



Welding products

EDITION 1 2008

GCE Group GCE world-wide: http://www.gcegroup.com



Founded in 1978, GCE is now one of the world's leading manufacturers of gas equipment, employing over 1,000 people in its production facilities in Europe and Asia. The company has grown through a combination of a dedicated workforce and an in depth knowledge of pressure and flow control, able to support customers in their demands

for safe and reliable products at competitive prices.











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"ORBIT" Lightweight welding & cutting blowpipe

A new superbly constructed welding & cutting blowpipe designed with safety in mind and engineered from highest quality materials to complement the operator in production or light gauge maintenance welding & cutting. The shank is common to both welding and cutting heads, the same quick, positive and leak-free means of attachment being used for both. The shank is manufactured from a solid drilled aluminium forging thus avoiding the necessity of internal tubes and giving added safety.

WELDING

8166

62017

The shank can be used with either lightweight swaged nozzles or D.H. solid copper tips + brass neck according to the operators preference, enabling precise flame control and up to 8mm (5/16") welding capacity in steel. CUTTING

The newly designed lightweight cutting attachment uses the nozzle mix principle and is thus highly resistant to backfire and flashback. Although of a lightweight design, it is engineered from solid brass castings and silver soldered tubes to provide an extremely robust construction. Using Orbit A-FN type nozzles and Acetylene fuel gas the orbit has a cutting capacity of over 20mm.

BUTBRO torches and nozzles conform to BS EN ISO 5172

| HOSE CONNECTIONS |
|------------------|
| WELDING CAPACITY |
| CUTTING CAPACITY |
| WELDING NOZZLES |
| |

CUTTING NOZZLES

1/4" BSP (Other threads available on request)
8mm
20mm
Lightweight, Swaged Nozzles Size 1-25
D.H. Solid Copper Tips Sizes 1-25
ORBIT A-FN Cutting Nozzles
ORBIT A-SFN Sheet Metal Nozzles
(Full Details of nozzles on page 13/14/15)





81000

ORBIT COMBINED WELDING & CUTTING OUTFIT 81000 ORBIT L/W WELDING OUTFIT 81903



Quantity

Quantity

ORBIT



| | | Quantity |
|-------|-----------------------------|----------|
| 81222 | ORBIT shank | 1 |
| 81444 | ORBIT cutting attachment | 1 |
| 81025 | ORBIT mixer | 1 |
| 62017 | ORBIT thread DH neck | 1 |
| 81666 | ORBIT heating nozzle & neck | 1 |

ORBIT COMBINED WELDING & CUTTING OUTFIT

Consisting of:

ORBIT Shank, Mixer & Cutting Attachment, L/W Nozzles Size 2, 5, 7, 10, 13, 18, 25, 3/64" A-FN Type Cutting Nozzle, Nozzle Cleaning Outfit, Outfit Spanner, Data Cards, Plastic Carrying Case

| 81000 | ORBIT combined outfit | 1 |
|-------|-----------------------|---|
| | | |

ORBIT L/W WELDING OUTFIT

Consisting of: ORBIT Shank & Mixer, L/W Nozzles Size 1, 2, 3, 5, 7, 10, 13, 25, Hose Check Valves, Outfit Spanner, Data Card, Plastic Carrying Case

| | | Quantity |
|-------|------------------|----------|
| 81903 | ORBIT L/W outfit | 1 |
| | | |

MODEL "O" TYPE lightweight blowpipe



This extremely lightweight blowpipe has excellent balance and handling qualities. It can be used with either acetylene or hydrogen and is supplied complete with neck and a set of tips. Designed for very fine welding and brazing applications, including the fusion of thin gauge sheet metal up to 1.5mm (1/16") and lead welding. Suitable for:

Jewellery, gold and silver work. Lead, zinc and thin section aluminium welding. Electrical and electronic engineering. Dental composition and repairs. Heating, ventilation and refrigeration work. Light fabrication and Laboratory work.

| 47000 | Standard model "O" blowpipe with neck & 5 tips | 1 |
|-------|--|---|
| 47666 | Model "O" neck | 1 |

Technical Data

| Hose connections: | 1/4″ BSP |
|-------------------|---|
| | |
| Welding capacity: | 1,5 mm |
| | |
| Welding nozzles: | Model "0" nozzle sizes 1-5 (Part N°47100-47500) |

CADDYPAK







The BUTBRO CADDYPAK provides all the qualities of conventional Oxy-Acetylene welding cutting and heating without heavy cumbersome full size cylinders. Weighing only 33 Kgs it is totally portable making it ideal for many applications including: FARM REPAIRS

CONSTRUCTION SITEWORK MOBILE REPAIR SERVICES FACTORY MAINTENANCE GARAGE & MOTOR TRADE DIY APPLICATIONS

The robust trolley has been re-designed to give added stability and has an adjustable height clamp to accommodate taller cylinders. Storage for the outfit case is provided on the rear of the trolley. The handle is retractable to enable the whole kit to be carried in a car boot.

The BUTBRO ORBIT complete welding and cutting Caddypak provides welding capacity up to 8mm (5/16") and cutting capacity up to 25mm (1") and heating with acetylene. Just add the cylinders and the kit is ready for immediate use. N.B. CYLINDERS NOT INCLUDED. BUTBRO torches and nozzles conform to BS EN ISO 5172.

The outfit comprises:

Caddypak

ORBIT Shank, Mixer & Cutting Attachment, Single Stage, 2 Gauge Oxygen Regulator, Single Stage, 2 Gauge Acetylene Regulator, Slimguard Oxygen Flashback Arrestor, Slimguard Acetylene Flashback Arrestor, 5 Metres Twin Line Fitted Hose, L/W Nozzles Size 2, 5, 7, 10, 13, 3/64" A-FN Type Cutting Nozzle, ASFN Type Sheet Metal Cutting Nozzle, ORBIT Heating Nozzle & Neck, Sunfire Sparklighter, Nozzle Cleaner Outfit, Outfit Spanner, Combination Spanner, Goggles, Data Card, Plastic Carrying Case, Caddypak Cylinder Trolley



Quantity

MK 3A/4/5



MK3A/4/5 COMBINED WELDING & CUTTING TORCH FOR MEDIUM DUTY APPLICATIONS



The BUTBRO MK3A /4/5 is a high pressure, sturdily constructed and well balanced welding and cutting torch replacing the Butbro MK 2, together with additional improved progressive features. Each component (shank, mixer, cutting attachment) is inter-changeable with other leading makes of type 3/4/5 equipment.

