

# **HARRIS®**

**GAS APPARATUS & FLOW CONTROL EQUIPMENT**



## **INTERNATIONAL EQUIPMENT CATALOGUE**





The Harris Products Group was officially formed in 2005 with the combination of Harris Calorific, located in Georgia, USA and in Pianoro (BO), Italy, and J.W. Harris Company, located in Ohio, USA.

The merger resulted from a series of acquisitions by The Lincoln Electric Company.

Harris Calorific is a manufacturer of gas welding and cutting equipment, industrial and specialty gas regulation equipment and gas distribution systems. J.W. Harris is a major producer of soldering, brazing and welding rings; it manufactures high quality alloys and specializes in phosphorus/ copper and phosphorus/ copper/ silver brazing alloys for the air-conditioning and refrigeration industries.

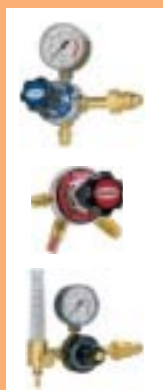
The result of this merger is a very powerful combination of customer service teams working together to provide best-in-class service to Harris' customers.

The Harris Products Group includes facilities in the United States, Italy, Poland, Spain, Germany, Mexico and Brazil, giving the Company a broad global footprint.

Today Harris is very proud to supply products and equipment of the highest quality to the global cutting, brazing, soldering and welding markets in over 95 different countries.



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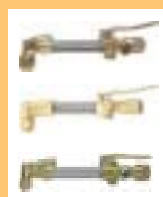
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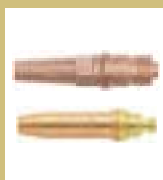
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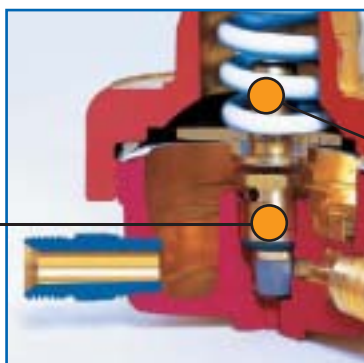
# Regulators

## General features:

- ▶ Harris regulators are designed and manufactured according to the most recent international standards:
  - EN ISO 2503 FOR CYLINDER PRESSURE REGULATORS
  - EN 13918 FOR CYLINDER FLOW REGULATORS
  - PRESSURE GAUGES CONFORM TO EN 562
- ▶ High pressure capsule seat with PTFE (Teflon) sealing surface
- ▶ Compressed gas regulators D version have tamperproof self reseating internal safety relief valve (IRV)
- ▶ All regulators supplied with inlet and outlet to suit country



One piece encapsulated seat with internal filter



Tamper proof, self reseating internal safety relief valve IRV

## Cylinder Pressure Regulators

### Model 601 Compact single stage cylinder pressure regulator

#### Applications:

- ▶ Light duty cutting, welding and brazing

#### Features:

- ▶ Maximum inlet pressure of 230 bar
- ▶ Forged brass body and bonnet
- ▶ Rear inlet connection (side entry optional)
- ▶ 50 mm safety gauge



601-1.5-AC

| MODEL NO.  | VERSION   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|-----------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-------------------------------|-----------------------------|
| 601-1.5-AC | -         | Acetylene                                                         | 25                       | 0-1.5                   | 7                   | 0-2.5                         | 0-40                        |
| 601-4-LP   | -         | Propane                                                           | 25                       | 0-4                     | 20                  | 0-6                           | 0-40                        |
| 601P-4-LP  | one gauge | Propane                                                           | 25                       | 0-4                     | 20                  | 0-6                           |                             |
| 601D-10-OX | -         | Oxygen                                                            | 230                      | 0-10                    | 42                  | 0-16                          | 0-315                       |
| 601D-10 *  | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 42                  | 0-16                          | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 80I

### Single stage cylinder regulator

#### Applications:

- ▶ Medium duty cutting, heating and welding

#### Features:

- ▶ Maximum inlet pressure of 230 bar
- ▶ Enough flow to cut up to 300 mm. steel
- ▶ Smooth adjustment, with high precision
- ▶ Side inlet connection
- ▶ Standard version with chromed bonnet, gold painted gauge case
- ▶ B version fitted with black bonnet and black gauge case



801DB-10-OX

| MODEL NO.   | VERSION   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | SUPPLY PRESSURE GAUGE (bar) | DELIVERY PRESSURE GAUGE (bar) |
|-------------|-----------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-----------------------------|-------------------------------|
| 801-1.5-AC  | -         | Acetylene                                                         | 25                       | 0-1.5                   | 30                  | 0-40                        | 0-2.5                         |
| 801B-1.5-AC | -         | Acetylene                                                         | 25                       | 0-1.5                   | 30                  | 0-40                        | 0-2.5                         |
| 801-4-LP    | -         | Propane                                                           | 25                       | 0-4                     | 16.5                | 0-40                        | 0-6                           |
| 801B-4-LP   | -         | Propane                                                           | 25                       | 0-4                     | 16.5                | 0-40                        | 0-6                           |
| 801P-4-LP   | one gauge | Propane                                                           | 25                       | 0-4                     | 16.5                |                             | 0-6                           |
| 801BP-4-LP  | one gauge | Propane                                                           | 25                       | 0-4                     | 16.5                |                             | 0-6                           |
| 801D-4-OX   | -         | Oxygen                                                            | 230                      | 0-4                     | 100                 | 0-315                       | 0-6                           |
| 801DB-4-OX  | -         | Oxygen                                                            | 230                      | 0-4                     | 100                 | 0-315                       | 0-6                           |
| 801D-4 *    | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-4                     | 100                 | 0-315                       | 0-6                           |
| 801DB-4 *   | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-4                     | 100                 | 0-315                       | 0-6                           |
| 801D-10-OX  | -         | Oxygen                                                            | 230                      | 0-10                    | 155                 | 0-315                       | 0-16                          |
| 801DB-10-OX | -         | Oxygen                                                            | 230                      | 0-10                    | 155                 | 0-315                       | 0-16                          |
| 801D-10 *   | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                 | 0-315                       | 0-16                          |
| 801DB-10 *  | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                 | 0-315                       | 0-16                          |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 82I

### Single stage with rear entry

#### Applications:

- ▶ Medium duty cutting, heating and welding

#### Features:

- ▶ Maximum inlet pressure of 230 bar
- ▶ Enough flow to cut up to 300 mm. steel
- ▶ Smooth adjustment, with high precision
- ▶ Rear inlet connection ideal for better visibility on small cylinder
- ▶ B version fitted with black bonnet and black gauge case



821D-10-OX

| MODEL NO.   | VERSION   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|-------------|-----------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-------------------------------|-----------------------------|
| 821-1.5-AC  | -         | Acetylene                                                         | 25                       | 0-1.5                   | 30                  | 0-2.5                         | 0-40                        |
| 821B-1.5-AC | -         | Acetylene                                                         | 25                       | 0-1.5                   | 30                  | 0-2.5                         | 0-40                        |
| 821-4-LP    | -         | Propane                                                           | 25                       | 0-4                     | 16.5                | 0-6                           | 0-40                        |
| 821B-4-LP   | -         | Propane                                                           | 25                       | 0-4                     | 16.5                | 0-6                           | 0-40                        |
| 821P-4-LP   | one gauge | Propane                                                           | 25                       | 0-4                     | 16.5                | 0-6                           |                             |
| 821BP-4-LP  | one gauge | Propane                                                           | 25                       | 0-4                     | 16.5                | 0-6                           |                             |
| 821D-10-OX  | -         | Oxygen                                                            | 230                      | 0-10                    | 155                 | 0-16                          | 0-315                       |
| 821DB-10-OX | -         | Oxygen                                                            | 230                      | 0-10                    | 155                 | 0-16                          | 0-315                       |
| 821D-10 *   | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                 | 0-16                          | 0-315                       |
| 821DB-10 *  | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                 | 0-16                          | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 841

### Single stage cylinder regulator

#### Applications:

- ▶ Medium duty cutting, heating and welding applications.

#### Features:

- ▶ Maximum inlet pressure of 230 bar
- ▶ Enough flow to cut steel up to 300 mm. thickness
- ▶ Smooth adjustment, with high precision
- ▶ Chromed bonnet and gold painted gauge case



841D-10-OX

| MODEL NO.    | GAS       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|--------------|-----------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 841-1.5-AC   | Acetylene | 25                       | 0-1.5                   | 30                    | 0-2.5                         | 0-40                        |
| 841-4-LP     | Propane   | 25                       | 0-4                     | 16.5                  | 0-6                           | 0-40                        |
| 841D-10-OX * | Oxygen    | 230                      | 0-10                    | 155                   | 0-16                          | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 842

### Single stage cylinder regulator

#### Applications:

- ▶ Medium duty cutting, heating and welding applications.

#### Features:

- ▶ Maximum inlet pressure of 230 bar
- ▶ Enough flow to cut steel up to 300 mm. thickness
- ▶ Smooth adjustment, with high precision
- ▶ Black bonnet and black gauge case
- ▶ Without regulation outlet valve
- ▶ W version fitted with outlet valve



842D-10-OX

| MODEL NO.   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|-------------|-------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 842-1.5-AC  | Acetylene                                                         | 25                       | 0-1.5                   | 30                    | 0-2.5                         | 0-40                        |
| 842-4-LP    | Propane                                                           | 25                       | 0-4                     | 16.5                  | 0-6                           | 0-40                        |
| 842D-10-OX  | Oxygen                                                            | 230                      | 0-10                    | 155                   | 0-16                          | 0-315                       |
| 842DW-10-OX | Oxygen                                                            | 230                      | 0-10                    | 155                   | 0-16                          | 0-315                       |
| 842D-10 *   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                   | 0-16                          | 0-315                       |
| 842DW-10 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                   | 0-16                          | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 814

### Single stage with one gauge

#### Applications:

- ▶ Medium duty cutting, heating and welding

#### Features:

- ▶ Maximum inlet pressure of 230 bar
- ▶ Enough flow to cut up to 300 mm. steel
- ▶ Smooth adjustment, with high precision
- ▶ Side inlet connection
- ▶ Delivery pressure set by turning the knob on calibrated bonnet
- ▶ Cylinder pressure shown on HP pressure gauge
- ▶ B version fitted with black bonnet and black gauge case



Bonnet calibration



814D-10-OX

| MODEL NO                  | VERSION   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | SUPPLY PRESSURE GAUGE (bar) |
|---------------------------|-----------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-----------------------------|
| 814-1.5-AC<br>814B-1.5-AC | one gauge | Acetylene                                                         | 25                       | 0-1.5                   | 30                  | 0-40                        |
| 814-4-LP<br>814B-4-LP     | one gauge | Propane                                                           | 25                       | 0-4                     | 16.5                | 0-40                        |
| 814D-10-OX<br>814DB-10-OX | one gauge | Oxygen                                                            | 230                      | 0-10                    | 155                 | 0-315                       |
| 814D-10 *<br>814DB-10 *   | one gauge | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                 | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 818

### Single stage gaugeless

#### Applications:

- ▶ Medium duty cutting, heating and welding
- ▶ Designed for all industrial applications in the toughest working conditions

#### Features:

- ▶ Maximum inlet pressure of 230 bar
- ▶ Enough flow to cut up steel 300 mm. thickness
- ▶ Smooth adjustment, with high precision
- ▶ Side inlet connection
- ▶ Cylinder pressure shown on indicator with polycarbonate cover
- ▶ Delivery pressure set by turning the knob on calibrated bonnet
- ▶ B version fitted with black bonnet



Bonnet calibration



Indicator



818D-10-OX

| MODEL NO.                 | VERSION   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) |
|---------------------------|-----------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|
| 818-1.5-AC<br>818B-1.5-AC | gaugeless | Acetylene                                                         | 25                       | 0-1.5                   | 30                  |
| 818-4-LP<br>818B-4-LP     | gaugeless | Propane                                                           | 25                       | 0-4                     | 16.5                |
| 818D-10-OX<br>818DB-10-OX | gaugeless | Oxygen                                                            | 230                      | 0-10                    | 155                 |
| 818D-10 *<br>818DB-10 *   | gaugeless | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                 |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 825

### Single stage with two gauges

#### Applications:

- ▶ Heavy duty, large, strong regulator for the professionals

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure of 230 bar
- ▶ Enough flow to cut up to 400 mm. steel
- ▶ Large Ø 70 mm. diaphragm stabilizes working pressure
- ▶ Durable chromed bonnet
- ▶ Side entry (vertical optional)



825D-10-OX

| MODEL NO.  | VERSION   | GAS                                             | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|-----------|-------------------------------------------------|--------------------------|-------------------------|---------------------|-------------------------------|-----------------------------|
| 825-1.5-AC | -         | Acetylene                                       | 25                       | 0-1.5                   | 52                  | 0-2.5                         | 0-40                        |
| 825-4-LP   | -         | Propane                                         | 25                       | 0-4                     | 25                  | 0-6                           | 0-40                        |
| 825P-4-LP  | one gauge | Propane                                         | 25                       | 0-4                     | 25                  | 0-6                           |                             |
| 825D-4-OX  | -         | Oxygen                                          | 230                      | 0-4                     | 112                 | 0-6                           | 0-315                       |
| 825D-4 *   | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Methane | 230                      | 0-4                     | 112                 | 0-6                           | 0-315                       |
| 825AD-4 *  | -         | Helium, Hydrogen                                | 230                      | 0-4                     | 112                 | 0-6                           | 0-315                       |
| 825D-10-OX | -         | Oxygen                                          | 230                      | 0-10                    | 170                 | 0-16                          | 0-315                       |
| 825D-10 *  | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Methane | 230                      | 0-10                    | 170                 | 0-16                          | 0-315                       |
| 825AD-10 * | -         | Helium, Hydrogen                                | 230                      | 0-10                    | 170                 | 0-16                          | 0-315                       |
| 825D-15-OX | -         | Oxygen                                          | 230                      | 0-15                    | 275                 | 0-25                          | 0-315                       |
| 825D-15 *  | -         | Argon, CO <sub>2</sub> , Nitrogen, Air, Methane | 230                      | 0-15                    | 275                 | 0-25                          | 0-315                       |
| 825AD-15 * | -         | Helium, Hydrogen                                | 230                      | 0-15                    | 275                 | 0-25                          | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 829

### Single stage gaugeless

#### Applications:

- ▶ Heavy duty cutting, designed for the really rough industrial applications in the toughest working conditions

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure of 230 bar
- ▶ Enough flow to cut up to 400 mm. steel
- ▶ Large Ø 70 mm. diaphragm stabilizes working pressure
- ▶ Durable chromed bonnet
- ▶ Cylinder pressure shown on indicator with polycarbonate cover
- ▶ Delivery pressure set by turning the knob on calibrated bonnet



829-1.5-AC



Indicator



Bonnet calibration

| MODEL NO.  | VERSION   | GAS       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) |
|------------|-----------|-----------|--------------------------|-------------------------|---------------------|
| 829-1.5-AC | gaugeless | Acetylene | 25                       | 0-1.5                   | 35                  |
| 829-3.5-LP | gaugeless | Propane   | 25                       | 0-3.5                   | 25                  |
| 829-8-OX   | gaugeless | Oxygen    | 230                      | 0-8                     | 160                 |

## Model 896

### Double stage with two gauges

#### Applications:

- ▶ Used where stable outlet pressure is required
- ▶ Ideal for quality cutting applications, laboratory systems or precision machine cutting. Also Ideal for heavy machine cutting, hand cutting and gouging

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure of 230 bar
- ▶ First stage reduces full cylinder pressure by approximately 90%
- ▶ Large Ø 70 mm. second stage diaphragm accurately controls delivery pressure
- ▶ Durable chromed bonnet
- ▶ Side entry (vertical optional)
- ▶ B version fitted with black bonnet and black gauge case



896-1.5-AC

| MODEL NO.  | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-------------------------------|-----------------------------|
| 896-1.5-AC | Acetylene                                                         | 25                       | 0-1.5                   | 25                  | 0-2.5                         | 0-40                        |
| 896-4-LP   | Propane                                                           | 25                       | 0-4                     | 19                  | 0-6                           | 0-40                        |
| 896D-4-OX  | Oxygen                                                            | 230                      | 0-4                     | 95                  | 0-6                           | 0-315                       |
| 896D-4 *   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-4                     | 95                  | 0-6                           | 0-315                       |
| 896D-10-OX | Oxygen                                                            | 230                      | 0-10                    | 100                 | 0-16                          | 0-315                       |
| 896D-10 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 100                 | 0-16                          | 0-315                       |
| 896D-15-OX | Oxygen                                                            | 230                      | 0-15                    | 120                 | 0-25                          | 0-315                       |
| 896D-15 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-15                    | 120                 | 0-25                          | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 899

### Double stage gaugeless

#### Applications:

- ▶ Used where stable outlet pressure is required
- ▶ Ideal for quality cutting applications, laboratory systems or precision machine cutting. Also Ideal for heavy machine cutting, hand cutting and gouging

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure of 230 bar
- ▶ First stage reduces full cylinder pressure by approximately 90%
- ▶ Large Ø 70 mm. second stage diaphragm accurately controls delivery pressure
- ▶ Durable chromed bonnet
- ▶ Cylinder pressure shown on indicator with polycarbonate cover
- ▶ Delivery pressure set by turning the knob on calibrated bonnet



899-1.5-AC



Indicator



Bonnet calibration

| MODEL NO.  | VERSION   | GAS       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) |
|------------|-----------|-----------|--------------------------|-------------------------|---------------------|
| 899-1.5-AC | gaugeless | Acetylene | 25                       | 0-1.5                   | 35                  |
| 899-10-OX  | gaugeless | Oxygen    | 230                      | 0-8                     | 90                  |

## Model 94

### Single stage

#### Applications:

- Ideal for heavy duty in industrial and laboratory service

#### Features:

- Solid forged brass body and bonnet
- Maximum inlet pressure of 230 bar
- Large Ø 90 mm. diaphragm accurately controls delivery pressure
- Sintered metal inlet filter
- Tough pressure gauge with easy to read calibration



94-1.5-AC

| MODEL NO. | GAS       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|-----------|-----------|--------------------------|-------------------------|---------------------|-------------------------------|-----------------------------|
| 94-1.5-AC | Acetylene | 25                       | 0-1.4                   | 35                  | 0-2.5                         | 0-40                        |
| 94-10-OX  | Oxygen    | 230                      | 0-7                     | 155                 | 0-16                          | 0-315                       |

## SERIES 900 - 300 bar Regulators

### Model 901

#### Single stage cylinder regulator

#### Applications:

- Medium duty cutting, heating and welding

#### Features:

- Maximum inlet pressure of 300 bar
- Enough flow to cut up to 300 mm. steel
- High pressure capsule seat with Kel-F (CTFE) sealing surface
- Smooth adjustment, with high precision
- B version fitted with black bonnet and black gauge case



901D-10-OX

| MODEL NO.  | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-------------------------------|-----------------------------|
| 901D-4-OX  | Oxygen                                                            | 300                      | 0-4                     | 105                 | 0-6                           | 0-400                       |
| 901D-4 *   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-4                     | 105                 | 0-6                           | 0-400                       |
| 901D-10-OX | Oxygen                                                            | 300                      | 0-10                    | 175                 | 0-16                          | 0-400                       |
| 901D-10 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-10                    | 175                 | 0-16                          | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 921

### Single stage with rear entry

#### Applications:

- ▶ Medium duty cutting, heating and welding

#### Features:

- ▶ Maximum inlet pressure of 300 bar
- ▶ Enough flow to cut up to 300 mm. steel
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Smooth adjustment, with high precision
- ▶ Rear inlet connection ideal for better visibility on small cylinder
- ▶ B version fitted with black bonnet and black gauge case



921D-10-OX

| MODEL NO.  | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESS. GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-----------------------------|-----------------------------|
| 921D-4-OX  | Oxygen                                                            | 300                      | 0-4                     | 105                 | 0-6                         | 0-400                       |
| 921D-4 *   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-4                     | 105                 | 0-6                         | 0-400                       |
| 921D-10-OX | Oxygen                                                            | 300                      | 0-10                    | 175                 | 0-16                        | 0-400                       |
| 921D-10 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-10                    | 175                 | 0-16                        | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 941

### Single stage cylinder regulator

#### Applications:

- ▶ Medium duty cutting, heating and welding.

#### Features:

- ▶ Maximum inlet pressure of 300 bar
- ▶ Enough flow to cut steel up to 300 mm. thickness
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Smooth adjustment, with high precision



941D-10-OX

| MODEL NO.  | GAS    | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|--------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 941D-10-OX | Oxygen | 230                      | 0-10                    | 155                   | 0-16                          | 0-400                       |

## Model 942

### Single stage cylinder regulator

#### Applications:

- ▶ Medium duty cutting, heating and welding.

#### Features:

- ▶ Maximum inlet pressure of 300 bar
- ▶ Enough flow to cut steel up to 300 mm. thickness
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Smooth adjustment, with high precision
- ▶ Without regulation outlet valve
- ▶ W version fitted with outlet valve



942D-10-OX

| MODEL NO.   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|-------------|-------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 942D-10-OX  | Oxygen                                                            | 230                      | 0-10                    | 155                   | 0-16                          | 0-400                       |
| 942D-10 *   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                   | 0-16                          | 0-400                       |
| 942DW-10-OX | Oxygen                                                            | 230                      | 0-10                    | 155                   | 0-16                          | 0-400                       |
| 942DW-10 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 230                      | 0-10                    | 155                   | 0-16                          | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 914

### Single stage with one gauge

#### Applications:

- ▶ Medium duty cutting, heating and welding.

#### Features:

- ▶ Maximum inlet pressure of 300 bar
- ▶ Enough flow to cut up to 300 mm. steel
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Smooth adjustment, with high precision
- ▶ Side inlet connection (rear entry optional)
- ▶ Delivery pressure set by turning the knob on calibrated bonnet
- ▶ Cylinder pressure shown on HP pressure gauge
- ▶ B version fitted with black bonnet and black gauge case



Bonnet calibration



914D-10-OX

| MODEL NO.  | VERSION   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | SUPPLY PRESSURE GAUGE (bar) |
|------------|-----------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-----------------------------|
| 914D-4-OX  | one gauge | Oxygen                                                            | 300                      | 0-4                     | 105                 | 0-400                       |
| 914D-4 *   | one gauge | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-4                     | 105                 | 0-400                       |
| 914D-10-OX | one gauge | Oxygen                                                            | 300                      | 0-10                    | 175                 | 0-400                       |
| 914D-10 *  | one gauge | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-10                    | 175                 | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 918

### Single stage gaugeless

#### Applications:

- ▶ Medium duty cutting, heating and welding
- ▶ Designed for all industrial applications in the toughest working conditions

#### Features:

- ▶ Maximum inlet pressure of 300 bar
- ▶ Enough flow to cut up to 300 mm. steel
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Smooth adjustment, with high precision
- ▶ Side inlet connection
- ▶ Cylinder pressure shown on indicator with polycarbonate cover
- ▶ Delivery pressure set by turning the knob on calibrated bonnet
- ▶ B version fitted with black bonnet



918D-10-OX



Bonnet calibration



Indicator

| MODEL NO.  | VERSION   | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) |
|------------|-----------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|
| 918D-4-OX  | gaugeless | Oxygen                                                            | 300                      | 0-4                     | 105                 |
| 918D-4 *   | gaugeless | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-4                     | 105                 |
| 918D-10-OX | gaugeless | Oxygen                                                            | 300                      | 0-10                    | 175                 |
| 918D-10 *  | gaugeless | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-10                    | 175                 |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 925

### Single stage with two gauges

#### Applications:

- ▶ Heavy duty cutting, heating and welding
- ▶ Large, strong regulator for the professionals

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure of 300 bar
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Large Ø 70 mm. diaphragm stabilizes working pressure
- ▶ Enough flow to cut up to 400 mm. steel
- ▶ Side entry (vertical optional)



925D-10-OX

| MODEL NO.  | GAS                                             | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|-------------------------------------------------|--------------------------|-------------------------|---------------------|-------------------------------|-----------------------------|
| 925D-4-OX  | Oxygen                                          | 300                      | 0-4                     | 115                 | 0-6                           | 0-400                       |
| 925D-4 *   | Argon, CO <sub>2</sub> , Nitrogen, Air, Methane | 300                      | 0-4                     | 115                 | 0-6                           | 0-400                       |
| 925AD-4 *  | Helium, Hydrogen                                | 300                      | 0-4                     | 115                 | 0-6                           | 0-400                       |
| 925D-10-OX | Oxygen                                          | 300                      | 0-10                    | 185                 | 0-16                          | 0-400                       |
| 925D-10 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Methane | 300                      | 0-10                    | 185                 | 0-16                          | 0-400                       |
| 925AD-10 * | Helium, Hydrogen                                | 300                      | 0-10                    | 185                 | 0-16                          | 0-400                       |
| 925D-15-OX | Oxygen                                          | 300                      | 0-15                    | 325                 | 0-25                          | 0-400                       |
| 925D-15 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Methane | 300                      | 0-15                    | 325                 | 0-25                          | 0-400                       |
| 925AD-15 * | Helium, Hydrogen                                | 300                      | 0-15                    | 325                 | 0-25                          | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 996

### Double stage with two gauges

#### Applications:

- ▶ Used where stable outlet pressure is required
- ▶ Ideal for quality cutting applications, laboratory systems or precision machine cutting. Also ideal for heavy machine cutting, hand cutting and gouging

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure of 300 bar
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ First stage reduces full cylinder pressure by approximately 90%
- ▶ Large Ø 70 mm. second stage diaphragm accurately controls delivery pressure
- ▶ Durable chromed bonnet
- ▶ Side entry (vertical optional)



996D-10-OX

| MODEL NO.  | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX AIR FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|-------------------------------------------------------------------|--------------------------|-------------------------|---------------------|-------------------------------|-----------------------------|
| 996D-4-OX  | Oxygen                                                            | 300                      | 0-4                     | 85                  | 0-6                           | 0-400                       |
| 996D-4 *   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-4                     | 85                  | 0-6                           | 0-400                       |
| 996D-10-OX | Oxygen                                                            | 300                      | 0-10                    | 100                 | 0-16                          | 0-400                       |
| 996D-10 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-10                    | 100                 | 0-16                          | 0-400                       |
| 996D-15-OX | Oxygen                                                            | 300                      | 0-15                    | 120                 | 0-25                          | 0-400                       |
| 996D-15 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 300                      | 0-15                    | 120                 | 0-25                          | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Cylinder Flow Regulators

#### General features:

- ▶ Conform to EN 13918
- ▶ Accurate pressure compensated design flowmeter for precise flow
- ▶ Flowmeter with easy to read polycarbonate outer tube cover for strength and 360° visibility
- ▶ Factory preset outlet pressure at 3,5 bar

## Flowmeter Regulators

### Model 601D-F

#### Compact flowmeter regulator

#### Applications:

- ▶ Light duty MIG/TIG welding

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure 230 bar
- ▶ Rear inlet connection (side inlet optional)

| MODEL NO.       | GAS                     | MAX INLET PRESSURE (bar) | FLOW ((Lpm)) | SUPPLY PRESSURE GAUGE (bar) | FLOWMETER (Lpm) |
|-----------------|-------------------------|--------------------------|--------------|-----------------------------|-----------------|
| 601D-15-F-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15         | 0-315                       | 0-15            |
| 601D-30-F-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30         | 0-315                       | 0-30            |



601D-30-F

## Model 80ID-F Flowmeter regulator

### Applications:

- Ideal for all MIG/TIG welding applications

### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 230 bar
- B version fitted with black bonnet and black gauge case



801DB-30-F

| MODEL NO.                           | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWMETER (Lpm) |
|-------------------------------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 801D-15-F-AR/CD<br>801DB-15-F-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 801D-30-F-AR/CD<br>801DB-30-F-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |
| 801D-20-F-FG<br>801DB-20-F-FG       | Formier Gas             | 230                      | 0-20       | 0-315                       | 0-20            |
| 801D-50-F-FG<br>801DB-50-F-FG       | Formier Gas             | 230                      | 0-50       | 0-315                       | 0-50            |

## Model 82ID-F Precision engineered double flowmeter regulator

### Applications:

- Ideal for light and medium duty multiple MIG / TIG welding

### Features:

- One regulator/cylinder for two gas supply sources with separate flow control
- Two flowmeters (with knob at 180° to inlet) with soft seat needle valve for smooth and precise control
- Rear entry
- B version fitted with black bonnet and black gauge case



821DB-30-F

| MODEL NO.                           | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWMETER (Lpm) |
|-------------------------------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 821D-15-F-AR/CD<br>821DB-15-F-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 821D-30-F-AR/CD<br>821DB-30-F-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |
| 821D-20-F-FG<br>821DB-20-F-FG       | Formier Gas             | 230                      | 0-20       | 0-315                       | 0-20            |
| 821D-50-F-FG<br>821DB-50-F-FG       | Formier Gas             | 230                      | 0-50       | 0-315                       | 0-50            |

## Model 825D-F

### Flowmeter regulator

#### Applications:

- ▶ Large, strong regulator for the welding professionals, suitable for all welding and laboratory applications

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure 230 bar
- ▶ Large Ø 70 mm. diaphragm for accurate flow and pressure regulation



825D-30-F

| MODEL NO.       | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWMETER (Lpm) |
|-----------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 825D-15-F-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 825D-30-F-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |

## Model 811DB-F

### Electrically heated flowmeter regulator

#### Applications:

- ▶ Ideal for all welding applications where high and continuous flow of CO<sub>2</sub> is required with accurate flow control

#### Features:

- ▶ Maximum inlet pressure 230 bar
- ▶ CE marked
- ▶ Two independent heating elements controlled by thermostat
- ▶ Stabilized temperature up to 30 Lpm continuous CO<sub>2</sub>
- ▶ Overheating protection with resettable thermal fuse
- ▶ Insulation IP 64 (EN 60529)
- ▶ Voltage: 110 and 240 volts versions
- ▶ 3 metres long (9.87 feet) power cable



811DB-30-F

| MODEL NO.  | GAS             | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWMETER (Lpm) |
|------------|-----------------|--------------------------|------------|-----------------------------|-----------------|
| 811DB-15-F | CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 811DB-30-F | CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |

## SERIES 900 - 300 bar Regulators

### Model 901D-F Flowmeter regulator

#### Applications:

- Ideal for all MIG/TIG welding applications

#### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 300 bar
- High pressure capsule seat with Kel-F (CFTE) sealing surface
- B version fitted with black bonnet and black gauge case



901D-30-F

| MODEL NO.       | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWMETER (Lpm) |
|-----------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 901D-15-F-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-15       | 0-400                       | 0-15            |
| 901D-30-F-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-30       | 0-400                       | 0-30            |
| 901D-20-F-FG    | Formier Gas             | 300                      | 0-20       | 0-400                       | 0-20            |
| 901D-50-F-FG    | Formier Gas             | 300                      | 0-50       | 0-400                       | 0-50            |

### Model 925D-F Flowmeter regulator

#### Applications:

- Large, strong regulator for the welding professionals, suitable for all welding and laboratory applications

#### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 300 bar
- Large 70 mm Ø diaphragm for accurate flow and pressure regulation
- High pressure capsule seat with Kel-F (CFTE) sealing surface



925D-15-F

| MODEL NO.       | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWMETER (Lpm) |
|-----------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 925D-15-F-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-15       | 0-400                       | 0-15            |
| 925D-30-F-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-30       | 0-400                       | 0-30            |

## Model 911DB-F

### Electrically heated flowmeter regulator

#### Applications:

- ▶ Ideal for all welding applications where high and continuous flow of CO<sub>2</sub> are required with accurate flow control

#### Features:

- ▶ Maximum inlet pressure 300 bar
- ▶ CE marked
- ▶ Two independent heating elements controlled by thermostat
- ▶ Stabilized temperature up to 30 Lpm continuous CO<sub>2</sub>
- ▶ Overheating protection with resettable thermal fuse
- ▶ Insulation IP 64 (EN 60529)
- ▶ Voltage: 110 and 240 volts versions
- ▶ 3 metres long (9.87 feet) power cable



911DB-30-F

| MODEL NO.  | GAS             | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWMETER (Lpm) |
|------------|-----------------|--------------------------|------------|-----------------------------|-----------------|
| 911DB-15-F | CO <sub>2</sub> | 300                      | 0-15       | 0-400                       | 0-15            |
| 911DB-30-F | CO <sub>2</sub> | 300                      | 0-30       | 0-400                       | 0-30            |

## Flowgauge Regulators

#### General features:

- ▶ Accurate flows through outlet calibrated orifice
- ▶ Flow set by adjusting knob

## Model 601-L

### Compact single stage flowgauge regulator

#### Applications:

- ▶ Ideal for light duty MIG/TIG welding

#### Features:

- ▶ Maximum inlet pressure 230 bar
- ▶ 50 mm safety gauge
- ▶ Complete with hose connection diameter hose 5 to 6 mm
- ▶ Rear inlet connection



601D-30-L

| MODEL NO.       | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|-----------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 601D-15-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 601D-30-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |

## Model 801D-L Flowgauge regulator

### Applications:

- Suitable for all light and medium duty MIG/TIG welding

### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 230 bar
- B version fitted with black bonnet and black gauge case



801DB-15-L

| MODEL NO.        | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|------------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 801D-15-L-AR/CD  | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 801D-30-L-AR/CD  | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |
| 801D-50-L-AR/CD  | Argon / CO <sub>2</sub> | 230                      | 0-50       | 0-315                       | 0-50            |
| 801D-30-L-FG     | Formier Gas             | 230                      | 0-30       | 0-315                       | 0-30            |
| 801D-50-L-FG     | Formier Gas             | 230                      | 0-50       | 0-315                       | 0-50            |
| 801DB-15-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 801DB-30-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |
| 801DB-50-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-50       | 0-315                       | 0-50            |
| 801DB-30-L-FG    | Formier Gas             | 230                      | 0-30       | 0-315                       | 0-30            |
| 801DB-50-L-FG    | Formier Gas             | 230                      | 0-50       | 0-315                       | 0-50            |

## Model 842-WL Single stage flowgauge regulator

### Applications:

- Suitable for all light and medium duty MIG/TIG welding

### Features:

- Maximum inlet pressure of 230 bar
- Enough flow to cut steel up to 300 mm. thickness
- Smooth adjustment, with high precision
- Black bonnet and black gauge case



842W-30L

| MODEL NO.      | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | FLOWGAUGE (bar) |
|----------------|-------------------------|--------------------------|------------|-----------------|
| 842W-15L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-15            |
| 842W-30L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-30            |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 814-L

### Flowgauge regulator with one gauge

#### Applications:

- Suitable for all light and medium duty MIG/TIG welding

#### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 230 bar
- Delivery flow set by turning the knob on calibrated bonnet
- B version fitted with black bonnet and black gauge case



814D-30-L

| MODEL NO.                           | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|-------------------------------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 814D-15-L-AR/CD<br>814DB-15-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 814D-30-L-AR/CD<br>814DB-30-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |
| 814D-50-L-AR/CD<br>814DB-50-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-50       | 0-315                       | 0-50            |

## Model 818-L

### Flowgauge regulator gaugeless

#### Applications:

- Suitable for all light and medium duty MIG/TIG welding

#### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 230 bar
- Delivery flow set by turning the knob on calibrated bonnet
- Cylinder pressure shown on indicator with polycarbonate cover
- B version fitted with black bonnet



818D-30-L

| MODEL NO.                           | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | FLOWGAUGE (Lpm) |
|-------------------------------------|-------------------------|--------------------------|------------|-----------------|
| 818D-15-L-AR/CD<br>818DB-15-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-15            |
| 818D-30-L-AR/CD<br>818DB-30-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-30            |
| 818D-50-L-AR/CD<br>818DB-50-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-50       | 0-50            |

## Model 825D-L Flowgauge regulator

### Applications:

- ▶ Large size flowgauge regulator for MIG/TIG welding

### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure 230 bar
- ▶ Large Ø 70 mm. diaphragm stabilizes working pressure
- ▶ Durable chromed bonnet



825D-30-L

| MODEL NO.       | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|-----------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 825D-15-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 825D-30-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |
| 825D-50-L-AR/CD | Argon / CO <sub>2</sub> | 230                      | 0-50       | 0-315                       | 0-50            |

## Model 811DB-L Electrically heated flowgauge regulator

### Applications:

- ▶ Ideal for all welding applications where high and continuous flows of CO<sub>2</sub> are required with accurate flow control

### Features:

- ▶ Maximum inlet pressure 230 bar
- ▶ The outlet gauge enables direct reading in Low Pressure
- ▶ CE marked
- ▶ Two independent heating elements controlled by thermostat
- ▶ Stabilized temperature up to 30 Lpm continuous CO<sub>2</sub>
- ▶ Overheating protection with resettable thermal fuse
- ▶ Insulation IP 64 (EN 60529)
- ▶ Voltage: 110 and 240 volts versions
- ▶ 3 metres long (9.87 feet) power cable



811DB-30-L

| MODEL NO.     | GAS             | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|---------------|-----------------|--------------------------|------------|-----------------------------|-----------------|
| 811DB-15-L-CD | CO <sub>2</sub> | 230                      | 0-15       | 0-315                       | 0-15            |
| 811DB-30-L-CD | CO <sub>2</sub> | 230                      | 0-30       | 0-315                       | 0-30            |

## SERIES 900 - 300 bar Regulators

### Model 901D-L Flowgauge regulator

#### Applications:

- Suitable for all light and medium duty MIG/TIG welding

#### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 300 bar
- High pressure capsule seat with Kel-F (CFTE) sealing surface
- B version fitted with black bonnet and black gauge case


**901D-30-L**

| MODEL NO.       | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|-----------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 901D-30-L-FG    | Formier Gas             | 300                      | 0-30       | 0-400                       | 0-30            |
| 901D-50-L-FG    | Formier Gas             | 300                      | 0-50       | 0-400                       | 0-50            |
| 901D-15-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-15       | 0-400                       | 0-15            |
| 901D-30-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-30       | 0-400                       | 0-30            |
| 901D-50-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-50       | 0-400                       | 0-50            |

### Model 942-WL Single stage flowgauge regulator

#### Applications:

- Suitable for all light and medium duty MIG/TIG welding

#### Features:

- Maximum inlet pressure of 300 bar
- Enough flow to cut steel up to 300 mm. thickness
- High pressure capsule seat with Kel-F (CFTE) sealing surface
- Smooth adjustment, with high precision


**942W-30L**

| MODEL NO.      | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | FLOWGAUGE (bar) |
|----------------|-------------------------|--------------------------|------------|-----------------|
| 942W-15L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-15       | 0-15            |
| 942W-30L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-30       | 0-30            |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 914-L Flowgauge regulator with one gauge

### Applications:

- Suitable for all light and medium duty MIG/TIG welding

### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 300 bar
- High pressure capsule seat with Kel-F (CFTE) sealing surface
- Delivery flow set by turning the knob on calibrated bonnet
- B version fitted with black bonnet



914-30-L

| MODEL NO.      | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|----------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 914-15-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-15       | 0-400                       | 0-15            |
| 914-30-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-30       | 0-400                       | 0-30            |
| 914-50-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-50       | 0-400                       | 0-50            |

## Model 918-L Flowgauge regulator gaugeless

### Applications:

- Suitable for all light and medium duty MIG/TIG welding

### Features:

- Forged brass body for maximum strength
- Maximum inlet pressure 300 bar
- Delivery flow set by turning the knob on calibrated bonnet
- Cylinder pressure shown on indicator with polycarbonate cover
- High pressure capsule seat with Kel-F (CFTE) sealing surface
- B version fitted with black bonnet



918-30-L

| MODEL NO.      | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | FLOWGAUGE (Lpm) |
|----------------|-------------------------|--------------------------|------------|-----------------|
| 918-15-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-15       | 0-15            |
| 918-30-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-30       | 0-30            |
| 918-50-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-50       | 0-50            |

## Model 925D-L

### Flowgauge regulator

#### Applications:

- ▶ Large size flowgauge regulator for MIG/TIG welding

#### Features:

- ▶ Forged brass body for maximum strength
- ▶ Maximum inlet pressure 300 bar
- ▶ Large Ø 70 mm. diaphragm for accurate flow and pressure regulator
- ▶ Durable chromed bonnet
- ▶ High pressure capsule seat with Kel-F (CFTE) sealing surface


**925D-30-L**

| MODEL NO.       | GAS                     | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|-----------------|-------------------------|--------------------------|------------|-----------------------------|-----------------|
| 925D-15-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-15       | 0-400                       | 0-15            |
| 925D-30-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-30       | 0-400                       | 0-30            |
| 925D-50-L-AR/CD | Argon / CO <sub>2</sub> | 300                      | 0-50       | 0-400                       | 0-50            |

## Model 911DB-L

### Electrically heated flowgauge regulator

#### Applications:

- ▶ Ideal for all welding applications where high and continuous flows of CO<sub>2</sub> are required with accurate flow control

#### Features:

- ▶ Maximum inlet pressure 300 bar
- ▶ The outlet gauge enables direct reading in Low Pressure
- ▶ CE marked
- ▶ Two independent heating elements controlled by thermostat
- ▶ Stabilized temperature up to 30 Lpm continuous CO<sub>2</sub>
- ▶ Overheating protection with resettable thermal fuse
- ▶ Insulation IP 64 (EN 60529)
- ▶ Voltage: 110 and 240 volts versions
- ▶ 3 metres long (9.87 feet) power cable


**911DB-30-L**

| MODEL NO.     | GAS             | MAX INLET PRESSURE (bar) | FLOW (Lpm) | SUPPLY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|---------------|-----------------|--------------------------|------------|-----------------------------|-----------------|
| 911DB-15-L-CD | CO <sub>2</sub> | 300                      | 0-15       | 0-400                       | 0-15            |
| 911DB-30-L-CD | CO <sub>2</sub> | 300                      | 0-30       | 0-400                       | 0-30            |

## Models 603 and 803P Inert gas guard

### Applications:

- Designed to eliminate the pressure surge at the beginning of each weld in MIG/TIG welding, maintains a constant flow and pressure with each weld, permits gas savings over 60%.

