3000</td>
</tr>
<tr>
<td>9005725</td>
<td>Brass</td>
<td>1.00-11.5 NPS union nut, LH</td>
<td>3000</td>
</tr>
<tr>
<td>9005703</td>
<td>Brass</td>
<td>½” NPT union nipple, 3” long</td>
<td>3000</td>
</tr>
<tr>
<td>9005759</td>
<td>Brass</td>
<td>¾” NPT union nipple, 3” long</td>
<td>3000</td>
</tr>
<tr>
<td>9005708</td>
<td>Brass</td>
<td>1.00-11.5 NPS x ½” NPT union bushing, RH</td>
<td>3000</td>
</tr>
<tr>
<td>9005726</td>
<td>Brass</td>
<td>1.00-11.5 NPS x ½” NPT union bushing, LH</td>
<td>3000</td>
</tr>
<tr>
<td>9005747</td>
<td>Brass</td>
<td>1.00-11.5 NPS x ¾” NPT union bushing, RH</td>
<td>3000</td>
</tr>
<tr>
<td>9005727</td>
<td>Brass</td>
<td>1.00-11.5 NPS x ¾” NPT union bushing, LH</td>
<td>3000</td>
</tr>
</tbody>
</table>

---

MODEL SHOWN:
- Diaphragm Valve
  - P/N: 9107062
- Master Shutoff Valve
  - P/N: 9005706
- Packed Stem Valve
  - P/N: 9005700
- Station Valve
  - P/N: 9005088
LOW PRESSURE/HIGH FLOW PIPELINE PARTICLE FILTER FOR OXYGEN, FUEL GASES AND INERT GASES

Removes dust, rust, scale and other particulate matter that can damage critical downstream components such as regulators, flash arrestors, valves, torches, etc. They feature an easy-to-replace 40 micron sintered bronze filter element.

**FILTER FEATURES**

- "T" style design allows filter replacement without removing from piping
- Low initial pressure drop within capacity of up to 25,000 SCFH (air)
- Pressure rating of up to 350 psi
- 1 year warranty
- Can be mounted in a vertical or horizontal position
- Cartridge included with filter

<table>
<thead>
<tr>
<th>FILTER PART NO.</th>
<th>GAS</th>
<th>INLET/OUTLET</th>
<th>FLOW SCFH AIR @ 100 PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC2HLF2560</td>
<td>Fuel</td>
<td>1&quot; NPT (F)</td>
<td>25,000</td>
</tr>
<tr>
<td>QC2HLF2580</td>
<td>Oxygen/Inert</td>
<td>1&quot; NPT (F)</td>
<td>25,000</td>
</tr>
<tr>
<td>QC2HLF2360</td>
<td>Fuel</td>
<td>½&quot; NPT (F)</td>
<td>14,000</td>
</tr>
<tr>
<td>QC2HLF2380</td>
<td>Oxygen/Inert</td>
<td>½&quot; NPT (F)</td>
<td>14,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CARTRIDGE PART NO.</th>
<th>FOR MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC2HLF2600</td>
<td>2400 and 2500</td>
</tr>
<tr>
<td>QC2HLF2610</td>
<td>2300</td>
</tr>
</tbody>
</table>

Filter Cartridge
**SINGLE AND DOUBLE OUTLET DROPS**

**DESCRIPTION**
The Harris Products Group single and dual station drops are OSHA compliant and can safely deliver a variety of gases from central piping systems to oxy-fuel, welding and other work stations. Single stations are equipped with fittings to allow conversion to dual stations with the purchase of required minor components. * Fuel and oxygen drops are equipped with check valves to meet OSHA and NFPA requirements. All models come with gas specific CGA connections as well as hard cap and chain to protect unused connections from contamination and damage. Plug on drip leg can be removed to clean system of contamination.