It has front mounted colour coded control valves, employing stainless valve spindles fitted with both '0' ring and nylon seals; providing fine adjustment and leak-free conditions.

The shank is common to both welding and cutting heads, the same guick positive positioning and leak-free means of attachment being used for both.BUTBRO torches and nozzles conform to BS EN ISO 5172

WELDING AND HEATING

Designed for welding work from 18swg to over 1" thickness using type 3/4/5 swaged nozzles sizes 1 - 90 litres. The mixer seats on serrated toothed faces allowing the operator a selection of positive nozzle positioning through 360°. Also can be used for heating, with either acetylene or propane heating nozzles, together with a heating neck.

CUTTING

The cutting head is nozzle mixing, enabling the operator to use either acetylene or propane fuel gases by fitting the appropriate nozzle. A range of ANM and PNM nozzles are available for clean efficient cutting of material thickness from sheet metal to 50mm (2") using both acetylene, and propane fuel. It's versatility allows gouging, flame cleaning etc., to be supplied to customer's requirements.

PROPANE SUPER HEATING

Using a propane super heating mixer and 10 " or 28 " stainless steel super heating neck an intense heat output of up to 600,000 Btu/H is obtained. Ideal for heating castings and similar large articles.

| | | Quantity |
|-------|--|----------|
| 77222 | MK3A/4/5 shank | 1 |
| 77333 | MK3A/4/5 welding mixer | 1 |
| 77555 | MK3A/4/5 propane superheating mixer | 1 |
| 77444 | MK3A/4/5 cutting attachment | 1 |
| 68666 | MK 3 brass heating neck (for AHT heating nozzles) | 1 |
| 68777 | MK 3 long brass heating neck (for AHT heating nozzles) | 1 |
| 78666 | 10" stainless steel super heating neck | 1 |
| 78777 | 28" stainless steel super heating neck | 1 |

Technical Data

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| 3/8" (other threads available on request) |
|--|
| 25 mm |
| 50 mm |
| Type 2/3/4/5 Swaged Welding Nozzles Sizes 1-90 |
| ANM (Acetylene) Cutting Nozzles |
| PNM (Propane) Cutting Nozzles |
| ASNM Sheet Metal Nozzles |
| AGNM Gouging Nozzles |
| ARCNM Rivet Cutting Nozzles |
| AHT (Acetylene) Heating Nozzles |
| Super Heating Nozzles (Propane) Sizes 1H-5H |
| |

OXY-PROPANE superheating necks

Two superheating necks are available to accommodate the range of five super heating nozzle sizes 1H to 5H which guarantee an immediate and highly intense heat output from 70,000 to 600,000 Btu/h on castings and large articles.

| | | Quantity |
|-------|-----------------------|----------|
| 78666 | Superheating 10" neck | 1 |
| 78777 | Superheating 28" neck | 1 |
| | | |

Technical Data

Heating Nozzles:

Super Heating Nozzles 1H-5H (1/2" x 25 UNS)



Typical Assemblies - MK3A/4/5 SYSTEM



MK3A/4/5 COMBINED WELDING & CUTTING OUTFIT



77000

BUTBRO MK3A /4/5 Shank, Mixer & Cutting Attachment, Type 3 Swaged Welding Nozzles Size 2, 5, 7, 10, 13, 18, 25, 1/16" ANM Cutting Nozzle, 3/64" ANM Cutting Nozzle, Nozzle Cleaner Outfit, Headnut Spanner, Data Card, Plastic Carrying Case



MK3A/4/5 combined outfit

Quantity

MK3A/4/5 COMPLETE WELDING & CUTTING OUTFIT



Consisting of:

BUTBRO MK3A /4/5 Shank, Mixer & Cutting Attachment, Single Stage, 2 Gauge Oxygen Regulator, Single Stage, 2 Gauge Acetylene Regulator, Slimguard Oxygen Flashback Arrestor, Slimguard Acetylene Flashback Arrestor, 5 Metres 1/4 " Bore Twin Line Fitted Hose, Type 3 Swaged Welding Nozzles Size 2, 5, 7, 13, 1/16" ANM Cutting Nozzle, Sunfire Spark lighter, Nozzle Cleaner Outfit, Combination Spanner, Spindle Key, Headnut Spanner, Goggles, Data Card, Plastic Carrying Case

| | | Qualitity |
|---------|----------------------------|-----------|
| 77778FB | With flashback arrestor | 1 |
| 77777 | Without flashback arrestor | 1 |

Cutting torches and accessories



UNIVERSAL

BUTBRO cutters are engineered from solid brass stampings with silver soldered joints and provide a lightweight, well balanced, durable cutter giving reliability.

With rear mounted valves and cutting lever and round handle.

Cutter employs the nozzle mix principle, in which the combustible gas mixing is confined to the cutting nozzle. This results in a cutter which is highly resistant to backfire and flashback. A wide range of accessories are available for this cutter, such as attachments for heating, gouging, sheet metal nozzles, circle attachments, spade guide, power attachments, etc., to give maximum possible versatility. BUTBRO torches and nozzles conform to BS EN ISO 5172.

Rear mounted valves

| | Length | Head Angles | Quantity |
|--------|--------------|-------------|----------|
| 88090C | 18″ (460 mm) | 90° | 1 |
| 88091C | 18″ (460 mm) | 75° | 1 |
| 88092C | 18″ (460 mm) | 180° | 1 |
| 88093C | 27″ (700 mm) | 90° | 1 |
| 88094C | 27″ (700 mm) | 75° | 1 |
| 88095C | 27″ (700 mm) | 180° | 1 |
| 88096C | 36″ (900 mm) | 90° | 1 |
| 88097C | 36" (900 mm) | 75° | 1 |
| 88098C | 36" (900 mm) | 180° | 1 |

Technical Data

| Hose connections: | 3/8" BSP (other threads available on request) |
|-------------------|---|
| Cutting capacity: | 300 mm (12") |
| Cutting nozzles: | ANM (Acetylene) Cutting Nozzles |
| | PNM (Propane) Cutting Nozzles |
| | ASNM Sheet Metal Nozzles |
| | AGNM Gouging Nozzles |
| | ARCNM Rivet Cutting Nozzles |
| Gas: | Acetylene or Propane |

Steelmaster 2

valves



Forward mounted

BUTBRO cutters are engineered from solid brass stampings with silver soldered joints and provide a lightweight, well balanced, durable cutter giving reliability.