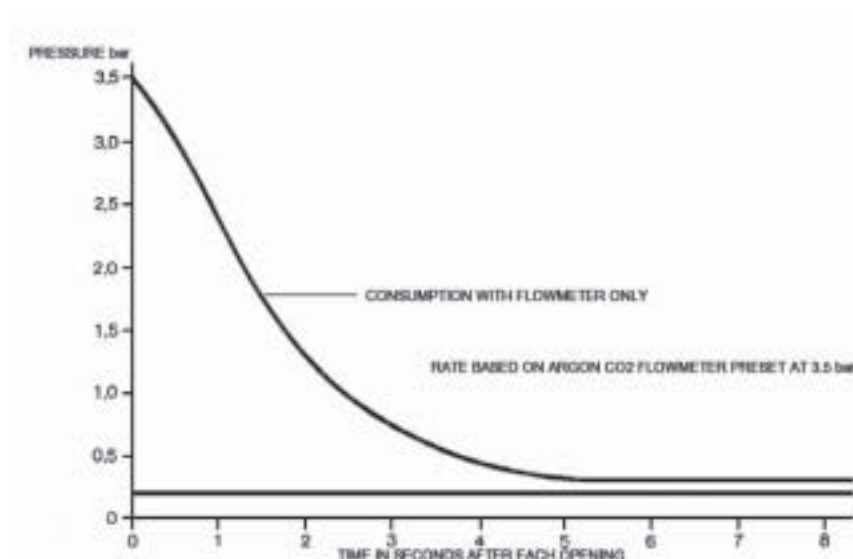
### Features:

- Harris Inert Gas Guards are designed to save shielding gases in two ways:
  - by reducing the gas surge when a MIG gun or TIG torch is activated. Because they are designed to reduce the pressure held in supply hose, gas waste is reduced when the gun or torch is triggered
  - by delivering a controlled flow rate
- Operators will typically set shielding gas flow rates higher than necessary for a welding operation. Once set by a supervisor, the Inert Gas Guard delivers the precise amount of flow for the operation, eliminating the needless waste of gas.

### Where to use:

Connect Models 603 and 803-P between your existing flowmeter and hose to torch. Table below shows part numbers to fit each flowmeter outlet thread.

| MODEL NO | GAS                     | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | INLET                 | OUTLET                  |
|----------|-------------------------|--------------------------|-------------------------|-----------------------|-------------------------|
| 603Z-001 | Argon / CO <sub>2</sub> | 15                       | 0.6-0.9                 | G 3/8"-RH-UNI ISO 228 | G 3/8" A-RH-UNI ISO 228 |
| 603Z-002 |                         |                          |                         | 9/16"-18-UNF-2B-RH    | 9/16"-18-UNF-2A-RH      |
| 603Z-003 |                         |                          |                         | G 1/4"-RH-UNI ISO 228 | G 1/4" A-RH-UNI ISO 228 |
| 803P-001 | Argon / CO <sub>2</sub> | 15                       | 0.6-0.9                 | G 3/8"-RH-UNI ISO 228 | G 3/8" A-RH-UNI ISO 228 |
| 803P-002 |                         |                          |                         | 9/16"-18-UNF-2B-RH    | 9/16"-18-UNF-2A-RH      |
| 803P-003 |                         |                          |                         | G 1/4"-RH-UNI ISO 228 | G 1/4" A-RH-UNI ISO 228 |



- The curve on this chart illustrates the extent of costly shielding gas waste that can occur each time a MIG gun or TIG torch is activated. Conversely, the line illustrates how Harris Inert Gas Guard can significantly reduce gas waste by delivering a set flow of shielding gas.
- Actual Argon, Carbon Dioxide and other shielding gas savings will vary depending upon the specific requirements of the MIG or TIG welding operation
- Factory pre-set output pressure of 0.8 bar with maximum flow rate of 15 Lpm



603



803P

## High Performance Regulators

### General features:

- ▶ Stainless steel diaphragm - No internal contamination

## Model 825DS

### Single stage cylinder pressure regulator

### Applications:

- ▶ All applications where high outlet pressure is required
- ▶ Ideal for high pressure plasma cutting

### Features:

- ▶ Forged brass body
- ▶ Maximum inlet pressure 230 bar
- ▶ Stainless steel diaphragm - no internal contamination
- ▶ Enough oxygen flow to cut up to 400 mm steel
- ▶ Large Ø 70 mm diaphragm stabilizes working pressure
- ▶ Side entry (vertical optional)



825ARS-40

| MODEL NO.   | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|-------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 825DS-25 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 230                      | 0-25                    | 350                   | 0-40                          | 0-315                       |
| 825ARS-40 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 230                      | 0-40                    | 400                   | 0-60                          | 0-315                       |
| 825ARS-50   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 230                      | 0-50                    | 450                   | 0-100                         | 0-315                       |
| 825DS-20    | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 230                      | 0-20                    | 300                   | 0-40                          | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 896DS

### Double stage with stainless steel diaphragm

### Applications:

- ▶ Used where outlet pressure must be held within strict limits
- ▶ Ideal for quality cutting applications, laboratory system or precision machine cutting
- ▶ Also ideal for heavy machine cutting, hand cutting, and gouging

### Features:

- ▶ Forged brass body
- ▶ Maximum inlet pressure 230 bar
- ▶ Stainless steel diaphragm on first stage - no internal contamination
- ▶ Enough oxygen flow to cut up to 400 mm steel
- ▶ Large Ø 70 mm second stage diaphragm accurately controls delivery pressure
- ▶ Stainless steel T screw
- ▶ Side entry (vertical optional)



896DS-25

| MODEL NO.  | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 896DS-25 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 230                      | 0-25                    | 150                   | 0-40                          | 0-315                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## SERIES 900 - 300 bar Regulators

### Model 925DS

### Single stage with stainless steel diaphragm

#### Applications:

- ▶ All applications where high outlet pressure is required
- ▶ Ideal for high pressure plasma cutting

#### Features:

- ▶ Forged brass body
- ▶ Maximum inlet pressure 300 bar
- ▶ Stainless steel diaphragm on first stage - no internal contamination
- ▶ Enough oxygen flow to cut up to 400 mm steel
- ▶ Large  $\varnothing$  70 mm second stage diaphragm accurately controls delivery pressure
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Stainless steel T screw
- ▶ Side entry ( vertical optional)



925ARS-40

| MODEL NO.   | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|-------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 925DS-25 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-25                    | 400                   | 0-40                          | 0-400                       |
| 925ARS-40 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-40                    | 500                   | 0-60                          | 0-400                       |
| 925ARS-50   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-50                    | 600                   | 0-100                         | 0-400                       |
| 925DS-20    | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-20                    | 380                   | 0-40                          | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

### Model H25

### Single stage with stainless steel diaphragm

#### Applications:

- ▶ Specially designed for high flow requirements
- ▶ Ideal for feeding plasma and laser cutting systems

#### Features:

- ▶ Forged brass body
- ▶ Maximum inlet pressure 300 bar
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Stainless steel T screw
- ▶ Air flow up to 700 m³/h
- ▶ External safety relief valve



H25ARS-40

| MODEL NO.   | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|-------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| H25D-15 *   | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-15                    | 450                   | 0-25                          | 0-400                       |
| H25DS-25 *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-25                    | 500                   | 0-40                          | 0-400                       |
| H25ARS-40 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-40                    | 720                   | 0-60                          | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 996DS

### Double stage regulator with stainless steel diaphragm in both stages

#### Applications:

- ▶ Used where outlet pressure must be held within strict limits
- ▶ Ideal for quality cutting applications, laboratory systems or precision machine cutting. Also ideal for heavy machine cutting, hand cutting, and gouging

#### Features:

- ▶ Forged brass body
- ▶ Maximum inlet pressure 300 bar
- ▶ Stainless steel diaphragm in both stages - no internal contamination
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ First stage reduces full cylinder pressure by approximately 90%
- ▶ Large  $\varnothing$  70 mm second stage diaphragm accurately controls delivery pressure
- ▶ Side entry (vertical optional)


**996DS-25**

| MODEL NO.  | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 996DS-25 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-25                    | 150                   | 0-40                          | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 987

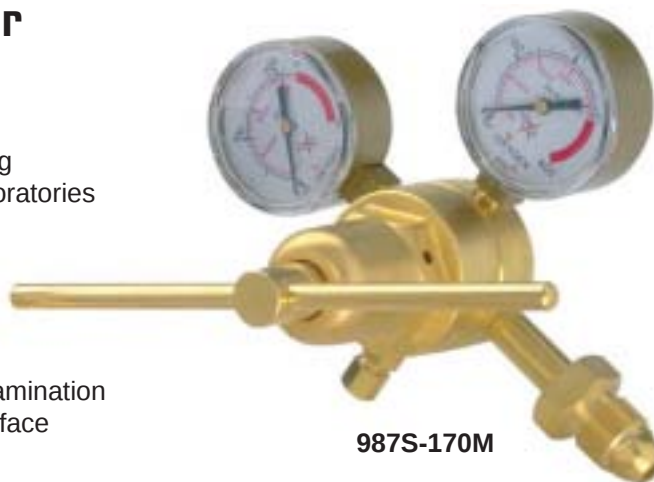
### High pressure cylinder regulator

#### Applications:

- ▶ Designed to operate with high pressure cylinder
- ▶ High pressure testing, charging accumulators, pressurising aircraft struts, oil refineries, chemical plants, research laboratories and general industry
- ▶ Ideal also for high pressure manifold distribution

#### Features:

- ▶ Maximum inlet pressure 300 bar
- ▶ Stainless steel diaphragm on first stage - no internal contamination
- ▶ High pressure capsule seat with Kel-F (CTFE) sealing surface
- ▶ Corrosion resistant, forged brass, body and bonnet
- ▶ Bronze bonnet bushing and stainless steel T screw
- ▶ Inlet is heavy duty - 15 mm thread with metal to metal seal
- ▶ Outlet is a 1/4" external diameter copper tube compression fitting
- ▶ Models available for all non-corrosive compressed gases
- ▶ Same regulator used for lightweight gases, without vibration


**987S-170M**

| MODEL NO.    | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|--------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 987S-100M *  | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-100                   | 400                   | 0-315                         | 0-400                       |
| 987AS-170M * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-170                   | 500                   | 0-315                         | 0-400                       |
| CLIMATESTER  | Nitrogen                                                                  | 300                      | 0-55                    | 120                   | 0-70                          | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 8700 High pressure cylinder regulator

### Applications:

- ▶ Designed to operate in high pressure cylinder. All gas and air models are self-relieving
- ▶ Typical applications include high pressure testing, charging accumulators and pressurizing aircraft struts

### Features:

- ▶ Maximum inlet pressure 300 bar
- ▶ One piece encapsulated valve with CTFE seats and internal filter
- ▶ Elastomeric diaphragm for longer life
- ▶ Ergonomic knob for improved grip



8700

| MODEL NO.      | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|----------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| 8700 3000psi * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-205                   | 330                   | 0-280                         | 0-400                       |
| 8700 4500psi * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-300                   | 330                   | 0-400                         | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model HP750 Servo dome loaded regulator

### Applications:

- ▶ Laser assist gases, pressure transfer, blanketing & high flow manifolds

### Features:

- ▶ High pressure, high flow regulator
- ▶ Maximum inlet pressure 380 bar
- ▶ One piece encapsulated seat design with 10 micron filtration
- ▶ Servo dome load technology, the regulator has an internal pressure feedback sensing line which monitors the outlet pressure and constantly opens or closes the regulator valve to maintain the internal pressure balance. The result is a constant delivery pressure regardless of the flow rate or inlet pressure conditions



HP-750

| MODEL NO.            | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|----------------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------------------|
| HP750-17 (3000867) * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 380                      | 0-17                    | >1000                 | 0-28                          | 0-400                       |
| HP750-35 (3000868) * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 380                      | 0-35                    | >1000                 | 0-42                          | 0-400                       |
| HP750-70 (3000869) * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 380                      | 0-70                    | >1000                 | 0-138                         | 0-400                       |

\*The regulator is available for all the listed gases. When ordering always specify gas.

# Pipeline Regulators

## Model 847

### Pipeline regulator with one gauge

#### Applications:

- Specially designed to allow high flow rate from industrial and laboratory pipeline points
- Particularly suited to machine cutting where more than one torch is used. Also for heavy cutting and heating

#### Features:

- High flow and outlet pressure (up to 15 bar) line regulator
- Forged brass body for maximum strength
- Sintered alloy inlet filter to trap impurities
- Maximum inlet pressure 25 bar
- 15 Lpm, 30 Lpm and 50 Lpm versions available for argon and CO<sub>2</sub>


**847-15-L**

| MODEL NO.      | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | FLOWGAUGE (Lpm) |
|----------------|-------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-----------------|
| 847-1.5-AC     | Acetylene                                                         | 25                       | 0-1.5                   | 13                    | 0-2.5                         | -               |
| 847-4-LP       | Propane                                                           | 25                       | 0-4                     | 76                    | 0-6                           | -               |
| 847-10-OX      | Oxygen                                                            | 25                       | 0-10                    | 95                    | 0-16                          | -               |
| 847-10 *       | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 25                       | 0-10                    | 95                    | 0-16                          | -               |
| 847-15-OX      | Oxygen                                                            | 25                       | 0-15                    | 135                   | 0-25                          | -               |
| 847-15 *       | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 25                       | 0-15                    | 135                   | 0-25                          | -               |
| 847-15-L-AR/CD | Argon / CO <sub>2</sub>                                           | 25                       | -                       | -                     | -                             | 0-15            |
| 847-30-L-AR/CD | Argon / CO <sub>2</sub>                                           | 25                       | -                       | -                     | -                             | 0-30            |
| 847-50-L-AR/CD | Argon / CO <sub>2</sub>                                           | 25                       | -                       | -                     | -                             | 0-50            |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model H47

### High flow pipeline regulator

#### Applications:

- Designed for high flow requirement for feeding industrial gas pipelines for plasma and laser cutting

#### Features:

- Maximum inlet pressure 60 bar
- Rear inlet connection
- Air flow over 370 m³/h
- Stainless steel diaphragm
- T screw provides smooth action and long service life


**H47DS-15**

| MODEL NO.  | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) |
|------------|---------------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|
| H47DS-15 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 60                       | 0-15                    | 330                   | 0-25                          |
| H47DS-25 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 60                       | 0-25                    | 350                   | 0-40                          |
| H47AS-40 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 60                       | 0-40                    | 390                   | 0-60                          |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Model 846

### Pipeline regulator with one gauge

#### Applications:

- Specially designed to allow high flow rate from industrial and laboratory pipeline points.

#### Features:

- High flow and outlet pressure (up to 10 bar) line regulator
- Forged brass body for maximum strength
- Sintered alloy inlet filter to trap impurities
- Maximum inlet pressure 25 bar



846

| MODEL NO.      | GAS                                                               | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m³/h) | DELIVERY PRESSURE GAUGE (bar) | FLOWGAUGE ((Lpm)) | MAX LINE PRESSURE (bar) |
|----------------|-------------------------------------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------|-------------------|-------------------------|
| 846-1.5-AC     | Acetylene                                                         | 25                       | 0-1.5                   | 13                    | 0-2.5                         | -                 | 25                      |
| 846-4-LP       | Propane                                                           | 25                       | 0-4                     | 76                    | 0-6                           | -                 | 25                      |
| 846-10-OX      | Oxygen                                                            | 25                       | 0-10                    | 95                    | 0-16                          | -                 | 25                      |
| 846-10 *       | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Methane | 25                       | 0-10                    | 95                    | 0-16                          | -                 | 25                      |
| 846-15-L-AR/CD | Argon / CO <sub>2</sub>                                           | 25                       | -                       | -                     | -                             | 0-15              | 25                      |
| 846-30-L-AR/CD | Argon / CO <sub>2</sub>                                           | 25                       | -                       | -                     | -                             | 0-30              | 25                      |
| 846-50-L-AR/CD | Argon / CO <sub>2</sub>                                           | 25                       | -                       | -                     | -                             | 0-50              | 25                      |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## Balloon Filling Regulator

### Model HELIFILLER

### Compact single stage balloon filler regulator

#### Application:

- Balloon filler designed for helium and helium mixtures

#### Features:

- Forged brass body and bonnet
- High pressure capsule seat with PTFE (Teflon) sealing surface
- Fixed pressure preset at 2 bar (30 psi/ 200 kPa).
- Complete with rubber coated " Tilt Valve ". When vertical the valve is closed, when pulled to the side it opens.
- Side inlet connection



HELIFILLER

| MODEL NO.  | VERSION               | GAS                        | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) |
|------------|-----------------------|----------------------------|--------------------------|-------------------------|
| HELIFILLER | gaugeless, tilt valve | Helium and Helium mixtures | 230                      | 2 (pre-set)             |

# Beverage Regulators

## Models 802/822D

### Beverage regulator for cylinder

#### Applications:

- Ideal for breweries, beverage manufacturers, wholesale distribution for use in bars, pubs and wine bars

#### Features:

- High flow beverage regulator for CO<sub>2</sub>, nitrogen or mixtures
- Model 802 side entry model 822 rear entry
- Compression fitting outlet (7/16"-20-UNF) for 1/4" plastic hose (special reverse flow valve to avoid internal liquid contamination on request)
- Safety pressure gauge with dual scale bar/kPa



802D

| MODEL NO.            | GAS             | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|----------------------|-----------------|--------------------------|-------------------------|-------------------------------|-----------------------------|
| 802D-4-CD side inlet | CO <sub>2</sub> | 100                      | 0-4                     | 0-6                           | 0-100                       |
| 802D-4-N side inlet  | Nitrogen        | 230                      | 0-4                     | 0-6                           | 0-315                       |
| 802D-8-CD side inlet | CO <sub>2</sub> | 100                      | 0-8                     | 0-10                          | 0-100                       |
| 802D-8-N side inlet  | Nitrogen        | 230                      | 0-8                     | 0-10                          | 0-315                       |
| 802R-4-CD side inlet | CO <sub>2</sub> | 100                      | 0-4                     | 0-6                           | 0-100                       |
| 802R-4-N side inlet  | Nitrogen        | 230                      | 0-4                     | 0-6                           | 0-315                       |
| 802R-8-CD side inlet | CO <sub>2</sub> | 100                      | 0-8                     | 0-10                          | 0-100                       |
| 802R-8-N side inlet  | Nitrogen        | 230                      | 0-8                     | 0-10                          | 0-315                       |
| 822D-4-CD rear inlet | CO <sub>2</sub> | 100                      | 0-4                     | 0-6                           | 0-100                       |
| 822D-4-N rear inlet  | Nitrogen        | 230                      | 0-4                     | 0-6                           | 0-315                       |
| 822D-8-N rear inlet  | CO <sub>2</sub> | 100                      | 0-8                     | 0-10                          | 0-100                       |
| 822D-8-N rear inlet  | Nitrogen        | 230                      | 0-8                     | 0-10                          | 0-315                       |
| 822R-4-CD rear inlet | CO <sub>2</sub> | 100                      | 0-4                     | 0-6                           | 0-100                       |
| 822R-4-N rear inlet  | Nitrogen        | 230                      | 0-4                     | 0-6                           | 0-315                       |
| 822R-8-CD rear inlet | CO <sub>2</sub> | 100                      | 0-8                     | 0-10                          | 0-100                       |
| 822R-8-N rear inlet  | Nitrogen        | 230                      | 0-8                     | 0-10                          | 0-315                       |

# High Purity Gas Regulators

## Model 904 . Two gauge cylinder regulator

#### Application:

- Ideal for quality application where high purity gas is required

#### Features:

- External safety relief valve with 1/4" NPT female thread for external release hose connection
- Forged brass body fully chromed
- Maximum inlet pressure 300 bar
- Stainless steel diaphragm - no internal contamination
- Capsule seat with Kel-F (CTFE) sealing surface



904D-10

| MODEL NO.  | GAS                                                                       | MAX INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | MAX (AIR) FLOW (m <sup>3</sup> /h) | DELIVERY PRESSURE GAUGE (bar) | SUPPLY PRESSURE GAUGE (bar) |
|------------|---------------------------------------------------------------------------|--------------------------|-------------------------|------------------------------------|-------------------------------|-----------------------------|
| 904D-1.5 * | Argon, CO <sub>2</sub> , Nitrogen, Air, Helium, Hydrogen, Oxygen, Methane | 300                      | 0-1.5                   | 24                                 | 0-2.5                         | 0-400                       |
| 904D-4 *   |                                                                           |                          | 0-4                     | 48                                 | 0-6                           |                             |
| 904D-10 *  |                                                                           |                          | 0-10                    | 100                                | 0-16                          |                             |
| 904R-1.5 * |                                                                           |                          | 0-1.5                   | 24                                 | 0-2.5                         |                             |
| 904R-4 *   |                                                                           |                          | 0-4                     | 48                                 | 0-6                           |                             |
| 904R-10 *  |                                                                           |                          | 0-10                    | 100                                | 0-16                          |                             |

\*The regulator is available for all the listed gases. When ordering always specify gas.

## **Specialty Gas single stage, double stage and line regulators for Corrosive and Non-Corrosive Gases**



### **Series 720C**

**High Purity Chrome-Plated Brass Barstock**



### **Series 740**

**High Purity Stainless Barstock**



### **Series 700**

**High Purity Chrome-Plated Forged Brass**

**A COMPLETE LINE OF ACCESSORIES  
IS AVAILABLE**



**Please call our customer service for more information**

## Specialty Gas Manifold

### Series SG 900 Semi-Automatic Manifold



### Series SG 960 Fully Automatic Switchover



Regulation Box



Control Box



Alarm Box



Manifold Depth: 26 cm  
Cabinet Weight: 25 Kg.

Please call our customer service for more information

## Regulator ordering information

### CODE FOR REGULATOR MODEL PART

|                 |
|-----------------|
| 801 / 901       |
| 904             |
| 802             |
| 814 / 914       |
| 818 / 918       |
| 821             |
| 822             |
| 825 / 895 / H25 |
| 829             |
| 841             |
| 842             |
| 846             |
| 847 / H47       |
| 848             |
| 987             |
| 896 / 996       |

Where more than  
one option,  
maintain  
order indicated

### TYPE CODE (Only if non-standard)

|   |                                   |
|---|-----------------------------------|
| - | Horizontal entry (standard)       |
| V | Placed in Kit                     |
| E | Vertical entry                    |
| A | Anti vibrator (lightweight gases) |
| D | IRV Diaphragm safety relief valve |
| R | External safety relief valve      |
| S | Stainless steel diaphragm         |
| B | Black painted gauges              |
| P | Without HP gauge                  |
| N | 1/4" NPT gauge (std is 1/4" G)    |
| G | Inlet connection 3/8"             |
| W | Outlet valve (when not standard)  |
| T | With lock "T" screw               |
| X | With inlet stem valve "SNAP SAFE" |

### NOMINAL PRESSURE OR FLOW

|      |                      |
|------|----------------------|
| 1,5  |                      |
| 4    |                      |
| 8    |                      |
| 10   |                      |
| 15   | Only for 825,847,896 |
| 25   | Only for 896         |
| 40   | Only for 825         |
| 150  |                      |
| 400  |                      |
| 800  |                      |
| 1000 |                      |
| 1500 | Only for 825,847,896 |
| 2500 | Only for 896         |
| 4000 | Only for 825         |
| 15   |                      |
| 30   |                      |
| 50   |                      |

### CALIBRATION

|    |                                                         |
|----|---------------------------------------------------------|
| -  | Pressure gauges calibrated bar or kPa                   |
| L  | Flow gauge or indicator calibrated, (Lpm)               |
| F  | Flowmeter, (Lpm)                                        |
| LK | Flow gauge or indicator in (Lpm), Pressure gauge in kPa |
| FK | Flowmeter in (Lpm), Pressure gauge in kPa               |

### GAS

|     |                |
|-----|----------------|
| OX  | Oxygen         |
| AC  | Acetylene      |
| AIR | Air            |
| AR  | Argon          |
| CD  | Carbon Dioxide |
| N   | Nitrogen       |
| N2O | Nitrous oxide  |
| H   | Hydrogen       |
| LP  | Propane        |
| PG  | Practical Gas  |
| ARC | ARCD           |
| HE  | Helium         |
| FG  | Formier gas    |

### PROGRESSIVE NUMBER PERSONALIZES

|     |   |    |  |    |   |
|-----|---|----|--|----|---|
| 801 | E | 10 |  | OX | 1 |
|-----|---|----|--|----|---|

# MANIFOLD SYSTEMS

## Highlights

- ▶ Compact design
- ▶ All modular components are fully tested for stability, functionality and gas tightness for 12 hours before delivery.
- ▶ Plug and go!
- ▶ Low mounting costs
- ▶ Easy to extend
- ▶ Equipped with all necessary and approved safety devices



MFS1.5AC2X2

## Technical data for gas manifolds

- ▶ **Gas type:** acetylene. Oxygen and technical gases
- ▶ **Inlet pressure:** acetylene 25 bar, all other gases up to 300 bar
- ▶ **Working pressure:** acetylene 1.5 bar, all other gases up to 40 bar
- ▶ **Number of cylinders:** up to 2x6 cylinders as standard
- ▶ **Number of MCP:** up to 2x3 MCP as standard
- ▶ **Nominal capacity of gas flow:** acetylene 5 Nm<sup>3</sup>/h up to 150 Nm<sup>3</sup>/h, oxygen and technical gases 30 Nm<sup>3</sup>/h up to 320 Nm<sup>3</sup>/h.
- ▶ **Components:** mounting plate made off stainless steel, approved non return valves on all cylinder connections.

All acetylene gas manifolds are equipped with an automatic quick action shut off valve in the high pressure zone.

## Technical data gas tapping points

- ▶ **Inlet pressure:** acetylene 1.5 bar, all other gases up to 40 bar
- ▶ **Nominal capacity of gas flow:** inert gas 0-30 l/min gauge, 0-15 l/min or 0-50 l/min flow-metre. Acetylene up to 15 Nm<sup>3</sup>/h, propane up to 10 Nm<sup>3</sup>/h, oxygen up to 200 Nm<sup>3</sup>/h
- ▶ **Components:** connection body, shut off valve; pipeline connections that can be welded or brazed.



MFS25OX2X2

MFS1.5AC1X1



MFS25IG1X1



## Accessories

High pressure distribution block with connecting pipe



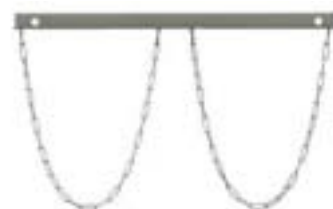
High pressure flexible hose with on/off valve



High pressure flexible hose with on/off valve



Cylinder bracket



| MODEL N.    | ITEM    | CYLINDERS | GAS       | INLET PRESSURE (bar) | DELIVERY PRESSURE (bar) | FLOW (Nm <sup>3</sup> /h) |
|-------------|---------|-----------|-----------|----------------------|-------------------------|---------------------------|
| MFS25OX1X1  | 4704550 | 1X1       | OXYGEN    | 300                  | 0-25                    | 60                        |
| MFS25OX1X2  | 4704551 | 1X2       |           |                      |                         |                           |
| MFS25OX2X1  | 4704552 | 2X1       |           |                      |                         |                           |
| MFS25OX2X2  | 4704553 | 2X2       |           |                      |                         |                           |
| MFS25IG1X1  | 4704600 | 1X1       | INERT GAS | 300                  | 0-25                    | 60                        |
| MFS25IG1X2  | 4704601 | 1X2       |           |                      |                         |                           |
| MFS25IG2X1  | 4704602 | 2X1       |           |                      |                         |                           |
| MFS25IG2X2  | 4704603 | 2X2       |           |                      |                         |                           |
| MFS1,5AC1X1 | 4704650 | 1X1       | ACETYLENE | 25                   | 0-1.5                   | 5                         |
| MFS1,5AC1X2 | 4704651 | 1X2       |           |                      |                         |                           |
| MFS1,5AC2X1 | 4704652 | 2X1       |           |                      |                         |                           |
| MFS1,5AC2X2 | 4704653 | 2X2       |           |                      |                         |                           |
| MFS4LP1X1   | 4704700 | 1X1       | PROPANE   | 25                   | 0-4                     | 15                        |
| MFS4LP1X2   | 4704701 | 1X2       |           |                      |                         |                           |
| MFS4LP2X1   | 4704702 | 2X1       |           |                      |                         |                           |
| MFS4LP2X2   | 4704703 | 2X2       |           |                      |                         |                           |

Controls and instruments are mounted on a stainless steel plate in modular system.

Depending on the type, the manifold consists of completely assembled components free from oil and grease:

A - Cylinder mounts Typ: FH

B - High pressure non-return valve Typ: RSV ( EN15615) [BAM Approval No. BAM ZBA/009/004]

C - High pressure pig tails: (EN 14113)

D - High pressure collection block: HD-VB 1/4NPT

E - High pressure isolation valve: DV [Approval No. EN 961]

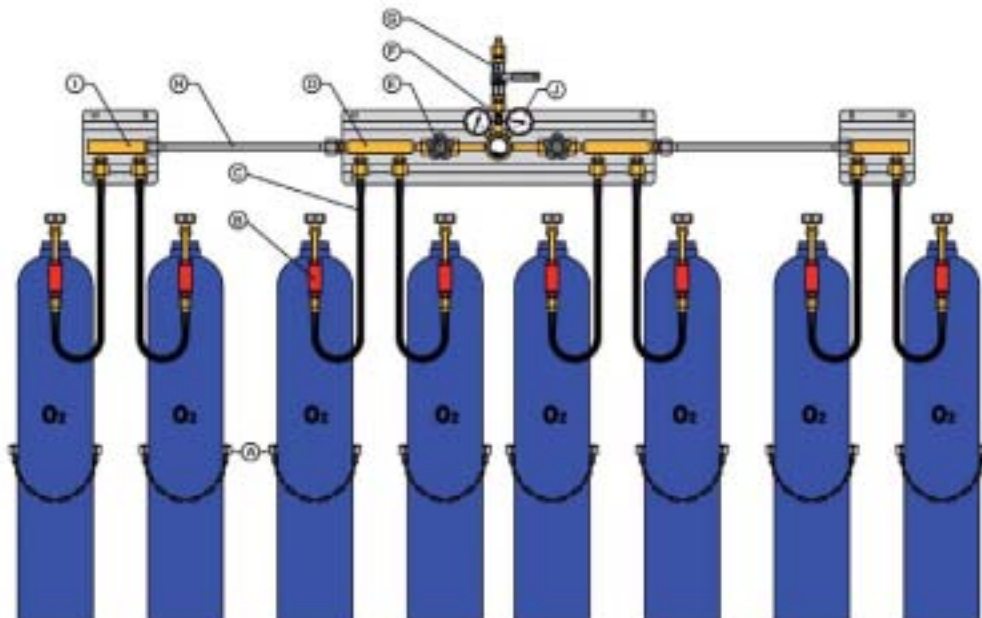
F - Regulator: e.g. H25

G - Isolation Valve Typ: LAV - KH 15-63

H - High pressure connection tube Typ: HDVR-415

I - High pressure collection block: HD-VB 1/4NPT

J - Gauge



Designed and manufactured according to EN ISO 5172.