**DETAILS**
- **Inlet** – ½” FNPT, ¼ Quick Turn Valve
- **Mount** – Rear mount and side mount models available
- **Labels** – Variety of gas specific labels shipped with different models**

* Required fittings to convert single to dual station

<table>
<thead>
<tr>
<th><strong>B</strong> Inert - CGA 032</th>
<th><strong>C</strong> Inert CGA 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2” MNPT x 1/4” FNPT - PN 9005806</td>
<td>1/2” MNPT x 1/4” FNPT - PN 9005807</td>
</tr>
<tr>
<td>1/2” MNPT x 5/8”-18 FRH - PN 90050371</td>
<td>1/4” MNPT x 7/8”-14 FRH - PN 9005687</td>
</tr>
<tr>
<td>Cap and Chain - PN 8809688</td>
<td>Cap and Chain - PN 8809697</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>C</strong> Fuel - CGA 025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2” MNPT x CGA 025 - PN 8809686</td>
</tr>
<tr>
<td>Cap and Chain - PN 8809687</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>C</strong> Oxygen - CGA 025</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2” MNPT x CGA 024 - PN 9005807</td>
</tr>
<tr>
<td>Cap and Chain - PN 8809687</td>
</tr>
</tbody>
</table>

**PART NO.** | **DESCRIPTION** | **GAS SERVICE** | **INLET CONNECTION** | **OUTLET CONNECTION** |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4300805</td>
<td>Single Station Drop, Oxygen</td>
<td>Oxygen</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (M) CGA 024</td>
</tr>
<tr>
<td>4300806</td>
<td>Single Station Drop, Flammable Gas</td>
<td>Fuel Gas</td>
<td>1/2” FNPT</td>
<td>7/8-14 LH “C” (M) CGA 025</td>
</tr>
<tr>
<td>4300807</td>
<td>Single Station Drop, Inert/Air</td>
<td>Inert/Air</td>
<td>1/2” FNPT</td>
<td>5/8-18 RH “B” (F) CGA 032</td>
</tr>
<tr>
<td>4300808</td>
<td>Single Station Drop, Inert/Air</td>
<td>Inert/Air</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (F) CGA 033</td>
</tr>
<tr>
<td>4300813</td>
<td>Side Mount Single Station Drop, Oxygen</td>
<td>Oxygen</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (M) CGA 024</td>
</tr>
<tr>
<td>4300814</td>
<td>Side Mount Single Station Drop, Flammable Gas</td>
<td>Fuel Gas</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (M) CGA 025</td>
</tr>
<tr>
<td>4300815</td>
<td>Side Mount Single Station Drop, Inert/Air</td>
<td>Inert/Air</td>
<td>1/2” FNPT</td>
<td>5/8-18 RH “B” (F) CGA 032</td>
</tr>
<tr>
<td>4300816</td>
<td>Side Mount Single Station Drop, Inert/Air</td>
<td>Inert/Air</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (F) CGA 034</td>
</tr>
<tr>
<td>4300809</td>
<td>Double Station Drop, Oxygen</td>
<td>Oxygen</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (M) CGA 024</td>
</tr>
<tr>
<td>4300810</td>
<td>Double Station Drop, Flammable Gas</td>
<td>Fuel Gas</td>
<td>1/2” FNPT</td>
<td>7/8-14 LH “C” (M) CGA 025</td>
</tr>
<tr>
<td>4300811</td>
<td>Double Station Drop, Inert/Air</td>
<td>Inert/Air</td>
<td>1/2” FNPT</td>
<td>5/8-18 RH “B” (F) CGA 032</td>
</tr>
<tr>
<td>4300812</td>
<td>Double Station Drop, Inert/Air</td>
<td>Inert/Air</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (F) CGA 034</td>
</tr>
<tr>
<td>4300817</td>
<td>Side Mount Double Station Drop, Oxygen</td>
<td>Oxygen</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (M) CGA 024</td>
</tr>
<tr>
<td>4300818</td>
<td>Side Mount Double Station Drop, Flammable Gas</td>
<td>Fuel Gas</td>
<td>1/2” FNPT</td>
<td>7/8-14 LH “C” (M) CGA 025</td>
</tr>
<tr>
<td>4300819</td>
<td>Side Mount Double Station Drop, Inert/Air</td>
<td>Inert/Air</td>
<td>1/2” FNPT</td>
<td>5/8-18 RH “B” (F) CGA 032</td>
</tr>
<tr>
<td>4300820</td>
<td>Side Mount Double Station Drop, Inert/Air</td>
<td>Inert/Air</td>
<td>1/2” FNPT</td>
<td>7/8-14 RH “C” (F) CGA 034</td>
</tr>
</tbody>
</table>