With forward mounted valves and cutting lever for additional safety and flat handle.

Cutter employs the nozzle mix principle, in which the combustible gas mixing is confined to the cutting nozzle. This results in a cutter which is highly resistant to backfire and flashback. A wide range of accessories are available for this cutter, such as attachments for heating, gouging, sheet metal nozzles, circle attachments, spade guide, power attachments, etc., to give maximum possible versatility. BUTBRO torches and nozzles conform to BS EN ISO 5172.

| | Length | Head Angles | Quantity |
|-------|--------------|-------------|----------|
| 87090 | 18″ (460 mm) | 90° | 1 |
| 87091 | 18″ (460 mm) | 75° | 1 |
| 87096 | 36″ (900 mm) | 90° | 1 |
| 87097 | 36" (900 mm) | 75° | 1 |

Technical Data

| Hose connections: | 3/8" BSP (other threads available on request) |
|-------------------|---|
| Cutting capacity: | 300 mm (12") |
| Cutting nozzles: | ANM (Acetylene) Cutting Nozzles |
| | PNM (Propane) Cutting Nozzles |
| | ASNM Sheet Metal Nozzles |
| | AGNM Gouging Nozzles |
| | ARCNM Rivet Cutting Nozzles |
| Gas: | Acetylene or Propane |



Double roller guide



Large circle cutting attachment

| * | Cut accurate It is adjustab | circles with this versatile attachment. le to cut circles from 60mm (2 1/2″) up to 425 (17″) Dia. | Quantity |
|---|--------------------------------|--|----------|
| | 70513 | Large circle cutting attachment | 1 |

Small circle cutting attachment



Cutter head nuts

| Quantity 9 427 210 Head nut 7/8"* 20 UNS 1 For use with Steelmaster 2 cutters. Quantity Quantity 9 427 220 Head nut M 22 x 1.5 1 | For use with NM2 | 50 cutters and type 3/ | 4/5 cutting attachments | |
|--|-------------------|------------------------|-------------------------|----------|
| 9 427 210 Head nut 7/8" * 20 UNS 1 For use with Steelmaster 2 cutters. Quantity 9 427 220 Head nut M 22 x 1.5 1 | | | | Quantity |
| For use with Steelmaster 2 cutters. Quantity 9427 220 Head nut M 22 x 1.5 1 | 9 427 210 | Head nut | 7/8"* 20 UNS | 1 |
| Quantity 9427 220 Head nut M 22 x 1.5 1 | For use with Stee | lmaster 2 cutters. | | |
| 9 427 220 Head nut M 22 x 1.5 1 | | | | Quantity |
| III EE A HO | 9 427 220 | Head nut | M 22 x 1.5 | 1 |

Mark 4 Gas Economiser



Considerable savings in gas costs can be achieved by the use of a gas economiser in production welding and brazing. The torch is held on the hooked arm when not in use which shuts off gas supply to the torch. When unhooked the torch can be immediately re-ignited from the pilot light without having to re-adjust the valves. 3/8" BSP connections.

| | | Quantity |
|--|------|----------|
| | | |

128 257 5 Mark 4 Gas Economiser



UNIVERSAL air propane equipment

Ideal for plumbing, heating, and ventilation trades, the Butbro air propane shank has adjustable pilot flame and 3/8"BSP inlet. Spot/turbo(copper pipe)/special burners connect directly to the shank for all plumbing applications. Heating heads are connected via stainless tubes for larger heating jobs such as road working/roofing/bitumen heating.

Shank with gas saver UNIVERSAL



Combined shut-off valve and adjusting knob.

Use: designed for use with soldering, brazing and heating torches UNIVERSAL

| | Torch, tube connection | Packaging | Quantity |
|-----------|------------------------|-----------|----------|
| 076 321 6 | M14 x 1 | blister | 1 |

Technical Data

| Working pressure: | up to 4 bar |
|------------------------|-------------|
| Adjustable pilot flame | |
| Capacity: | 12 kg/h |
| Length: | 195 mm |
| Weight: | 0,36 kg |
| Gas: | PB |
| Hose connection: | G 3/8″LH |

Paint remover fan burner UNIVERSAL



Use: for removing old work and localised heating.

| | Connection | Quantity |
|-------------------|---------------|----------|
| 23705 | M14 x 1 | 1 |
| Technical Data | | |
| Working pressure: | 1,5 - 2,0 bar | |
| Consumption PB: | 220 g/h | |
| Output: | 2,83 kW | |
| Length/width: | 170/40 mm | |
| Weight: | 0,19 kg | |

Soldering torch B-UNIVERSAL



Use: for soldering and brazing; for point heating.

| | Connection | | Туре | Quantity |
|-------------------|------------|------------------|------------------|----------|
| 548 800 763 223 | M14 x 1 | | B-5 mm | 1 |
| 548 800 763 224 | M14 x 1 | | B-7 mm | 1 |
| | | | | |
| Technical Data | | B-5 mm | B-7 mm | |
| Working pressure: | | 1,5 - 2,5 bar | 1,5 - 2,5 bar | |
| Consumption PB: | | 54 - 66 g/h | 162 - 210 g/h | |
| Output: | | 0,69 - 0,85 kW/h | 2,08 - 2,70 kW/h | |
| Length: | | 120 mm | 138 mm | |
| Weight: | | 0,09 kg | 0,11 kg | |
| Gas: | | P, PB | Р, РВ | |