Harris offers torches specifically designed for the best performance possible with each fuel gas:

## Equal pressure system with acetylene and alternative fuel:

- ▶ Head mixing
- ▶ Equal pressure mixing of oxygen and fuel gas is extremely resistant to backfire
- ▶ Torch can be used with all fuel gases - just change the tips
- ▶ All torches are supplied as standard with threads 9/16"-18-UNF-3A-RH

## Low pressure system with propane, LPG and MAPP®:

- ▶ Injector style
- ▶ Low pressure head mixing - fuel gas can be used at pressures as low as 0.015 bar
- ▶ Steady preheat flame during cutting
- ▶ Less fuel gas intake during cutting
- ▶ Pays for itself by drawing all fuel gas out of cylinder

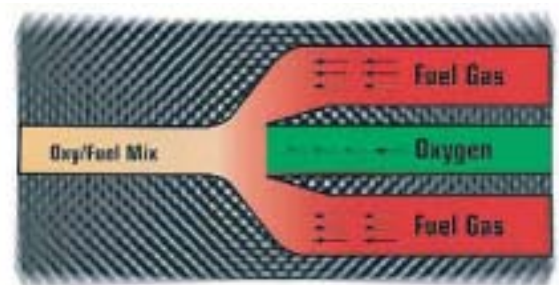
Standard torches are not supplied with inlet hose connections or cutting tips

## Fuel Mixer

Harris Calorific offers two types of oxy/fuel mixers. Equal pressure or positive pressure 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

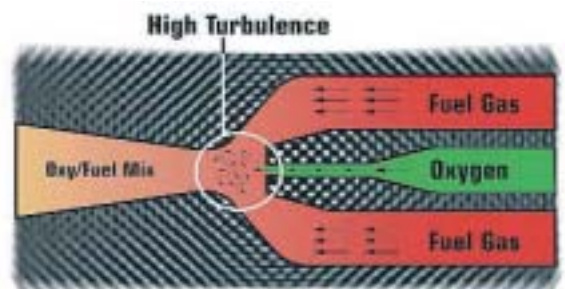
To thoroughly mix the oxygen and fuel gas, "E" mixer designs rely on equal pressure control of both oxygen and fuel gas. Both gases enter the mixing chamber at controlled pressures. "E" mixers allow the end-user greater control of the oxy/fuel ratio. This feature has an advantage in applications where 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 alternative 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 Calorific line are designed to operate at fuel gas pressures as low as 0.015 bar. "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 alternative fuels. "F" mixers tend to have a narrower operating range than "E" mixers but because of their superior mixing capabilities they tend to maximize calories output within that range.

"F" mixers are used primarily with low pressure natural gas. However, they are also recommended for use with alternative fuels when maximum calories output is needed and / or positive pressure control of the fuel gas is not available.



## Model 62



90° Head

...for Acetylene and low-cost fuel gases such as Propane, Natural Gas, MAPP® Gas, and Propylene

The industry standard by which all other designs are compared. The 62-5 is less expensive to own, operate and safer to use.

Our special 62 "F" injector mixer can produce the hottest flame possible at the lowest gas pressure making it the safest, most efficient design in the industry.

- ▶ Cuts up to 300 mm steel
- ▶ Solid forged head and lever
- ▶ Triangular tube design
- ▶ Brazed connections
- ▶ Head mixing
- ▶ Use with 6290 tips (see page 59-60)

| 62-5E EQUAL PRESSURE "E" TORCHES<br>(FOR ACETYLENE AND ALTERNATIVE FUELS) |                |              |                |                |
|---------------------------------------------------------------------------|----------------|--------------|----------------|----------------|
| 90°Head                                                                   |                | 70°Head      |                | Length<br>(mm) |
| Part no.                                                                  | Weight<br>(Kg) | Part no.     | Weight<br>(Kg) |                |
| 62-5E                                                                     | 1.27           | 62-5AE       | 1.25           | 460            |
| 62-5EL                                                                    | 1.32           | 62-5AEL      | 1.31           | 530            |
| 62-5EL-1000                                                               | 1.73           | 62-5AEL-1000 | 1.58           | 900            |

| 62-5F LOW PRESSURE "F" INJECTOR TORCHES<br>(FOR MAXIMUM PERFORMANCE WITH ALTERNATIVE FUELS) |                |              |                |              |                |                |
|---------------------------------------------------------------------------------------------|----------------|--------------|----------------|--------------|----------------|----------------|
| 90°Head                                                                                     |                | 70°Head      |                | 180°Head     |                | Length<br>(mm) |
| Part no.                                                                                    | Weight<br>(Kg) | Part no.     | Weight<br>(Kg) | Part no.     | Weight<br>(Kg) |                |
| 62-5F                                                                                       | 1.27           | 62-5AF       | 1.25           | 62-5BF       | 1.14           | 460            |
| 62-5FL                                                                                      | 1.32           | 62-5AFL      | 1.31           | 62-5BFL      | 1.18           | 530            |
| 62-5FL-835                                                                                  | 1.59           | 62-5AFL-835  | 1.58           | 62-5BFL-835  | 1.42           | 835            |
| 62-5FL-1000                                                                                 | 1.70           | 62-5AFL-1000 | 1.69           | 62-5BFL-1000 | 1.52           | 900            |
| 62-5FL-1250                                                                                 | 1.82           | 62-5AFL-1250 | 1.80           | 62-5BFL-1250 | 1.63           | 1210           |
| 62-5FL-1500                                                                                 | 2.00           | 62-5AFL-1500 | 1.98           | 62-5BFL-1500 | 1.79           | 1500           |
| 62-5FL-2000                                                                                 | 2.50           | 62-5AFL-2000 | 2.50           | 62-5BFL-2000 | 2.30           | 2000           |



70° Head



180° Head

| 62-5 LOW PRESSURE TORCHES<br>(FOR ACETYLENE) |                |             |                |             |                |                |
|----------------------------------------------|----------------|-------------|----------------|-------------|----------------|----------------|
| 90°Head                                      |                | 70°Head     |                | 180°Head    |                | Length<br>(mm) |
| Part no.                                     | Weight<br>(Kg) | Part no.    | Weight<br>(Kg) | Part no.    | Weight<br>(Kg) |                |
| 62-5                                         | 1.27           | 62-5A       | 1.25           | 62-5B       | 1.14           | 460            |
| 62-5L                                        | 1.32           | 62-5AL      | 1.31           | 62-5BL      | 1.18           | 530            |
| 62-5L-835                                    | 1.59           | 62-5AL-835  | 1.58           | 62-5BL-835  | 1.42           | 835            |
| 62-5L-1000                                   | 1.70           | 62-5AL-1000 | 1.69           | 62-5BL-1000 | 1.52           | 900            |
| 62-5L-1250                                   | 1.82           | 62-5AL-1250 | 1.80           | 62-5BL-1250 | 1.63           | 1210           |
| 62-5L-1500                                   | 2.00           | 62-5AL-1500 | 1.98           | 62-5BL-1500 | 1.79           | 1500           |

Available with G 3/8" A-UNI ISO 228 inlet threads,  
add "GB" to product code when ordering

## Model 242



- ▶ Cutting capacity 200 mm
- ▶ One torch suitable for use with all fuel gases: simply change tip for cutting, heating, gauging.
- ▶ Toughest design-triangular stainless steel tubes, solid forged brass head
- ▶ Available to suit all tip styles in the world
- ▶ Ease-on cutting oxygen control smoother starts
- ▶ Head mixing and equal pressure design for maximum operator safety
- ▶ Harris design quality control and reputation makes this the "safest" long life torch
- ▶ Fast heating and cutting
- ▶ Spare parts and accessories readily available
- ▶ Total versatility
- ▶ Extended lengths available on request
- ▶ Use with 6290 tips (see page 59-60)

**242 EQUAL PRESSURE TORCHES (FOR MAXIMUM PERFORMANCE WITH ACETYLENE AND ALTERNATIVE FUELS)**

| 90°Head  |             | 70°Head  |             | Length (mm) |
|----------|-------------|----------|-------------|-------------|
| Part no. | Weight (Kg) | Part no. | Weight (Kg) |             |
| 242      | 1.30        | 242-A    | 1.30        | 460         |
| 242-L    | 1.35        | 242A-L   | 1.35        | 530         |

## Model 42



- ▶ Cuts up to 200 mm
- ▶ Lightweight
- ▶ Solid forged head
- ▶ Triangular tube design
- ▶ Brazed tube connections
- ▶ Use with 6290 tips (see page 59-60)



### Handwheel valve

Model 42-3 available with handwheel valve. Add "V" to product code when ordering.

**42-4F LOW PRESSURE "F" INJECTOR TORCHES (FOR MAXIMUM PERFORMANCE WITH ALTERNATIVE FUELS)**

| 90°Head     |             | 70°Head      |             | Length (mm) |
|-------------|-------------|--------------|-------------|-------------|
| Part no.    | Weight (Kg) | Part no.     | Weight (Kg) |             |
| 42-4F       | 1.02        | 42-4AF       | 1.02        | 420         |
| 42-4FL      | 1.06        | 42-4AFL      | 1.06        | 500         |
| 42-3FL-835  | 1.21        | 42-3AFL-835  | 1.21        | 835         |
| 42-3FL-1000 | 1.35        | 42-3AFL-1000 | 1.35        | 1000        |

**42-4E EQUAL PRESSURE "E" TORCHES (FOR ACETYLENE AND ALTERNATIVE FUELS)**

| 90°Head  |             | Length (mm) |
|----------|-------------|-------------|
| Part no. | Weight (Kg) |             |
| 42-4E    | 0.99        | 420         |
| 42-4EL   | 1.04        | 500         |

**42-4 LOW PRESSURE TORCHES (FOR ACETYLENE)**

| 90°Head    |             | 70°Head     |             | Length (mm) |
|------------|-------------|-------------|-------------|-------------|
| Part no.   | Weight (Kg) | Part no.    | Weight (Kg) |             |
| 42-4       | 1.03        | 42-4A       | 1.04        | 420         |
| 42-4L      | 1.07        | 42-4AL      | 1.07        | 500         |
| 42-3L-835  | 1.28        | 42-3AL-835  | 1.25        | 835         |
| 42-3L-1000 | 1.35        | 42-3AL-1000 | 1.35        | 1000        |

Available with G 3/8" A-UNI ISO 228 inlet threads, add "GB" to product code when ordering

## Model 242-NM



- ▶ Cutting capacity 200 mm
- ▶ One torch suitable for use with all fuel gases
- ▶ Toughest design- triangular stainless steel tubes, solid forged brass head
- ▶ Stainless steel cutting oxygen lever
- ▶ Use with 8290 tips (see page 61)

| 242-NM EQUAL PRESSURE TIP MIX TORCHES<br>(FOR ACETYLENE OR ALTERNATIVE FUELS) |                |           |                |                 |
|-------------------------------------------------------------------------------|----------------|-----------|----------------|-----------------|
| 90°Head                                                                       |                | 70°Head   |                | Length<br>(mm)) |
| Part no.                                                                      | Weight<br>(Kg) | Part no.  | Weight<br>(Kg) |                 |
| 242-NM                                                                        | 1.25           | 242-NM-A  | 1.25           | 460             |
| 242-NML                                                                       | 1.32           | 242-NM-AL | 1.31           | 530             |

Available with G 3/8" A-UNI ISO 228 inlet threads, add "GB" to product code when ordering

## Model 28



- ▶ Cuts up to 400 mm with acetylene
- ▶ Cuts up to 500 mm with propane
- ▶ Operates with acetylene or alternative fuel
- ▶ Stainless steel gas tube
- ▶ Tip mix principle
- ▶ Use with 2890 tip mix tips (see page 61)

| 28-L EQUAL PRESSURE TIP MIX TORCHES<br>(FOR ACETYLENE OR ALTERNATIVE FUELS) |                |                |
|-----------------------------------------------------------------------------|----------------|----------------|
| 90°Head                                                                     |                | Length<br>(mm) |
| Part no.                                                                    | Weight<br>(Kg) |                |
| 28                                                                          | 1.42           | 510            |
| 28-L                                                                        | 1.60           | 675            |

## Cutting Attachments

- ▶ Solid forged head resists abuse and distortion
- ▶ Triangular tube design is compact and lightweight with exceptional strength and rigidity
- ▶ Brazed connections prevent leaks
- ▶ Protected torch union nut protects seats and o-rings from abuse
- ▶ Solid forged lever for exceptional strength
- ▶ Ease-on cutting oxygen control for smoother starts

### Handwheel valve



73-3 Cuts up to 150 mm

Heavy duty equipment

### 73 Equal Pressure "E" Cutting Attachments (for Acetylene and Alternative Fuels)

| PART NO. | HEAD ANGLE | COMPATIBLE CUTTING TIPS | COMPATIBLE HANDLE | WEIGHT (Kg) | LENGTH (mm) |
|----------|------------|-------------------------|-------------------|-------------|-------------|
| 73-3     | 90°        | 6290                    | 43-2              | 0.638       | 227         |
| 73-3B    | 180°       | 6290                    | 263               | 0.630       | 253         |
| 73-3V*   | 90°        | 6290                    | 543               | 0.650       | 227         |

\* "V" handwheel valve instead of lever.



49-3 Cuts up to 150 mm

Heavy duty equipment

### 49 Low Pressure Cutting Attachments (for Acetylene)

| PART NO. | HEAD ANGLE | COMPATIBLE CUTTING TIPS | COMPATIBLE HANDLE  | WEIGHT (Kg) | LENGTH (mm) |
|----------|------------|-------------------------|--------------------|-------------|-------------|
| 49-3     | 90°        | 6290                    | 43-2<br>263<br>543 | 0.678       | 248         |
| 49-3A    | 70°        | 6290                    |                    | 0.686       | 258         |
| 49-3L360 | 90°        | 6290                    |                    | 0.728       | 348         |
| 49-3L500 | 90°        | 6290                    |                    | 0.750       | 490         |
| 49-3V*   | 90°        | 6290                    |                    | 0.692       | 248         |

\* "V" handwheel valve instead of lever.

### 49-F Low Pressure "F" Cutting Attachments (for Alternative Fuels)

| PART NO.  | HEAD ANGLE | COMPATIBLE CUTTING TIPS | COMPATIBLE HANDLE  | WEIGHT (Kg) | LENGTH (mm) |
|-----------|------------|-------------------------|--------------------|-------------|-------------|
| 49-3AF    | 70°        | 6290                    | 43-2<br>263<br>543 | 0.674       | 258         |
| 49-3AFV*  | 70°        | 6290                    |                    | 0.700       | 258         |
| 49-3F     | 90°        | 6290                    |                    | 0.678       | 248         |
| 49-3FL360 | 90°        | 6290                    |                    | 0.736       | 348         |
| 49-3FL500 | 90°        | 6290                    |                    | 0.804       | 490         |
| 49-3FV*   | 90°        | 6290                    |                    | 0.688       | 248         |

\* "V" handwheel valve instead of lever.



273 Cuts up to 150 mm

Medium- Heavy  
duty equipment  
Brazed in mixer

### 273 Equal Pressure Cutting Attachments (for Acetylene and Alternative Fuels)

| PART NO. | HEAD<br>ANGLE | COMPATIBLE<br>CUTTING TIPS | COMPATIBLE<br>HANDLE | WEIGHT<br>(Kg) | LENGTH<br>(mm) |
|----------|---------------|----------------------------|----------------------|----------------|----------------|
| 273      | 90°           | 6290                       | 43-2, 263, 543       | 0.840          | 230            |

### 273-NM Equal Pressure Cutting Attachments (for Acetylene and Alternative Fuels)

| PART NO. | HEAD<br>ANGLE | COMPATIBLE<br>CUTTING TIPS | COMPATIBLE<br>HANDLE | WEIGHT<br>(Kg) | LENGTH<br>(mm) |
|----------|---------------|----------------------------|----------------------|----------------|----------------|
| 273-NM   | 90°           | 8290                       | 43-2, 263, 543       | 0.800          | 230            |



72-3 Cuts up to 100 mm

Medium duty  
equipment

### 72 Equal Pressure "E" Cutting Attachments (for Acetylene and Alternative Fuels)

| PART NO. | HEAD<br>ANGLE | COMPATIBLE<br>CUTTING TIPS | COMPATIBLE<br>HANDLE | WEIGHT<br>(Kg) | LENGTH<br>(mm) |
|----------|---------------|----------------------------|----------------------|----------------|----------------|
| 72-3     | 90°           | 6290                       | 85                   | 0.636          | 227            |
| 72-3V*   | 90°           | 6290                       | 85                   | 0.642          | 227            |

\* "V" handwheel valve instead of lever.



36-2 Cuts up to 75 mm

Light duty  
equipment

### 36 Equal Pressure "E" Cutting Attachments (for Acetylene and Alternative Fuels)

| PART NO. | HEAD<br>ANGLE | COMPATIBLE<br>CUTTING TIPS | COMPATIBLE<br>HANDLE | WEIGHT<br>(Kg) | LENGTH<br>(mm) |
|----------|---------------|----------------------------|----------------------|----------------|----------------|
| 36-2     | 90°           | 6290                       | 19-6                 | 0.326          | 189            |

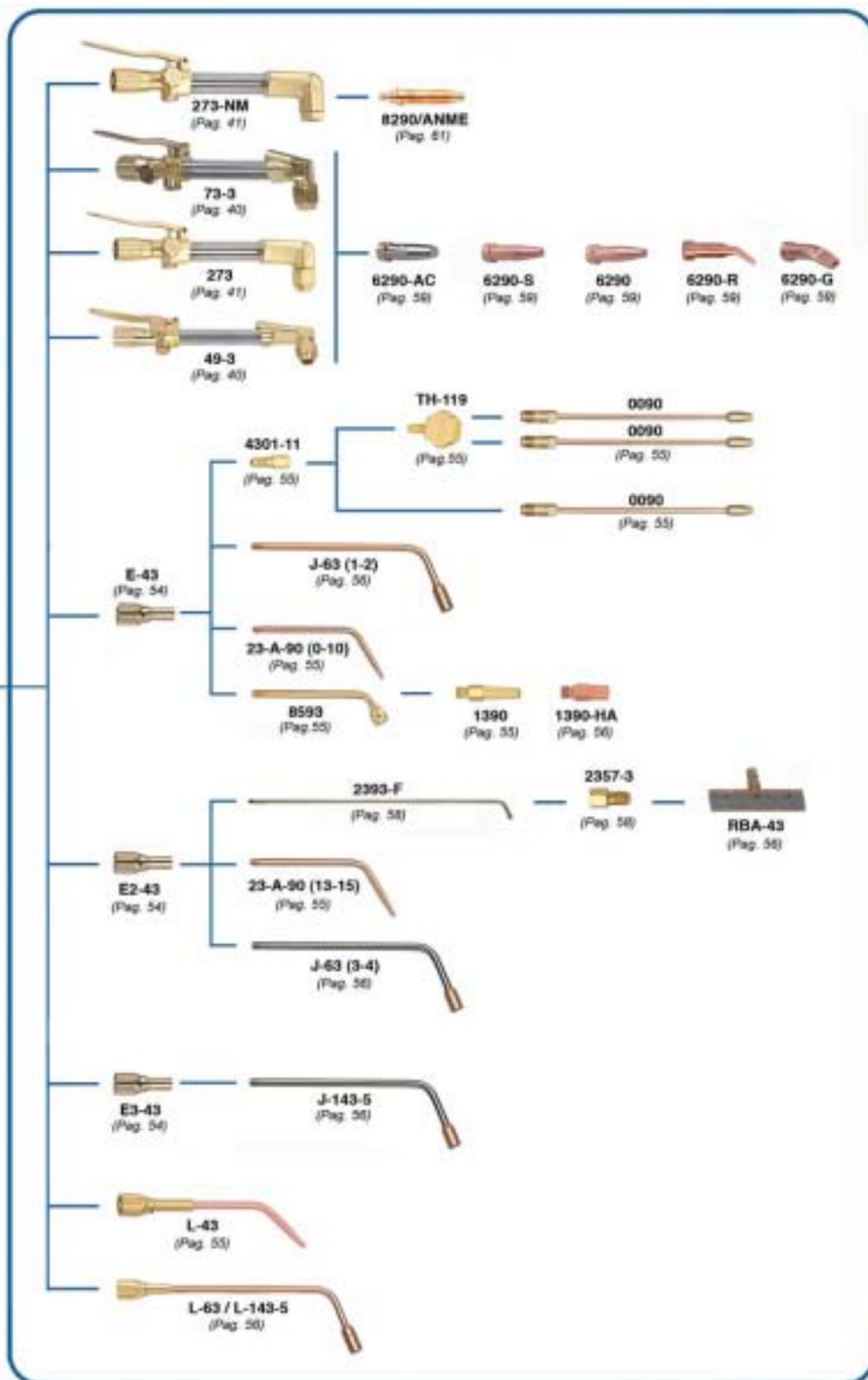
## Model 43

Welds up to 50 mm  
Cuts up to 150 mm

This model is a high capacity combination handle.  
With proper accessories, it can be used for either acetylene or other fuel gases.



## ACETYLENE

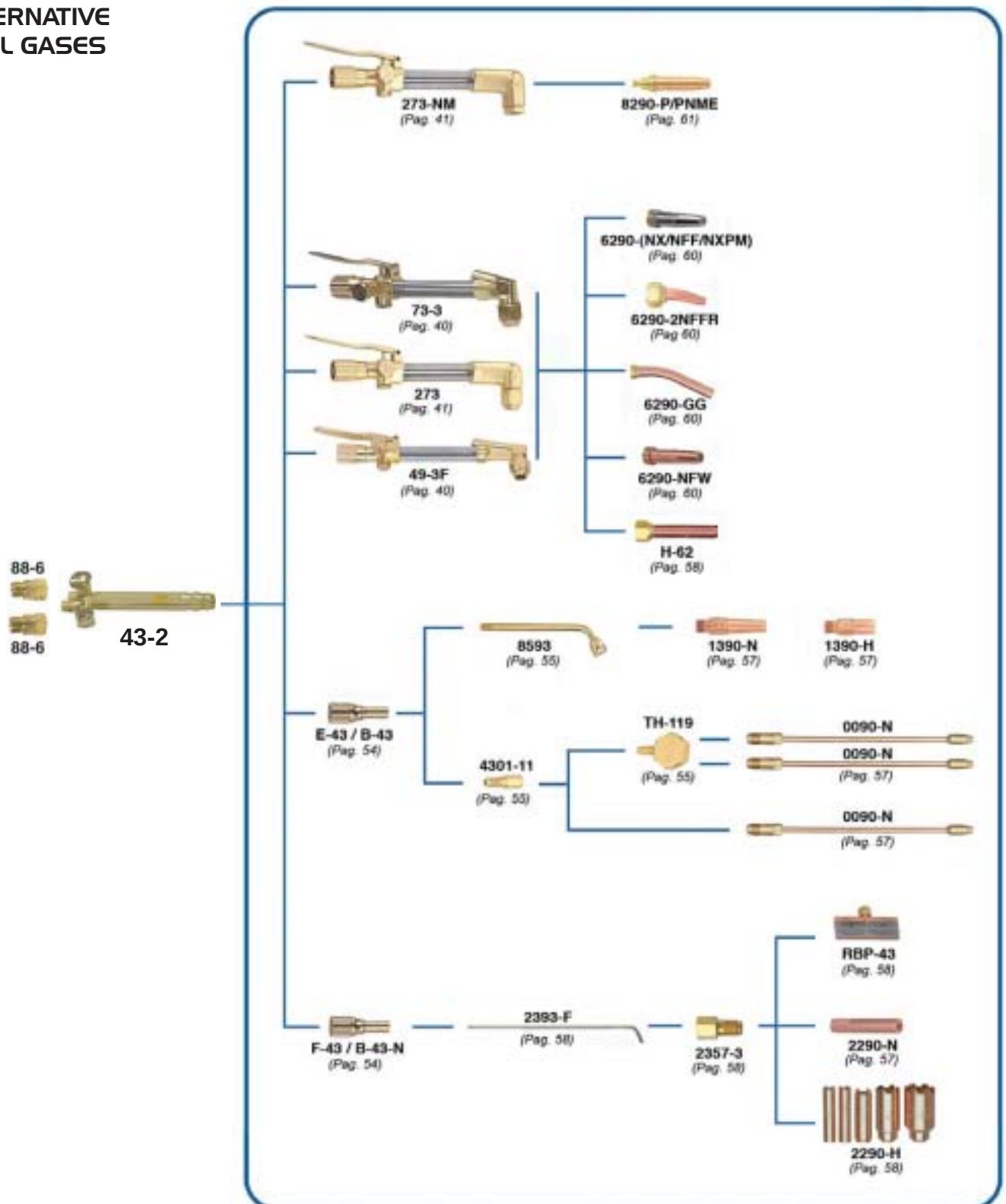


**Features:**

- ▶ Stainless steel head
- ▶ Tough extruded brass handle
- ▶ Stainless steel ball valves
- ▶ No screws or soldered parts for easier maintenance

| PART NO. | COMPATIBLE CUTTING ATTACHMENT | THREAD OXYGEN           | THREAD FUEL GAS         | WEIGHT (Kg) | LENGTH (mm) |
|----------|-------------------------------|-------------------------|-------------------------|-------------|-------------|
| 43-2     | 49-3, 59-3,                   | 9/16"-18-UNF-3A-RH      | 9/16"-18-UNF-3A-LH      | 0.550       | 208         |
| 43-2GB   | 73-3, 273                     | G 3/8" A-RH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 | 0.558       | 208         |

**ALTERNATIVE FUEL GASES**



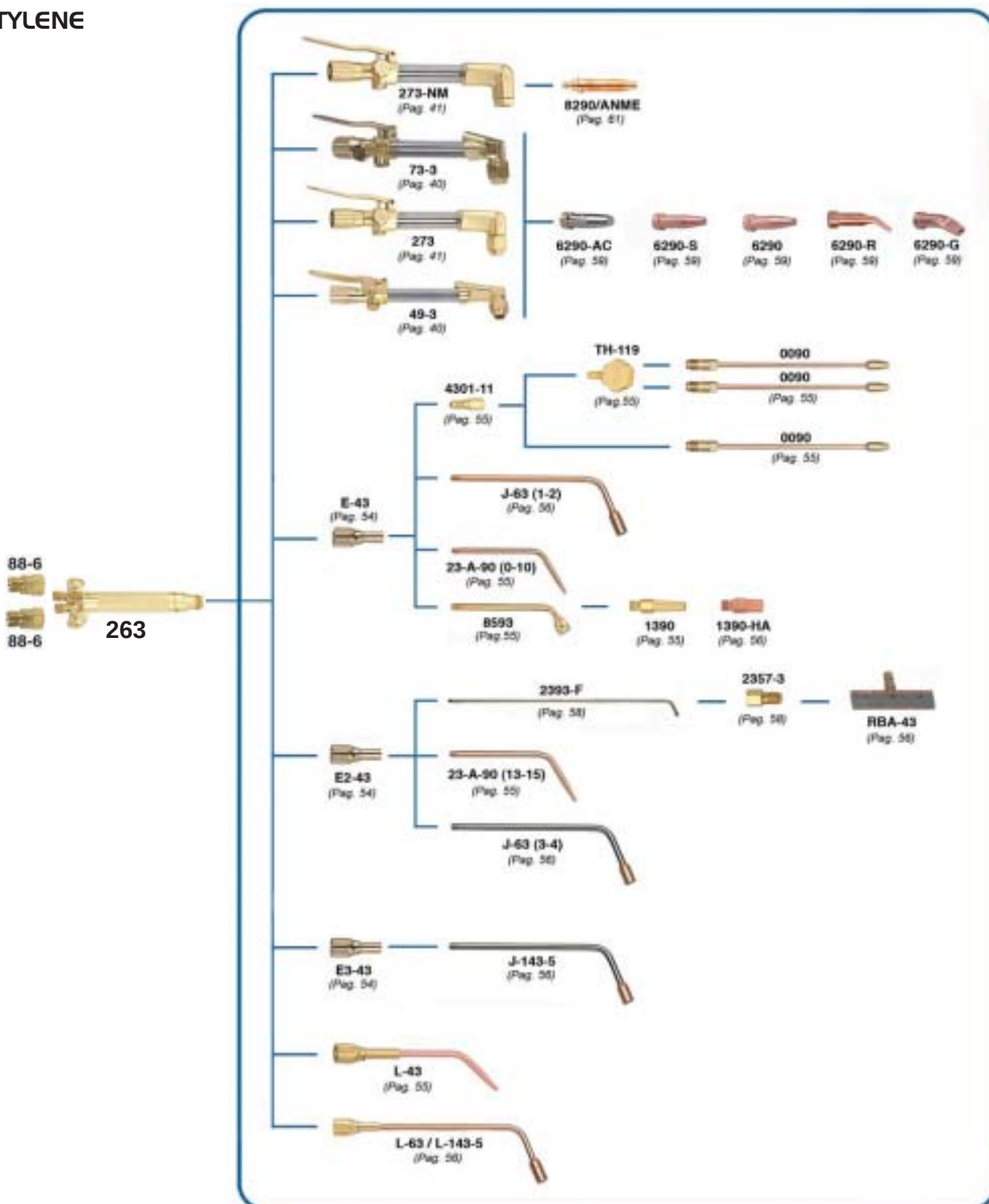
## Model 263

Welds up to 50 mm  
Cuts up to 150 mm

This model is a high capacity combination handle.  
With proper accessories, it can be used for either acetylene or other fuel gases.



## ACETYLENE

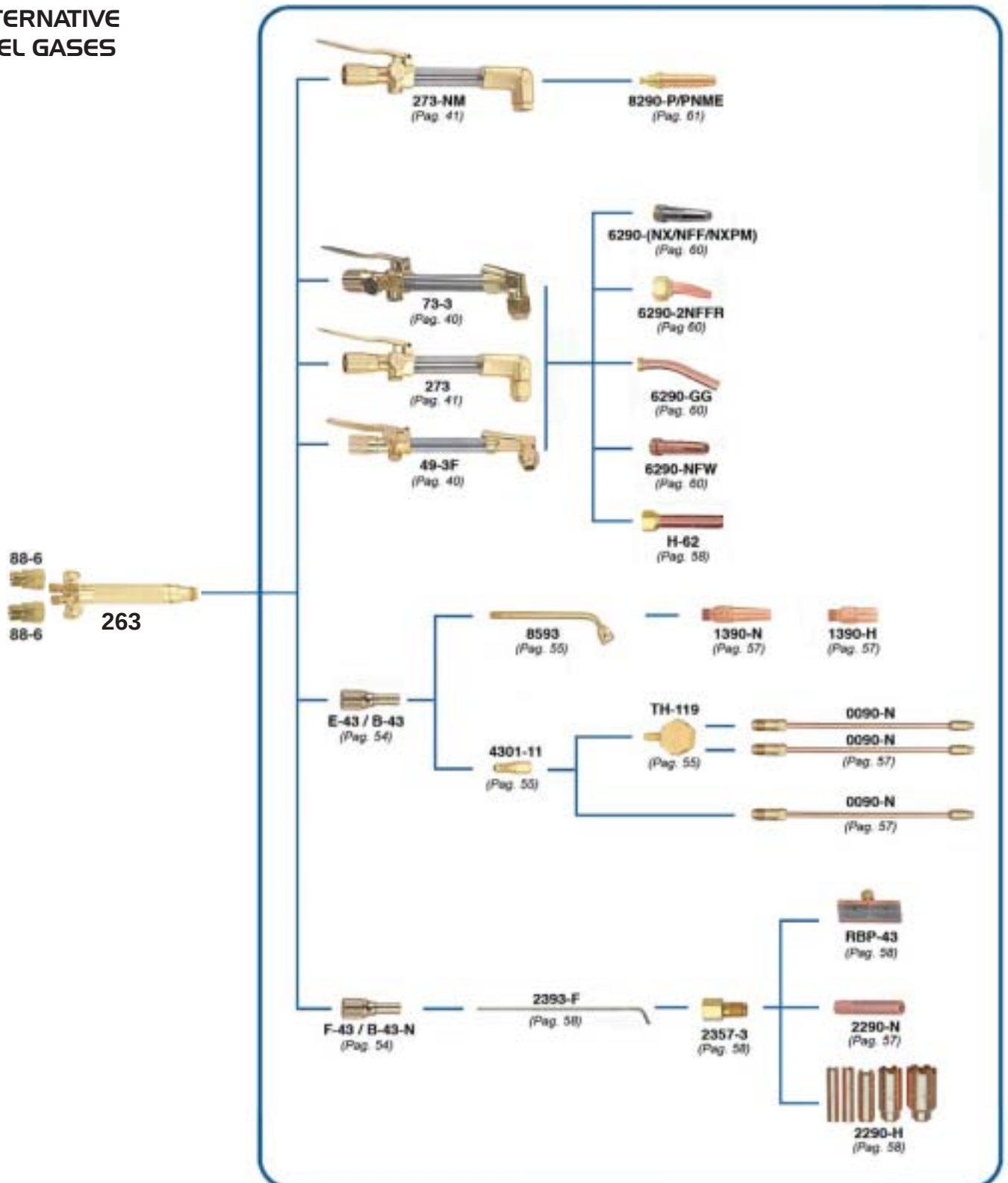


**Features:**

- ▶ High precision ball valves
- ▶ Two separate gas tubes
- ▶ Brass handle

| PART NO. | COMPATIBLE CUTTING ATTACHMENT | THREAD OXYGEN           | THREAD FUEL GAS         | WEIGHT (Kg) | LENGTH (mm) |
|----------|-------------------------------|-------------------------|-------------------------|-------------|-------------|
| 63-2     | 49-3, 59-3,                   | 9/16"-18-UNF-3A-RH      | 9/16"-18-UNF-3A-LH      | 0.550       | 208         |
| 63-2GB   | 73-3, 273                     | G 3/8" A-RH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 | 0.558       | 208         |

**ALTERNATIVE FUEL GASES**



## Model 543

Welds up to 50 mm

Cuts up to 150 mm



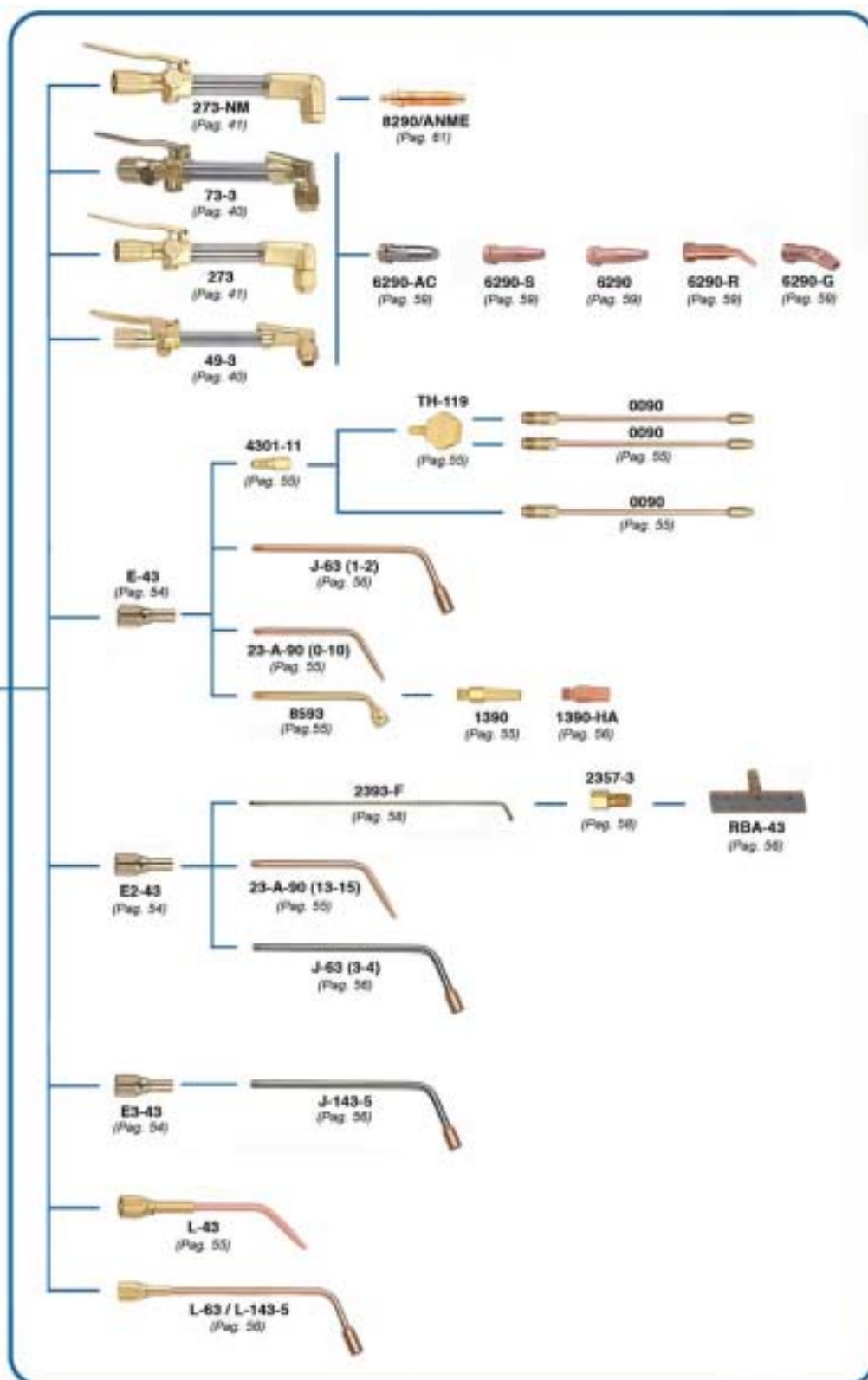
### Features:

- ▶ Conforms to EN ISO 5172
- ▶ Ergonomic design with front valves
- ▶ Forged aluminium alloy body