**Gas specific labels provided**

Flammable Gas: Acetylene, LPG and Hydrogen
Inert gases: Argon, CO2, Helium, Nitrogen, Ar/CO2, Air

**Drip Leg** – Included on all models
**Length** – 20” (Ref.) both single and dual drop models

**MODEL SHOWN:** 4300811

**PART NO.**

4300805
4300806
4300807
4300808
4300813
4300814
4300815
4300816
4300809
4300810
4300811
4300812
4300817
4300818
4300819
4300820

**TECHNICAL DATA**

Orders: 1.800.733.4043
WHAT INFORMATION CAN BE DETERMINED FROM A FLOW CURVE?
The following sketch explains how to interpret the flow curves presented in this catalog.

**Maximum Flow** - A rating defined as the maximum amount a regulator can flow when the set delivery pressure approaches 0 PSIG (vertical axis on flow curve). This point on the curve represents a blanketing operation.

**Rated Flow** - A rating defined as 80% of the maximum flow. This point on the flow curve corresponds to typical operating conditions.

Note: All regulator flow curves in the catalog have been developed using air at 70°F. To obtain flow rates for other gases, multiply flow by the correction factor in Table 1a (to the right).

WHAT IS $C_v$?
The $C_v$ or the flow coefficient is a number that represents the flow capacity of a regulator for a given set of conditions. The $C_v$ can be used to compare flow capacity between two regulators. The higher the $C_v$, the greater the flow capacity. The $C_v$ values listed in this catalog represent the overall $C_v$ of the regulator including the outlet fitting.

WHAT IS PRESSURE RISE?
Pressure rise is the change in set delivery pressure as a result of a drop or decay in inlet pressure. For example, the rise on a Model 25GX is expressed as 0.2 PSIG/100 PSIG. Regulators are measured on their ability to provide a flat delivery curve. Pressure rise can be used to explain the main advantage of two stage vs. single-stage. See pressure regulation chart.

WHAT IS CGA E-4?
CGA E-4 is a regulator standard developed by the Industrial Gas Apparatus Committee of the Compressed Gas Association. The standard defines product safety requirements, product test requirements and performance characteristics to meet field applications.

WHAT ARE GAS FLOW CORRECTION FACTORS?
Each gas has a different density and therefore flows at different rates under the same pressures and conditions. The correction factor compares their densities to air.

---

**TABLE 1a. GAS CORRECTION FACTORS**

<table>
<thead>
<tr>
<th>Gas</th>
<th>Correction Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide</td>
<td>0.81</td>
</tr>
<tr>
<td>Propane</td>
<td>0.81</td>
</tr>
<tr>
<td>Propylene</td>
<td>0.83</td>
</tr>
<tr>
<td>Argon</td>
<td>0.85</td>
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<tr>
<td>Oxygen</td>
<td>0.95</td>
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<tr>
<td>Air</td>
<td>1.00</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>1.02</td>
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<tr>
<td>Acetylene</td>
<td>1.05</td>
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<tr>
<td>Methane</td>
<td>1.34</td>
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<tr>
<td>Helium</td>
<td>2.69</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>3.79</td>
</tr>
</tbody>
</table>