Brazing torch TURBO-UNIVERSAL

| Use: for soldering and braz | ing, especially of copper | piping systems | | | |
|-----------------------------|---------------------------|----------------|-------|----------------|----------------|
| | Connect | ion | Туре | For Pipe max | Quantity |
| 548 800 763 225 | M14 x 1 | | T Ø12 | 12 mm | 1 |
| 4903 | M14 x 1 | | TØ14 | 18 mm | 1 |
| 4911 | M14 x 1 | | T Ø17 | 22 mm | 1 |
| 548 800 763 228 | M14 x 1 | | T Ø20 | 28 mm | 1 |
| | | | | | |
| Technical Data | T Ø12 | T Ø14 | | T Ø17 | T Ø20 |
| Working pressure: | 1,5 - 2,5 bar | 1,5 - 2,5 bar | | 1,5 - 2,5 bar | 1,2 - 2,5 bar |
| Consumption PB: | 63 - 112 g/h | 210 - 338 g/h | | 272 - 384 g/h | 440 - 550 g/h |
| Output: | 0,81 - 1,44 kW | 2,70 - 4,35 kW | | 3,50 - 4,94 kW | 5,66 - 7,08 kW |
| Length: | 155 mm | 178 mm | | 184 mm | 190 mm |
| Weight: | 0,13 kg | 0,15 kg | | 0,17 kg | 0,19 kg |
| Gas: | Р, РВ | P, PB | | P, PB | P, PB |
| For copper pipe: | 12 mm | 18 mm | | 22 mm | 28 mm |
| | | | | | |

Heating torch GT-UNIVERSAL



Use: for heating of pipes 1/2" or 1"; for pipe soldering and brazing jobs; preheating before tube bending. Use with neck tube.

| | | Connection | | Quantity |
|-------------------|-------|---------------|---------------|----------|
| 548 914 094 500 | GT ½″ | M14 x 1 | | 1 |
| 21089 | GT 1″ | M14 x 1 | | 1 |
| | | | CT 4// | |
| lechnical Data | | GT ½″ | GI I" | |
| Working pressure: | | 1,5 - 2,0 bar | 1,5 - 2,0 bar | |
| Consumption PB: | | 350 g/h | 450 g/h | |
| Output: | | 4,50 kW | 5,79 kW | |
| Length: | | 190 mm | 190 mm | |
| Weight: | | 0,20 kg | 0,24 kg | |
| Gas: | | Р, РВ | P, PB | |

Shrinkwrap torch S-UNIVERSAL

Use: available in two sizes for shrinkwrapping.

| | | Connection | | Quantity |
|-------------------|-----------|------------|-----------|----------|
| 32003 | S - 30 mm | M14 x 1 | | 1 |
| 33670 | S - 40 mm | M14 x 1 | | 1 |
| | | | | |
| Technical Data | | S - 30 mm | S - 40 mm | |
| Working pressure: | | 1,5 bar | 1,5 bar | |
| Consumption PB: | | 1 900 g/h | 2 500 g/h | |



Heating torch H-UNIVERSAL



Use: for industrial heating; roofing and construction work. Use with neck tube. Type Ø Quantity M20 x 1 548 800 763 217 30 mm 1 40 mm 548 800 763 218 1 4069 45 mm 548 800 763 219 50 mm 1 548 800 763 220 60 mm 1

| Technical Data | H Ø30 | H Ø40 | H Ø45 |
|-------------------------------|---------------------------------------|--|-----------------|
| Working pressure: | 1,0 - 4,0 bar | 1,0 - 4,0 bar | 1,0 - 4,0 bar |
| Consumption PB: | 664 - 1056 g/h | 1200 - 1902 g/h | 2500 - 5300 g/h |
| Output: | 8,55 - 13,59 kW | 15,44 - 24,48 kW | 37,9 - 76,2 kW |
| Length: | 88 mm | 95 mm | 100 mm |
| Weight: | 0,12 kg | 0,21 kg | 0,25 kg |
| Gas: | Р, РВ | P, PB | P, PB |
| Technical Data | H Ø50 | H Ø60 | |
| Working pressure: | 1,0 - 4,0 bar | 1,0 - 4,0 bar | |
| Consumption PB: | 3780 - 7590 a/h | 5030 - 9744 a/h | |
| | 5700 7550 g/m | 5656 57 H g/H | |
| Output: | 48,68 - 97,69 kW | 64,74 - 125,41 kW | |
| Output: Length: | 48,68 - 97,69 kW 115 mm | 64,74 - 125,41 kW 125 mm | |
| Output: Length: Weight: | 48,68 - 97,69 kW 115 mm 0,30 kg | 64,74 - 125,41 kW 125 mm 0,34 kg | |

Neck tube UNIVERSAL



Manufactured in stainless steel.

Use: designed to connect UNIVERSAL heating torches to shank UNIVERSAL. Head connection M 20x1 MALE.

Torch connection M 14 x 1 FEMALE.

| | Туре | Connection | Weight | Packaging | Quantity |
|-----------------|---------|------------|---------|-------------|----------|
| 2279 | 130 mm | M14 x 1 | 0,11 kg | plastic bag | 1 |
| 548 809 381 300 | 230 mm | M14 x 1 | 0,14 kg | plastic bag | 1 |
| 548 809 381 310 | 350 mm | M14 x 1 | 0,19 kg | plastic bag | 1 |
| 548 809 394 880 | 500 mm | M14 x 1 | 0,25 kg | plastic bag | 1 |
| 548 809 381 320 | 600 mm | M14 x 1 | 0,29 kg | plastic bag | 1 |
| 548 809 381 330 | 750 mm | M14 x 1 | 0,35 kg | plastic bag | 1 |
| 548 809 381 340 | 1000 mm | M14 x 1 | 0,44 kg | plastic bag | 1 |

Support H-UNIVERSAL



Use: Allows hot heating torches to be rested safety on a horizontal surface. Assembled onto the neck tube of the torch.

| | Weight | Quantity |
|-------|---------|----------|
| 12476 | 0,15 kg | 1 |

Cutting nozzles



ANM short pattern



6 heating holes, 76 mm long. Use: Acetylene fuel gas.

| | Range | Size |
|-------|--------------|------------|
| 10132 | 3 - 6 mm | size 1/32" |
| 10364 | 5 - 12 mm | size 3/64" |
| 10116 | 10 - 75 mm | size 1/16" |
| 10564 | 70 - 100 mm | size 5/64" |
| 10332 | 90 - 150 mm | size 3/32" |
| 10764 | 140 - 200 mm | size 7/64" |
| 10018 | 190 - 300 mm | size 1/8" |