## ACETYLENE



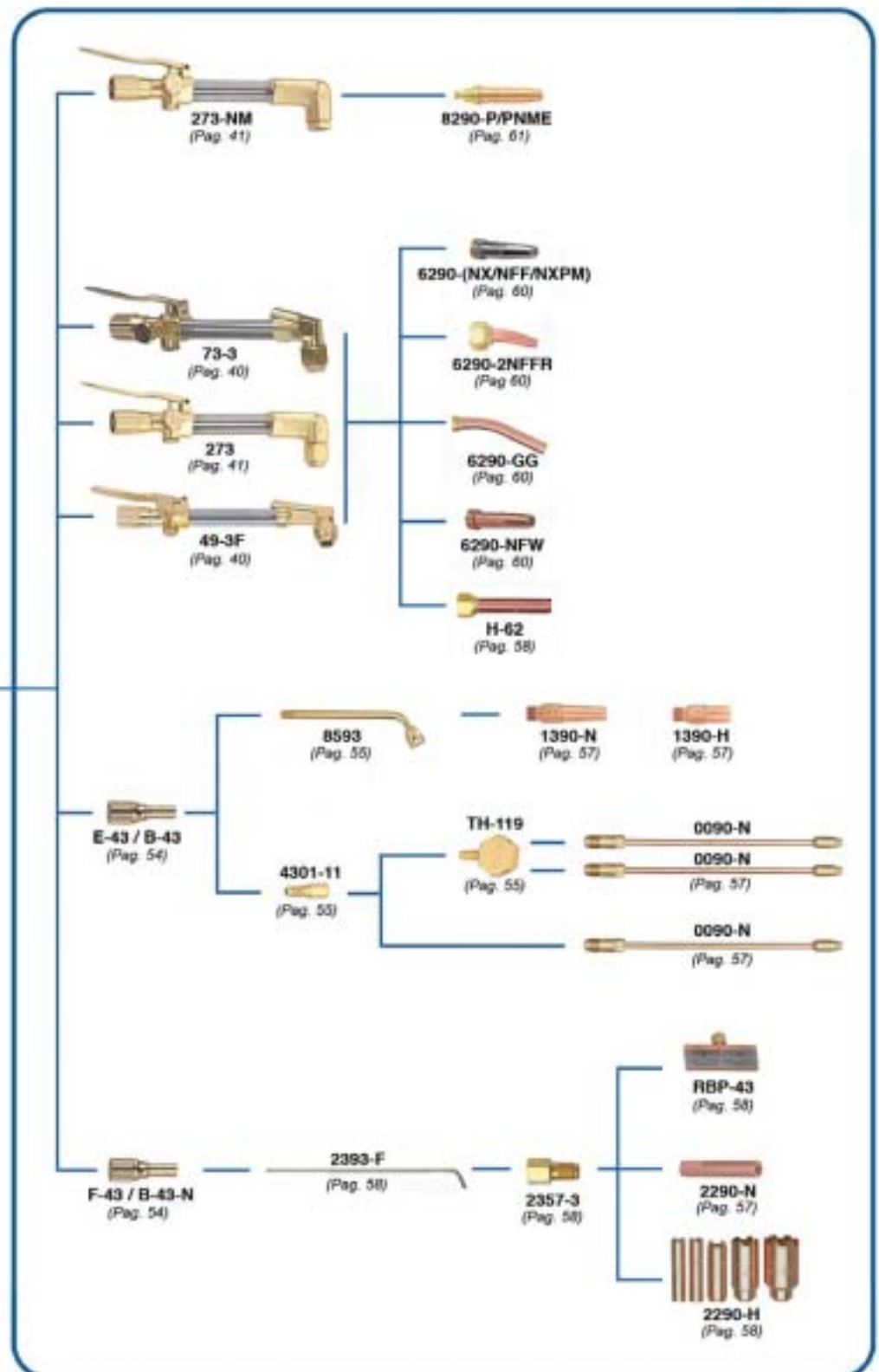
543



- High precision ball valves
- Coated with tough black polyurethane for longer life

| PART NO. | COMPATIBLE CUTTING ATTACHMENT | THREAD OXYGEN           | THREAD FUEL GAS         | WEIGHT (Kg) | LENGTH (mm) |
|----------|-------------------------------|-------------------------|-------------------------|-------------|-------------|
| 543      | 49-3, 59-3, 73-3, 273         | 9/16"-18-UNF-3A-RH      | 9/16"-18-UNF-3A-LH      | 0.502       | 211         |
| 543D     |                               | G 1/4" A-RH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 | 0.503       | 211         |
| 543GB    |                               | G 3/8" A-RH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 | 0.507       | 211         |

## ALTERNATIVE FUEL GASES



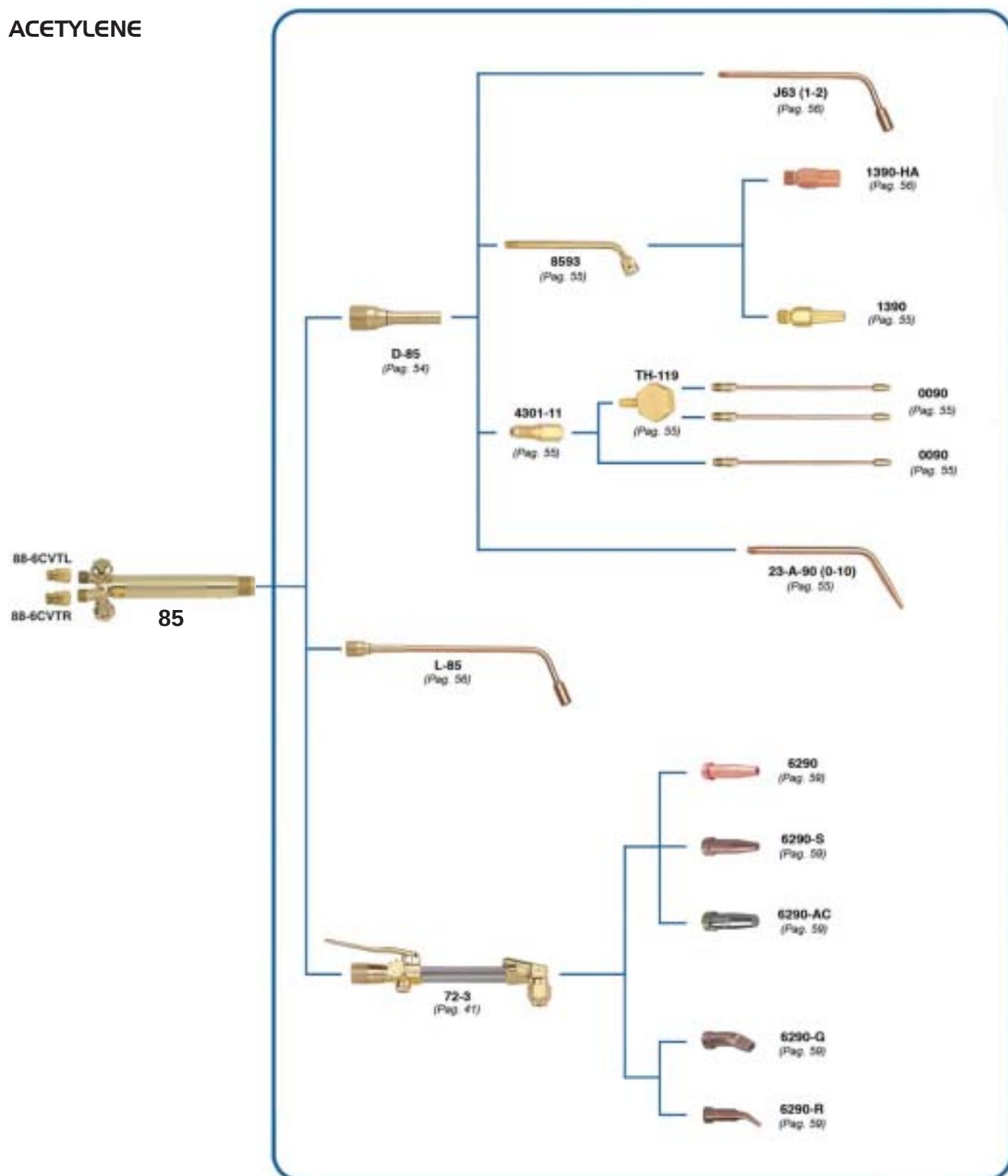
## Model 85

Welds up to 20 mm  
Cuts up to 100 mm

This model 85 is designed for welding, heating and cutting with oxy-acetylene.



## ACETYLENE

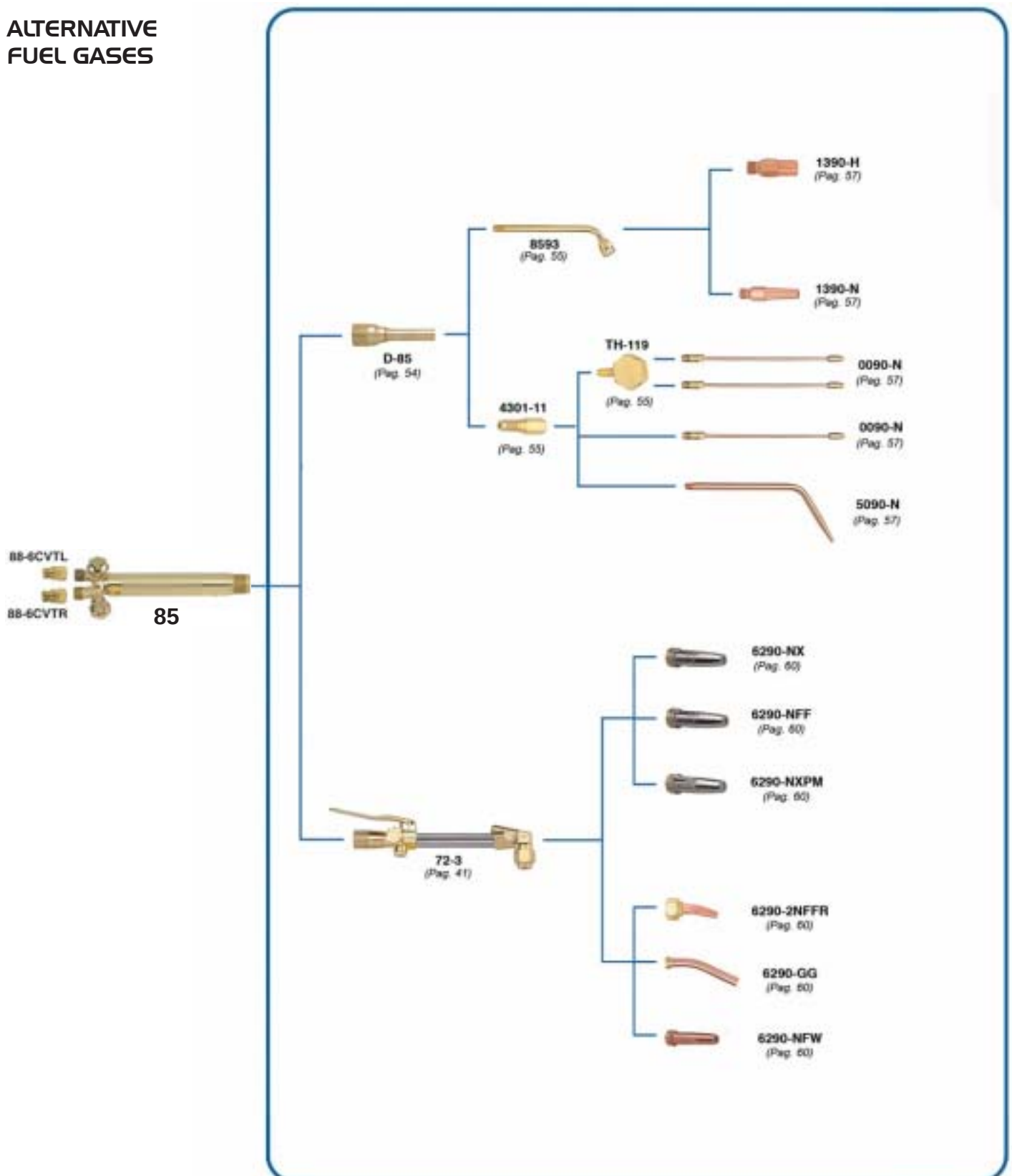


**Features:**

- Brass torch handle
- Silver brazed twin tube construction for safety and durability
- Ball valve for fast and accurate flame adjustment

| PART NO. | COMPATIBLE CUTTING ATTACHMENT | THREAD OXYGEN      | THREAD FUEL GAS    | WEIGHT (Kg) | LENGTH (mm) |
|----------|-------------------------------|--------------------|--------------------|-------------|-------------|
| 85       | 72-3                          | 9/16"-18-UNF-3A-RH | 9/16"-18-UNF-3A-LH | 0.362       | 183         |

**ALTERNATIVE FUEL GASES**



## Model 50

Welds up to 14 mm



Automatic Torch Handle. The Harris 50-9 and 50-10 automatic torch handles feature a unique gas control system to reduce operating and improve safety and convenience.

The thumb operated on/off gas control and adjustable pilot light eliminate relighting and flame readjustment each time the torch is used. The on/off feature can be used for cutting, brazing, and welding with all oxy fuel gases.

The pilot flame light feature is not recommended when using cutting attachments or heating tips.

Select model 50-9 for acetylene and 50-10 for other fuel gases.

### Features:

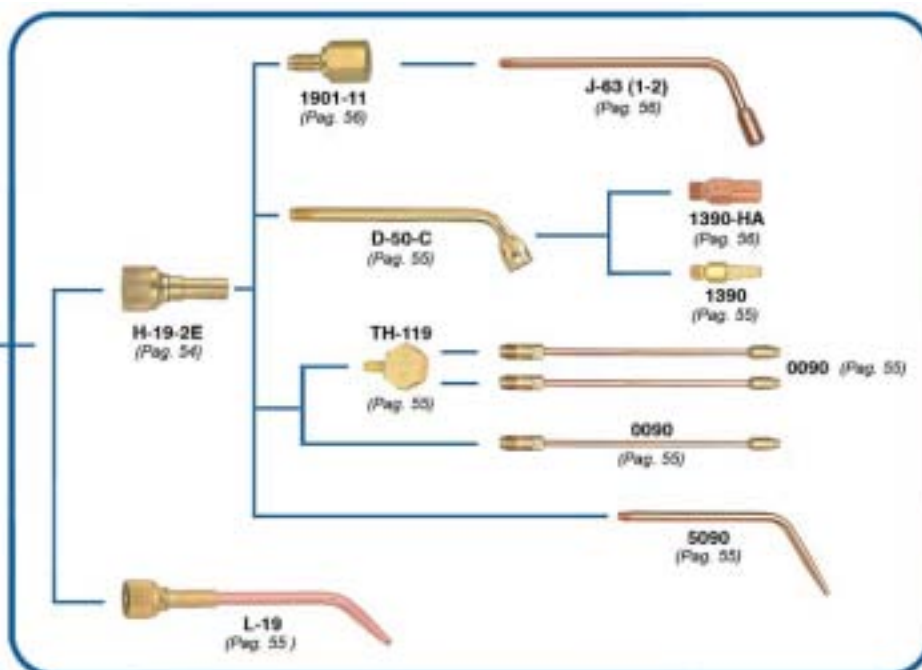
- ▶ Automatic on/off gas control
- ▶ Adjustable pilot light

| PART NO. | COMPATIBLE CUTTING ATTACHMENT | THREAD OXYGEN           | THREAD FUEL GAS         | WEIGHT (Kg) | LENGTH (mm) |
|----------|-------------------------------|-------------------------|-------------------------|-------------|-------------|
| 50-9     | 36-2                          | 9/16"-18-UNF-3A-RH      | 9/16"-18-UNF-3A-LH      | 0.310       | 169         |
| 50-9-GB  |                               | G 1/4" A-RH-UNI ISO 228 | G 1/4" A-LH-UNI ISO 228 | 0.308       | 169         |
| 50-10    |                               | 9/16"-18-UNF-3A-RH      | 9/16"-18-UNF-3A-LH      | 0.310       | 169         |
| 50-10-GB |                               | G 1/4" A-RH-UNI ISO 228 | G 1/4" A-LH-UNI ISO 228 | 0.308       | 169         |

### ACETYLENE



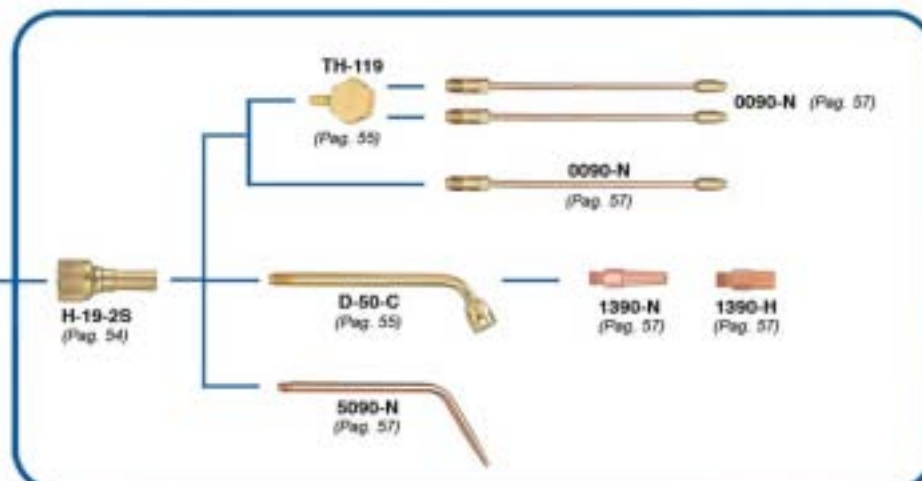
50-9



### ALTERNATIVE FUEL GASES



50-10



## Model 19

Welds up to 14 mm  
Cuts up to 75 mm

The model 19-6 combination torch handle for cutting, welding, brazing and heating. It can be used with oxy-acetylene or other fuel gases. The model 19-6 features silver brazed twin tube construction. Valves are located at the front of torch handle for more precise control while brazing.

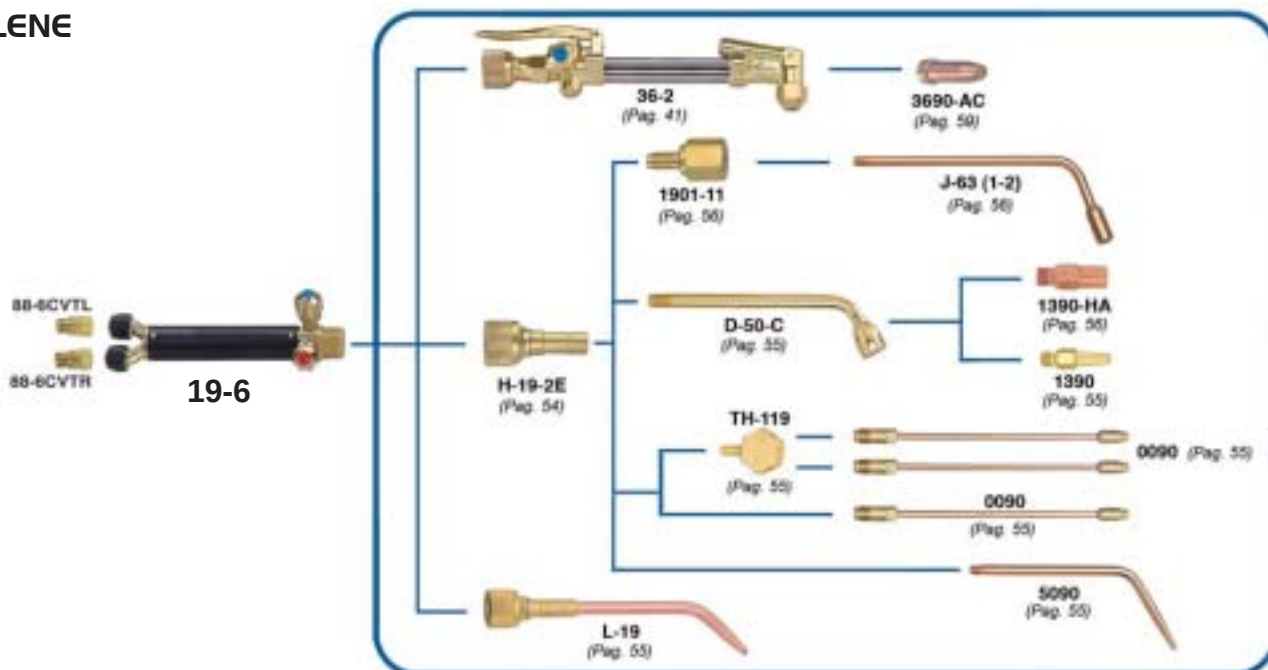


### Features:

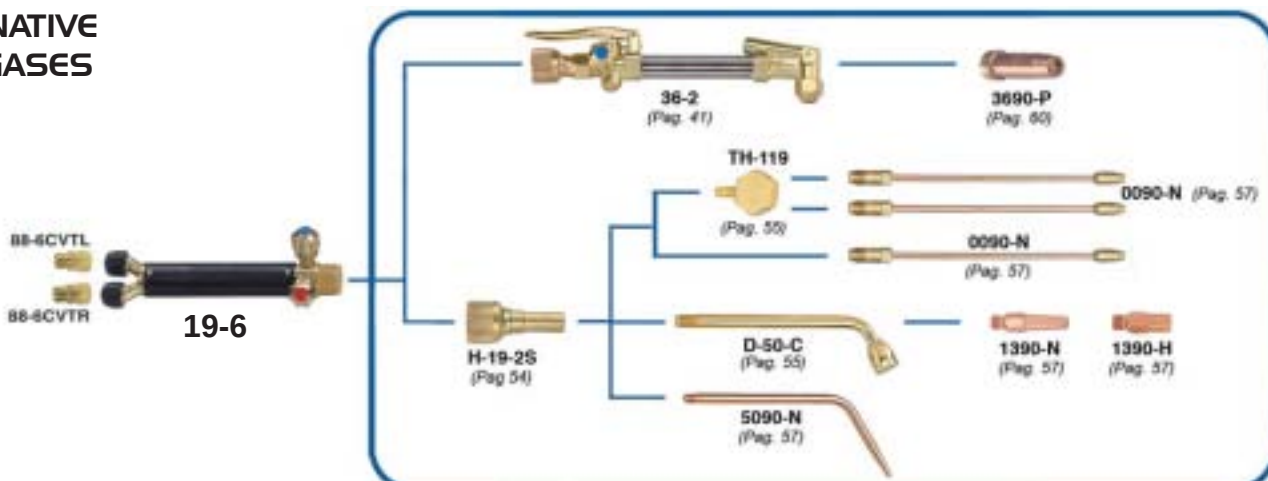
- ▶ Light weight handle
- ▶ Silver brazed twin tube construction for safety and durability
- ▶ Ball valve for fast and accurate flame adjustment

| PART NO. | COMPATIBLE CUTTING ATTACHMENT | THREAD OXYGEN           | THREAD FUEL GAS         | WEIGHT (Kg) | LENGTH (mm) |
|----------|-------------------------------|-------------------------|-------------------------|-------------|-------------|
| 19-6     | 36-2                          | 9/16"-18-UNF-3A-RH      | 9/16"-18-UNF-3A-LH      | 0.240       | 154         |
| 19-6-GB  |                               | G 1/4" A-RH-UNI ISO 228 | G 1/4" A-LH-UNI ISO 228 | 0.238       | 154         |

### ACETYLENE



### ALTERNATIVE FUEL GASES



## 189-2 Automatic Soldering And Heating Assembly Propane, Natural Gas

The Harris 189-2 heating and soldering torch is designed to operate with natural gas (0,015 bar or more) or propane in combination with 3 to 7 bar of compressed air only. The 189-2 is completely automatic. Once adjusted to the proper flame, the pilot light can be retained during down time and full flame returned instantly by pressing the hand lever. The pilot light can be enlarged to a full "smoothing on" secondary flame when used for soldering. The tip can be positioned in any direction.



- ▶ Large area soft soldering
- ▶ Preheating castings for welding
- ▶ Heating pipes in chemical plants
- ▶ Mould drying
- ▶ Metal cleaning (Brewery, Vats, Rubber Mould, etc.)
- ▶ Burning paint
- ▶ Heating forming dies prior to hard facing
- ▶ Stress relieving die shoes
- ▶ For use with compressed air only
- ▶ Max. Kcal. output  
33.000 Kcal. with propane  
21.000 Kcal. with natural gas



**81-12 TIP**

### 81-12 Heating Tip

| PART NO.    | HEAT OUTPUT (Kcal/h) | COMPRESSED AIR |            | PROPANE        |            |
|-------------|----------------------|----------------|------------|----------------|------------|
|             |                      | PRESSURE (bar) | FLOW (l/h) | PRESSURE (bar) | FLOW (l/h) |
| PROPANE     |                      |                |            |                |            |
| 81-12       | 66000                | 7              | 45000      | 0,3            | 3000       |
| NATURAL GAS |                      |                |            |                |            |
| 81-12       | 83000                | 7              | 40000      | 0.015          | 9000       |

## I87 Metal Powder Spraying Assembly Oxy-Acetylene



- ▶ Metal spraying with cobalt, nickel, and Iron bases; tungsten carbide and tribaloy
- ▶ Operates with acetylene
- ▶ Lightweight design
- ▶ Safety system to avoid power blowback and mixed gases into the powder container
- ▶ Uses standard 85 handle (see page 48)

## I8790 Tips

- ▶ Tips assembly can rotate 360° to allow for spray operations in any desired direction



| PART NO.  | OXYGEN PRESSURE (bar) |     | ACETYLENE PRESSURE (bar) |     | OXYGEN FLOW (l/h) |      | ACETYLENE FLOW (l/h) |      | HEATING POWER (Kcal/h) |        |
|-----------|-----------------------|-----|--------------------------|-----|-------------------|------|----------------------|------|------------------------|--------|
| 18790-45H | 3.0                   | 5.0 | 0.5                      | 0.8 | 1125              | 1875 | 600                  | 1000 | 13550                  | 183600 |
| 18790-48H | 2.0                   | 3.5 | 0.3                      | 0.5 | 750               | 1300 | 400                  | 600  | 8130                   | 110160 |
| 18790-53H | 1.5                   | 2.5 | 0.2                      | 0.4 | 600               | 1000 | 300                  | 500  | 6780                   | 91870  |

## I878ILT Powder Container

- ▶ Powder container capacity of 0.45 kg. (1 lb) ideal for small jobs
- ▶ Powder recoveries of up to 95%



## Equal Pressure "E" Type Mixer



E-43



E-243



E3-43/F-43



D-85



H-19-2E

| PART NO. | FITS HANDLE    | GAS           | WELDING TIPS                                      | HEATING TIPS                                     | BRAZING TIPS                                                                                               | FLAME CLEANING TIPS                      |
|----------|----------------|---------------|---------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------|
| E-43     | 43-2, 263, 543 | Oxy-Acetylene | 23A90 tips 0,1,3,5,6,8,9,10                       | J-63 tips 1,2                                    | -                                                                                                          | -                                        |
|          |                |               | 0090 tips 1,3,5,6,8<br>(+adapter 4301-11+TH-119)  | 1390-HA<br>(+tube 8593)                          |                                                                                                            |                                          |
|          |                | Oxy-Propane   | 1390 tips 00,0,1,3,5,6,8,9,10<br>(+tube 8593)     | -                                                | 1390-N tips<br>2,3,4,5,6,7,8,9,10<br>(+ tube 8593)<br>0090-N tips 2,4,6,8<br>(+adapter 4301-11<br>+TH-119) | -                                        |
|          |                |               | -                                                 | -                                                |                                                                                                            |                                          |
| E2-43    | 43-2, 263, 543 | Oxy-Acetylene | 23A90 tips 13,15                                  | J-63 tips 3,4                                    | -                                                                                                          | RBA-43 tips 2,4,6<br>(+tube 2393+2357-3) |
| E3-43    | 43-2, 263, 543 | Oxy-Acetylene | -                                                 | J-143-5                                          | -                                                                                                          | -                                        |
| D-85     | 85             | Oxy-Acetylene | 23A90 tips 0,1,3,5,6,8,9,10                       | J-63-tips 1,2                                    | -                                                                                                          | -                                        |
|          |                |               | 0090 tips 1,3,5,6,8,<br>(+adapter 4301-11+TH-119) | 1390-HA<br>(+tube 8593)                          |                                                                                                            |                                          |
|          |                |               | 1390 tips 00,0,1,3,5,6,8,9,10<br>(+tube 8593)     | -                                                |                                                                                                            |                                          |
|          |                |               | -                                                 | -                                                |                                                                                                            |                                          |
| H-19-2E  | 19-6, 50-9     | Oxy-Acetylene | 5090 tips 0,1,3,5,6,8,9,10                        | J-63-tips 1,2<br>(+adapter 1901-11)              | -                                                                                                          | -                                        |
|          |                |               | 0090 tips 1,3,5,6,8<br>(+tip holder TH-119)       | 1390-HA<br>(+tube 8593)                          |                                                                                                            |                                          |
|          |                |               | 1390 tips 00,0,1,3,5,6,8,9,10<br>(+tube D-50-C)   | -                                                |                                                                                                            |                                          |
|          |                |               | 0090 tips 1,3,5,6,8                               | -                                                |                                                                                                            |                                          |
| F-43     | 43-2, 263, 543 | Oxy-Propane   | -                                                 | 2290-H tips<br>1,2,3,4,5<br>(+ tube 2393+2357-3) | 2290-N tips<br>13,15,20,30,80<br>(+tube 2393+2357-3)                                                       | RBP-43 tips 2,4,5<br>(+tube 2393+2357-3) |

## Low Pressure "F" Type Mixer



B-43-N



H-19-2S



B-43-1/2/3/5/6/8/9/10

| PART NO. | FITS HANDLE        | GAS         | HEATING TIPS                           | BRAZING TIPS                                                             | FLAME CLEANING TIPS                      |
|----------|--------------------|-------------|----------------------------------------|--------------------------------------------------------------------------|------------------------------------------|
| B-43-N   | 43-2<br>263<br>543 | Oxy-Propane | 2290-H tips 1,2,3,4,5<br>(+ tube 2393) | 2290-N tips 13,15,20,30,80<br>(+tube 2393+2357-3)                        | RBP-43 tips 2,4,5<br>(+tube 2393+2357-3) |
| B-43-1   |                    | Oxy-Propane | -                                      | 1390-2N (+tube 8593) 0090-2N<br>(+adapter 4301-11+tip holder TH-119)     | -                                        |
| B-43-3   |                    | Oxy-Propane | -                                      | 1390-3N/4N (+tube 8593) 0090-4N<br>(+adapter 4301-11+tip holder TH-119)  | -                                        |
| B-43-5   |                    | Oxy-Propane | -                                      | 1390-5N (+tube 8593)                                                     | -                                        |
| B-43-6   |                    | Oxy-Propane | -                                      | 1390-6N/7N (+tube 8593) 0090-6N<br>(+adapter 4301-11+tip holder TH-119)) | -                                        |
| B-43-8   |                    | Oxy-Propane | -                                      | 1390-8N/H (+tube 8593) 0090-8N<br>(+adapter 4301-11+tip holder TH-119)   | -                                        |
| B-43-9   |                    | Oxy-Propane | -                                      | 1390-9N (+tube 8593)                                                     | -                                        |
| B-43-10  |                    | Oxy-Propane | -                                      | 1390-10N (+tube 8593)                                                    | -                                        |
| H-19-2S  |                    | Oxy-Propane | 1390-H (+tube D-50-C)                  | 1390-N tips 2,3,4,5,6,7,8,9,10<br>(+tube D-50-C)                         | -                                        |
|          |                    |             | -                                      | 0090-N tips 2,4,6,8                                                      |                                          |

## Acetylene Welding and Brazing Tips/Assemblies

| WELDING / BRAZING |                  |                 |              |              |                          |               |                   | EQUAL PRESSURE  |                    | LOW PRESSURE    |                    |
|-------------------|------------------|-----------------|--------------|--------------|--------------------------|---------------|-------------------|-----------------|--------------------|-----------------|--------------------|
| ASSEMBLY<br>L-19  | ASSEMBLY<br>L-43 | TIPS<br>23-A-90 | TIPS<br>5090 | TIPS<br>1390 | FLEXIBLE<br>TIPS<br>0090 | FLOW<br>(l/h) | THICKNESS<br>(mm) | OXYGEN<br>(bar) | ACETYLENE<br>(bar) | OXYGEN<br>(bar) | ACETYLENE<br>(bar) |
| -                 | -                | -               | -            | 1390-00      | -                        | 25            | -                 | 0.3 - 0.8       | 0.3 - 0.8          | 2.5             | 0.015 - 0.2        |
| L-19-0            | L-43-0           | 23-A-90-0       | 5090-0       | 1390-0       | -                        | 45            | 0.2 - 0.5         |                 |                    |                 |                    |
| L-19-1            | L-43-1           | 23-A-90-1       | 5090-1       | 1390-1       | 0090-1                   | 65            | 0.5 - 1.0         |                 |                    |                 |                    |
| -                 | -                | -               | 5090-2       | 1390-2       | -                        | 100           | -                 |                 |                    |                 |                    |
| L-19-3            | L-43-3           | 23-A-90-3       | 5090-3       | 1390-3       | 0090-3                   | 160           | 1.0 - 2.0         |                 |                    |                 |                    |
| -                 | -                | -               | 5090-4       | 1390-4       | -                        | 250           | -                 |                 |                    |                 |                    |
| L-19-5            | L-43-5           | 23-A-90-5       | 5090-5       | 1390-5       | 0090-5                   | 350           | 2.0 - 4.0         |                 |                    |                 |                    |
| L-19-6            | L-43-6           | 23-A-90-6       | 5090-6       | 1390-6       | 0090-6                   | 500           | 4.0 - 6.0         |                 |                    |                 |                    |
| -                 | -                | -               | 5090-7       | 1390-7       | -                        | 700           | -                 |                 |                    |                 |                    |
| L-19-8            | L-43-8           | 23-A-90-8       | 5090-8       | 1390-8       | 0090-8                   | 1000          | 6.0 - 9.0         |                 |                    |                 |                    |
| L-19-9            | L-43-9           | 23-A-90-9       | 5090-9       | 1390-9       | -                        | 1500          | 9.0 - 14.0        |                 |                    |                 |                    |
| L-19-10           | L-43-10          | 23-A-90-10      | 5090-10      | 1390-10      | -                        | 2000          | 14.0 - 20.0       |                 |                    |                 |                    |
| -                 | L-43-13          | 23-A-90-13      | -            | -            | -                        | 3000          | 20.0 - 30.0       |                 |                    |                 |                    |
| -                 | L-43-15          | 23-A-90-15      | -            | -            | -                        | 4000          | 30.0 - 50.0       |                 |                    |                 |                    |



L-19



23-A-90



1390



L-43



5090



0090

## Tip Tubes for Separate Welding and Brazing Tips

| HANDLE             | MIXER   | TIP TUBE/<br>ADAPTER | TIP             | WELDING ASSEMBLY |
|--------------------|---------|----------------------|-----------------|------------------|
| 43-2<br>263<br>543 | E2-43   | -                    | 23-A-90 (13-15) | L-43             |
|                    | E-43    | 8593                 | 1390            |                  |
|                    | E-43    | 4301-11+TH-119       | 0090            |                  |
|                    | E-43    | -                    | 23-A-90 (0-10)  |                  |
| 85                 | D-85    | 8593                 | 1390            | -                |
|                    |         | 4301-11+TH-119       | 0090            |                  |
|                    |         | -                    | 23A-90 (0-10)   |                  |
| 19-6<br>50-9       | H-19-2E | D-50-C               | 1390            | L-19             |
|                    |         | TH-119               | 0090            |                  |
|                    |         | -                    | 5090            |                  |



D-50-C  
TIP TUBE



8593  
TIP TUBE



4301-11  
ADAPTER



TH-119  
TWIN TIP HOLDER

## Acetylene Heating Tips and Assemblies



L - 63



J - 63

1901-11  
ADAPTER

| HANDLE             | MIXER      | ADAPTER | HEATING<br>TIPS<br>PART NO. | HEATING<br>ASSEMBLY<br>PART NO. |
|--------------------|------------|---------|-----------------------------|---------------------------------|
| 43-2<br>263<br>543 | E-43       | -       | J-63-1                      | L-63-1                          |
|                    | E-43       |         | J-63-2                      | L-63-2                          |
|                    | E2-43      |         | J-63-3                      | L-63-3                          |
|                    | E2-43      |         | J-63-4                      | L-63-4                          |
|                    | E3-43/F-43 |         | J-143-5                     | L-143-5                         |
| 85                 | D-85       | 1901-11 | J-63-1                      | L-85-1                          |
| 19-6<br>50-9       | H-19-2E    |         | J-63-2                      | L-85-2                          |
|                    |            |         | J-63-1                      | -                               |
|                    |            |         | J-63-2                      |                                 |

| HANDLE             | MIXER   | TIP TUBE | TIP     |
|--------------------|---------|----------|---------|
| 43-2<br>263<br>543 | E-43    | 8593     | 1390-HA |
| 85                 | D-85    | 8593     | 1390-HA |
| 19-6/50-9          | H-19-2E | D-50-C   | 1390-HA |

### Heating Tips and Assemblies Data Chart



1390-HA

|          |        |         | OXYGEN & ACETYLENE "EQUAL PRESSURE" |            | FLOW (l/h)  |             | APPROX. HEATING OUTPUT |
|----------|--------|---------|-------------------------------------|------------|-------------|-------------|------------------------|
| PART NO. |        |         | MAX. (bar)                          | MIN. (bar) | OXYGEN      | ACETYLENE   | (Kcal/h)               |
| L-63-1   | L-85-1 | J-63-1  | 0.15 - 0.4                          | 0.15 - 0.4 | 600 - 1100  | 600 - 1000  | 7450 - 13000           |
| L-63-2   | L-85-2 | J-63-2  | 0.2 - 0.5                           | 0.2 - 0.5  | 900 - 1550  | 850 - 1400  | 11100 - 18700          |
| L-63-3   | -      | J-63-3  | 0.3 - 0.6                           | 0.3 - 0.6  | 1550 - 2500 | 1400 - 2250 | 18500 - 29800          |
| L-63-4   | -      | J-63-4  | 0.6 - 1.0                           | 0.6 - 1.05 | 2500 - 4300 | 2250 - 3950 | 29800 - 52000          |
| L-63-5   | -      | J-143-5 | 0.8 - 1.4                           | 0.6 - 1.05 | 5000 - 9350 | 4500 - 8500 | 59500 - 111500         |
| -        | -      | 1390-HA | 0.35                                | 0.35       | 1100        | 1000        | -                      |

## Acetylene Flame Cleaning Tips

| HANDLE             | MIXER          | TIP TUBE/ADAPTER | TIP    |
|--------------------|----------------|------------------|--------|
| 43-2<br>263<br>543 | B-43-N<br>F-43 | 2393+2357-3      | RBA-43 |

Select Model 2393 tip tube and adapter from page 58.