---

**PRESSURE REGULATION**

---
MODELS 601 & 301

MODEL 601

DETAILS
Regulator Weight: 1.39 lbs./0.63 kg
Pressure Rise: 0.43 PSIG per 100 PSIG
Cv: 0.08

MODEL 301

DETAILS
Regulator Weight: 2.2 lbs./0.99 kg
Pressure Rise: 0.4 PSIG per 100 PSIG
Cv: 0.08

THE HARRIS PRODUCTS GROUP
www.harrisproductsgroup.com
MODEL 25GX HVAC

PERFORMANCE CHART
ALL FLOWS BASED ON AIR @ 70°F

MODEL 25GX-500 HIGH PRESSURE SINGLE-STAGE REGULATOR
- 25GX-500 @ 2000 PSIG inlet
- 25GX-500 @ 500 PSIG inlet

MODEL 25GX-250 HIGH PRESSURE SINGLE-STAGE REGULATOR
- 25GX-250 @ 2000 PSIG inlet
- 25GX-250 @ 250 PSIG inlet

DETAILS
Regulator Weight: 3.2 lbs./1.45 kg
Pressure Rise: 0.2 PSIG per 100 PSIG
Cₗ: 0.17
MODEL 425

DETAILS
Regulator Weight: 3.7 lbs./1.67 kg.
Pressure Rise: 0.2 PSIG per 100 PSIG
Cv: 0.17

MODEL 29

DETAILS
Regulator Weight: 2.7 lbs./1.22 kg.
Pressure Rise: 0.2 PSIG per 100 PSIG
Cv: 0.17

MODEL 25GX

DETAILS
Regulator Weight: 3.2 lbs./1.45 kg.
Pressure Rise: 0.2 PSIG per 100 PSIG
Cv: 0.17
MODEL 45, 2500 & 450

MODEL 45

DETAILS
Regulator Weight: 3.2 lb / 1.45 kg
Pressure Rise: 0.2 PSIG per 100 PSIG
Cv: 0.17

MODEL 2500

DETAILS
Regulator Weight: 4.6 lb / 2.09 kg
Pressure Rise: 0.3 PSIG per 100 PSIG
Cv: 0.17

MODEL 450

DETAILS
Regulator Weight: 4.6 lb / 2.09 kg
Pressure Rise: 0.3 PSIG per 100 PSIG
Cv: 0.17

MODEL 45 SINGLE-STAGE REGULATOR
- 45-145 @ 2000 PSIG inlet
- 45-145 @ 200 PSIG inlet
- 45-15 @ 200 PSIG inlet

MODEL 2500 SINGLE-STAGE REGULATOR
- 2500-125 @ 2000 PSIG inlet
- 2500-125 @ 200 PSIG inlet
- 2500-50 @ 200 PSIG inlet
- 2500-15 @ 200 PSIG inlet

MODEL 450 SINGLE-STAGE REGULATOR
- 450-200 @ 2000 PSIG inlet
- 450-200 @ 200 PSIG inlet
- 450-125 @ 2000 PSIG inlet
- 450-125 @ 200 PSIG inlet
- 450-50 @ 200 PSIG inlet
- 450-15 @ 200 PSIG inlet

PERFORMANCE CHART
All flows based on air @ 70°F
**TECHNICAL DATA**

**MODEL 45S & 330**

**MODEL 45S**

**DETAILS**

Regulator Weight: 3.2 lb / 1.45 kg
Pressure Rise: 0.3 PSIG per 100 PSIG

\[ C_v = 0.17 \]

**MODEL 330**

**DETAILS**

Regulator Weight: 4.3 lb / 1.95 kg.

\[ C_v = 0.37 \]