ANME long pattern



6 heating holes, 88 mm long. Use: Acetylene fuel gas.

| | Range | Size |
|-------|--------------|------------|
| 45132 | 3 - 6 mm | size 1/32" |
| 45364 | 5 - 12 mm | size 3/64" |
| 45116 | 10 - 75 mm | size 1/16" |
| 45564 | 70 - 100 mm | size 5/64" |
| 45332 | 90 - 150 mm | size 3/32" |
| 45764 | 140 - 200 mm | size 7/64″ |
| 45018 | 190 - 300 mm | size 1/8" |

PNM short pattern



9 spline inner, 76 mm long. Use: Propane fuel gas.

| | Range | Size |
|-------|--------------|------------|
| 18132 | 3 - 6 mm | size 1/32″ |
| 18364 | 5 - 12 mm | size 3/64" |
| 18116 | 10 - 75 mm | size 1/16" |
| 18564 | 70 - 100 mm | size 5/64" |
| 18332 | 90 - 150 mm | size 3/32″ |
| 18764 | 140 - 200 mm | size 7/64" |
| 18018 | 190 - 300 mm | size 1/8" |

PNME long pattern



9 spline inner, 88 mm long. Use: Propane fuel gas.

| | Range | Size |
|-------|--------------|------------|
| 46132 | 3 - 6 mm | size 1/32" |
| 46364 | 5 - 12 mm | size 3/64" |
| 46116 | 10 - 75 mm | size 1/16" |
| 46564 | 70 - 100 mm | size 5/64" |
| 46332 | 90 - 150 mm | size 3/32" |
| 46764 | 140 - 200 mm | size 7/64" |
| 46018 | 190 - 300 mm | size 1/8" |



AGNM gouging nozzles



| 94 mm long. Use: Acetylene fuel gas. | | |
|---|-----------------------------------|-----------------|
| | Range | Size |
| 15013 | 6 - 8 mm Width x 3 - 9 mm Depth | size 13 - 1/32" |
| 15019 | 8 - 11 mm Width x 6 - 11 mm Depth | size 19 - 3/64" |
| 15025 | 9 - 12 mm Width x 9 - 12 mm Depth | size 25 - 1/16" |

ASNM sheet metal nozzle



| - | 88 mm long. Use: Acetylene fuel gas. | | |
|---|---|----------|------|
| | | Range | Size |
| | 14000 | 0 - 3 mm | 0,3 |
| | | | |

ARCNM rivet cutting nozzle



Use: Acetylene fuel gas

| 111 mm | use. Acceptence fuel gas. | | |
|--------|---------------------------|---------|------|
| | | Range | Size |
| | 16000 | ø 50 mm | 1/16 |
| | | | |

AFN type (ORBIT) cutting nozzles

| - | 51 mm 🕞 | |
|---|------------------|--|
| • | $ \rightarrow $ | |

| Use: Acetylene fuel gas. | | |
|--------------------------|------------|------------------|
| | Range | Size |
| 13000 | 0 - 3 mm | Sheet Metal ASFN |
| 13132 | 3 - 6 mm | size 1/32" |
| 13364 | 6 - 20 mm | size 3/64" |
| 13116 | 20 - 30 mm | size 1/16" |

PHS/VVC machine cutting nozzles - chromed - for use with PROPANE

| - | 62 mm | |
|---|-------|---|
| | | _ |
| | | |
| П | | |

| | Size | Cutting thickness | Cutting oxygen pressure | Cutting speed |
|-----------|-------|----------------------|----------------------------|------------------|
| 07 697 11 | 5/0 | 1-4 mm | 3 bar | 750 mm/min |
| 07 697 12 | 4/0 | 4-6 mm | 3 bar | 700 mm/min |
| 07 697 13 | 3/0 | 6-9 mm | 5 bar | 650 mm/min |
| 07 697 14 | 00 | 9-12 mm | 5 bar | 630 mm/min |
| 07 697 15 | 0 | 12-20 mm | 6 bar | 600 mm/min |
| 07 697 16 | 0 1⁄2 | 20-35 mm | 7 bar | 550 mm/min |
| 07 697 17 | 1 | 35-60 mm | 7 bar | 480 mm/min |
| 07 697 18 | 1 1⁄2 | 60-75 mm | 7 bar | 310 mm/min |
| 07 697 19 | 2 | 75-125 mm | 7 bar | 280 mm/min |
| 07 697 20 | 2 1⁄2 | 125-150 mm | 6,5 bar | 200 mm/min |
| 07 697 21 | 3 | 150-175 mm | 7 bar | 180 mm/min |
| 07 697 22 | 4 | 175-200 mm | 6,5 bar | 180 mm/min |
| 07 697 23 | 5 | 200-225 mm | 6 bar | 150 mm/min |
| 07 697 24 | 5 1⁄2 | 225-250 mm | 6 bar | 130 mm/min |

Welding & heating nozzles



Lightweight swaged copper nozzles



For use on Orbit torch 1/4" x 26 TPI thread.

| | Range | Size |
|-------|------------|---------|
| 62401 | to 1 mm | size 1 |
| 62402 | 1 - 1,5 mm | size 2 |
| 62403 | 1,5 - 2 mm | size 3 |
| 62405 | 2 - 2,5 mm | size 5 |
| 62407 | 2,5 - 3 mm | size 7 |
| 62410 | 3 - 4 mm | size 10 |
| 62413 | 4 - 5 mm | size 13 |
| 62418 | 5 - 6 mm | size 18 |
| 62425 | 6 - 8 mm | size 25 |