### Oxy-Acetylene RBA Flame Cleaning Heads Data Chart

| PART NO. | LENGTH (mm) | PRESSURE     |                 | FLOW         |                 |
|----------|-------------|--------------|-----------------|--------------|-----------------|
|          |             | OXYGEN (bar) | ACETYLENE (bar) | OXYGEN (l/h) | ACETYLENE (l/h) |
| RBA-43-2 | 50          | 0.4 - 0.7    | 0.4 - 0.7       | 800 - 1130   | 700 - 900       |
| RBA-43-4 | 100         | 0.7 - 0.9    | 0.7 - 0.9       | 1550 - 1650  | 1400 - 1500     |
| RBA-43-6 | 150         | 0.8 - 1.0    | 0.8 - 1.0       | 1780 - 1820  | 1400 - 1650     |



RBA-43

## Alternative Fuel Tips

### 1390-N, 5090-N & 0090-N Brazing Tips

### 2290-N & 1390-H Heating Tips



1390-H



2290-N

| HANDLE             | MIXER | TIP TUBE | 1390-N TIPS              |
|--------------------|-------|----------|--------------------------|
| 43-2<br>263<br>543 | E-43  | B-43-1   | 1390-2N                  |
|                    |       | B-43-3   | 1390-3N                  |
|                    |       | B-43-3   | 1390-4N                  |
|                    |       | B-43-5   | 1390-5N                  |
|                    |       | B-43-6   | 1390-6N                  |
|                    |       | B-43-6   | 1390-7N                  |
|                    |       | B-43-8   | 1390-8N/1390-H           |
|                    |       | B-43-9   | 1390-9N                  |
|                    |       | B-43-10  | 1390-10N                 |
| 19-6/50-10         | -     | H-19-2S  | D 50-C                   |
|                    |       |          | 1390-N/1390-H/<br>5090-N |

| HEAVY DUTY<br>HANDLE | MIXER          | TIP TUBE/<br>ADAPTER | 2290-N TIPS |
|----------------------|----------------|----------------------|-------------|
| 43-2<br>263<br>543   | F-43<br>B-43-N | 2393+2357-3          | 2290-13N    |
|                      |                |                      | 2290-15N    |
|                      |                |                      | 2290-20N    |
|                      |                |                      | 2290-30N    |
|                      |                |                      | 2290-80N    |

Select Model 2393 and adapter tip tube from page 58

| HANDLE             | MIXER   | ADAPTER | TIP              |
|--------------------|---------|---------|------------------|
| 43-2<br>263<br>543 | B-43-1  | 4301-11 | 0090-2N          |
|                    | B-43-3  |         | 0090-4N          |
|                    | B-43-6  |         | 0090-6N          |
|                    | B-43-8  |         | 0090-8N          |
| 19-6<br>50-10      | H-19-2S | -       | 0090-2N-4N-6N-8N |



0090-N

### 1390-N/2290-N/0090-N/5090-N/1390-H Tip Performance Data Chart

| PART NO. |         |         | LOW PRESSURE    |                      | EQUAL PRESSURE  |                      | FLOW<br>(l/h) |             |
|----------|---------|---------|-----------------|----------------------|-----------------|----------------------|---------------|-------------|
|          |         |         | OXYGEN<br>(bar) | FUEL<br>GAS<br>(bar) | OXYGEN<br>(bar) | FUEL<br>GAS<br>(bar) | OXYGEN        | FUEL<br>GAS |
| 1390-2N  | 0090-2N | -       | 1,0             | 0.015-0.2            | 0.3-1           | 0.3-1                | 300           | 75          |
| 1390-3N  | -       | 5090-3N | 1,0             |                      |                 |                      | 550           | 140         |
| 1390-4N  | 0090-4N | -       | 1,4             |                      |                 |                      | 700           | 175         |
| 1390-5N  | -       | 5090-5N | 1,8             |                      |                 |                      | 900           | 225         |
| 1390-6N  | 0090-6N | -       | 1,8             |                      |                 |                      | 1100          | 275         |
| 1390-7N  | -       | -       | 2,1             |                      |                 |                      | 1350          | 345         |
| 1390-8N  | 0090-8N | 5090-8N | 2,1             |                      |                 |                      | 1500          | 375         |
| 1390-9N  | -       | -       | 2,5             |                      |                 |                      | 1650          | 415         |
| 1390-10N | -       | -       | 2,8             |                      |                 |                      | 2000          | 500         |
| 2290-13N |         |         | 1,2             |                      |                 |                      | 3400          | 850         |
| 2290-15N |         |         | 1,2             | 0.5                  | 3.5             | 1.0-0.5              | 4200          | 1050        |
| 2290-20N |         |         | 1,2             |                      |                 |                      | 6000          | 1500        |
| 2290-30N |         |         | 2,3             |                      |                 |                      | 8000          | 2000        |
| 2290-80N |         |         | 2,3             |                      |                 |                      | 9600          | 2400        |
| 1390-H   |         |         | 3,5             |                      |                 |                      | 4200          | 1050        |



1390-N2 to 4



1390-N5 to 10



5090-N

## 2290-H Heating Tips, 2393 Tip Tubes, RBP-43 Flame Cleaning Heads - Alternative Fuels Tips

**2290-H****H-62-P**

### 2290-H/H-62-P Performance Data Chart

| PART NO. | PRESSURE (bar) |          | FLOW (l/h)  |            | APPROX. HEATING OUTPUT (Kcal/h) |
|----------|----------------|----------|-------------|------------|---------------------------------|
|          | OXYGEN         | FUEL GAS | OXYGEN      | PROPANE    |                                 |
| 2290-1H  | 1-2            | 0.5      | 4000-7000   | 1000-2000  | 22300 - 44600                   |
| 2290-2H  | 2-3            | 0.5      | 5900-12800  | 1500-3200  | 33500 - 71400                   |
| 2290-3H  | 2-5            | 1.0      | 8500-22900  | 2200-5700  | 49000 - 127100                  |
| 2290-4H  | 3-6            | 1.0      | 14000-28400 | 3600-7100  | 80300 - 158000                  |
| 2290-5H  | 4-8            | 1.0-2.0  | 17000-39700 | 4300-10000 | 96000 - 223000                  |
| H-62-1P  | 3.0            | 0.5      | 4000-7000   | 1000-2000  | 22300 - 44600                   |
| H-62-2P  | 3.5            | 0.5      | 5900-12800  | 1500-2200  | 38500 - 71400                   |
| H-62-3P  | 4.0            | 1.0      | 8500-22900  | 2200-5700  | 49000 - 127100                  |

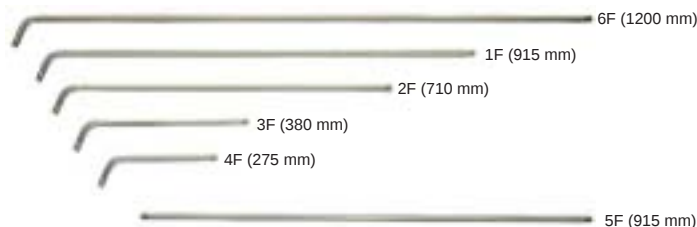
H-62-P to be used with cutting attachment and cutting torches.

### 2393-F Tip Tube Chart

| PART NO. | LENGTH (mm) | DESIGN   |
|----------|-------------|----------|
| 2393-1F  | 915         | curved   |
| 2393-2F  | 710         | curved   |
| 2393-3F  | 380         | curved   |
| 2393-4F  | 275         | curved   |
| 2393-5F  | 915         | straight |
| 2393-6F  | 1200        | curved   |

NOTE: For extended tip life, use Tip Adapter 2357-3.

### 2393-F Tip Tube

**2357-3  
TIP ADAPTER**

| HANDLE             | MIXER          | TIP TUBE/ADAPTER | TIP              |
|--------------------|----------------|------------------|------------------|
| 43-2<br>263<br>543 | B-43-N<br>F-43 | 2393+2357-3      | 2290-H<br>RBP-43 |

**RBP-43 Tips**

### RBP-43 Oxy-Propane, Propylene Based & Natural Gas Flame Cleaning Heads Data Chart

| PART NO. | LENGTH (mm) | OXYGEN PRESSURE (bar) | PROPANE PRESSURE (bar) | OXYGEN FLOW (l/h) | PROPANE FLOW (l/h) |
|----------|-------------|-----------------------|------------------------|-------------------|--------------------|
| RBP-43-2 | 50          | 0.5 - 10              | 0.5                    | 2550 - 3400       | 700 - 1050         |
| RBP-43-4 | 100         | 1.0 - 1.5             | 0.5 - 1.5              | 6350 - 8500       | 1850 - 2500        |
| RBP-43-6 | 150         | 2 - 3                 | 1.0 - 1.5              | 13900 - 18100     | 3000 - 4150        |

## Acetylene Cutting Tips

### General Preheat 6290 One Piece Oxy-Acetylene Tip Chart



| PART NO. | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE Equal Pressure (bar) | ACETYLENE Low Pressure (bar) |
|----------|----------------------|--------------|--------------------------------|------------------------------|
| 6290-000 | 0 - 5                | 1.0 - 2.0    | 0.3 - 0.8                      | 0.015 - 0.2                  |
| 6290-00  | 5 - 10               | 1.0 - 2.0    |                                |                              |
| 6290-0   | 10 - 15              | 1.5 - 2.5    |                                |                              |
| 6290-1   | 15 - 25              | 2.0 - 3.5    |                                |                              |
| 6290-2   | 25 - 50              | 3.0 - 4.5    |                                |                              |
| 6290-3   | 50 - 100             | 3.0 - 4.5    |                                |                              |
| 6290-4   | 100 - 175            | 3.5 - 5.5    |                                |                              |

### Heavy Preheat 6290-S One Piece Oxy-Acetylene Tip Chart



| PART NO. | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE Equal Pressure (bar) | ACETYLENE Low Pressure (bar) |
|----------|----------------------|--------------|--------------------------------|------------------------------|
| 6290-1S  | 15 - 25              | 2.0 - 3.5    | 0.3 - 0.8                      | 0.015 - 0.2                  |
| 6290-2S  | 25 - 50              | 3.0 - 4.5    |                                |                              |
| 6290-3S  | 50 - 100             | 3.0 - 4.5    |                                |                              |
| 6290-4S  | 100 - 175            | 3.5 - 5.5    |                                |                              |
| 6290-5S  | 175 - 250            | 4.5 - 5.5    |                                |                              |
| 6290-6S  | 250 - 300            | 5.0 - 6.5    |                                |                              |

### Heavy Preheat 6290-AC Two Piece Oxy-Acetylene Tip Chart



Plated Shell

| PART NO.  | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE Equal Pressure (bar) | ACETYLENE Low Pressure (bar) |
|-----------|----------------------|--------------|--------------------------------|------------------------------|
| 6290-00AC | 5 - 10               | 1.0 - 2.0    | 0.3 - 0.8                      | 0.015 - 0.2                  |
| 6290-0AC  | 10 - 15              | 1.5 - 2.5    |                                |                              |
| 6290-1AC  | 15 - 25              | 2.0 - 3.5    |                                |                              |
| 6290-2AC  | 25 - 50              | 3.0 - 4.5    |                                |                              |
| 6290-3AC  | 50 - 100             | 3.0 - 4.5    |                                |                              |
| 6290-4AC  | 100 - 175            | 3.5 - 5.5    |                                |                              |
| 6290-5AC  | 175 - 250            | 4.5 - 5.5    |                                |                              |
| 6290-6AC  | 250 - 300            | 5.0 - 6.5    |                                |                              |



Unplated Shell

### 3690-AC Oxy-Acetylene Tip Chart

| PART NO.  | METAL THICKNESS (mm) | OXYGEN (bar) | ACETYLENE Equal Pressure (bar) | WHERE USED                    |
|-----------|----------------------|--------------|--------------------------------|-------------------------------|
| 3690-00AC | 0 - 6                | 1.0 - 2.0    | 0.3 - 0.8                      | 36-2<br>Cutting<br>Attachment |
| 3690-0AC  | 6 - 13               | 1.5 - 2.5    |                                |                               |
| 3690-1AC  | 13 - 25              | 2.0 - 3.5    |                                |                               |
| 3690-2AC  | 25 - 75              | 3.0 - 4.5    |                                |                               |

### 6290 Oxy-Acetylene Specialty Tip Chart



6290-G 6290-R

| PART NO. | APPLICATION          | OXYGEN (bar) | ACETYLENE Equal Pressure (bar) | ACETYLENE Low Pressure (bar) | WHERE USED                                     |
|----------|----------------------|--------------|--------------------------------|------------------------------|------------------------------------------------|
| 6290-1G  | Gouging Wide 3x6 mm  | 2.5          | 0.3 - 0.8                      | 0.015 - 0.2                  | Recommended<br>for Straight<br>Cutting Torches |
| 6290-2G  | Gouging Wide 5x10 mm | 3.5          |                                |                              |                                                |
| 6290-3G  | Gouging Wide 6x13 mm | 3.5          |                                |                              |                                                |
| 6290-R   | Rivet Cutting        | 3.0          |                                |                              |                                                |

Cleaning Instructions: Use Tip Cleaner C-9

## Alternative Fuel Cutting Tips

### General Preheat 6290-N & NX Oxy-Propane, Natural Gas Tip Chart



Plated Shell

| PART NO.  | PLATE THICKNESS (mm) | OXYGEN (bar) | FUEL GAS Equal Pressure (bar) | FUEL GAS Low Pressure (bar) |
|-----------|----------------------|--------------|-------------------------------|-----------------------------|
| 6290-00NX | 0 - 5                | 1.0 - 2.0    | 0.3 - 08                      | 0.015 - 0.2                 |
| 6290-00NX | 5 - 10               | 1.5 - 2.0    |                               |                             |
| 6290-0NX  | 10 - 15              | 2.0 - 3.0    |                               |                             |
| 6290-1NX  | 15 - 25              | 2.5 - 3.5    |                               |                             |
| 6290-2NX  | 25 - 50              | 3.0 - 4.0    |                               |                             |
| 6290-3NX  | 50 - 75              | 3.0 - 4.5    |                               |                             |
| 6290-4NX  | 75 - 150             | 3.5 - 5.5    |                               |                             |
| 6290-5NX  | 150 - 200            | 4.5 - 5.5    |                               |                             |
| 6290-6NX  | 200 - 300            | 5.0 - 6.5    |                               |                             |

### Heavy Preheat 6290-NFF Oxy-Propane, Natural Gas Tip Chart



Plated Shell

| PART NO.  | PLATE THICKNESS (mm) | OXYGEN (bar) | FUEL GAS Equal Pressure (bar) | FUEL GAS Low Pressure (bar) |
|-----------|----------------------|--------------|-------------------------------|-----------------------------|
| 6290-1NFF | 15 - 25              | 2.5 - 3.5    | 0.3 - 08                      | 0.015 - 0.2                 |
| 6290-2NFF | 25 - 50              | 3.0 - 4.0    |                               |                             |
| 6290-3NFF | 50 - 75              | 3.0 - 4.5    |                               |                             |
| 6290-4NFF | 75 - 150             | 3.5 - 5.5    |                               |                             |
| 6290-5NFF | 150 - 200            | 4.5 - 5.5    |                               |                             |
| 6290-6NFF | 200 - 300            | 5.0 - 6.5    |                               |                             |

### 6290-NXPM Oxy-MAPP® and Oxy-Propylene Tip Chart



Plated Shell

| PART NO.    | PLATE THICKNESS (mm) | OXYGEN (bar) | FUEL GAS Equal Pressure (bar) | FUEL GAS Low Pressure (bar) |
|-------------|----------------------|--------------|-------------------------------|-----------------------------|
| 6290-00NXPM | 0 - 5                | 1.0 - 2.0    | 0.3 - 08                      | 0.015 - 0.2                 |
| 6290-00NXPM | 5 - 10               | 1.5 - 2.0    |                               |                             |
| 6290-0NXPM  | 10 - 15              | 2.0 - 3.0    |                               |                             |
| 6290-1NXPM  | 15 - 25              | 2.5 - 3.5    |                               |                             |
| 6290-2NXPM  | 25 - 50              | 3.0 - 4.0    |                               |                             |
| 6290-3NXPM  | 50 - 75              | 3.0 - 4.5    |                               |                             |
| 6290-4NXPM  | 75 - 150             | 3.5 - 5.5    |                               |                             |
| 6290-5NXPM  | 150 - 200            | 4.5 - 5.5    |                               |                             |
| 6290-6NXPM  | 200 - 300            | 5.0 - 6.5    |                               |                             |

### 3690-P Oxy-Propane, Natural Gas and 3690-M Oxy-MAPP® Tip Chart



Unplated Shell

| PART NO.     | METAL THICKNESS (mm) | OXYGEN (bar) | FUEL GAS (bar) | WHERE USED              |
|--------------|----------------------|--------------|----------------|-------------------------|
| 3690-00P/00M | 0-6                  | 1.0 - 2.0    | 0.3 - 08       | 36-2 Cutting Attachment |
| 3690-0P/0M   | 6-13                 | 1.5 - 2.5    |                |                         |
| 3690-1P/1M   | 13-25                | 2.0 - 3.5    |                |                         |
| 3690-2P/2M   | 25-75                | 3.0 - 4.5    |                |                         |

### 6290 Oxy-Propane, Propylene, Natural Gas & MAPP® Gas Specialty Tip Chart

6290-GG

6290-2NFFR



6290-NFW

| PART NO.   | APPLICATION           | OXYGEN (bar) | FUEL GAS Equal Pressure (bar) | FUEL GAS Low Pressure (bar) | WHERE USED                               |
|------------|-----------------------|--------------|-------------------------------|-----------------------------|------------------------------------------|
| 6290-1GG   | Gouging 3x6 mm wide   | 2.5          | 0.3 - 08                      | 0.015 - 0.2                 | Recommended for Straight Cutting Torches |
| 6290-2GG   | Gouging 5x10 mm wide  | 3.5          |                               |                             |                                          |
| 6290-3GG   | Gouging 6x13 mm wide  | 3.5          |                               |                             |                                          |
| 6290-4GG   | Gouging 10x19 mm wide | 4.0          |                               |                             |                                          |
| 6290-2NFFR | Rivet cutting         | 3.0          |                               |                             |                                          |
| 6290-NFW   | Rivet washing         | 3.5          |                               |                             |                                          |

Cleaning Instructions: Use Tip Cleaner C-9

## Acetylene Cutting Tips Tip Mix Tips



### Tip Mix Tips 8290 & 8290-ANME Oxy-Acetylene

| PART NO.<br>8290 | PART NO.<br>8290-ANME | PLATE<br>THICKNESS<br>(mm) | OXYGEN<br>(bar) | ACETYLENE<br>(bar) | WHERE<br>USED                                   |
|------------------|-----------------------|----------------------------|-----------------|--------------------|-------------------------------------------------|
| 8290-1           | 8290-ANME1            | 0 - 6                      | 1.5             | 0.5                | 242NM<br>NM-250<br>880-NM<br>Cutting<br>Torches |
| 8290-2           | 8290-ANME2            | 6 - 12                     | 2.0             | 0.5                |                                                 |
| 8290-3           | 8290-ANME3            | 12 - 75                    | 3.0             | 0.5                |                                                 |
| 8290-4           | 8290-ANME4            | 75 - 150                   | 3.0             | 1.0                |                                                 |
| 8290-5           | 8290-ANME5            | 150 - 200                  | 4.0             | 1.0                | 273 NM<br>Cutting<br>Attachment                 |
| 8290-6           | 8290-ANME6            | 200 - 250                  | 4.5             | 1.0                |                                                 |
| 8290-7           | 8290-ANME7            | 250 - 300                  | 5.5             | 1.0                |                                                 |

### Tip Mix Tips 2890-F Oxy-Acetylene



| PART NO. | PLATE<br>THICKNESS<br>(mm) | OXYGEN<br>(bar) | ACETYLENE<br>(bar) | WHERE<br>USED                    |
|----------|----------------------------|-----------------|--------------------|----------------------------------|
| 2890-1F  | 0 - 10                     | 1.0-1.5         | 0.2                | 28<br>28-L<br>Cutting<br>Torches |
| 2890-2F  | 10 - 50                    | 1.5-2.5         | 0.3                |                                  |
| 2890-3F  | 50 - 100                   | 3.0-4.5         | 0.5                |                                  |
| 2890-4F  | 100 - 125                  | 5.0-5.5         | 0.7                |                                  |
| 2890-5F  | 125 - 150                  | 5.5-6.0         | 0.7                |                                  |
| 2890-6F  | 150 - 200                  | 6.0-6.5         | 0.7                |                                  |
| 2890-7F  | 200 - 300                  | 7.0-9.0         | 1.0                |                                  |

## Alternative Fuels Cutting Tips Tip Mix Tips

### Two Piece Tip Mix Tips 8290-P & 8290-PNME Oxy-Propane, LPG & MAPP®

| PART NO.<br>8290-P | PART NO.<br>8290-PNME | PLATE<br>THICKNESS<br>(mm) | OXYGEN<br>(bar) | FUEL<br>GAS<br>(bar) | WHERE<br>USED                                    |
|--------------------|-----------------------|----------------------------|-----------------|----------------------|--------------------------------------------------|
| 8290-P1            | 8290 - PNME1          | 0 - 6                      | 1.5             | 0.5                  | 242-NM<br>NM-250<br>880-NM<br>Cutting<br>Torches |
| 8290-P2            | 8290 - PNME2          | 6 - 12                     | 2.0             | 0.5                  |                                                  |
| 8290-P3            | 8290 - PNME3          | 12 - 75                    | 3.0             | 0.5                  |                                                  |
| 8290-P4            | 8290 - PNME4          | 75 - 150                   | 3.0             | 1.0                  |                                                  |
| 8290-P5            | 8290 - PNME5          | 150 - 200                  | 4.0             | 1.0                  | 273-NM<br>Cutting<br>Attachment                  |
| 8290-P6            | 8290 - PNME6          | 200 - 250                  | 4.5             | 1.0                  |                                                  |
| 8290-P7            | 8290 - PNME7          | 250 - 300                  | 5.5             | 1.0                  |                                                  |



### Two Piece Tip Mix Tips 2890-P Oxy-Propane, LPG & MAPP®

| PART NO. | PLATE<br>THICKNESS<br>(mm) | OXYGEN<br>(bar) | FUEL GAS<br>(bar) | WHERE<br>USED                    |
|----------|----------------------------|-----------------|-------------------|----------------------------------|
| 2890-0P  | 0 - 10                     | 1.5-2.0         | 0.2               | 28<br>28-L<br>Cutting<br>Torches |
| 2890-1P  | 10 - 25                    | 2.0-2.5         | 0.4               |                                  |
| 2890-2P  | 25 - 50                    | 2.0-3.0         | 0.4               |                                  |
| 2890-3P  | 50 - 75                    | 2.5-3.0         | 0.4               |                                  |
| 2890-4P  | 75 - 100                   | 3.0-4.0         | 0.5               |                                  |
| 2890-5P  | 100 - 200                  | 3.0-5.0         | 0.5               |                                  |
| 2890-6P  | 200 - 300                  | 5.0-7.0         | 0.6               |                                  |
| 2890-7P  | 300 - 400                  | 6.0-7.0         | 0.7               |                                  |
| 2890-8P  | 400 - 500                  | 7.0-8.0         | 0.8               |                                  |




**VICTOR®** Style


**V-SERIES**

## Hand Cutting Torch

### Model V242



- ▶ Cuts up to 200 mm
- ▶ Head mixing and equal pressure design for maximum operator safety
- ▶ Triangular tube design
- ▶ Brazed tube connections
- ▶ Use with 1-101-HV and GPN tips (see page 64)

| V242 EQUAL PRESSURE TORCHES<br>(FOR ACETYLENE AND ALTERNATIVE FUELS) |                |            |                |                |
|----------------------------------------------------------------------|----------------|------------|----------------|----------------|
| 90°Head                                                              |                | 70°Head    |                | Length<br>(mm) |
| Part no.                                                             | Weight<br>(Kg) | Part no.   | Weight<br>(Kg) |                |
| V242                                                                 | 1.30           | V242A      | 1.30           | 1.30           |
| V242-L                                                               | 1.35           | V242A-L    | 1.35           | 1.35           |
| V242-L-36                                                            | 1.70           | V242A-L-36 | 1.70           | 1.70           |

## Cutting Attachments



| PART NO.                                                                           | HEAD ANGLE | COMPATIBLE CUTTING TIPS | COMPATIBLE HANDLE | WEIGHT (Kg) | LENGTH (mm) |
|------------------------------------------------------------------------------------|------------|-------------------------|-------------------|-------------|-------------|
| <b>Equal Pressure "E" Cutting Attachment (for Acetylene and Alternative Fuels)</b> |            |                         |                   |             |             |
| V273                                                                               | 90°        | GPN, 1101- HV           | V-315-CH, V263    | 0.500       | 220         |
| V2460                                                                              | 90°        | GPN, 1101- HV           | V-315-CH, V263    | 0.658       | 225         |
| <b>Low Pressure "F" Cutting Attachment (for Alternative Fuels)</b>                 |            |                         |                   |             |             |
| V49-3F                                                                             | 90°        | 6290                    | V-315-CH, V263    | 0.678       | 248         |
| V2460F                                                                             | 90°        | GPN                     | V-315-CH, V263    | 0.638       | 227         |
| V2460AF                                                                            | 70°        | GPN                     | V-315-CH, V263    | 0.638       | 227         |

# Handles



## Model V-315-CH

Welds up to 50 mm  
Cuts up to 150 mm

### Features:

- ▶ Tough extruded brass handle
- ▶ Stainless steel ball valves



Model V-315-CH

## Model V263

Welds up to 50 mm  
Cuts up to 150 mm

### Features:

- ▶ High precision ball valves
- ▶ Brass handle



Model V263

| PART NO. | COMPATIBLE CUTTING ATTACHMENT           | THREAD OXYGEN      | THREAD FUEL GAS    | WEIGHT (Kg) | LENGTH (mm) |
|----------|-----------------------------------------|--------------------|--------------------|-------------|-------------|
| V-315-CH | V273, V-2460, V2460 F, V2460 AF, V493 F | 9/16"-18-UNF-3A-RH | 9/16"-18-UNF-3A-LH | 0.552       | 205         |
| V263     |                                         |                    |                    | 0.506       | 219         |

## ACETYLENE

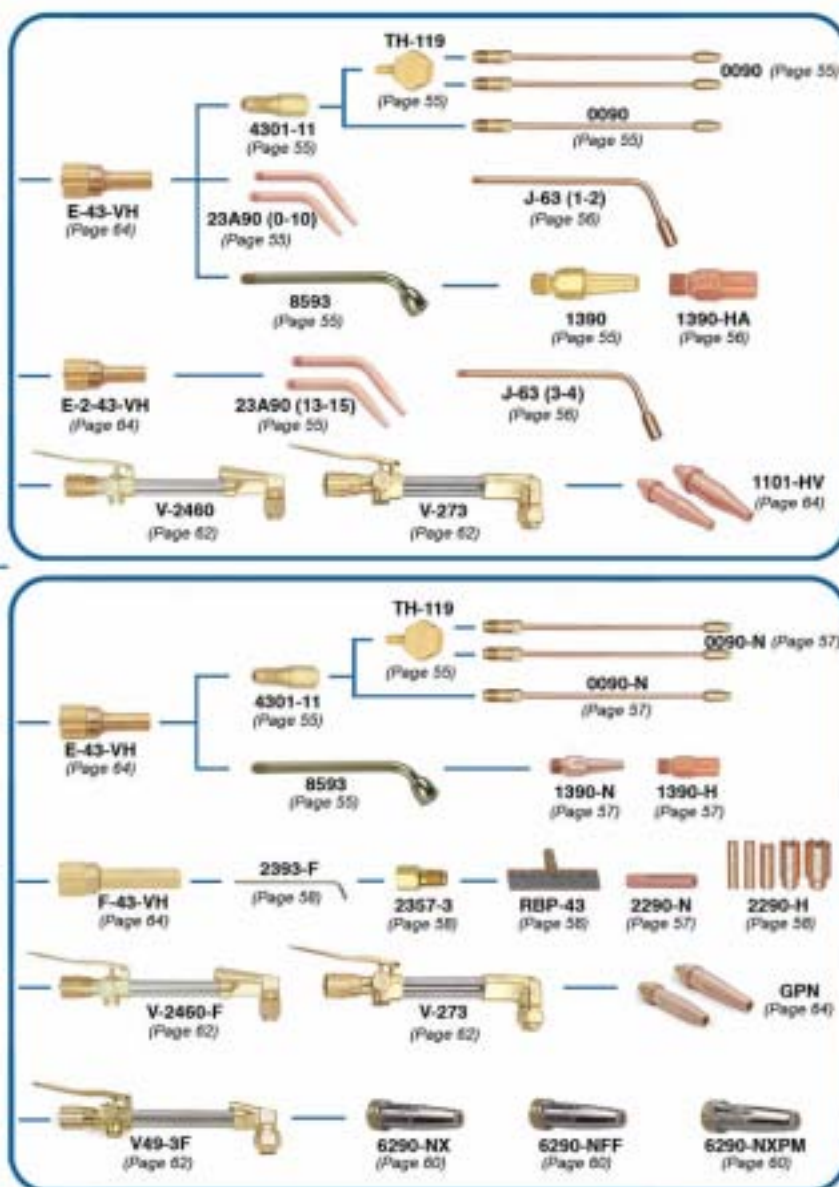


V-315-CH



V-263

## ALTERNATIVE FUEL GASES



## Equal Pressure "E" Type Mixer



E2-43-VH



F3-43-VH



| PART NO. | FITS HANDLE        | GAS           | WELDING TIPS                                     | HEATING TIPS                                  | BRAZING TIPS                                                                                            | FLAME CLEANING TIPS                      |
|----------|--------------------|---------------|--------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------|
| E-43-VH  | V-315-CH,<br>V-263 | Oxy-Acetylene | 23A90 tips 0,1,3,5,6,8,9,10                      | J-63 tips 1,2                                 | -                                                                                                       | -                                        |
|          |                    |               | 0090 tips 1,3,5,6,8<br>(+adapter 4301-11+TH-119) | 1390-HA<br>(+tube 8593)                       |                                                                                                         |                                          |
|          |                    | Oxy-Propane   | 1390 tips 00,0,1,3,5,6,8,9,10<br>(+tube 8593)    | -                                             | 1390-N tips 2,3,4,5,6,7,8,9,10<br>(+ tube 8593)<br>0090-N tips 2,4,6,8<br>(+adapter 4301-11<br>+TH-119) | -                                        |
| E2-43-VH | V-315-CH,<br>V-263 | Oxy-Acetylene | 23A90 tips 13,15                                 | J-63 tips 3,4                                 | -                                                                                                       | RBA-43 tips 2,4,6<br>(+tube 2393+2357-3) |
| F-43-VH  | V-315-CH,<br>V-263 | Oxy-Propane   | -                                                | 2290-H tips 1,2,3,4,5<br>(+ tube 2393+2357-3) | 2290-N tips 13,15,20,30,80<br>(+tube 2393+2357-3)                                                       | RBP-43 tips 2,4,6<br>(+tube 2393+2357-3) |



### GPN Oxy-Propane/Natural Gas Tip Chart - Two Piece



### I-101-HV Oxy-Acetylene Tip Chart - One Piece

| PART NO. | PLATE THICKNESS (mm) | TIP SIZE | OXYGEN (bar) | FUEL GAS (bar) |
|----------|----------------------|----------|--------------|----------------|
| GPN-000  | 0 - 3                | 000      | 1.4 - 1.7    | 0.15 - 0.35    |
| GPN-00   | 3 - 8                | 00       | 1.4 - 1.7    | 0.15 - 0.35    |
| GPN-0    | 8 - 15               | 0        | 1.7 - 2.4    | 0.20 - 0.35    |
| GPN-1    | 15 - 25              | 1        | 2.1 - 2.4    | 0.20 - 0.40    |
| GPN-2    | 25 - 50              | 2        | 2.4 - 3.1    | 0.20 - 0.55    |
| GPN-3    | 50 - 75              | 3        | 2.8 - 3.4    | 0.30 - 0.60    |
| GPN-4    | 75 - 100             | 4        | 2.8 - 3.4    | 0.40 - 0.60    |
| GPN-5    | 100 - 150            | 5        | 3.1 - 3.8    | 0.40 - 0.70    |
| GPN-6    | 150 - 200            | 6        | 3.1 - 3.8    | 0.40 - 0.80    |

| PART NO.    | PLATE THICKNESS (mm) | TIP SIZE | OXYGEN (bar) | ACETYLENE (bar) |
|-------------|----------------------|----------|--------------|-----------------|
| 1-101-HV000 | 0 - 3                | 000      | 1.4 - 1.7    | 0.20 - 0.35     |
| 1-101-HV00  | 3 - 8                | 00       | 1.4 - 1.7    | 0.20 - 0.35     |
| 1-101-HV0   | 8 - 15               | 0        | 1.7 - 2.4    | 0.20 - 0.35     |
| 1-101-HV1   | 15 - 25              | 1        | 2.1 - 2.4    | 0.20 - 0.35     |
| 1-101-HV2   | 25 - 50              | 2        | 2.4 - 3.1    | 0.20 - 0.50     |
| 1-101-HV3   | 50 - 75              | 3        | 2.8 - 3.4    | 0.30 - 0.70     |
| 1-101-HV4   | 75 - 100             | 4        | 2.8 - 3.4    | 0.35 - 0.70     |
| 1-101-HV5   | 100 - 150            | 5        | 3.1 - 3.8    | 0.50 - 0.90     |
| 1-101-HV6   | 150 - 200            | 6        | 3.1 - 3.8    | 0.50 - 1.00     |



Model 1-101-1-HV



Model V-315-CH



Cuts up to 25 mm. Equal Pressure Welds up to 4 mm. Equal Pressure (Acetylene)

| PART NO.         | HANDLE   | MIXER   | CUTTING ATTACHMENT | CHECK VALVES         | CUTTING TIP | WELDING TIPS | HEATING TIP | SINGLE STAGE OXYGEN REGULATOR | SINGLE STAGE FUEL GAS REGULATOR | ACCESSORIES                                                                 |
|------------------|----------|---------|--------------------|----------------------|-------------|--------------|-------------|-------------------------------|---------------------------------|-----------------------------------------------------------------------------|
| Master 1HV1      | V-315-CH | E-43-VH | V-2460             | -                    | 1101-1-HV   | 23A90-5      | -           | 94-10-OX                      | 94-1,5-AC                       | 6 MT Hose (4300500),<br>Goggles (APS010),<br>Lighter (26S),<br>Flints (26L) |
| Master 2HV       | V-315-CH | E-43-VH |                    | 886-CVTL<br>886-CVTR | 1101-1-HV   | 23A90-0/3/5  | J-63-1      | 825-10-OX                     | 825-1,5-AC                      |                                                                             |
| Master Gold HV   | V-315-CH | E-43-VH |                    | -                    | 1101-1-HV   | 23A90-5      | -           | 94-10-OX                      | 94-1,5-AC                       |                                                                             |
| Master Silver HV | V-315-CH | E-43-VH |                    | -                    | 1101-1-HV   | 23A90-5      | -           | 825-10-OX                     | 825-1,5-AC                      |                                                                             |

## AIRCO® Style

| MODEL N. | DESCRIPTION                   | WEIGHT (kg) | LENGTH (mm) |
|----------|-------------------------------|-------------|-------------|
| 242NM *  | Cutting torch, head angle 90° | 1,250       | 460         |
| 242NMA * | Cutting torch, head angle 70° | 1,250       | 470         |
| 263      | Handle                        | 0,500       | 220         |
| 273NM    | Cutting Attachment            | 0,800       | 230         |