**PERFORMANCE CHART**

**MODEL 45S SINGLE-STAGE REGULATOR**
- 45S-145 @ 2000 PSIG inlet
- 45S-145 @ 200 PSIG inlet
- 45S-15 @ 200 PSIG inlet

**MODEL 330 LIQUID CYLINDER REGULATOR**
- 330-125 @ 200 PSIG inlet
- 330-350 @ 400 PSIG inlet
- 330-500 @ 600 PSIG inlet
MODEL 647 & HP 750

MODEL 647

DETAILS
Regulator Weight: 3.8 lb / 1.72 kg
Cv: 0.17

MODEL 750

DETAILS
Regulator Weight: 8.5 lbs./3.85 kg.
Pressure Rise: 0.4 on 5500 psi inlet models
Cv: 0.55 on 3000 psi inlet models

PRESSURE REGULATION
0.3 PSIG/100 PSIG on 5500 psi inlet Models
0.5 PSIG/100 PSIG on 3000 psi inlet Models

TECHNICAL DATA
MODEL 8700

DETAILS

NON-RELIEVING VALVES
Regulator Weight: 5.8 lb / 2.63 kg
Pressure Rise: 3.3 PSIG per 100 PSIG
Cv: 0.08

DETAILS

SELF-RELIEVING VALVES
Regulator Weight: 7.0 lb / 3.17 kg
Pressure Rise: 3.3 PSIG per 100 PSIG
Cv: 0.08
MODELS 3500 & 3510

MODEL 3500

DETAILS
Regulator Weight: 4.6 lbs. / 2.09 kg.
Pressure Rise: 1.6 PSIG per 100 PSIG
Cv: 0.55
For Models 3003504, 3003505, 3003514, 3003540, 3003541, 3003538, 3003539 and all 3510 Manifold Regulator

FOR OTHER MODELS
Pressure Rise: 0.9 PSIG per 100 PSIG
Cv: 0.4

MODEL 3510

DETAILS
Regulator Weight: 5.5 lbs. / 2.49 kg.
Pressure Rise: 1.6 PSIG per 100 PSIG
Cv: 0.4 for 15 PSIG models and 0.55 for all other models
MODELS 3520 & 3530

MODEL 3520

DETAILS
Regulator Weight: 4.5 lbs.
Pressure Rise: 1.6 PSIG per 100 PSIG
Cₜ: 0.55

MODEL 3530

DETAILS
Regulator Weight: 4.3 lbs.
Pressure Rise: 1.6 PSIG per 100 PSIG
Cₜ: 0.55

MODEL 3520 & 3530 PIPELINE REGULATOR

- 3520-50 @ 200 PSIG inlet
- 3520-15 @ 100 PSIG inlet
- 3520-50 @ 250 PSIG inlet
- 3520-125 @ 250 PSIG inlet
- 3520-250 @ 500 PSIG inlet
- 3520-500 @ 750 PSIG inlet
MODELS 3540 & 3560

MODEL 3540

DETAILS
Regulator Weight: 6.9 lbs /3.13 kg.
Pressure Rise: 5.5 PSIG per 100 PSIG
Cv: 1.0

MODEL 3560

DETAILS
Regulator Weight: 6.7 lbs /3.04 lbs.
Pressure Rise: 5.5 PSIG per 100 PSIG
Cv: 1.0

MODEL 3540 & 3560 PIPELINE REGULATOR
- 15 @ 100 PSIG inlet
- 50 @ 200 PSIG inlet
- 125 @ 300 PSIG inlet
- 250 @ 400 PSIG inlet
- 500 @ 750 PSIG inlet

PERFORMANCE CHART
All flows based on air @ 70°F
DETAILS
Regulator Weight: 6.9 lbs./3.13 kg.
Pressure Rise: 5.5 PSIG per 100 PSIG
Cv: 1.0

MODEL 3580 & 3590 PIPELINE REGULATOR
- 15 @ 100 PSIG inlet
- 50 @ 200 PSIG inlet
- 125 @ 300 PSIG inlet
- 250 @ 400 PSIG inlet
- 500 @ 750 PSIG inlet
MODELS 247, 447 & 547