Type 2/3/4/5 swaged copper tube nozzles



For use on Type 2/3/4/5 Welding torch 7/16" x 27 TPI Thread (Sizes 1-90 Type 2 & 3), 31/64" x 27 TPI Thread (Sizes 45-90 using Heavy Duty Mixer)

| | Range | Size | |
|-------|------------|---------|--|
| 68501 | to 1 mm | size 1 | |
| 68502 | 1 - 1,5 mm | size 2 | |
| 68503 | 1,5 - 2 mm | size 3 | |
| 68505 | 2 - 2,5 mm | size 5 | |
| 68507 | 2,5 - 3 mm | size 7 | |
| 68510 | 3 - 4 mm | size 10 | |
| 68513 | 4 - 5 mm | size 13 | |
| 68518 | 5 - 6 mm | size 18 | |
| 68525 | 6 - 8 mm | size 25 | |
| 68535 | 8 - 10 mm | size 35 | |
| 68545 | 10 - 13 mm | size 45 | |
| 68555 | 13 - 19 mm | size 55 | |
| 68570 | 19 - 25 mm | size 70 | |
| 68590 | over 25 mm | size 90 | |

D.H. type solid copper tips

For use with Orbit torch, 5/16" x 25 TPI thread. Use in conjunction with DH neck 62017.

| | Range | Size |
|-------|------------|---------|
| 62301 | to 1 mm | size 1 |
| 62302 | 1 - 1,5 mm | size 2 |
| 62303 | 1,5 - 2 mm | size 3 |
| 62305 | 2 - 2,5 mm | size 5 |
| 62307 | 2,5 - 3 mm | size 7 |
| 62310 | 3 - 4 mm | size 10 |
| 62313 | 4 - 5 mm | size 13 |
| 62318 | 5 - 6 mm | size 18 |
| 62325 | 6 - 8 mm | size 25 |



Model 'O' brass welding tips



For use on Model 'O' Torch.

| | Size | |
|-------|--------|--|
| 47100 | size 1 | |
| 47200 | size 2 | |
| 47300 | size 3 | |
| 47400 | size 4 | |
| 47500 | size 5 | |
| | | |

Superheating nozzles



For use on type 3/4/5 blowpipe in conjunction with heavy duty mixer 77555 and necks 78666 or 78777. Can also be used with NM250/Steelmaster in conjunction with superheating adaptor 0768929. Use: propane fuel gas.

| 78991 | 1H | 72000 - 163 000 Btu/H |
|-----------|----------------|-------------------------|
| 78992 | 2H | 102 000 - 188 000 Btu/H |
| 78993 | 3H | 183 000 - 361 000 Btu/H |
| 78994 | 4H | 236 000 - 406 000 Btu/H |
| 78995 | 5H | 250 000 - 618 000 Btu/H |
| 07 689 29 | Superheating a | daptor for NM Cutters |

AHT heating nozzles



For use on type 3/4/5 equipment. In conjunction with necks 68777 or 68666. Use; Acetylene fuel gas.

Size

| | Size |
|-------|---------------------|
| 18175 | AHT 25 heating tin |
| 70723 | |
| 48450 | AHT 50 heating tip |
| 48410 | AHT 100 heating tip |

15

Regulators

Single stage regulators



07 835 10 with flowmeter



50530

Refrigeration regulators



BUTBRO single stage regulators are precision built to latest BS EN ISO 2503 standards to provide maximum accuracy and safety.

Features: Forged brass body and chromed bonnet. 63mm dual scale safety pressure gauges. Captive pressure adjusting screw.

Models available: 2 gauge. Gaugeless. 1 gauge. Flo-Gauge. Mapp. Pre-set.

Regulators are available for most common gases in either side or bottom entry with inlet threads suitable for any local cylinder connection standards. Regulators are also available with NEVOC type fittings.

Regulators - Bottom entry

| | Gas | Gauges | iniet pressure | Outlet pressure | Inlet connection | Outlet connection | Flow |
|-----------|-----------|--------|-------------------|--------------------|---------------------|----------------------|---------|
| 07 835 12 | Oxygen | 0 | 300 bar | 10 bar | G 5/8" (BS3) | G 3/8″ | 54 m³/h |
| 07 835 11 | Oxygen | 2 | 300 bar | 4 bar | G 5/8" (BS3) | G 3/8″ | 21 m³/h |
| 07 835 13 | Oxygen | 2 | 300 bar | 10 bar | G 5/8" (BS3) | G 3/8″ | 54 m³/h |
| 50554 | Oxygen | 2 | 300 bar | 40 bar | G 5/8" (BS3) | G 3/8″ | 98 m³/h |
| 07 835 02 | Acetylene | 0 | 25 bar | 1,5 bar | G 5/8 LH (BS4) | G 3/8 LH | 14 m³/h |
| 07 835 01 | Acetylene | 2 | 25 bar | 1,5 bar | G 5/8 LH (BS4) | G 3/8 LH | 14 m³/h |
| 07 835 17 | Propane | 0 | 25 bar | 4 bar | G 5/8 LH (BS4) | G 3/8 LH | 15 m³/h |
| 07 835 07 | Argon | 1 | 300 bar | 2 bar preset | G 5/8" (BS3) | G 3/8″ | 15 m³/h |
| 07 835 05 | Argon | 2 | 300 bar | 4 bar | G 5/8" (BS3) | G 3/8″ | 19 m³/h |
| 07 835 06 | Argon | 2 | 300 bar | Flow 0-15 LPM | G 5/8" (BS3) | G 3/8″ | 15 LPM |
| 07 835 08 | Argon | 2 | 300 bar | Flow 0-50 LPM | G 5/8" (BS3) | G 3/8″ | 50 LPM |
| 50530 | Mapp | 0 | small cylinders | small cylinders | G 1/4 LH | G 1/4 LH | |

Regulators - Side entry

| | Gas | Gauges | Inlet pressure | Outlet pressure | Inlet connection | Outlet connection | Flow |
|-----------|-------------------|--------|-------------------|--------------------|---------------------|----------------------|---------|
| 07 835 14 | Oxygen | 2 | 300 bar | 4 bar | G 5/8" (BS3) | G 3/8″ | 54 m³/h |
| 07 835 16 | Oxygen | 2 | 300 bar | 10 bar | G 5/8" (BS3) | G 3/8″ | 21 m³/h |
| 07 835 15 | Oxygen | 2 | 300 bar | 10 bar | CGA 540 | 9/16" x 18LH | 54 m³/h |
| 07 835 04 | Acetylene | 2 | 25 bar | 1,5 bar | G 5/8 LH (BS4) | G 3/8 LH | 14 m³/h |
| 07 835 03 | Acetylene | 2 | 25 bar | 1,5 bar | CGA 300 | 9/16" x 18LH | 14 m³/h |
| 07 835 09 | Argon | 1 | 300 bar | 4 bar | G 5/8" (BS3) | G 3/8″ | 19 m³/h |
| 07 835 10 | C0 ₂ * | 2 | 200 bar | 4 bar | 0,860 x 14TPI (BS8) | G 3/8″ | 20 m³/h |

* for CO₂ regulators use heaters above 30 l/m.