\* 530 mm length available (add "L" to model number)



263



273NM



8290ANME



| MODEL N. | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE (bar) |
|----------|----------------------|--------------|-----------------|
| 8290-1   | 0 - 6                | 1.5          | 0.5             |
| 8290-2   | 6 - 12               | 2.0          | 0.5             |
| 8290-3   | 12 - 75              | 3.0          | 0.5             |
| 8290-4   | 75 - 150             | 3.0          | 1.0             |
| 8290-5   | 150 - 200            | 4.0          | 1.0             |

8290PNME



| MODEL N. | PLATE THICKNESS (mm) | OXYGEN (bar) | FUEL GAS (bar) |
|----------|----------------------|--------------|----------------|
| 8290-P1  | 0 - 6                | 1.5          | 0.5            |
| 8290-P2  | 6 - 12               | 2.0          | 0.5            |
| 8290-P3  | 12 - 75              | 3.0          | 0.5            |
| 8290-P4  | 75 - 150             | 3.0          | 1.0            |
| 8290-P5  | 150 - 200            | 4.0          | 1.0            |

## OXWELD® Style

| MODEL N. | DESCRIPTION                   | WEIGHT (kg) | LENGTH (mm) |
|----------|-------------------------------|-------------|-------------|
| 242P *   | Cutting torch, head angle 90° | 1,250       | 460         |
| 242PA *  | Cutting torch, head angle 70° | 1,250       | 470         |
| 263P     | Handle                        | 0,500       | 220         |
| 273P     | Cutting Attachment            | 0,800       | 230         |

\* 530 mm length available (add "L" to model number)



263P



273P



CT1502

| PART N.   | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE (bar) |
|-----------|----------------------|--------------|-----------------|
| CT1502-2  | 0-5                  | 2.5          | 0.4             |
| CT1502-3  | 5-10                 | 2.5          | 0.4             |
| CT1502-4  | 10-20                | 3            | 0.4             |
| CT1502-6  | 20-50                | 3            | 0.4             |
| CT1502-8  | 50-130               | 4            | 0.6             |
| CT1502-10 | 130-200              | 5            | 0.7             |

CT1503

| PART N.   | PLATE THICKNESS (mm) | OXYGEN (bar) | FUEL GAS (bar) |
|-----------|----------------------|--------------|----------------|
| CT1502-4  | 10-20                | 2.5          | 0.45           |
| CT1502-6  | 20-50                | 3            | 0.45           |
| CT1502-8  | 50-130               | 3.5          | 0.45           |
| CT1502-10 | 130-200              | 4.5          | 0.8            |

## SMITH® Style

| MODEL N. | DESCRIPTION                   | WEIGHT (kg) | LENGTH (mm) |
|----------|-------------------------------|-------------|-------------|
| 242S *   | Cutting torch, head angle 90° | 1,200       | 460         |
| 242SA *  | Cutting torch, head angle 70° | 1,200       | 470         |
| 263S     | Handle                        | 0,600       | 220         |
| 273S     | Cutting Attachment            | 0,800       | 250         |

\* 530 mm length available (add "L" to model number)



CTSC12

| PART N.  | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE (bar) |
|----------|----------------------|--------------|-----------------|
| CTSC12-0 | 0-10                 | 2.5          | 0.3             |
| CTSC12-1 | 10-20                | 3            | 0.3             |
| CTSC12-2 | 20-35                | 3.5          | 0.3             |
| CTSC12-3 | 35-60                | 3.5          | 0.35            |
| CTSC12-4 | 60-120               | 4            | 0.35            |
| CTSC12-5 | 120-200              | 5            | 0.4             |



242S



263S



273S



CTSC50A

| PART N.   | PLATE THICKNESS (mm) | OXYGEN (bar) | FUEL GAS (bar) |
|-----------|----------------------|--------------|----------------|
| CTSC50A-0 | 0-10                 | 2.5          | 0.35           |
| CTSC50A-1 | 10-20                | 3            | 0.4            |
| CTSC50A-2 | 20-35                | 3.5          | 0.4            |
| CTSC50A-3 | 35-60                | 3.5          | 0.45           |
| CTSC50A-4 | 60-120               | 4            | 0.45           |
| CTSC50A-5 | 120-200              | 5            | 0.5            |

## CIGWELD® Style

| MODEL N. | DESCRIPTION                   | WEIGHT (kg) | LENGTH (mm) |
|----------|-------------------------------|-------------|-------------|
| 242HC *  | Cutting torch, head angle 90° | 1,350       | 470         |
| 242HCA * | Cutting torch, head angle 70° | 1,350       | 480         |
| 263HC    | Handle                        | 0,500       | 230         |
| 273HC    | Cutting Attachment            | 0,850       | 250         |

\* 530 mm length available (add "L" to model number)



CT41

| PART N. | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE (bar) |
|---------|----------------------|--------------|-----------------|
| CT41-6  | 0-6                  | 2            | 1               |
| CT41-8  | 6-12                 | 2            | 1               |
| CT41-12 | 12-20                | 2.5          | 1               |
| CT41-15 | 25-75                | 3.5          | 1               |
| CT41-20 | 100-125              | 4.5          | 1               |
| CT41-24 | 150-200              | 5            | 1               |



242HC



263HC



273HC



CT44

| PART N. | PLATE THICKNESS (mm) | OXYGEN (bar) | FUEL GAS (bar) |
|---------|----------------------|--------------|----------------|
| CT44-6  | 0-6                  | 2            | 1              |
| CT44-8  | 6-12                 | 2            | 1              |
| CT44-12 | 12-20                | 2.5          | 1              |
| CT44-15 | 25-75                | 3.5          | 1              |
| CT44-20 | 100-125              | 4.5          | 1              |
| CT44-24 | 150-200              | 5            | 1              |

## MESSER® Style

| MODEL N. | DESCRIPTION                   | WEIGHT (kg) | LENGTH (mm) |
|----------|-------------------------------|-------------|-------------|
| 242D *   | Cutting torch, head angle 90° | 1,300       | 1,300       |
| 242DA *  | Cutting torch, head angle 70° | 1,300       | 1,300       |
| 543HCD17 | Handle                        | 0,500       | 0,500       |
| 273D     | Cutting Attachment            | 0,800       | 0,800       |

\* 530 mm length available (add "L" to model number)



AB

| PART N. | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE (bar) |
|---------|----------------------|--------------|-----------------|
| AB1     | 3-10                 | 3            | 0.5             |
| AB2     | 10-25                | 3.5          | 0.5             |
| AB3     | 25-40                | 4            | 0.5             |
| AB4     | 40-60                | 4.5          | 0.5             |
| AB5     | 60-100               | 5            | 0.5             |
| AB6     | 100-200              | 6            | 0.5             |



242D



543HCD17



273D

## SAF® Style

| MODEL N. | DESCRIPTION                   | WEIGHT (kg) | LENGTH (mm) |
|----------|-------------------------------|-------------|-------------|
| 242G1 *  | Cutting torch, head angle 90° | 1,300       | 470         |
| 242G1A * | Cutting torch, head angle 70° | 1,300       | 480         |
| 543 G1   | Handle                        | 0,500       | 220         |
| 273G1    | Cutting Attachment            | 0,800       | 230         |

\* 530 mm length available (add "L" to model number)



G1A

| PART N. | PLATE THICKNESS (mm) | OXYGEN (bar) | ACETYLENE (bar) |
|---------|----------------------|--------------|-----------------|
| G1A-7   | 3-10                 | 2-3          | 0.5             |
| G1A-10  | 10-25                | 2-3          | 0.5             |
| G1A-12  | 25-50                | 2-3          | 0.5             |
| G1A-16  | 50-80                | 3-5          | 0.5             |
| G1A-20  | 80-120               | 3-5          | 0.5             |
| G1A-25  | 120-200              | 5-8          | 0.5             |



242G1



543G1



273G1



G1P

| PART N. | PLATE THICKNESS (mm) | OXYGEN (bar) | FUEL GAS (bar) |
|---------|----------------------|--------------|----------------|
| G1P-7   | 3-10                 | 3-10         | 2-3            |
| G1P-10  | 10-25                | 10-25        | 2-3            |
| G1P-12  | 25-50                | 25-50        | 2-3            |
| G1P-16  | 50-80                | 50-80        | 3-5            |
| G1P-20  | 80-120               | 80-120       | 3-5            |
| G1P-25  | 120-200              | 120-200      | 5-8            |



## Model 133/I98/98 Machine Torches

Harris machine cutting torches are designed to handle all types of machine cutting applications. Rugged and dependable, these torches provide up to 380 mm cutting capacity. Harris machine cutting torches are available in two tube and three tube design for all fuel gases at pressures as low as 0.015 bar.

### General Features:

- ▶ Solid head for maximum strength
- ▶ Standard 32 mm or 35 mm diameter barrel
- ▶ All torches have inlet threads 9/16x18 UNF
- ▶ Use with 6290 machine cutting tips (see page 70-71)

### Model 133-2/133-2F

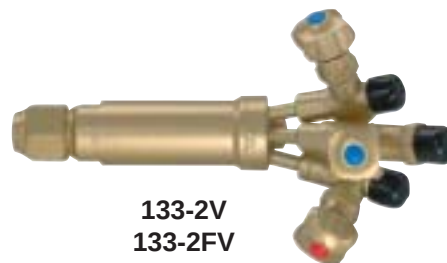
#### Features:

- ▶ Three tube valveless design for pipe bevelling, multiple bevelling and similar applications
- ▶ Cutting capacity up to 200 mm

**133-2  
133-2F**



**133-2V  
133-2FV**



### Model 133-2V/133-2FV

#### Features:

- ▶ Three tube with 3 valves.
- ▶ Cutting capacity up to 200 mm

| LOW PRESSURE "F" INJECTOR TYPE TORCHES<br>(FOR MAXIMUM PERFORMANCE WITH ALTERNATIVE FUEL) |        |             |             |               |
|-------------------------------------------------------------------------------------------|--------|-------------|-------------|---------------|
| Part no.                                                                                  | Style  | Weight (Kg) | Length (mm) | Barrel Ø (mm) |
| 133-2F                                                                                    | 3 tube | 0.68        | 65          | 30            |
| 133-2F-28                                                                                 | 3 tube | 0.63        | 65          | 28            |
| 133-2FV                                                                                   | 3 tube | 1.07        | 65          | 30            |
| 133-2FV-28                                                                                | 3 tube | 1.02        | 65          | 28            |

| LOW PRESSURE TORCHES<br>(FOR ACETYLENE) |        |             |             |               |
|-----------------------------------------|--------|-------------|-------------|---------------|
| Part no.                                | Style  | Weight (Kg) | Length (mm) | Barrel Ø (mm) |
| 133-2                                   | 3 tube | 0.68        | 65          | 30            |
| 133-2-28                                | 3 tube | 0.62        | 65          | 28            |
| 133-2V                                  | 3 tube | 1.05        | 65          | 30            |
| 133-2V-28                               | 3 tube | 1.02        | 65          | 28            |

## Model 198-2T/198-2TF

### Features:

- ▶ Quick opening cutting oxygen valve for immediate full flow
- ▶ Separate preheat and cutting oxygen valves for high and low preheat control
- ▶ Cutting capacity up to 380 mm
- ▶ Use with 6290 cutting tips (see page 70-71)

## Model 198-2/198-2F

### Features:

- ▶ Cutting capacity up to 200 mm
- ▶ One inlet connection for oxygen and cutting oxygen

## Model 198-4/98-4

### Features:

- ▶ Same characteristics as 198-2T but valveless

#### EQUAL PRESSURE "E" INJECTOR TYPE TORCHES (FOR ACETYLENE AND ALTERNATIVE FUELS)

| Part no.    | Style         | Weight (Kg) | Length (mm) | Barrel Ø (mm) |
|-------------|---------------|-------------|-------------|---------------|
| 198-2E      | 2 tube        | 1.30        | 250         | 32            |
| 198-2E-35   | 2 tube        | 1.41        | 250         | 35            |
| 198-2E-35R  | 2 tube & rack | 1.47        | 250         | 35            |
| 198-2ER     | 2 tube        | 1.34        | 250         | 32            |
| 198-2TAE    | 3 tube        | 1.67        | 450         | 32            |
| 198-2TAE-30 | 3 tube        | 1.55        | 450         | 30            |
| 198-2TAE-35 | 3 tube        | 1.68        | 450         | 35            |
| 198-2TAE    | 3 tube        | 1.68        | 450         | 35            |
| 198-2TE     | 3 tube        | 1.33        | 250         | 32            |
| 198-2TE-30  | 3 tube        | 1.20        | 250         | 30            |
| 198-2TE-30R | 2 tube & rack | 1.26        | 250         | 30            |
| 198-2TE-35  | 3 tube        | 1.43        | 250         | 35            |
| 98-4BE      | 2 tube        | 0.73        | 200         | 35            |

#### LOW PRESSURE TORCHES (FOR ACETYLENE)

| Part no.    | Style         | Weight (Kg) | Length (mm) | Barrel Ø (mm) |
|-------------|---------------|-------------|-------------|---------------|
| 198-2       | 2 tube        | 1.30        | 250         | 32            |
| 198-2-30    | 2 tube        | 1.18        | 250         | 30            |
| 198-2-35    | 2 tube        | 1.39        | 250         | 35            |
| 198-2-35R   | 2 tube & rack | 1.44        | 250         | 35            |
| 198-2A      | 2 tube        | 1.62        | 460         | 32            |
| 198-2T      | 3 tube        | 1.32        | 250         | 32            |
| 198-2T-30   | 3 tube        | 1.20        | 250         | 30            |
| 198-2T-30R  | 3 tube & rack | 1.29        | 250         | 35            |
| 198-2TA     | 3 tube        | 1.67        | 460         | 32            |
| 198-2TA-30  | 3 tube        | 1.55        | 460         | 30            |
| 198-2TA-35  | 3 tube        | 1.78        | 460         | 35            |
| 198-2TA-35R | 3 tube & rack | 1.90        | 460         | 35            |
| 198-2TAR    | 3 tube & rack | 1.75        | 460         | 32            |
| 198-2TR     | 3 tube & rack | 1.38        | 250         | 32            |
| 198-4       | 3 tube        | 0.65        | 110         | 32            |
| 198-4B      | 3 tube G 1/4" | 0.65        | 110         | 32            |
| 98-4        | 3 tube        | 0.73        | 110         | 35            |
| 98-4B       | 3 tube G 1/4" | 0.73        | 110         | 35            |



198-2T  
198-2TF



198-2  
198-2F



198-2TR (with rack)



198-4  
98-4

#### LOW PRESSURE "F" INJECTOR TYPE TORCHES (FOR MAXIMUM PERFORMANCE WITH ALTERNATIVE FUELS)

| Part no.     | Style         | Weight (Kg) | Length (mm) | Barrel Ø (mm) |
|--------------|---------------|-------------|-------------|---------------|
| 198-2F       | 2 tube        | 1.28        | 250         | 32            |
| 198-2F-35    | 2 tube        | 1.38        | 250         | 35            |
| 198-2F-35R   | 2 tube & rack | 1.44        | 250         | 35            |
| 198-2FR      | 2 tube & rack | 1.34        | 250         | 32            |
| 198-2TAF     | 3 tube        | 1.64        | 460         | 32            |
| 198-2TAF-30  | 3 tube        | 1.55        | 460         | 30            |
| 198-2TAF-35  | 3 tube        | 1.78        | 460         | 35            |
| 198-2TAF-35R | 3 tube & rack | 1.90        | 460         | 35            |
| 198-2TAFR    | 3 tube & rack | 1.76        | 460         | 32            |
| 198-2TF      | 3 tube        | 1.33        | 250         | 32            |
| 198-2TF-30   | 3 tube        | 1.20        | 250         | 30            |
| 198-2TF-30R  | 3 tube & rack | 1.25        | 250         | 30            |
| 198-2TF-35   | 3 tube        | 1.43        | 250         | 35            |
| 198-2TF-35R  | 3 tube & rack | 1.49        | 250         | 32            |
| 198-2TFR     | 3 tube & rack | 1.39        | 250         | 32            |
| 198-4BF      | 3 tube        | 0.65        | 110         | 32            |
| 198-4F       | 3 tube        | 0.65        | 110         | 32            |
| 98-4BF       | 3 tube G 1/4" | 0.73        | 110         | 35            |
| 98-4F        | 3 tube        | 0.73        | 110         | 35            |

## Machine Cutting Tips

**6290-VVC  
Plated Shell**



**6290-NH**



- ▶ Minimizes kerf
- ▶ Increased cutting speeds, reduces heat input
- ▶ High quality machine cuts, reduces afterwork
- ▶ Used with low cost fuel gases

### 6290-VVC High Speed Oxy-Propane Cutting Tip Chart - Plated Shell

| PART NO.    | PLATE THICKNESS (mm) | CUTTING SPEED (mm/min) | CUTTING OX PRESSURE (bar) | PREHEAT OX PRESSURE (High <sup>1</sup> - Low) (bar) | CUTTING OX FLOW (l/h) | PREHEAT OX FLOW (High - Low) (l/h) | PREHEAT FUEL FLOW (High - Low) (l/h) | HEATING POWER (High - Low) (Kcal/h) | KERF WIDTH (mm) |
|-------------|----------------------|------------------------|---------------------------|-----------------------------------------------------|-----------------------|------------------------------------|--------------------------------------|-------------------------------------|-----------------|
| 6290-5/0VVC | 1 - 4                | 750 - 550              | 4.0                       | 0.7 - 0.4                                           | 650                   | 1410 - 900                         | 350 - 230                            | 7800 - 5100                         | 1.3             |
| 6290-4/0VVC | 4 - 6                | 700 - 520              | 2.5                       | 1.0 - 0.5                                           | 1130                  | 1410 - 900                         | 350 - 230                            | 7800 - 5100                         | 1.5             |
| 6290-3/0VVC | 6 - 9                | 650 - 480              | 5.0                       | 2.5 - 0.7                                           | 2260                  | 2800 - 1200                        | 700 - 300                            | 15600 - 6700                        | 1.8             |
| 6290-00VVC  | 9 - 12,5             | 630 - 450              | 5.0                       | 2.5 - 0.7                                           | 2540                  | 2800 - 1200                        | 700 - 300                            | 15600 - 6700                        | 1.8             |
| 6290-0VVC   | 12,5 - 20            | 600 - 400              | 6.0                       | 2.5 - 0.7                                           | 3530                  | 2800 - 1200                        | 700 - 300                            | 15600 - 6700                        | 2.0             |
| 6290-0½VVC  | 20 - 35              | 550 - 360              | 7.0                       | 2.5 - 0.7                                           | 4000                  | 2800 - 1200                        | 700 - 300                            | 15600 - 6700                        | 2.0             |
| 6290-1VVC   | 35 - 60              | 480 - 220              | 7.0                       | 2.5 - 0.7                                           | 5560                  | 2800 - 1200                        | 700 - 300                            | 15600 - 6700                        | 2.3             |
| 6290-1½VVC  | 60 - 75              | 310 - 200              | 6.5                       | 2.5 - 0.7                                           | 7070                  | 2800 - 1200                        | 700 - 300                            | 15600 - 6700                        | 2.8             |
| 6290-2VVC   | 75 - 100             | 280 - 190              | 6.5                       | 2.5 - 0.7                                           | 8000                  | 2800 - 1300                        | 700 - 330                            | 15600 - 7400                        | 3.0             |
| 6290-2½VVC  | 100 - 125            | 240 - 180              | 7.0                       | 2.5 - 0.7                                           | 9000                  | 2800 - 1300                        | 700 - 330                            | 15600 - 7400                        | 3.0             |
| 6290-2½VVC  | 125 - 150            | 200 - 160              | 6.5                       | 2.5 - 0.7                                           | 11170                 | 2800 - 1300                        | 700 - 330                            | 15600 - 7400                        | 3.3             |
| 6290-3VVC   | 150 - 175            | 180 - 150              | 7.0                       | 2.5 - 0.7                                           | 12000                 | 2800 - 1300                        | 700 - 330                            | 15600 - 7400                        | 3.5             |
| 6290-4VVC   | 175 - 200            | 180 - 150              | 6.5                       | 2.5 - 0.7                                           | 14850                 | 3000 - 1300                        | 750 - 330                            | 16700 - 7400                        | 4.0             |
| 6290-5VVC   | 200 - 225            | 150 - 130              | 6.0                       | 2.8 - 0.7                                           | 16410                 | 3000 - 1510                        | 750 - 380                            | 16700 - 8500                        | 5.0             |
| 6290-5½VVC  | 225 - 250            | 130 - 110              | 6.0                       | 2.8 - 0.7                                           | 16980                 | 3000 - 1630                        | 750 - 410                            | 16700 - 9100                        | 6.4             |
| 6290-5NH    | 225 - 250            | 130 - 110              | 4.0                       | 2.8 - 0.7                                           | 16980                 | 3000 - 1880                        | 750 - 470                            | 16700 - 10500                       | 6.4             |
| 6290-6NH    | 250 - 275            | 130 - 110              | 4.0                       | 2.8 - 0.7                                           | 19520                 | 3000 - 1880                        | 750 - 470                            | 16700 - 10500                       | 6.4             |
| 6290-7NH    | 275 - 300            | 120 - 100              | 4.5                       | 3.5 - 0.7                                           | 23340                 | 3580 - 2510                        | 900 - 630                            | 20100 - 14000                       | 6.4             |
| 6290-8NH    | 300 - 380            | 110 - 90               | 4.5                       | 3.5 - 0.7                                           | 26170                 | 3580 - 2510                        | 900 - 630                            | 20100 - 14000                       | 7.6             |

(1) For a fast start, necessary when performing piercing and/or cutting thickness over 200 mm., use "high preheat".

For thickness up to 200 mm., switch from high to low preheat - just cut, it has started. - All pressures are measured at torch inlet. - Use minimum 0.3 (bar) fuel gas pressure for equal pressure torches. - Use maximum 0.2 (bar) fuel gas pressure for injector equipment.

### 6290-VVC High Speed Oxy-Methane and Natural Gas Cutting Tip Chart - Plated Shell

| PART NO.    | PLATE THICKNESS (mm) | CUTTING SPEED (mm/min) | CUTTING OX PRESSURE (bar) | PREHEAT OX PRESSURE (High <sup>1</sup> - Low) (bar) | CUTTING OX FLOW (l/h) | PREHEAT OX FLOW (High - Low) (l/h) | PREHEAT FUEL FLOW (High - Low) (l/h) | HEATING POWER (High - Low) (Kcal/h) | KERF WIDTH (mm) |
|-------------|----------------------|------------------------|---------------------------|-----------------------------------------------------|-----------------------|------------------------------------|--------------------------------------|-------------------------------------|-----------------|
| 6290-5/0VVC | 1 - 4                | 610 - 510              | 3.0                       | 1.0 - 0.6                                           | 420                   | 1410 - 850                         | 710 - 430                            | 6200 - 3700                         | 1.3             |
| 6290-4/0VVC | 4 - 6                | 560 - 510              | 3.5                       | 1.0 - 0.7                                           | 1130                  | 1410 - 1000                        | 710 - 500                            | 6200 - 4400                         | 1.5             |
| 6290-3/0VVC | 6 - 9                | 560 - 450              | 5.0                       | 2.5 - 0.7                                           | 2260                  | 2540 - 1000                        | 1270 - 500                           | 11000 - 4400                        | 1.8             |
| 6290-00VVC  | 9 - 12,5             | 510 - 460              | 5.0                       | 2.5 - 0.7                                           | 2540                  | 2540 - 1000                        | 1270 - 500                           | 11000 - 4400                        | 1.8             |
| 6290-0VVC   | 12,5 - 20            | 460 - 330              | 6.5                       | 2.5 - 0.7                                           | 3530                  | 2540 - 1000                        | 1270 - 500                           | 11000 - 4400                        | 2.0             |
| 6290-0½VVC  | 20 - 35              | 410 - 350              | 7.0                       | 2.5 - 0.9                                           | 4000                  | 2540 - 1130                        | 1270 - 570                           | 11000 - 5000                        | 2.0             |
| 6290-1VVC   | 35 - 60              | 380 - 330              | 7.0                       | 2.5 - 0.9                                           | 5560                  | 2540 - 1130                        | 1270 - 570                           | 11000 - 5000                        | 2.3             |
| 6290-1½VVC  | 60 - 75              | 300 - 230              | 7.0                       | 2.5 - 0.9                                           | 7070                  | 2540 - 1130                        | 1270 - 570                           | 11000 - 5000                        | 2.8             |
| 6290-2VVC   | 75 - 100             | 300 - 180              | 7.0                       | 2.5 - 0.9                                           | 9000                  | 2540 - 1130                        | 1270 - 570                           | 11000 - 5000                        | 3.0             |
| 6290-2½VVC  | 125 - 150            | 200 - 150              | 7.0                       | 2.5 - 0.9                                           | 11170                 | 2540 - 1130                        | 1270 - 570                           | 11000 - 5000                        | 3.3             |
| 6290-3VVC   | 150 - 175            | 180 - 125              | 7.0                       | 2.5 - 0.9                                           | 12000                 | 2830 - 1130                        | 1420 - 570                           | 12400 - 5000                        | 3.5             |
| 6290-4VVC   | 175 - 200            | 180 - 125              | 7.0                       | 2.5 - 0.9                                           | 14850                 | 2830 - 1130                        | 1420 - 570                           | 12400 - 5000                        | 4.0             |
| 6290-5VVC   | 200 - 225            | 150 - 100              | 6.5                       | 2.8 - 1.2                                           | 16410                 | 2830 - 1510                        | 1420 - 760                           | 12400 - 6600                        | 5.0             |
| 6290-5½VVC  | 225 - 250            | 125 - 100              | 6.5                       | 2.8 - 1.3                                           | 16980                 | 2830 - 1630                        | 1420 - 820                           | 12400 - 7100                        | 6.4             |
| 6290-5NH    | 225 - 250            | 125 - 100              | 4.0                       | 2.8 - 1.5                                           | 16980                 | 2830 - 1880                        | 1420 - 940                           | 12400 - 8200                        | 6.4             |
| 6290-6NH    | 250 - 275            | 120 - 100              | 4.0                       | 2.8 - 1.5                                           | 19520                 | 2830 - 1880                        | 1420 - 940                           | 12400 - 8200                        | 6.4             |
| 6290-7NH    | 275 - 300            | 110 - 100              | 4.5                       | 3.5 - 2.0                                           | 23340                 | 2830 - 2510                        | 1420 - 1260                          | 12400 - 11000                       | 6.4             |
| 6290-8NH    | 300 - 380            | 100 - 75               | 4.5                       | 3.5 - 2.0                                           | 26170                 | 2830 - 2510                        | 1420 - 1260                          | 12400 - 11000                       | 7.6             |

(1) For a fast start, necessary when performing piercing and/or cutting thickness over 200 mm., use "high preheat".

For thickness up to 200 mm., switch from high to low preheat - just cut, it has started. - All pressures are measured at torch inlet. - Use minimum 0.3 (bar) fuel gas pressure for equal pressure torches. - Use maximum 0.2 (bar) fuel gas pressure for injector equipment.

## Machine Cutting Tips

**6290-VAX  
Plated Shell**



**6290-VPM  
Plated Shell**



- ▶ Minimizes kerf
- ▶ Increased cutting speeds, reduces heat input
- ▶ High quality machine cuts, reduces afterwork
- ▶ Used with low cost fuel gases

**6290-NHM**



### 6290-VAX High Speed Oxy-Acetylene Cutting Tip Chart - Plated Shell

| PART NO.  | PLATE THICKNESS (mm) | CUTTING SPEED (mm/min) | CUTTING OX PRESSURE (bar) | CUTTING OX FLOW (l/h) | PREHEAT OX FLOW (l/h) | ACETYLENE FLOW (l/h) | HEATING POWER (Kcal/h) |
|-----------|----------------------|------------------------|---------------------------|-----------------------|-----------------------|----------------------|------------------------|
| 6290-1VAX | 0 - 8                | 650                    | 2.5 - 4.0                 | 850 -1250             | 400                   | 350                  | 4740                   |
| 6290-2VAX | 8 - 15               | 600                    | 5.0                       | 2400                  | 450                   | 420                  | 5690                   |
| 6290-3VAX | 15 - 35              | 550                    | 7.0                       | 4000                  | 500                   | 440                  | 5960                   |
| 6290-4VAX | 35 - 75              | 450                    | 7.0                       | 5000                  | 580                   | 500                  | 6780                   |
| 6290-5VAX | 75 - 150             | 300                    | 5.0                       | 9000                  | 660                   | 600                  | 8130                   |
| 6290-6VAX | 150 - 200            | 150                    | 6.5                       | 13500                 | 600                   | 800                  | 10840                  |

Use maximum 0.2 (bar) fuel gas pressure for injector equipment

Use minimum 0.3 (bar) fuel gas pressure for equilibrated pressure torches

### 6290-VPM High Speed Oxy-MAPP®, Tetrene and Propylene Cutting Tip Chart - Plated Shell

| PART NO.  | PLATE THICKNESS (mm) | CUTTING SPEED (mm/min) | CUTTING OX PRESSURE <sup>1</sup> (bar) | PREHEAT OX PRESSURE (High - Low) (bar) | PREHEAT OX FLOW (Low Pressure) (l/h) | CUTTING OX FLOW (l/h) | PREHEAT FUEL FLOW <sup>2</sup> (l/h) | HEATING POWER (Low) (Kcal/h) | KERF WIDTH (mm) |
|-----------|----------------------|------------------------|----------------------------------------|----------------------------------------|--------------------------------------|-----------------------|--------------------------------------|------------------------------|-----------------|
| 6290-0VPM | 1 - 4                | 750                    | 3.0                                    | 0.8 - 0.5                              | 600                                  | 810                   | 300                                  | 6300                         | 1.3             |
| 6290-1VPM | 4 - 8                | 700                    | 3.5                                    | 0.8 - 0.5                              | 1200                                 | 810                   | 300                                  | 6300                         | 1.5             |
| 6290-2VPM | 8 - 15               | 620                    | 5.0                                    | 1.7 - 0.5                              | 2400                                 | 840                   | 330                                  | 6930                         | 1.8             |
| 6290-3VPM | 15 - 35              | 550                    | 7.0                                    | 1.7 - 0.5                              | 4200                                 | 900                   | 360                                  | 7560                         | 2.0             |
| 6290-4VPM | 35 - 75              | 450                    | 7.0                                    | 1.7 - 0.7                              | 5100                                 | 1020                  | 400                                  | 8390                         | 2.5             |
| 6290-5VPM | 75 - 150             | 300                    | 7.0                                    | 1.7 - 0.7                              | 8400                                 | 1080                  | 420                                  | 8820                         | 3.0             |
| 6290-6VPM | 150 - 200            | 150                    | 7.0                                    | 2.0 - 0.7                              | 14400                                | 1140                  | 450                                  | 9450                         | 4.0             |
| 6290-7NHM | 200 - 300            | 125                    | 4.0                                    | 0.7 - 2.5                              | 22300                                | 1140                  | 450                                  | 9450                         | 6.9             |

(<sup>1</sup>) Cutting oxygen pressure are measured at torch inlet

(<sup>2</sup>) Preheat flows are calculated for propylene/oxygen at 2.6/1 ratio

Use minimum 0.3 (bar) fuel gas pressure for equal pressure torches

Use maximum 0.2 (bar) fuel gas pressure for injector equipment

**CLEANING INSTRUCTIONS:** The wire brush included with tip cleaner E-9 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 TIP  
Two Piece Cleaners**

## Machine Cutting Accessories



### TH-98 Twin Tip Adapter

Adjustable twin adapter for 2 cuts simultaneously using one torch. Adjust from 30 mm to 305 mm wide (special widths available on request) "O" ring sealed. Large capacity (up to 200 mm to each tip).



### BV-98-2 Beveling Head

Use with natural gas or propane only. Increase speed and quality of bevel cuts. 6290 cutting tips can be used. Use specially designed 1390-3H replacement heating tip for optimum results.



### 96-DC Oxygen Saver

Dual control oxygen saver for 3 hose torches. Fits to oxygen line. Moving the lever adjusts the flame from an extreme flame for piercing and quick starts to a soft small flame for economy and quality. Advantages are reduced oxygen and gas consumption, very high cut quality, square edges, slag-free cuts with fast starts. Not recommended for acetylene.



### C-98-V2 Flash Check Valve for Cutting Oxygen Inlet On Three Hose Torches

Stops reverse flow of gases. Recommended when cutting oxygen valve is remote from torches. Cutting capacity up to 200 mm.



### S-98-C Adjustable Tip Adapter

Allows adjustment of tip to any angle without moving the torch "O" ring sealed. Large capacity, (up to 200 mm) calibrated 90°.



### 88-6 Check Valves

Reverse flow check valves for preheat only. Help prevent dangerous reverse flow mixing of gas in hose and regulators (see page 81 for complete check valve information).

## Machine Cutting Guide

### CORRECT CUTTING



**PERFECT CUT** - Regular surface with slightly sloping drag lines marks 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



**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.

### CUTTING SPEED



**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 out" is still attained. Top edge is good, cut face is smooth and slag free. Quality is satisfactory for much 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, but faster speeds are more desirable.

### TIP DISTANCE



**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.

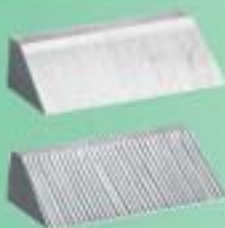
### GAS ADJUSTMENT



**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, and is caused by either speed too fast or preheat flame too mild. Another fault is a rounded top edge, caused by too much preheat indicating excessive gas consumption.

# HARRIS PORTABLE CUTTING SYSTEMS

## HARRIS SUPER

Harris Super is an innovative machine with a body structure systematized for different types of oxy-fuel cutting and automatic welding work

### Features

- ▶ Straight line and circle cutting or welding
- ▶ Double Cone Stepless Drive System, maintaining constant travel speed even with high temperatures and allowing greater speed control
- ▶ Plate Rider Torch Option, automatically maintains torch distance during cutting
- ▶ Modular straight 1800 mm rail sections (to be ordered separately)
- ▶ Circle rail Ø 40-360 mm and Ø 1150-2400 mm (to be ordered separately).
- ▶ Speed meter dial indication with conversion scale.
- ▶ Cutting torch unit for square or V-bevel cutting, equipped with the Harris cutting torch model 198-4.
- ▶ Double or triple cutting torch unit available on request.



### The Package includes:

- ▶ Cutting machine with connecting lead and rubber connection hose from machine to cutting torch
- ▶ Harris cutting torch model 198 with 3 tips
- ▶ Tool set
- ▶ Operation manual

| MODEL N.       | DESCRIPTION           | NOTE                     |
|----------------|-----------------------|--------------------------|
| PCS-SUPER-42F  | HARRIS Super 42 V     | Propane                  |
| PCS-SUPER-110F | HARRIS Super 110 V    |                          |
| PCS-SUPER-220F | HARRIS Super 220 V    |                          |
| PCS-SUPER-42   | HARRIS Super 42 V     | Acetylene                |
| PCS-SUPER-110  | HARRIS Super 110 V    |                          |
| PCS-SUPER-220  | HARRIS Super 220 V    |                          |
| PCS RAIL       | Straight rail 1800 mm | To be ordered separately |
| PCS CIRRAIL    | Circle rail           |                          |

### Specifications

|                     |                                                                                              |
|---------------------|----------------------------------------------------------------------------------------------|
| Cutting Thickness   | Up to 300 mm                                                                                 |
| Cutting Speed       | 80–800 mm/min                                                                                |
| Speed Control       | Single cone speed system, mechanical regulation                                              |
| Power Source        | 42V, 110V, 220V AC                                                                           |
| Weight              | 11 kg                                                                                        |
| Overall Measurement | 430 mm (L) x 170 mm (W) x 215 mm (H)                                                         |
| Cutting Torch       | Propane: 198-4F<br>Acetylene: 198-4                                                          |
| Cutting Tips (*)    | Propane: 6290-VVC (size 5/0 to 5½) - 6290-NH (size 6-7)<br>Acetylene: 6290-VAX (size 1 to 6) |

(\*) See page 70-71

## HARRIS PLUS

The Harris Plus is a more portable version of the Harris Super, designed with the same precision and capabilities.