**MODEL 247**

- **Regulator Weight:** 3.6 lbs. / 1.63 kg.
- **Pressure Rise:** 1.6 PSIG per 100 PSIG
- **Cₜ:** 0.53

**MODEL 447**

- **Regulator Weight:** 3.6 lbs. / 1.63 kg.
- **Pressure Rise:** 1.6 PSIG per 100 PSIG
- **Cₜ:** 0.53

**MODEL 547**

- **Regulator Weight:** 3.6 lbs. / 1.63 kg.
- **Pressure Rise:** 1.6 PSIG per 100 PSIG
- **Cₜ:** 0.53

**PERFORMANCE CHART**

ALL FLOWS BASED ON AIR @ 70°F

- **MODEL 247, 447 & 547 STATION/PIPELINE REGULATOR**
  - 447/547-200 @ 200 PSIG inlet
  - 447/547-125 @ 200 PSIG inlet
  - 447/547-50 @ 200 PSIG inlet
  - 447/547-15 @ 200 PSIG inlet

**DETAILS**

- **Regulator Weight:** 3.6 lbs. / 1.63 kg.
- **Pressure Rise:** 1.6 PSIG per 100 PSIG
- **Cₜ:** 0.53
MODEL 2548

DETAILS

Regulator Weight: 3.8 lbs./1.72 kg.
Pressure Rise: 0.9 PSIG per 100 PSIG
Cv: 0.4

MODEL 2548 PIPELINE REGULATOR - 200 PSIG INLET

<table>
<thead>
<tr>
<th>Model</th>
<th>Inlet Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2548-200</td>
<td>200 PSIG in</td>
</tr>
<tr>
<td>2548-125</td>
<td>200 PSIG in</td>
</tr>
<tr>
<td>2548-50</td>
<td>200 PSIG in</td>
</tr>
<tr>
<td>2548-15</td>
<td>200 PSIG in</td>
</tr>
</tbody>
</table>

MODEL 2548 PIPELINE REGULATOR - 2000 PSIG INLET

<table>
<thead>
<tr>
<th>Model</th>
<th>Inlet Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2548-200</td>
<td>2000 PSIG in</td>
</tr>
<tr>
<td>2548-125</td>
<td>2000 PSIG in</td>
</tr>
<tr>
<td>2548-50</td>
<td>2000 PSIG in</td>
</tr>
<tr>
<td>2548-15</td>
<td>2000 PSIG in</td>
</tr>
</tbody>
</table>

PERFORMANCE CHART

ALL FLOWS BASED ON AIR @ 70ºF

FLOW (SCFH) vs. DELIVERY PRESSURE (PSIG)

FLOW (SCFH) vs. DELIVERY PRESSURE (PSIG)
MODEL 2561 & 9296

MODEL 2561

DETAILS
Regulator Weight: 4.8 lbs / 2.18 kg.
Pressure: 0.04 PSIG per 100 PSIG
Cv: 0.15

MODEL 9296

DETAILS
Regulator Weight: 4.8 lbs / 2.18 kg.
Pressure Rise: 0.04 PSIG per 100 PSIG
Cv: 0.15

PERFORMANCE CHART
ALL FLOWS BASED ON AIR @ 70°F

MODEL 9296 & 2561 TWO STAGE REGULATOR
- 9296-250 @ 250 PSIG inlet
- 9296-125 @ 200 PSIG inlet
- 9296-50 @ 200 PSIG inlet
- 9296-15 @ 200 PSIG inlet

MODEL 9296

MODEL 2561

THE HARRIS PRODUCTS GROUP
www.harrisproductsgroup.com
Orders: 1.800.733.4043
MODEL 9296SS

DETAILS
Regulator Weight: 5.4 lbs. / 2.45 kg.
Pressure Rise: 0.04 PSIG per 100 PSIG
Cv: 0.15
MODEL 9200