This new range of regulators is specifically designed to meet the needs of the the heating, ventilation and air conditioning (HVAC) trades, for purge and leak test applications.

Available in three pressure variants, the regulators are supplied with JIC fitting outlets.

| | Туре | Inlet pressure | Outlet pressure | Inlet connection | Outlet connection |
|-----------|--------|----------------|-----------------|------------------|-------------------|
| 07 625 84 | RS 400 | 300 bar | 28 bar | G 5/8″ | W 11 x 1,25 |
| 07 625 83 | RS 600 | 300 bar | 41 bar | G 5/8″ | W 11 x 1,25 |
| 07 625 90 | RS 750 | 300 bar | 52 bar | G 5/8″ | W 11 x 1,25 |
| | | | | | |

Balloon inflators



Available in three variants, with 230 bar inlet rating and BS3 connection.

Use: Economy - Latex balloons (gaugeless, requires spanner to connect to cylinder)

Standard - Latex balloons, (inc contents gauge and handweel)

Combi - Latex and foil balloons

| | Туре |
|-----------|----------|
| 07 628 17 | Economy |
| 07 628 16 | Standard |
| 07 628 18 | Combi |



Mediline medical oxygen regulators and flowmeters - single stage therapy

| Regulators | | | | |
|------------|-------------|-----------------|-------------------------------|--|
| - | Gas | Inlet | Outlet | |
| 07 816 60 | Oxygen | BS3 | G 3/8 | |
| 07 816 61 | Oxygen | Bs3 | BS quick connector | |
| 07 816 65 | Air | Bs3 | G 3/8 | |
| 07 816 66 | Air | Bs3 | BS quick connector | |
| Flowmeters | Gas | | Outlet | |
| MM327 7 | Oxygen | | G 3/8 (0-15 LPM) | |
| MM327 9 | Oxygen | | BS quick connector (0-15 LPM) | |
| MM327 8 | Air | | G 3/8 (0-15 LPM) | |
| MM328 0 | Air | | BS quick connector (0-15 LPM) | |
| | | | | |
| 419 865 0 | Chrome plat | ed nut G3/8″ | | |
| 419 492 0 | Chrome plat | ed nipple G3/8' | ′ x 5 mm | |

CO₂ gas heaters



| Fitted between the cylinder and the regulator, preventing freezing inside the regulator. | | | | | | | |
|--|-----------------|-------|-------|--|--|--|--|
| Gas Voltage Thread | | | | | | | |
| 50831S | CO ₂ | 240 V | BS8 | | | | |
| 50832S | Argon | 240 V | BS 3 | | | | |
| 12450 | CO ₂ | 240 V | G 3/4 | | | | |

Safety pressure gauges - BS EN 5171

| 1/4″ NPT | | | | | |
|-----------------|-----------------|---------|----------|-------|--------|
| | Service | Pressur | e | Ø | Finish |
| 388 411 460 501 | Acetylene | 2,5 bar | 35 psi | 63 mm | Gold |
| 388 411 461 075 | Acetylene | 40 bar | 550 psi | 63 mm | Gold |
| 388 411 460 873 | Oxygen | 16 bar | 230 psi | 63 mm | Gold |
| 388 411 461 573 | Oxygen | 400 bar | 5600 psi | 63 mm | Gold |
| 1/4″ BSPP | | | | | |
| 388 413 350 502 | Acetylene | 2,5 bar | 35 psi | 50 mm | Black |
| 388 811 360 500 | Acetylene | 2,5 bar | 35 psi | 63 mm | Gold |
| 388 413 351 075 | Acetylene | 40 bar | 550 psi | 50 mm | Black |
| 388 811 361 074 | Acetylene | 40 bar | 550 psi | 63 mm | Gold |
| 388 413 350 512 | General purpose | 2,5 bar | 35 psi | 50 mm | Black |
| 388 413 350 687 | General purpose | 6 bar | 90 psi | 50 mm | Black |
| 388 413 350 873 | General purpose | 16 bar | 230 psi | 50 mm | Black |
| 388 811 360 700 | General purpose | 16 bar | 230 psi | 63 mm | Gold |
| 388 413 350 481 | General purpose | 16 l/m | 16 l/m | 50 mm | Black |
| 388 413 350 162 | General purpose | 160 bar | 2300 psi | 50 mm | Black |
| 388 811 361 582 | General purpose | 315 bar | 4570 psi | 63 mm | Gold |
| 388 413 351 402 | General purpose | 400 bar | 5600 psi | 50 mm | Black |
| 388 413 350 685 | Oxygen | 6 bar | 90 psi | 50 mm | Black |
| 388 413 350 871 | Oxygen | 16 bar | 230 psi | 50 mm | Black |
| 388 811 360 872 | Oxygen | 16 bar | 230 psi | 63 mm | Gold |
| 388 811 361 572 | Oxygen | 315 bar | 4570 psi | 63 mm | Gold |
| 388 413 351 400 | Oxygen | 400bar | 5600 psi | 63 mm | Black |
| | | | | | |

Spare parts

548 904 710 370 Crush washer for 1/4" BSPP gauge

Multi-stage regulators



Multi-stage regulators for cylinder and manifold mounting







07 621 53



Flowmeters



GCE multi-stage regulators are designed to provide accurate, fluctuation free delivery for precision applications such as machine cutting or laboratory use. The first stage reduces the inlet pressure by over 90% and the large second stage diaphragm ensures accurate delivery pressure. GCE multistage regulators are precision built to latest BS EN ISO 2503 and BS EN 7291 standards to provide maximum accuracy and safety.

These regulators have the additional feature of being able to pipe away gases from the relief valve port, and comply with the stringent requirements of BS EN 7291.