### Features

- ▶ Straight line and circle oxy fuel cutting
- ▶ Stepless Drive System, maintaining constant travel speed even with high temperatures and ensuring stable, trouble-free cutting
- ▶ Light Weight -9.5 kg- easy to carry and use
- ▶ Modular straight 1800 mm rail sections (to be ordered separately)

| MODEL N.      | DESCRIPTION           | NOTE                     |
|---------------|-----------------------|--------------------------|
| PCS-PLUS-42F  | HARRIS Plus 42 V      | Propane                  |
| PCS-PLUS-110F | HARRIS Plus 110 V     |                          |
| PCS-PLUS-220F | HARRIS Plus 220 V     |                          |
| PCS-PLUS-42   | HARRIS Plus 42 V      | Acetylene                |
| PCS-PLUS-110  | HARRIS Plus 110 V     |                          |
| PCS-PLUS-220  | HARRIS Plus 220 V     |                          |
| PCS RAIL      | Straight rail 1800 mm | To be ordered separately |

### Specifications

|                     |                                                                         |
|---------------------|-------------------------------------------------------------------------|
| Cutting Thickness   | 3~150 mm                                                                |
| Cutting Speed       | 150~800 mm/min                                                          |
| Speed control       | Single cone speed system, mechanical regulation                         |
| Power Source        | 42V, 110V, 220V AC                                                      |
| Weight              | 9.5 kg                                                                  |
| Overall Measurement | 360 mm (L) x 140 mm (W) x 175 mm (H)                                    |
| Cutting Torch       | Propane: 198-4F<br>Acetylene: 198-4                                     |
| Cutting Tips (*)    | Propane: 6290-VVC (size 5/0 to 2½)<br>Acetylene: 6290-VAX (size 1 to 5) |

(\*) See page 70-71



The Package includes:

- ▶ Cutting machine with connecting lead and rubber connection hose from machine to cutting torch
- ▶ Harris cutting torch model 198 with 3 tips
- ▶ Tool set
- ▶ Operation manual

## HARRIS HA

Harris HA is a portable, hand cutting machine with integrated drive system, suitable as a hand-held cutter as well as an automated cutting machine. It allows the operator to cut all kinds of profiles in a simple and accurate manner. Due to low weight, Harris HA can be used as simple as an ordinary hand cutting torch.

| MODEL N.  | DESCRIPTION     |
|-----------|-----------------|
| PCS-HA110 | HARRIS HA 110 V |
| PCS-HA    | HARRIS HA 220 V |

### Specifications

|                   |                                                                        |
|-------------------|------------------------------------------------------------------------|
| Cutting thickness | 3 ~ 30 mm                                                              |
| Running speed     | 200 ~ 700 mm/min                                                       |
| Input voltage     | 110V, 220V AC                                                          |
| Speed control     | Transistor control                                                     |
| Overall length    | 500 mm                                                                 |
| Weight            | 2.7 kg                                                                 |
| Standard wheel    | Attaches to machine body                                               |
| Cutting Tips      | Propane: 8290-PNME (size 1 to 3)<br>Acetylene: 8290-ANME (size 1 to 3) |

(\*) See page 61



## LIGHT DUTY OXY-ACETYLENE KITS

Compact lightweight ideal for plumbers, do-it-yourself and small work-shops.

### Features:

- ▶ 19-6 handle with front valves for easy regulation
- ▶ 36-2 cutting attachment with triangular stainless steel tube construction for maximum strength
- ▶ Protected "O" ring on cutting attachment, mixer and welding assembly



19/36-S



19/36-SU



19/36-STD-EP2



19/36-STD-UP

Cuts up to 75 mm. Equal Pressure - Welds up to 14 mm. Equal Pressure (Acetylene)

| PART NO. | HANDLE | MIXER   | HOSE CONNECTIONS | CUTTING ATTACHMENT | CUTTING TIPS     | WELDING TIPS | HEATING TIP | ACCESSORIES                                                                                 | PACKAGING                                        |
|----------|--------|---------|------------------|--------------------|------------------|--------------|-------------|---------------------------------------------------------------------------------------------|--------------------------------------------------|
| 19/36-S  | 19-6   | H-19-2E | 38-L3/R3         | 36-2               | 3690-0AC/1AC/2AC | 5090-0/3/5/9 | J-63-1      | Wrench (I-62-X), Circle Cutting Attachment (I-69-7), Tip cleaner (C-9), Connector (1901-11) | Steel case (1943-K)<br>Plastic Internal (4349-P) |

Cuts up to 75 mm. Equal Pressure - Welds up to 14 mm. Low Pressure (Acetylene)

| PART NO.     | HANDLE | HOSE CONNECTIONS | CUTTING ATTACHMENT | CUTTING TIPS | WELDING ASSEMBLIES | ACCESSORIES                                                            | PACKAGING                                          |
|--------------|--------|------------------|--------------------|--------------|--------------------|------------------------------------------------------------------------|----------------------------------------------------|
| 19/36-SU     | 19-6   | 38-L3/R3         | 36-2               | 3690-0AC/2AC | L-19-1/3/5/6/9     | Wrench (I-62-X), Circle Cutting Attachment (I-69-7), Tip cleaner (C-9) | Steel case (1943-K)<br>Plastic Internal (4349-PUA) |
| 19/36-STD-UP | 19-6   | 38-L3/R3         | 36-2               | 3690-0AC/2AC | L-19-1/3/5/6/9     | Wrench (I-62-X), Tip cleaner (C-9)                                     | Steel case (1943-K)<br>Plastic Internal (4349-PL)  |

Cuts up to 75 mm. Equal Pressure - Welds up to 4 mm. Equal Pressure (Acetylene)

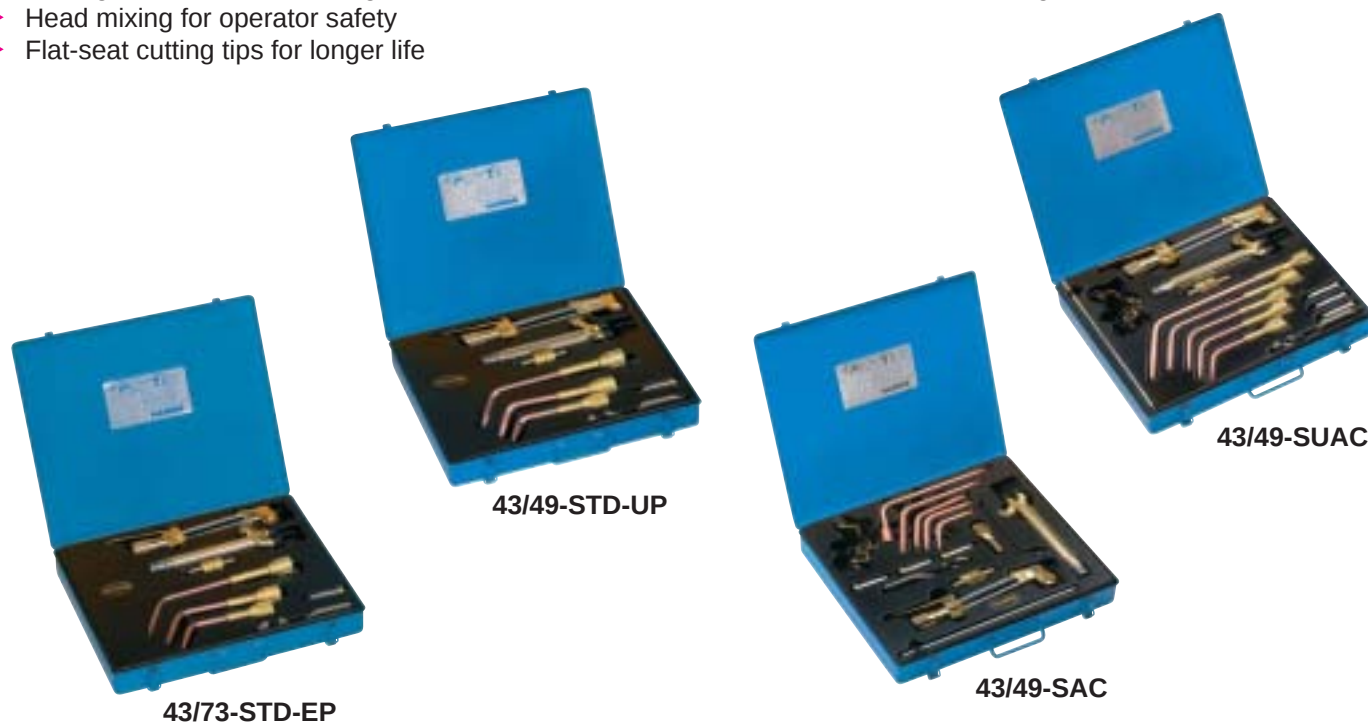
| PART NO.      | HANDLE | MIXER   | HOSE CONNECTIONS | CUTTING ATTACHMENT | CUTTING TIPS | WELDING TIPS      | HEATING TIP | ACCESSORIES                          | PACKAGING                                            |
|---------------|--------|---------|------------------|--------------------|--------------|-------------------|-------------|--------------------------------------|------------------------------------------------------|
| 19/36-STD-EP2 | 19-6   | H-19-2E | 38-L3/R3         | 36-2               | 3690-0AC/2AC | 5090-0/3/5/0090-3 | J-63-1      | Wrench (I-62-X), Connector (1901-11) | Steel case (1943-KSR)<br>Plastic Internal (4349-PSA) |

## HEAVY DUTY OXY-ACETYLENE KITS

Professional equipment designed for maximum safety and long life. Ideal for industry, workshops, shipyards, construction sites and oil industry.

### Features:

- ▶ 43-2 handle in forged brass with connection piece in stainless steel
- ▶ Cutting attachment with triangular stainless steel tube construction for maximum strength
- ▶ Head mixing for operator safety
- ▶ Flat-seat cutting tips for longer life



Cuts up to 50 mm. Equal Pressure - Welds up to 9 mm. Equal Pressure (Acetylene)

| PART NO.     | HANDLE | MIXER | HOSE CONNECTIONS | CUTTING ATTACHMENT | CUTTING TIP | WELDING TIPS  | ACCESSORIES   | PACKAGING                                        |
|--------------|--------|-------|------------------|--------------------|-------------|---------------|---------------|--------------------------------------------------|
| 43/73-STD-EP | 43-2   | E-43  | 38-L2/R2         | 73-3               | 6290-2AC    | 23-A-90-3/5/8 | Wrench I-62-X | Steel case (1943-K)<br>Plastic Internal (4349-P) |

Cuts up to 50 mm. Low Pressure - Welds up to 9 mm. Low Pressure (Acetylene)

| PART NO.     | HANDLE | HOSE CONNECTIONS | CUTTING ATTACHMENT | CUTTING TIP | WELDING ASSEMBLIES | ACCESSORIES   | PACKAGING                                         |
|--------------|--------|------------------|--------------------|-------------|--------------------|---------------|---------------------------------------------------|
| 43/49-STD-UP | 43-2   | 38-L2/R2         | 49-3               | 6290-2AC    | L-43/3/5/8         | Wrench I-62-X | Steel case (1943-K)<br>Plastic Internal (4349-PS) |

Cuts up to 150 mm. Low Pressure - Welds up to 20 mm. Equal Pressure (Acetylene)

| PART NO.  | HANDLE | MIXER | HOSE CONNECTIONS | CUTTING ATTACHMENT | CUTTING TIPS     | WELDING TIPS     | HEATING TIP | ACCESSORIES                                                  | PACKAGING                                        |
|-----------|--------|-------|------------------|--------------------|------------------|------------------|-------------|--------------------------------------------------------------|--------------------------------------------------|
| 43/49-SAC | 43-2   | E-43  | 38-L2/R2         | 49-3               | 6290-0AC/2AC/4AC | 23-A-90-3/5/6/10 | J-63-2      | Wrench I-62-X. Twin wheel circle cutting attachment (I-69-6) | Steel case (1943-K)<br>Plastic Internal (4349-P) |

Cuts up to 150 mm. Low Pressure - Welds up to 50 mm. Low Pressure (Acetylene)

| PART NO.   | HANDLE | HOSE CONNECTIONS | CUTTING ATTACHMENT | CUTTING TIPS     | WELDING ASSEMBLIES | ACCESSORIES                                                  | PACKAGING                                         |
|------------|--------|------------------|--------------------|------------------|--------------------|--------------------------------------------------------------|---------------------------------------------------|
| 43/49-SUAC | 43-2   | 38-L2/R2         | 49-3               | 6290-0AC/2AC/4AC | L-43-3/5/6/9/15    | Wrench I-62-X. Twin wheel circle cutting attachment (I-69-6) | Steel case (1943-K)<br>Plastic Internal (4349-PI) |



## Welding And Cutting Outfits

- ▶ Brass handle with large flow capacity for heavy duty applications
- ▶ Cutting attachment with triangular stainless steel tube design
- ▶ Equal pressure mixer for maximum safety - no backfire
- ▶ Regulator with improved quality, performance and durability
- ▶ Kits complete with goggles, lighter with flints and 6 mt. long twin hose with fittings
- ▶ Attractive completely recyclable packaging

Cuts up to 50 mm. Equal Pressure Welds up to 9 mm. Equal Pressure (Acetylene)

| PART NO. | HANDLE | MIXER | CUTTING ATTACHMENT | CUTTING TIP | WELDING TIPS | HEATING TIP | SINGLE STAGE OXYGEN REGULATOR | SINGLE STAGE FUEL GAS REGULATOR | ACCESSORIES                                                                 |
|----------|--------|-------|--------------------|-------------|--------------|-------------|-------------------------------|---------------------------------|-----------------------------------------------------------------------------|
| Master 1 | I43-2  | E-43  | 73-3               | 6290-2      | 23A90-3/5/8  | J-63-2      | 94-10-OX                      | 94-1,5-AC                       | 6 MT Hose (4300500),<br>Goggles (APS010),<br>Lighter (26S),<br>Flints (26L) |
| Master 2 |        |       |                    |             |              |             | 825-10-OX                     | 825-1,5-AC                      |                                                                             |

Cuts up to 25 mm. Equal Pressure Welds up to 4 mm. Equal Pressure (Acetylene)

| PART NO.      | HANDLE | MIXER | CUTTING ATTACHMENT | CHECK VALVES         | CUTTING TIPS | WELDING TIP | SINGLE STAGE OXYGEN REGULATOR | SINGLE STAGE FUEL GAS REGULATOR | ACCESSORIES                                                                 |
|---------------|--------|-------|--------------------|----------------------|--------------|-------------|-------------------------------|---------------------------------|-----------------------------------------------------------------------------|
| Master Gold   | I43-2  | E-43  | 73-3               | 886-CVTR<br>886-CVTL | 6290-1       | 23A90-5     | 94-10-OX                      | 94-1,5-AC                       | 6 MT Hose (4300500),<br>Goggles (APS010),<br>Lighter (26S),<br>Flints (26L) |
| Master Silver | 263    | E-43  | 73-3               |                      |              |             | 825-10-OX                     | 825-1,5-AC                      |                                                                             |
| Master Bronze | 85     | D-85  | 72-3               |                      |              |             | 801-10-OX                     | 801-1,5-AC                      |                                                                             |

Cuts up to 25 mm. Equal Pressure Welds up to 9 mm. Equal Pressure (Acetylene)

| PART NO. | HANDLE | MIXER | CUTTING ATTACHMENT | CHECK VALVES          | CUTTING TIP | WELDING TIPS | HEATING TIP | SINGLE STAGE OXYGEN REGULATOR | SINGLE STAGE FUEL GAS REGULATOR | ACCESSORIES                                                                 |
|----------|--------|-------|--------------------|-----------------------|-------------|--------------|-------------|-------------------------------|---------------------------------|-----------------------------------------------------------------------------|
| Master 3 | 85     | D-85  | 72-3               | 886-CVTR<br>886--CVTL | 6290-1      | 23A90-3/5/8  | J-63-1      | 801-10-OX                     | 801-1,5-AC                      | 6 MT Hose (4300500),<br>Goggles (APS010),<br>Lighter (26S),<br>Flints (26L) |



Cuts up to 25 mm. Equal Pressure Welds up to 4 mm. Equal Pressure (Acetylene)

| PART NO.   | HANDLE | MIXER | CUTTING ATTACHMENT | CUTTING TIP | WELDING TIP | SINGLE STAGE OXYGEN REGULATOR | SINGLE STAGE FUEL GAS REGULATOR | ACCESSORIES                                                                 |
|------------|--------|-------|--------------------|-------------|-------------|-------------------------------|---------------------------------|-----------------------------------------------------------------------------|
| Flamepower | 85     | D-85  | 72-3               | 6290-1AC    | 23A90-5     | 601-10-OX                     | 601-1,5-AC                      | 6 MT Hose (4300500),<br>Goggles (APS010),<br>Lighter (26S),<br>Flints (26L) |

Cuts up to 50 mm. Low Pressure (Propane)

| PART NO.      | CUTTING TORCH | CHECK VALVE   | HOSE CONNECTIONS | CUTTING TIPS | SINGLE STAGE OXYGEN REGULATOR | SINGLE STAGE FUEL GAS REGULATOR | ACCESSORIES                                                                 |
|---------------|---------------|---------------|------------------|--------------|-------------------------------|---------------------------------|-----------------------------------------------------------------------------|
| Master Cutter | 62-5F         | 886-CVTR/CVTL | 38-R2/L2         | 6290-1NX/2NX | 825-10-OX                     | 825-1,5-AC                      | 6 MT Hose (4300500),<br>Goggles (APS010),<br>Lighter (26S),<br>Flints (26L) |

## Flashback Arrestors

- ▶ Prevent reverse flow of gases with built-in check valve
- ▶ Extinguish flashback fire with sintered metal filter
- ▶ Thermal cut-off which positively shuts off the gas in case of hose fire, burn or repeated flashbacks (only T version)
- ▶ Pressure operated cut-off which positively shuts off the gas when pressure exceeds (only 3T version)



### Regulator type


**188- (L & R)**

**188-2 (L & R)**

| PART NO. | FUEL GAS | MAX FLOW<br>l/h | MAX PRESSURE<br>(bar) * |     |     |                | INLET<br>THREAD       | OUTLET<br>THREAD        |
|----------|----------|-----------------|-------------------------|-----|-----|----------------|-----------------------|-------------------------|
|          |          |                 | OX                      | AC  | LPG | H <sub>2</sub> |                       |                         |
| 188-L    | Fuel gas | 30.000          | -                       | 1.5 | 5   | 3.5            | 9/16"-18-UNF-2B-LH    | 9/16"-18-UNF-2A-LH      |
| 188-R    | Ox       | 100.000         | 15                      | -   | -   | -              | 9/16"-18-UNF-2B-RH    | 9/16"-18-UNF-2A-RH      |
| 188-LGB  | Fuel gas | 30.000          | -                       | 1.5 | 5   | 3.5            | G 3/8"-LH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 |
| 188-RGB  | Ox       | 100.000         | 15                      | -   | -   | -              | G 3/8"-RH-UNI ISO 228 | G 3/8" A-RH-UNI ISO 228 |
| 188-2L   | Fuel gas | 60.000          | -                       | 1.5 | 5   | 3.5            | 9/16"-18-UNF-2B-LH    | 9/16"-18-UNF-2A-LH      |
| 188-2R   | Ox       | 180.000         | 15                      | -   | -   | -              | 9/16"-18-UNF-2B-RH    | 9/16"-18-UNF-2A-RH      |
| 188-2AL  | Fuel gas | 60.000          | -                       | 1.5 | 5   | 3.5            | 5/8"-18-UNF-LH        | 5/8"-18-UNF-LH          |
| 188-2AR  | Ox       | 180.000         | 15                      | -   | -   | -              | 5/8"-18-UNF-RH        | 5/8"-18-UNF-RH          |
| 188-2LGB | Fuel gas | 60.000          | -                       | 1.5 | 5   | 3.5            | G 3/8"-LH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 |
| 188-2RGB | Ox       | 180.000         | 15                      | -   | -   | -              | G 3/8"-RH-UNI ISO 228 | G 3/8" A-RH-UNI ISO 228 |
| 188-GL   | Fuel gas | 30.000          | -                       | 1.5 | 5   | 3.5            | G 1/4"-LH-UNI ISO 228 | G 1/4" A-LH-UNI ISO 228 |
| 188-GR   | Ox       | 100.000         | 15                      | -   | -   | -              | G 1/4"-RH-UNI ISO 228 | G 1/4" A-RH-UNI ISO 228 |
| 188-FFL  | Fuel gas | 30.000          | -                       | 1.5 | 5   | 3.5            | M16x1.5-6H-LH         | M16x1.5-6g-LH           |
| 188-FFR  | Ox       | 100.000         | 15                      | -   | -   | -              | M16x1.5-6H-RH         | M16x1.5-6g-RH           |

\*1 bar=100 kPa


**188-T (L & R)**

**188-2T (L & R)**

| PART NO.  | FUEL GAS | MAX FLOW<br>l/h | MAX PRESSURE<br>(bar) * |     |     |                | INLET<br>THREAD       | OUTLET<br>THREAD        |
|-----------|----------|-----------------|-------------------------|-----|-----|----------------|-----------------------|-------------------------|
|           |          |                 | OX                      | AC  | LPG | H <sub>2</sub> |                       |                         |
| 188-TL    | Fuel gas | 30.000          | -                       | 1.5 | 5   | 3.5            | 9/16"-18-UNF-2B-LH    | 9/16"-18-UNF-2A-LH      |
| 188-TR    | Ox       | 100.000         | 15                      | -   | -   | -              | 9/16"-18-UNF-2B-RH    | 9/16"-18-UNF-2A-RH      |
| 188-TAL   | Fuel gas | 30.000          | -                       | 1.5 | 5   | 3.5            | 5/8"-18-UNF-LH        | 5/8"-18-UNF-LH          |
| 188-TAR   | Ox       | 100.000         | 15                      | -   | -   | -              | 5/8"-18-UNF-RH        | 5/8"-18-UNF-RH          |
| 188-TLGB  | Fuel gas | 30.000          | -                       | 1.5 | 5   | 3.5            | G 3/8"-LH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 |
| 188-TRGB  | Ox       | 100.000         | 15                      | -   | -   | -              | G 3/8"-RH-UNI ISO 228 | G 3/8" A-RH-UNI ISO 228 |
| 188-2TAL  | Fuel gas | 60.000          | -                       | 1.5 | 5   | 3.5            | 5/8"-18-UNF-LH        | 5/8"-18-UNF-LH          |
| 188-2TAR  | Ox       | 180.000         | 15                      | -   | -   | -              | 5/8"-18-UNF-RH        | 5/8"-18-UNF-RH          |
| 188-2TL   | Fuel gas | 60.000          | -                       | 1.5 | 5   | 3.5            | 9/16"-18-UNF-2B-LH    | 9/16"-18-UNF-2A-LH      |
| 188-2TR   | Ox       | 180.000         | 15                      | -   | -   | -              | 9/16"-18-UNF-2B-RH    | 9/16"-18-UNF-2A-RH      |
| 188-2TLGB | Fuel gas | 60.000          | -                       | 1.5 | 5   | 3.5            | G 3/8"-LH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 |
| 188-2TRGB | Ox       | 180.000         | 15                      | -   | -   | -              | G 3/8"-RH-UNI ISO 228 | G 3/8" A-RH-UNI ISO 228 |

\*1 bar=100 kPa

| PART NO.  | FUEL GAS | MAX FLOW<br>l/h | MAX PRESSURE<br>(bar) * |     |     |                | INLET<br>THREAD       | OUTLET<br>THREAD        |
|-----------|----------|-----------------|-------------------------|-----|-----|----------------|-----------------------|-------------------------|
|           |          |                 | OX                      | AC  | LPG | H <sub>2</sub> |                       |                         |
| 188-3TLGB | Fuel gas | 60.000          | -                       | 1.5 | 5   | 3.5            | G 3/8"-LH-UNI ISO 228 | G 3/8" A-LH-UNI ISO 228 |
| 188-3TRGB | Ox       | 180.000         | 15                      | -   | -   | -              | G 3/8"-RH-UNI ISO 228 | G 3/8" A-RH-UNI ISO 228 |

\*1 bar=100 kPa

### Hose to Hose type


**188- TT (L6 & R6)**

| PART NO. | FUEL GAS | MAX FLOW<br>l/h | MAX PRESSURE<br>(bar) * |     |     |                | INLET<br>THREAD    | OUTLET<br>THREAD   |
|----------|----------|-----------------|-------------------------|-----|-----|----------------|--------------------|--------------------|
|          |          |                 | OX                      | AC  | LPG | H <sub>2</sub> |                    |                    |
| 188-TT6  | Fuel gas | 20.000          | -                       | 1.5 | 5   | 3.5            | Ø hose 1/4"(6 mm)  | Ø hose 1/4"(6 mm)  |
| 188-TT6  | Ox       | 65.000          | 15                      | -   | -   | -              | Ø hose 1/4"(6 mm)  | Ø hose 1/4"(6 mm)  |
| 188-TT8  | Fuel gas | 20.000          | -                       | 1.5 | 5   | 3.5            | Ø hose 5/16"(8 mm) | Ø hose 5/16"(8 mm) |
| 188-TT8  | Ox       | 65.000          | 15                      | -   | -   | -              | Ø hose 5/16"(8 mm) | Ø hose 5/16"(8 mm) |

\*1 bar=100 kPa

## Torch Type



188-1G (L6 & R6)



188-GG (L & R)

| PART NO.  | FUEL GAS | MAX FLOW l/h | MAX PRESSURE (bar) * |     |     |                | INLET THREAD            | OUTLET THREAD         |
|-----------|----------|--------------|----------------------|-----|-----|----------------|-------------------------|-----------------------|
|           |          |              | OX                   | AC  | LPG | H <sub>2</sub> |                         |                       |
| 188-1GBL6 | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | Ø hose 1/4" (6 mm)      | G 3/8"-LH-UNI ISO 228 |
| 188-1GBR6 | Ox       | 65.000       | 15                   | -   | -   | -              | Ø hose 1/4" (6 mm)      | G 3/8"-RH-UNI ISO 228 |
| 188-1GBL8 | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | Ø hose 5/16" (8 mm)     | G 3/8"-LH-UNI ISO 228 |
| 188-1GBR8 | Ox       | 65.000       | 15                   | -   | -   | -              | Ø hose 5/16" (8 mm)     | G 3/8"-RH-UNI ISO 228 |
| 188-1GL6  | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | Ø hose 1/4" (6 mm)      | G 1/4"-LH-UNI ISO 228 |
| 188-1GR6  | Ox       | 65.000       | 15                   | -   | -   | -              | Ø hose 1/4" (6 mm)      | G 1/4"-RH-UNI ISO 228 |
| 188-1L6   | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | Ø hose 1/4" (6 mm)      | 9/16"-18-UNF-2A-LH    |
| 188-1R6   | Ox       | 65.000       | 15                   | -   | -   | -              | Ø hose 1/4" (6 mm)      | 9/16"-18-UNF-2A-RH    |
| 188-1L8   | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | Ø hose 5/16" (8 mm)     | 9/16"-18-UNF-2A-LH    |
| 188-1R8   | Ox       | 65.000       | 15                   | -   | -   | -              | Ø hose 5/16" (8 mm)     | 9/16"-18-UNF-2A-RH    |
| 188-GGAL  | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | 5/8"-18-UNF-LH          | 5/8"-18-UNF-LH        |
| 188-GGAR  | Ox       | 65.000       | 15                   | -   | -   | -              | 5/8"-18-UNF-RH          | 5/8"-18-UNF-RH        |
| 188-GGGBL | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | G 3/8" A-LH-UNI ISO 228 | G 3/8"-LH-UNI ISO 228 |
| 188-GGGBR | Ox       | 65.000       | 15                   | -   | -   | -              | G 3/8" A-RH-UNI ISO 228 | G 3/8"-RH-UNI ISO 228 |
| 188-GGGL  | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | G 1/4" A-LH-UNI ISO 228 | G 1/4"-LH-UNI ISO 228 |
| 188-GGGR  | Ox       | 65.000       | 15                   | -   | -   | -              | G 1/4" A-RH-UNI ISO 228 | G 1/4"-RH-UNI ISO 228 |
| 188-GGL   | Fuel gas | 20.000       | -                    | 1.5 | 5   | 3.5            | 9/16"-18-UNF-2A-LH      | 9/16"-18-UNF-2B-LH    |
| 188-GGR   | Ox       | 65.000       | 15                   | -   | -   | -              | 9/16"-18-UNF-2A-RH      | 9/16"-18-UNF-2B-RH    |

\*1 bar=100 kPa

## Check Valves

- Torch type
- Help prevent dangerous reverse flow mixing of gas in the hose
- Compact light weight design add extra operator safety



88-6CVT (L&R)

| PART NO.  | FUEL GAS | MAX PRESSURE (bar) * |     |     |                | INLET THREAD            | OUTLET THREAD         |
|-----------|----------|----------------------|-----|-----|----------------|-------------------------|-----------------------|
|           |          | OX                   | AC  | LPG | H <sub>2</sub> |                         |                       |
| 88-3SVL   | Fuel gas | -                    | 1.5 | 5   | 3.5            | G 1/4" A-LH-UNI ISO 228 | G 1/4"-LH-UNI ISO 228 |
| 88-3SVR   | Ox       | 15                   | -   | -   | -              | G 1/4" A-RH-UNI ISO 228 | G 1/4"-RH-UNI ISO 228 |
| 88-4CVL** | Fuel gas | -                    | 1.5 | 5   | 3.5            | 9/16"-18-UNF-2A-LH      | 9/16"-18-UNF-3B-LH    |
| 88-4CVR** | Ox       | 15                   | -   | -   | -              | 9/16"-18-UNF-2A-RH      | 9/16"-18-UNF-3B-RH    |
| 88-6AL    | Fuel gas | -                    | 1.5 | 5   | 3.5            | .622"-18-UN-2A-LH       | 9/16"-18-UNF-3B-LH    |
| 88-6AL1   | Fuel gas | -                    | 1.5 | 5   | 3.5            | .622"-18-UN-2A-LH       | .622"-18-UN-LH        |
| 88-6AR    | Ox       | 15                   | -   | -   | -              | .622"-18-UN-2A-RH       | 9/16"-18-UNF-3B-RH    |
| 88-6AR1   | Ox       | 15                   | -   | -   | -              | .622"-18-UN-2A-RH       | .622"-18-UN-RH        |
| 88-6CTL   | Fuel gas | -                    | 1.5 | 5   | 3.5            | M16x1.5-6g-LH           | M16x1.5-6G-LH         |
| 88-6CTR   | Ox       | 15                   | -   | -   | -              | M16x1.5-6g-RH           | M16x1.5-6G-RH         |
| 88-6CVTL  | Fuel gas | -                    | 1.5 | 5   | 3.5            | 9/16"-18-UNF-2A-LH      | 9/16"-18-UNF-2B-LH    |
| 88-6CVTR  | Ox       | 15                   | -   | -   | -              | 9/16"-18-UNF-2A-RH      | 9/16"-18-UNF-2B-RH    |
| 88-6FL    | Fuel gas | -                    | 1.5 | 5   | 3.5            | M16x1.5-6g-LH           | 9/16"-18-UNF-3B-LH    |
| 88-6FR    | Ox       | 15                   | -   | -   | -              | M16x1.5-6g-RH           | 9/16"-18-UNF-3B-RH    |
| 88-6GBL   | Fuel gas | -                    | 1.5 | 5   | 3.5            | G 3/8" A-LH-UNI ISO 228 | G 3/8"-LH-UNI ISO 228 |
| 88-6GBR   | Ox       | 15                   | -   | -   | -              | G 3/8" A-RH-UNI ISO 228 | G 3/8"-RH-UNI ISO 228 |
| 88-6GBR1  | Ox       | 15                   | -   | -   | -              | G 3/8" A-RH-UNI ISO 228 | 9/16"-18-UNF-3B-RH    |
| 88-6GL    | Fuel gas | -                    | 1.5 | 5   | 3.5            | G 3/8" A-LH-UNI ISO 228 | 9/16"-18-UNF-3B-LH    |
| 88-6GR    | Ox       | 15                   | -   | -   | -              | G 1/4" A-RH-UNI ISO 228 | 9/16"-18-UNF-3B-RH    |

\*1 bar=100 kPa \*\*Regulator type

## Quick Action Coupling

- Long lasting stainless steel pin connection
- Automatic gas cut-off to positively shut off the gas supply when disconnected
- Durable brass and stainless steel construction



CPL8



QACL8

| PART NO. | DESCRIPTION | CONNECTION TYPE                | TYPE      |
|----------|-------------|--------------------------------|-----------|
| CPL6     | Male        | Hose connection Ø 1/4" (6 mm)  | Hose      |
| CPR6     |             | Hose connection Ø 5/16" (8 mm) |           |
| CPL8     |             | Threads G 3/8"-LH-UNI ISO 228  | Torch     |
| CPR8     |             | Threads G 3/8"-RH-UNI ISO 228  |           |
| CPLGB    |             | Threads 9/16"-18-UNF-2B-LH     |           |
| CPRGB    |             | Threads 9/16"-18-UNF-2B-LH     |           |
| CPL      | Female      | Hose connection Ø 1/4" (6 mm)  | Hose      |
| CPR      |             | Hose connection Ø 5/16" (8 mm) |           |
| QACL6    |             | Threads G 3/8"-LH-UNI ISO 228  | Regulator |
| QACL8    |             | Threads G 3/8"-RH-UNI ISO 228  |           |
| QACLGB   |             | Threads G 3/8"-LH-UNI ISO 228  |           |
| QACR6    |             | Threads G 3/8"-RH-UNI ISO 228  |           |

## Flowmeters Models 861 & 866

- ▶ Measure flow from 0 to 15/30 Lpm for Ar/CO<sub>2</sub>
- ▶ Measure flow from 0 to 20/50 Lpm for Formier gas
- ▶ Calibrated at 3.5 bar inlet pressure (optional 4 bar)
- ▶ Easy to read flowtube has virtually unbreakable transparent polycarbonate outer cover for maximum strength and 360° visibility
- ▶ Brass body and knob
- ▶ Needle valve for accurate adjustment of flow
- ▶ Simplified choice of outlet connections on the body
- ▶ Calibration (bar/PSI)
- ▶ Inlet threads 1/4" NPT male (for other inlets refer to the table below)



**mod. 861**  
90° Inlet & Knob



**mod. 866**  
180° Inlet & Knob

| PART NO.<br>861 | PART NO.<br>866 | FLOW<br>(l/m) | GAS                   | OUTLET<br>THREAD             |
|-----------------|-----------------|---------------|-----------------------|------------------------------|
| 861-15L-ARC     | 866-15L-ARC     | 15            | Argon/CO <sub>2</sub> | 9/16"-18-UNF-2A-RH           |
| 861-30L-ARC     | 866-30L-ARC     | 30            |                       | 9/16"-18-UNF-2A-RH           |
| 861-15L-ARC-1   | 866-15L-ARC-1   | 15            |                       | G 3/8" A-RH-UNI ISO 228      |
| 861-30L-ARC-1   | 866-30L-ARC-1   | 30            |                       | G 3/8" A-RH-UNI ISO 228      |
| 861-15L-ARC-2   | 866-15L-ARC-2   | 15            |                       | G 1/4" A-RH-UNI ISO 228      |
| 861-30L-ARC-2   | 866-30L-ARC-2   | 30            |                       | G 1/4" A-RH-UNI ISO 228      |
| 861-15L-ARC-3   | 866-15L-ARC-3   | 15            |                       | .622"-18-UN-RH               |
| 861-30L-ARC-3   | 866-30L-ARC-3   | 30            |                       | .622"-18-UN-RH               |
| 861-15L-ARC-5   | 866-15L-ARC-5   | 15            |                       | Hose connection 1/4" (6 mm)  |
| 861-30L-ARC-5   | 866-30L-ARC-5   | 30            |                       | Hose connection 1/4" (6 mm)  |
| 861-15L-ARC-6   | 866-15L-ARC-6   | 15            |                       | Hose connection 3/8" (10 mm) |
| 861-30L-ARC-6   | 866-30L-ARC-6   | 30            | Formier gas           | Hose connection 3/8" (10 mm) |
| 861-15L-ARC-7   | 866-15L-ARC-7   | 15            |                       | Hose connection 5/16" (8 mm) |
| 861-30L-ARC-7   | 866-30L-ARC-7   | 30            |                       | Hose connection 5/16" (8 mm) |
| 861-15L-ARC-11  | 866-15L-ARC-11  | 15            |                       | M16x1,5-6g-RH                |
| 861-30L-ARC-11  | 866-30L-ARC-11  | 30            |                       | M16x1,5-6g-RH                |
| 861-20L-FG-8    | 866-20L-FG-8    | 20            |                       | 9/16"-18-UNF-2A-LH           |
| 861-50L-FG-8    | 866-50L-FG-8    | 50            |                       | 9/16"-18-UNF-2A-LH           |
| 861-20L-FG-4    | 866-20L-FG-4    | 20            |                       | G 3/8" A-LH-UNI ISO 228      |
| 861-50L-FG-4    | 866-50L-FG-4    | 50            |                       | G 3/8" A-LH-UNI ISO 228      |
| 861-20L-FG-9    | 866-20L-FG-9    | 20            |                       | G 1/4" A-LH-UNI ISO 228      |
| 861-50L-FG-9    | 866-50L-FG-9    | 50            |                       | G 1/4" A-LH-UNI ISO 228      |
| 861-20L-FG-5    | 866-20L-FG-5    | 20            | Oxygen                | Hose connection 1/4" (6 mm)  |
| 861-50L-FG-5    | 866-50L-FG-5    | 50            |                       | Hose connection 1/4" (6 mm)  |
| 861-20L-FG-6    | 866-20L-FG-6    | 20            |                       | Hose connection 3/8" (10 mm) |
| 861-50L-FG-6    | 866-50L-FG-6    | 50            |                       | Hose connection 3/8" (10 mm) |
| 861-20L-FG-7    | 866-20L-FG-7    | 20            |                       | Hose connection 5/16" (8 mm) |
| 861-50L-FG-7    | 866-50L-FG-7    | 50            |                       | Hose connection 5/16" (8 mm) |
| 861-15L-OX      | 866-15L-OX      | 15            |                       | 9/16"-18-UNF-2A-RH           |
| 861-15L-OX-1    | 866-15L-OX-1    | 15            |                       | G 3/8" A-RH-UNI ISO 228      |
| 861-15L-OX-2    | 866-15L-OX-2    | 15            |                       | G 1/4" A-RH-UNI ISO 228      |
| 861-15L-OX-3    | 866-15L-OX-3    | 15            |                       | .622"-18-UN-RH               |
| 861-15L-OX-5    | 866-15L-OX-5    | 15            |                       | Hose connection 1/4" (6 mm)  |
| 861-15L-OX-6    | 866-15L-OX-6    | 15            |                       | Hose connection 3/8" (10 mm) |
| 861-15L-OX-7    | 866-15L-OX-7    | 15            |                       | Hose connection 5/16" (8 mm) |
| 861-15L-OX-11   | 866-15L-OX-11   | 15            |                       | M16x1,5-6g-RH                |

### ALL PART NUMBERS CAN BE SUPPLIED ALSO WITH THE FOLLOWING INLET / FEATURE

| MODEL | MODEL | INLET THREAD / FEATURE                              |
|-------|-------|-----------------------------------------------------|
| 861A  | 866A  | G 3/8"-RH-UNI ISO 228 (female)                      |
| 861B  | 866B  | G 1/4"-RH-UNI ISO 228 (female)                      |
| 861C  | 866C  | .622"-18-UN-RH (female)                             |
|       | 866D  | Right hand (nameplate and scale at 270° from inlet) |
| 861E  | 866E  | Measuring scale 180° from inlet (standard is 90°)   |
| 861F  | 866F  | 9/16"-18-UNF-3B-RH (female)                         |
| 861G  | 866G  | G 1/8"-RH-UNI ISO 228 (male), only for model 601    |
| 861P  | 866P  | dia-index knob                                      |
| 861X  | 866X  | Pressure 4 bar (60 psi)                             |

For inlet connection refer to this table.