DETAILS
Regulator Weight: 6.8 lbs. / 13.08 kg
Pressure Rise: 0.05 PSIG per 100 PSIG
Cv : 0.53
For fuel gas Models (P/N:3302210, 3302211 and 3302212)

FOR OTHER MODELS
Regulator Weight: 6.8 lbs. / 13.08 kg,
Pressure Rise: 0.03 PSIG per 100 PSIG
Cv : 0.37

PERFORMANCE CHART
ALL FLOWS BASED ON AIR @ 70ºF

MODEL 9200 TWO STAGE REGULATOR - 200 PSIG INLET
- 9200-250 @ 250 PSIG inlet
- 9200-125 @ 200 PSIG inlet
- 9200-50 @ 200 PSIG inlet
- 9200-15 @ 200 PSIG inlet

MODEL 9200 TWO STAGE REGULATOR - 2000 PSIG INLET
- 2548-200 @ 2000 PSIG inlet
- 2548-125 @ 2000 PSIG inlet
- 2548-50 @ 2000 PSIG inlet
- 2548-15 @ 2000 PSIG inlet
**DETAILS**

**MODEL 9235 & HP 705**

**REGULATOR WEIGHT:** 6.9 lbs. / 3.13 kg.

**PRESSURE RISE:** 0.05 PSIG per 100 PSIG

**Cv:** 0.4

**MODEL 9235 TWO STAGE REGULATOR**

- **9235-350 @ 2000 PSIG inlet**
- **9235-350 @ 500 PSIG inlet**

**MODEL HP705**

**REGULATOR WEIGHT:** 6.8 lbs. / 13.08 kg.

**PRESSURE RISE:** 0.09 PSIG per 100 PSIG

**Cv:** 0.15

**MODEL HP705 TWO STAGE REGULATOR**

- **HP 705-125 @ 200 PSIG inlet**
- **HP 705-125 @ 2000 PSIG inlet**
"E" MIXER VS. "F" MIXER

HARRIS OFFERS TWO TYPES OF OXY/FUEL MIXERS. EQUAL PRESSURE OR POSITIVE MIXERS ARE REFERRED TO AS "E" TYPE MIXERS WHILE, LOW PRESSURE INJECTOR MIXERS ARE REFERRED TO AS "F" MIXERS. THE TYPE OF MIXER WHICH BEST SUITS THE NEED DEPENDS ON THE APPLICATION AND THE AVAILABLE FUEL GAS SUPPLY. THE FOLLOWING Explains some of the features and benefits of each mixer design.

TYPICAL "E" MIXER DESIGN
To thoroughly mix the oxygen and fuel gas, "E" mixer designs rely on the positive pressure control of both oxygen and fuel gas. Both gases enter the mixing chamber at controlled pressures. "E" mixers allow the end-user greater control of the oxy/fuel ratio. This feature has an advantage in applications where a very carburizing or oxidizing flame is required. Also because of their higher potential flow rates, "E" mixers are required for high flow heating applications. This design is primarily used with acetylene but can also be used with alternate fuels when positive pressure control of the fuel gas is available.

TYPICAL "F" MIXER DESIGN
"F" or low pressure injector mixers require that only the oxygen has a positive pressure control. The oxygen exits a specially designed chamber at a very high velocity which causes the fuel gas to be aspirated into the mixing chamber. Because of the aspirating effect on the fuel gas, positive control of the fuel gas is not required. In fact, the mixers in the Harris line are designed to operate at fuel gas pressures as low as 4 ounces. "F" mixers tend to produce a more homogenous oxy/fuel mixture because of the high turbulence in the mixing chamber. This feature is most important when using the more difficult to mix alternate fuels. "F" mixers tend to have a narrower operating range than "E" mixers but because of their superior mixing capabilities they tend to maximize BTU output within that range. "F" mixers are used primarily with low pressure natural gas. However, they are also recommended for use with alternate fuels when maximum BTU output is needed and/or positive pressure control of the fuel gas is not available.
## FUEL GAS TECHNICAL DATA