Please add the corresponding letter to the part no.

(Eg. 861A-15L-ARC for inlet G 3/8"-RH-UNI ISO 228 female)



Flowmeter regulators (see pages 12-16)

## Gauges

- ▶ Safety gauge conforms to EN 562
- ▶ Easy to read dual scale gauges with polycarbonate lens for durability
- ▶ Steel case protected by oven baked corrosion resistant paint

### Rubber Cover



CPR6333



8E-615



8A-802-1



8E-601-1

| PART NO.    | GAUGE SCALE            | GAS       | Ø & THREAD      |
|-------------|------------------------|-----------|-----------------|
| 8A-6001     | 0-15 l/min             |           | Ø 63 - 1/4" NPT |
| 8A-6002     | 0-50 l/min             |           |                 |
| 8A-615      | 0-315 bar / 0-4568 psi |           |                 |
| 8A-615-OX   | 0-315 bar / 0-4568 psi | Oxygen    |                 |
| 8A-617-AC   | 0-40 bar / 0-580 psi   | Acetylene |                 |
| 8A-619-OX   | 0-16 bar / 0-232 psi   | Oxygen    |                 |
| 8A-6411-OX  | 0-25 bar / 0-362 psi   | Oxygen    | Ø 63 - G 1/4"   |
| 8A-686-AC   | 0-2.5 bar / 0-36 psi   | Acetylene |                 |
| 8E-6001     | 0-15 l/min             |           |                 |
| 8E-6002     | 0-50 l/min             |           |                 |
| 8E-6003     | 0-30 l/min             |           |                 |
| 8E-615      | 0-315 bar / 0-4568 psi |           |                 |
| 8E-615-OX   | 0-315 bar / 0-4568 psi | Oxygen    |                 |
| 8E-615K     | 0-30000 kPa            |           |                 |
| 8E-615K-OX  | 0-30000 kPa            | Oxygen    |                 |
| 8E-617      | 0-40 bar / 0-580 psi   |           |                 |
| 8E-617-AC   | 0-40 bar / 0-580 psi   | Acetylene |                 |
| 8E-617K     | 0-4000 kPa             |           |                 |
| 8E-617K-AC  | 0-4000 kPa             | Acetylene |                 |
| 8E-619      | 0-16 bar / 0-232 psi   |           |                 |
| 8E-619-OX   | 0-16 bar / 0-232 psi   | Oxygen    |                 |
| 8E-619K     | 0-1600 kPa             |           |                 |
| 8E-619K-OX  | 0-1600 kPa             | Oxygen    |                 |
| 8E-621      | 0-400 bar / 0-5800 psi |           |                 |
| 8E-621-OX   | 0-400 bar / 0-5800 psi | Oxygen    |                 |
| 8E-621K     | 0-40000 kPa            |           |                 |
| 8E-623      | 0-100 bar / 0-1450 psi |           |                 |
| 8E-6411     | 0-25 bar / 0-362 psi   |           |                 |
| 8E-6411-OX  | 0-25 bar / 0-362 psi   | Oxygen    |                 |
| 8E-6411K    | 0-2500 kPa             |           |                 |
| 8E-6411K-OX | 0-2500 kPa             | Oxygen    |                 |
| 8E-661      | 0-6 bar / 0-87 psi     |           |                 |
| 8E-661-OX   | 0-6 bar / 0-87 psi     | Oxygen    |                 |
| 8E-661K     | 0-600 kPa              |           |                 |
| 8E-661K-OX  | 0-600 kPa              | Oxygen    |                 |
| 8E-6620     | 0-60 bar / 870 psi     |           |                 |
| 8E-6620-OX  | 0-60 bar / 870 psi     | Oxygen    |                 |
| 8E-6620-K   | 0-6000 kPa             |           |                 |
| 8E-686      | 0-2.5 bar / 0-36 psi   |           |                 |
| 8E-686-AC   | 0-2.5 bar / 0-36 psi   | Acetylene |                 |
| 8E-686K     | 0-250 kPa              |           |                 |
| 8E-686K-AC  | 0-250 kPa              | Acetylene |                 |

### FOR REGULATORS MODEL 802/822

| PART NO. | GAUGE SCALE | Ø & THREAD    |
|----------|-------------|---------------|
| 8A-802-1 | 0-100 bar   | Ø 50 - G 1/8" |
| 8A-802-2 | 0-10 bar    |               |
| 8A-802-3 | 0-6 bar     |               |
| 8A-802-4 | 0-315 bar   |               |

### FOR REGULATORS MODEL 601

| PART NO.    | GAUGE SCALE            | GAS       | Ø & THREAD    |
|-------------|------------------------|-----------|---------------|
| 8E-601-1    | 0-315 bar / 0-4568 psi | Oxygen    | Ø 50 - G 1/8" |
| 8E-601-1-OX | 0-315 bar / 0-4568 psi |           |               |
| 8E-601-2    | 0-30 l/min             |           |               |
| 8E-601-3    | 0-25 bar / 0-362 psi   |           |               |
| 8E-601-3-AC | 0-25 bar / 0-362 psi   | Acetylene |               |
| 8E-601-4    | 0-40 bar / 0-580 psi   |           |               |
| 8E-601-4-AC | 0-40 bar / 0-580 psi   | Acetylene |               |
| 8E-601-5    | 0-6 bar / 0-87 psi     |           |               |
| 8E-601-6    | 0-16 bar / 0-232 psi   |           |               |
| 8E-601-6-OX | 0-16 bar / 0-232 psi   | Oxygen    |               |
| 8E-601-7    | 0-15 l/min             |           |               |

### Rubber Cover



CPR63332

for  
8A-802... & 8E-601...  
gauges

## Outlet Nipples for regulators



957 - L



957 - R

| PART NO.   | INLET<br>THREAD         | OUTLET<br>THREAD        | NOTES                             |
|------------|-------------------------|-------------------------|-----------------------------------|
| 957-L      | 1/4" NPT                | 9/16"-18-UNF-2A-LH      | -                                 |
| 957-R      |                         | 9/16"-18-UNF-2A-RH      |                                   |
| 957-SL     |                         | G 3/8" A-LH-UNI ISO 228 |                                   |
| 957-SR     |                         | G 3/8" A-RH-UNI ISO 228 |                                   |
| 957-AA     |                         | .622"-18-UN-LH          |                                   |
| 957-AO     |                         | .622"-18-UN-RH          |                                   |
| F-957-L    |                         | M16x1,5-6g-LH           |                                   |
| F-957-R    |                         | M16x1,5-6g-RH           |                                   |
| G-957-1L   |                         | G 1/4" A-LH-UNI ISO 228 |                                   |
| G-957-1R   |                         | G 1/4" A-RH-UNI ISO 228 |                                   |
| 60157-L    | M11x1-6g-RH             | 9/16"-18-UNF-2A-LH      | Only for model 601                |
| 60157-R    |                         | 9/16"-18-UNF-2A-RH      |                                   |
| 60157-SL   |                         | G 3/8" A-LH-UNI ISO 228 |                                   |
| 60157-SR   |                         | G 3/8" A-RH-UNI ISO 228 |                                   |
| 60157-AA   |                         | .622"-18-UN-LH          |                                   |
| 60157-AO   |                         | .622"-18-UN-RH          |                                   |
| 60157-FL   |                         | M16x1,5-6g-LH           |                                   |
| 60157-FR   |                         | M16x1,5-6g-RH           |                                   |
| 60157-AL   |                         | G 1/4" A-LH-UNI ISO 228 |                                   |
| 60157-AR   |                         | G 1/4" A-RH-UNI ISO 228 |                                   |
| 60157-L-2  | G 1/8" A-RH-UNI ISO 228 | 9/16"-18-UNF-2A-LH      | Only for model 601 L & flowmeters |
| 60157-R-2  |                         | 9/16"-18-UNF-2A-RH      |                                   |
| 60157-SL-2 |                         | G 3/8" A-LH-UNI ISO 228 |                                   |
| 60157-SR-2 |                         | G 3/8" A-RH-UNI ISO 228 |                                   |
| 60157-AA-2 |                         | .622"-18-UN-LH          |                                   |
| 60157-AO-2 |                         | .622"-18-UN-RH          |                                   |
| 60157-FL-2 |                         | M16x1,5-6g-LH           |                                   |
| 60157-FR-2 |                         | M16x1,5-6g-RH           |                                   |
| 60157-AL-2 |                         | G 1/4" A-LH-UNI ISO 228 |                                   |
| 60157-AR-2 |                         | G 1/4" A-RH-UNI ISO 228 |                                   |

| PART NO.        | GAS                   | MAX FLOW<br>(l/m) | INLET<br>THREAD | OUTLET<br>THREAD        | NOTES         |
|-----------------|-----------------------|-------------------|-----------------|-------------------------|---------------|
| 957-AO15-ARCD   | Argon/CO <sub>2</sub> | 15                | 1/4" NPT        | .622"-18-UN-RH          |               |
| 957-AO30-ARCD   | Argon/CO <sub>2</sub> | 30                |                 | .622"-18-UN-RH          |               |
| 957-AO50-ARCD   | Argon/CO <sub>2</sub> | 50                |                 | .622"-18-UN-RH          |               |
| 957-AR15-ARCD   | Argon/CO <sub>2</sub> | 15                |                 | G 1/4" A-RH-UNI ISO 228 |               |
| 957-AR15-N2O-M  | Nitrous oxide         | 15                |                 | G 1/4" A-RH-UNI ISO 228 | Chrome plated |
| 957-AR15-OX-M   | Oxygen                | 15                |                 | G 1/4" A-RH-UNI ISO 228 | Chrome plated |
| 957-AR30-ARCD   | Argon/CO <sub>2</sub> | 30                |                 | G 1/4" A-RH-UNI ISO 228 |               |
| 957-AR50-ARCD   | Argon/CO <sub>2</sub> | 50                |                 | G 1/4" A-RH-UNI ISO 228 |               |
| 957-FR15-ARCD   | Argon/CO <sub>2</sub> | 15                |                 | M16x1,5-6g-RH           |               |
| 957-FR30-ARCD   | Argon/CO <sub>2</sub> | 30                |                 | M16x1,5-6g-RH           |               |
| 957-FR50-ARCD   | Argon/CO <sub>2</sub> | 50                |                 | M16x1,5-6g-RH           |               |
| 957-R15-AIR-M   | Oxygen                | 15                |                 | 9/16"-18-UNF-2A-RH      | Chrome plated |
| 957-R15-N2O-M   | Nitrous oxide         | 15                |                 | 9/16"-18-UNF-2A-RH      | Chrome plated |
| 957-R15-ARCD    | Argon/CO <sub>2</sub> | 15                |                 | 9/16"-18-UNF-2A-RH      | Chrome plated |
| 957-R15-OX      | Oxygen                | 15                |                 | 9/16"-18-UNF-2A-RH      |               |
| 957-R15-OX-M    | Oxygen                | 15                |                 | 9/16"-18-UNF-2A-RH      |               |
| 957-R30-ARCD    | Argon/CO <sub>2</sub> | 30                |                 | 9/16"-18-UNF-2A-RH      |               |
| 957-R50-ARCD    | Argon/CO <sub>2</sub> | 50                |                 | 9/16"-18-UNF-2A-RH      |               |
| 957-SL-30-FG    | Formiargas            | 30                |                 | G 3/8" A-LH-UNI ISO 228 |               |
| 957-SL-50-FG    | Formiargas            | 50                |                 | G 3/8" A-LH-UNI ISO 228 |               |
| 957-SL-50-H2    | Hydrogen              | 50                |                 | G 3/8" A-LH-UNI ISO 228 |               |
| 957-SR-15-ARCD  | Argon/CO <sub>2</sub> | 15                |                 | G 3/8" A-RH-UNI ISO 228 |               |
| 957-SR-15-N2O   | Nitrous oxide         | 15                |                 | G 3/8" A-RH-UNI ISO 228 |               |
| 957-SR-15-N2O-M | Nitrous oxide         | 15                |                 | G 3/8" A-RH-UNI ISO 228 | Chrome plated |
| 957-SR-15-OX-M  | Oxygen                | 15                |                 | G 3/8" A-RH-UNI ISO 228 | Chrome plated |
| 957-SR-30-ARCD  | Argon/CO <sub>2</sub> | 30                |                 | G 3/8" A-RH-UNI ISO 228 |               |
| 957-SR-50-ARCD  | Argon/CO <sub>2</sub> | 50                |                 | G 3/8" A-RH-UNI ISO 228 |               |

## Calibrated Outlet Nipples for regulators



957 - AO15-ARCD

## Tip Nuts



| PART NO. | CUTTING TORCHES / CUTTING ATTACHMENTS                 | TIPS     |
|----------|-------------------------------------------------------|----------|
| 6259B    | 133, 142, 198, 42-4, 49-3, 62-5, 72-3, 73-3, 242, 273 | 6290     |
| 2859     | 28, 28-L                                              | 2890     |
| 9008437  | 36-2                                                  | 3690     |
| 4559     | 59-3, 880-NM, NM-250, 242-NM, 273-NM                  | 8290     |
| 9002537  | 573, 880                                              | 6290     |
| 9005236  | V-Series                                              | 1-101-HV |

## Roller Guides & Circle Cutting Attachments



| PART NO.  | ANGLE    | CONNECTION FOR TIPS | CUTTING ATTACHMENTS / CUTTING TORCHES                  | NOTES              |
|-----------|----------|---------------------|--------------------------------------------------------|--------------------|
| I-69-4    | 90°      | 6290                | 142, 62-5, 42-3, 42-4, 49-3, 572, 72-3, 73-3, 242, 273 | Single wheel guide |
| I-69-5    |          | 3690                | 36-2                                                   |                    |
| I-69-6    | 45°-135° | 6290                | 142, 62-5, 42-3, 42-4, 49-3, 572, 72-3, 73-3, 242, 273 |                    |
| I-69-6-HV |          | 1-101-HV            | V-Series                                               |                    |
| I-69-7    | 90°      | 3690                | 36-2                                                   |                    |
| R-69-3B   |          | 6290                | 142, 62-5, 42-3, 42-4, 49-3, 572, 72-3, 73-3, 242, 273 |                    |
| R-69-4C   |          | 8290                | NM-250, 880-NM, 59-3, 242-NM, 273-NM                   |                    |
| R-69-880  |          | 6290                | 880, 573                                               |                    |
| R-69-A    |          | 2890                | 28, 28-L                                               |                    |

## Converters



38-2GBL 38-2GBR

| PART NO. | FROM (FEMALE)         | TO (MALE)               |
|----------|-----------------------|-------------------------|
| 38-2AL   | 9/16"-18-UNF-3B-LH    | .622"-18-UN-LH          |
| 38-2AR   | 9/16"-18-UNF-3B-RH    | .622"-18-UN-RH          |
| 38-2FL   | 9/16"-18-UNF-3B-LH    | M16x1,5-6g-LH           |
| 38-2FR   | 9/16"-18-UNF-3B-RH    | M16x1,5-6g-RH           |
| 38-2GBL  | 9/16"-18-UNF-3B-LH    | G 3/8" A-LH-UNI ISO 228 |
| 38-2GBR  | 9/16"-18-UNF-3B-RH    | G 3/8" A-RH-UNI ISO 228 |
| 38-2GR   | 9/16"-18-UNF-3B-RH    | G 1/4" A-RH-UNI ISO 228 |
| 38-4GL   | 9/16"-18-UNF-3B-LH    | G 1/4" A-LH-UNI ISO 228 |
| 38-3FL   | M16x1,5-4H-LH         | 9/16"-18-UNF-2A-LH      |
| 38-3FR   | M16x1,5-4H-RH         | 9/16"-18-UNF-2A-RH      |
| 38-5GL   | G 1/4"-LH-UNI ISO 228 | 9/16"-18-UNF-2A-LH      |
| 38-5GR   | G 1/4"-RH-UNI ISO 228 | 9/16"-18-UNF-2A-RH      |
| 38-6GL   | G 3/8"-LH-UNI ISO 228 | 9/16"-18-UNF-2A-LH      |
| 38-6GR   | G 3/8"-RH-UNI ISO 228 | 9/16"-18-UNF-2A-RH      |

## Needle Valves

Needle valve for precise flow control can replace outlet nipples on regulators. Particularly recommended for laboratory installations.



52-L

| PART NO. | GAS      | INLET    | OUTLET          |
|----------|----------|----------|-----------------|
| 52-L     | Fuel gas | 1/4" NPT | 9/16"-18-UNF-LH |
| 52-R     | Oxygen   | 1/4" NPT | 9/16"-18-UNF-RH |
| 52-DR    | Oxygen   | 1/4" NPT | 1/4" NPT        |

## "Y" Pieces

"Y" piece for attaching two hose lines to same regulator Assembly on regulator outlet.



37-L

| PART NO. | GAS      | THREADS               | NOTES          |
|----------|----------|-----------------------|----------------|
| 37-L     | Fuel gas | 9/16"-18-UNF-LH       | WITH VALVES    |
| 37-R     | Oxygen   | 9/16"-18-UNF-RH       |                |
| 37-FL    | Fuel gas | M16x1,5-4H-LH         |                |
| 37-FR    | Oxygen   | M16x1,5-4H-RH         |                |
| 37-GBL   | Fuel gas | G 3/8"-LH-UNI ISO 228 | WITHOUT VALVES |
| 37-GBR   | Oxygen   | G 3/8"-RH-UNI ISO 228 |                |
| 37-L2    | Fuel gas | 9/16"-18-UNF-LH       |                |
| 37-R2    | Oxygen   | 9/16"-18-UNF-RH       |                |
| 37-SL2   | Fuel gas | G 3/8"-LH-UNI ISO 228 |                |
| 37-SR2   | Oxygen   | G 3/8"-RH-UNI ISO 228 |                |

## Stems & Nuts

Inlet stems & Nuts are supplied according with country specification.



## Goggles



APS010

## Wrench

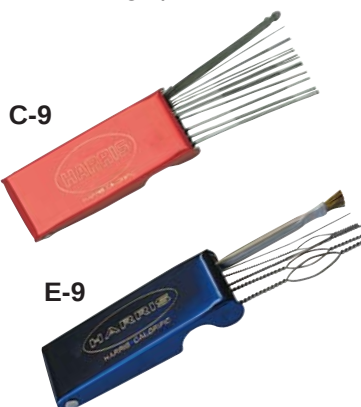


I-62-X

## Tip Cleaners

**C-9** Calibrated tip cleaner for hand cutting tips

**E-9** Calibrated tip cleaner for machine cutting tips



## Lighter with flint



26-SL

Flints 26-L

## Twin Hoses

Hose highly resistant to abrasion and flame

**4300500**

1/4" x 1/4" twin hose 6 mt.  
with 9/16" fittings (red & green).



**TA8X8** (100MT)  
section mm. 8x8 (red & blue).

**TA6X6** (100MT)  
section mm. 6x6 (red & blue).



**TA8X8LP** (100 MT)  
section mm. 8x8  
for Propane and LPG



## STAND 2

### Empty stand

Is used to show Harris products.  
Can be fitted with products as  
per your requirements  
In stainless steel  
Length: 90 cm  
Depth: 45 cm  
Height: 200 cm





# HARRIS FILLER METAL SELECTION CHART

| METAL TO BE JOINED                                                                                                                                                                   | FILLER METALS          |                                                                                                                                                                         | MELTING RANGE |                | FLUIDITY RATING * | FLUXES                                                                                 | TORCHES & FLAMES **                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|-------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|                                                                                                                                                                                      | SOLDERS                | BRAZING FILLER METALS                                                                                                                                                   | SOLIDUS °F/°C | LIQUIDUS °F/°C |                   |                                                                                        |                                                                                         |
| Copper or Brass to Copper or Brass                                                                                                                                                   | Stay-Brite®            |                                                                                                                                                                         | 430/221       | 430/221        | 10                | Stay-Clean® Soldering Flux                                                             | Harris Powertorch® Air - Fuel Equipment                                                 |
|                                                                                                                                                                                      | Stay-Brite® 8          |                                                                                                                                                                         | 430/221       | 535/279        | 8                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      | Bridgit®               |                                                                                                                                                                         | 460/238       | 630/332        | 6                 | Bridgit® Water Soluble Paste Flux                                                      | Harris Powertorch® Air - Fuel Equipment                                                 |
|                                                                                                                                                                                      |                        | Blockade®                                                                                                                                                               | 1178/637      | 1247/674       | 7                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | Harris® 0                                                                                                                                                               | 1310/410      | 1475/802       | 5                 | No flux required for copper to copper joints with the phosphorus-bearing filler metals | Harris Powertorch® or Classic Oxy-Acetylene Equipment (reducing flame)                  |
|                                                                                                                                                                                      |                        | Stay-Silv® 5                                                                                                                                                            | 1190/643      | 1500/816       | 3                 | For brass and other alloys of copper, use Stay-Silv® White Brazing Flux                |                                                                                         |
| Copper or Brass to Steel or Stainless                                                                                                                                                |                        | Dynaflo®                                                                                                                                                                | 1190/643      | 1465/796       | 3                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | Stay-Silv® 6                                                                                                                                                            | 1190/643      | 1425/774       | 5                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | Stay-Silv® 15                                                                                                                                                           | 1190/643      | 1480/804       | 3                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      | Stay-Brite®            |                                                                                                                                                                         | 430/221       | 430/221        | 10                | Stay-Clean® Soldering Flux                                                             | Harris Powertorch® Air - Fuel Equipment                                                 |
|                                                                                                                                                                                      | Stay-Brite® 8          |                                                                                                                                                                         | 430/221       | 535/279        | 8                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | Safety-Silv® 56                                                                                                                                                         | 1145/618      | 1205/652       | 8                 | Stay-Silv® White Brazing Flux                                                          | Harris Powertorch® or Classic Oxy-Acetylene Equipment (slightly reducing flame)         |
| Steels or Stainless to Steels or Stainless                                                                                                                                           |                        | Safety-Silv® 40                                                                                                                                                         | 1250/677      | 1350/732       | 5                 | Stay-Silv® Black Flux for Stainless                                                    |                                                                                         |
|                                                                                                                                                                                      |                        | Safety-Silv® 45                                                                                                                                                         | 1225/663      | 1370/743       | 6,5               |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | Safety-Silv® 45T                                                                                                                                                        | 1195/646      | 1265/685       | 7                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      | Stay-Brite®            |                                                                                                                                                                         | 430/221       | 430/221        | 10                | Stay-Clean® Soldering Flux                                                             | Harris Powertorch® Air - Fuel Equipment                                                 |
|                                                                                                                                                                                      | Stay-Brite® 8          |                                                                                                                                                                         | 430/221       | 535/279        | 8                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | Safety-Silv® 56                                                                                                                                                         | 1145/618      | 1205/652       | 8                 |                                                                                        |                                                                                         |
| Steel or Stainless to Carbides                                                                                                                                                       |                        | Safety-Silv® 40                                                                                                                                                         | 1250/677      | 1350/732       | 5                 | Stay-Silv® White Brazing Flux                                                          | Harris Powertorch® or Classic Oxy-Acetylene Equipment (slightly reducing flame)         |
|                                                                                                                                                                                      |                        | Safety-Silv® 40Ni2                                                                                                                                                      | 1220/660      | 1435/779       | 4,5               | Stay-Silv® Black Flux for Stainless                                                    |                                                                                         |
|                                                                                                                                                                                      |                        | Safety-Silv® 45                                                                                                                                                         | 1225/663      | 1370/743       | 6,5               |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | Safety-Silv® 45 T                                                                                                                                                       | 1195/646      | 1265/685       | 7                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | Safety-Silv® 50N                                                                                                                                                        | 1220/660      | 1305/707       | 7                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      | <b>Not Recommended</b> |                                                                                                                                                                         |               |                |                   |                                                                                        |                                                                                         |
| Aluminium to Aluminium (1)<br>Aluminium to Copper or Brass (2)*<br>Aluminium to Steel or Stainless (2)*<br><br>*Aluminium dissimilar metal joints may subject to galvanic corrosion. |                        | Safety-Silv® 40Ni2                                                                                                                                                      | 1220/660      | 1435/779       | 4,5               | Stay-Silv® White Brazing Flux                                                          | Harris Powertorch® - or Classic Oxy-Acetylene Equipment (reducing flame)                |
|                                                                                                                                                                                      |                        | Safety-Silv® 50N                                                                                                                                                        | 1220/660      | 1305/707       | 7                 |                                                                                        |                                                                                         |
|                                                                                                                                                                                      | Alsolder® 500          |                                                                                                                                                                         | 391/119       | 482/250        | NOT RATED         | Stay-Clean® Aluminium Soldering Flux                                                   | Harris Powertorch® Air - Fuel Equipment                                                 |
|                                                                                                                                                                                      | Alcor®                 |                                                                                                                                                                         |               | 824/440        | NOT RATED         | No Flux Required                                                                       | Harris Powertorch® Air - Fuel Equipment                                                 |
|                                                                                                                                                                                      |                        | Albraze® 1070                                                                                                                                                           | 1070/577      | 1080/581       | NOT RATED         |                                                                                        |                                                                                         |
|                                                                                                                                                                                      |                        | (1) Can be directly brazed or soldered.<br>(2) Solder directly with Alsolder® 500, or coat steel side with aluminium and solder with Alcor® or Braze with Albraze® 1070 |               |                |                   | Albraze® 1070 Flux                                                                     | Harris Powertorch® - Fuel Equipment or Classic Oxy-Acetylene Equipment (reducing flame) |

\* The higher the fluidity rating, the faster the alloy flows within the melting range.

\*\* For best results and strong leakproof bonds, filler metals should be applied to the joint area only after the parts are heated to the proper brazing temperature. Oxy acetylene torches may be substituted for air-fuel but will require care to prevent melting of the base metals with this higher temperature flame.

Safety Information: WARNING: PROTECT yourself and others. Read and understand this information. FUMES AND GASES can be hazardous to your health. HEAT RAYS (INFRARED RADIATION) from flame or hot metal can injure eyes. Before use, read and understand the manufacturer's instructions. Material Safety Data Sheet (MSDS) and your employer's safety practices. Keep your head out of fumes. Use enough ventilation, exhaust at the flame, or both, to keep fumes and gases from your breathing zone and the general area. Wear correct eye, ear and body protection. See American National Standard Z49.1. Safety in Welding, Cutting, and Allied Processes, published by the American Welding Society, 550 N.W. LeJeune Road, Miami, Florida 33126. OSHA Safety Standards, available from the U.S. Government Office, Washington, DC 20402. STATEMENT OF LIABILITY - DISCLAIMER Any suggestion of product applications or results is given without representation or warranty, either expressed or implied. Without exception or limitation, there are no warranties of merchantability or of IMS for particular purpose or application. The user must fully evaluate every process and application in all aspects, including suitability, compliance with applicable law and non-infringement of the rights of others. The Harris Products Group and its affiliates shall have no liability in respect thereof.



**THE HARRIS PRODUCTS GROUP**

# **ALLOY CATALOG**

**BRAZING, SOLDERING, WELDING,  
FLUXES, & ACCESSORIES**



# CERTIFICATE **TUV NORD**

**Management system as per  
EN ISO 9001 : 2008**

In accordance with TÜV NORD CERT procedures, it is hereby certified that

**Harris Calorific International Sp. z o.o.  
ul. Strefowa 8  
PL / 58-200 Dzierżonów**

applies a management system in line with the above standard for the following scope:

**Production and sale of pressure and flow regulators for industrial gasses  
as well as torches and accessories for gas cutting, welding and brazing**

Certificate Registration No. **44 100 093102**  
Audit Report No.: **PL2862/2009**

Valid until: **2012-12-21**

Certification Body  
at TÜV NORD CERT GmbH

Katowice, 2009-12-22

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits.

TÜV NORD CERT GmbH

Langemarckstrasse 20

45141 Essen

[www.tuev-nord-cert.com](http://www.tuev-nord-cert.com)



TGA-ZM-07-06-00

## Useful data – Conversion table

### VOLUME

|               | cu in    | cu ft | cu yd  | cu cm     | cu meter | liter | US gal |
|---------------|----------|-------|--------|-----------|----------|-------|--------|
| 1 cu in       | 1        | -     | 16,387 |           |          | 0,02  |        |
| 1 cu ft       | 1.728,00 | 1     | 0,037  | 28.317    | 0,028    | 28,32 | 7,481  |
| 1 cu yd       | 46.656   | 27    | 1      | -         | 0,764    | 764,5 | 202    |
| 1 cu cm       | 0,06     | -     | -      | 1         | -        | 0,001 | -      |
| 1 cu meter    | 61.024   | 35,31 | 1,308  | 1.000.000 | 1        | 1.000 | 264,2  |
| 1 liter       | 61.024   | 0,035 | 1      |           | 0,001    | 1     | 0,264  |
| 1 gallon (US) | 231      | 0,133 | 0,004  | 3.785,40  | 0,003    | 3,785 | 1      |

### PRESSURE

|                | psi    | bar   | atm   | mm Hg  | inch Hg | inch water | kPa     |
|----------------|--------|-------|-------|--------|---------|------------|---------|
| 1 psi          | 1      | 0,068 | 0,068 | 51,713 | 2,035   | 27,68      | 6,895   |
| 1 bar          | 14,504 | 1     | 0,986 | 750,06 | 29,53   | 401,48,00  | 100     |
| 1 atm          | 14,696 | 1,013 | 1     | 760    | 29,921  | 406,8      | 101,325 |
| 1 mm Hg (torr) | 0,019  | 0,001 | 0,001 | 1      | 0,039   | 0,535      | 0,133   |
| 1 in Hg        | 0,491  | 0,033 | 0,033 | 25,4   | 1       | 13,596     | 3       |
| 1 in water     | 5,202  | 0,358 | 0,002 | 269,02 | 10,591  | 1          | 35,808  |
| 1 kPa          | 0,145  | 0,01  | 0,009 | 7,519  | 0       | 4,015      | 1       |

### WEIGHT

|              | grain | oz     | lb    | ton   | gram  | kg    | metric ton |
|--------------|-------|--------|-------|-------|-------|-------|------------|
| 1 grain      | 1     | 0,002  | -     | -     | 0,064 | -     | -          |
| 1 ounce      | 437,5 | 1      | 0,062 | -     | 28,35 | 0,028 | -          |
| 1 pound      | 7.000 | 16     | 1     | 0,000 | 453,6 | 0,453 | -          |
| 1 ton        |       | 32.000 | 2.000 | 1     |       | 907,2 | 0,907      |
| 1 gram       | 15,43 | 0,04   | -     | -     | 1     | 0,001 | -          |
| 1 kilogram   |       | 35,274 | 2,205 | -     | 1.000 | 1     | 0,001      |
| 1 metric ton | -     | 35,274 | 2.205 | 1,102 | -     | 1.000 | 1          |

### FLOW

|           | scc/min | Lpm    | SCFM  | l/h    | Nm³/h | SCFH   |  |
|-----------|---------|--------|-------|--------|-------|--------|--|
| 1 scc/min | 1       | 0,001  | 0,06  |        |       | 0,002  |  |
| 1 Lpm     | 1.000   | 1      | 0,035 | 60     | 0,06  | 2,119  |  |
| 1 SCFM    | 28.317  | 26     | 1     | 1.699  | 1,699 | 60     |  |
| 1 l/h     | 16,667  | 0,016  | 1     |        | 0,001 | 0,035  |  |
| 1 Nm³/h   | 16.667  | 16,667 | 0,589 | 1.000  | 1     | 35,314 |  |
| 1 SCFH    | 471,95  | 0,472  | 0,016 | 28,317 | 0,028 | 1      |  |

SCFM = Standard Cubic Feet per Minute

scc/min = Standard Cubic Centimeters per Minute

SCFH = Standard Cubic Feet per Hour

Lpm = Liter per Minutes

Nm³/h = Normal Cubic Meter per Hour

### ENERGY

|              | BTU        | cal    | watts-hour |  |  |  |  |
|--------------|------------|--------|------------|--|--|--|--|
| 1 BTU        | 1          | 251,98 | 0,293      |  |  |  |  |
| 1 cal        | 3,968x10-3 | 1      | -          |  |  |  |  |
| 1 watts-hour | 3,414      | -      | 1          |  |  |  |  |

## GAS CONVERSION FACTORS

AIR ➤ to

|                                                                   | FACTOR | INVERSE |
|-------------------------------------------------------------------|--------|---------|
| ACETYLENE (C <sub>2</sub> H <sub>2</sub> )                        | 1,050  | 0,952   |
| ARGON (Ar)                                                        | 0,851  | 1,175   |
| ARGON/CO <sub>2</sub> (75% Ar – 25% CO <sub>2</sub> )             | 0,833  | 1,200   |
| NITROGEN (N <sub>2</sub> )                                        | 1,020  | 0,980   |
| CARBON DIOXIDE (CO <sub>2</sub> )                                 | 0,808  | 1,238   |
| SULFUR DIOXIDE (SO <sub>2</sub> )                                 | 0,660  | 1,515   |
| BUTANE (C <sub>4</sub> H <sub>10</sub> )                          | 0,700  | 1,429   |
| HELIUM (He)                                                       | 2,695  | 0,371   |
| ETHANE (C <sub>2</sub> H <sub>6</sub> )                           | 0,980  | 1,020   |
| ETHYLENE (C <sub>2</sub> H <sub>4</sub> )                         | 1,010  | 0,990   |
| FORMIER GAS (90% N <sub>2</sub> – 10% H <sub>2</sub> )            | 1,300  | 0,769   |
| HYDROGEN (H <sub>2</sub> )                                        | 3,810  | 0,262   |
| METHANE (CH <sub>4</sub> )                                        | 1,350  | 0,741   |
| METHYLACETYLENE PROPADIENE (MPS – C <sub>3</sub> H <sub>4</sub> ) | 1,238  | 0,808   |
| CARBON OXIDE (CO)                                                 | 1,020  | 0,980   |
| NEON (Ne)                                                         | 1,200  | 0,833   |
| OXYGEN (O <sub>2</sub> )                                          | 0,950  | 1,053   |
| PROPANE (C <sub>3</sub> H <sub>8</sub> )                          | 0,800  | 1,250   |
| PROPYLENE (C <sub>3</sub> H <sub>6</sub> )                        | 1,237  | 0,808   |
| NITROGEN PROTOXIDE (N <sub>2</sub> O)                             | 0,810  | 1,235   |

### WARRANTY

The Company warrants each new product or part thereof to be free from defects in workmanship and material.

If any part thereof shall prove to be defective in workmanship or material within one year from the date of purchase by the user, as a result of normal use and service for purposes for which it was intended, as determined by the Company, the Company will replace the part or parts so determined by it to be defective with new parts, at Company's cost and expense.

This warranty is exclusive, and there are no other warranties or representations, expressed or implied.

### NOTE:

*We are constantly improving our products.*

*Harris Calorific therefore reserves the right to make changes in specifications without notice.*

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Harris Calorific International Sp. z o.o.  
ul. Strefowa 8 - 58-200 Dzierżonów - Poland  
Tel: +48 74 646 23 52 - 3  
fax: +48 74 646 23 43  
[marketing@harriscal.it](mailto:marketing@harriscal.it)  
[www.harrisproductsgroup.com](http://www.harrisproductsgroup.com)