### TECHNICAL DATA FOR THE MOST COMMON INDUSTRY FUEL GASES

<table>
<thead>
<tr>
<th></th>
<th>Acetylene</th>
<th>Butane</th>
<th>Propane</th>
<th>Propane</th>
<th>Natural Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max. Flame Temperature °F</strong></td>
<td>5720</td>
<td>4980</td>
<td>5240</td>
<td>5130</td>
<td>5040</td>
</tr>
<tr>
<td><strong>Oxy/Fuel Combination Ratio (Maximum Temp.)</strong></td>
<td>1.5:1</td>
<td>4.5:1</td>
<td>3:6:1</td>
<td>4.5:1</td>
<td>1.9:1</td>
</tr>
<tr>
<td><strong>Neutral Flame Temperature °F</strong></td>
<td>5620</td>
<td>4925</td>
<td>5190</td>
<td>5090</td>
<td>5010</td>
</tr>
<tr>
<td><strong>Oxy/Fuel Combination Ratio (Neutral)</strong></td>
<td>1.1:1</td>
<td>3.8:1</td>
<td>2.6:1</td>
<td>3.7:1</td>
<td>1.5:1</td>
</tr>
<tr>
<td><strong>Btu's Per Cubic Foot</strong></td>
<td>1470</td>
<td>3394</td>
<td>2370</td>
<td>2563</td>
<td>1000</td>
</tr>
<tr>
<td><strong>% BTU in Outer Cone</strong></td>
<td>65</td>
<td>92</td>
<td>84</td>
<td>89</td>
<td>97</td>
</tr>
<tr>
<td><strong>Burning Velocity in O&lt;sub&gt;2&lt;/sub&gt;</strong></td>
<td>22.7/sec.</td>
<td>11.2/sec.</td>
<td>15.0/sec.</td>
<td>12.2/sec.</td>
<td>15.2/sec.</td>
</tr>
<tr>
<td><strong>Flammability Limits in O&lt;sub&gt;2&lt;/sub&gt;</strong></td>
<td>3-93 %</td>
<td>1.8-8.5%</td>
<td>2.5-60%</td>
<td>2.4-57%</td>
<td>5-59%</td>
</tr>
<tr>
<td><strong>Flammability Limits in Air</strong></td>
<td>2.5-80 %</td>
<td>N/A</td>
<td>2.0-11.1 %</td>
<td>2.3-9.5 %</td>
<td>5.3-14 %</td>
</tr>
<tr>
<td><strong>Specific Gravity (Air=1@60°F)</strong></td>
<td>0.91</td>
<td>2.08</td>
<td>1.45</td>
<td>1.56</td>
<td>0.55</td>
</tr>
<tr>
<td><strong>Vapor Pressure (PSIG @ 70°F)</strong></td>
<td>250</td>
<td>16.3</td>
<td>135</td>
<td>120</td>
<td>(LINE PRESSURE)</td>
</tr>
<tr>
<td><strong>Lbs/Gal Liquid</strong></td>
<td>-</td>
<td>4.7</td>
<td>4.8</td>
<td>4.35</td>
<td>4.28</td>
</tr>
<tr>
<td><strong>Cubic Ft/Lb Gas</strong></td>
<td>14.6</td>
<td>6.4</td>
<td>9.0</td>
<td>8.66</td>
<td>23.6</td>
</tr>
<tr>
<td><strong>Cubic Ft/Gal Liquid</strong></td>
<td>-</td>
<td>30</td>
<td>43.5</td>
<td>43</td>
<td>37</td>
</tr>
</tbody>
</table>

*Data above is from reliable industry sources and is used in Harris Fuel Gas Cost Analysis Programs*

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