Features: Forged brass body. Safety Valve. 50mm dia dual scale safety pressure gauges. Captive pressure adjusting screw. Regulators are available for most common gases in either side or bottom entry with inlet threads suitable for any local cylinder connection standards. Regulators are also available with NEVOC type fittings.

Regulators - Bottom entry

| | Gas | Gauges | lnlet pressure | Outlet pressure | Inlet connection | Outlet connection | Flow |
|-----------|---------------|--------|-------------------|--------------------|---------------------|----------------------|----------|
| 07 621 44 | Oxygen | 2 | 300 bar | 4,0 bar | G 5/8″ | G 3/8″ | 20 m³/h |
| 07 621 45 | Oxygen | 2 | 300 bar | 10,0 bar | G 5/8″ | G 3/8″ | 48 m³/h |
| 07 621 43 | Acetylene | 2 | 25 bar | 1,5 bar | G 5/8 LH | G 3/8 LH | 10 m³/h |
| 07 621 81 | Inert | 2 | 300 bar | 2,0 bar | G 5/8″ | G 3/8″ | 12 m³/h |
| 07 621 46 | Inert | 2 | 300 bar | 4,0 bar | G 5/8″ | G 3/8" | 20 m³/h |
| 07 621 47 | Inert | 2 | 300 bar | 10,0 bar | G 5/8″ | G 3/8″ | 48 m³/h |
| 07 621 48 | Hydrogen | 2 | 300 bar | 4,0 bar | G 5/8 LH | G 3/8 LH | 80 m³/h |
| 07 621 49 | Hydrogen | 2 | 300 bar | 10,0 bar | G 5/8 LH | G 3/8 LH | 191 m³/h |
| 07 621 52 | Nitrous oxide | 2 | 200 bar | 10,0 bar | BS 13 | G 3/8″ | 35 m³/h |

Regulators - Side entry

| | Gas | Gauges | lnlet pressure | Outlet pressure | Inlet connection | Outlet connection | Flow |
|-----------|--------------------------|--------|-------------------|--------------------|---------------------|----------------------|----------|
| 07 621 98 | Oxygen | 2 | 300 bar | 4,0 bar | G 5/8″ | G 3/8″ | 20 m³/h |
| 07 621 99 | Oxygen | 2 | 300 bar | 10,0 bar | G 5/8″ | G 3/8″ | 48 m³/h |
| 07 621 96 | Acetylene | 2 | 25 bar | 1,5 bar | G 5/8 LH | G 3/8 LH | 10 m³/h |
| 07 621 82 | Inert | 2 | 300 bar | 2,0 bar | G 5/8″ | G 5/8″ | 12 m³/h |
| 07 621 97 | CO ₂ * | 2 | 200 bar | 4,0 bar | 0,860 x 14 TPI | G 3/8″ | 16 m³/h |
| 07 621 53 | CO ₂ * | 2 | 200 bar | 10,0 bar | 0,860 x 14 TPI | G 3/8″ | 40 m³/h |
| 07 621 50 | Helium | 2 | 300 bar | 4,0 bar | G 5/8″ | G 3/8″ | 191 m³/h |
| 07 621 51 | Helium | 2 | 200 bar | 10,0 bar | G 5/8″ | G 3/8″ | 35 m³/h |

* for CO₂ regulators use heaters

Precision Flowmeter with brass finish, 3/8" BSP connections, available in 2 models, 15 LPM or 30 LPM.

| | Gauges |
|-----------------|--------------------------|
| 388 239 391 610 | 0 - 15 LPM |
| 388 239 391 600 | 0 - 30 LPM |
| | |
| 50081 | Flowmeter elbow 3/8″ BSP |



Special purpose regulators

"S" series



"S" series – heavy duty single stage regulators of brass construction with stainless steel diaphragms. Typical applications are system charging and testing. Range 28-170 bar delivery pressure.

| | Туре | Gas | Entry | Inlet pressure | Outlet pressure | Flow |
|-----------|--------|--------|--------|----------------|-----------------|----------|
| 07 628 64 | S 400 | Inert | bottom | 300 bar | 28 bar | 36 m³/h |
| 07 628 65 | S 1500 | Inert | bottom | 300 bar | 100 bar | 120 m³/h |
| 07 628 66 | S 2500 | Inert | bottom | 300 bar | 170 bar | 150 m³/h |
| 07 625 13 | S 400 | Oxygen | bottom | 230 bar | 28 bar | 33 m³/h |
| 50554 | S 600 | Oxygen | bottom | 230 bar | 40 bar | 98 m³/h |
| 07 628 67 | S 1500 | Oxygen | bottom | 230 bar | 100 bar | 115 m³/h |
| 50555 | S 1500 | Oxygen | bottom | 230 bar | 100 bar | 70 m³/h |
| 07 625 11 | S 2500 | Oxygen | bottom | 230 bar | 170 bar | 140 m³/h |
| 50556 | S 2500 | Oxygen | bottom | 230 bar | 170 bar | 85 m³/h |
| | | | | | | |

"M600" series



"M600" series – improved delivery pressure control is achieved from two stage regulation. Typical applications are those left unattended for periods of time such as cable pressurisation, chemical and laboratory. Range up to 41 bar delivery pressure.

| | Туре | Gas | Entry | Inlet pressure | Outlet pressure | Flow |
|-----------|-------|-----------------|--------|----------------|-----------------|----------|
| 07 623 98 | M 600 | CO ₂ | side | 200 bar | 41 bar | 80 m³/h |
| 07 623 97 | M 600 | Flammable | bottom | 300 bar | 41 bar | 108 m³/h |
| 07 623 96 | M 600 | Inert | bottom | 300 bar | 41 bar | 108 m³/h |
| 07 623 77 | M 600 | Inert | side | 300 bar | 41 bar | 108 m³/h |
| 07 623 99 | M 600 | Oxygen | bottom | 230 bar | 41 bar | 100 m³/h |
| | | | | | | |

"OR14" series



"OR14" series – offering some of the highest flows in the Butbro range through the use of a special monel tied valve, these are intended for cylinder and pipeline applications. The G5/8 inlet adaptor can be removed to reveal a 1" BSP flat seat female fitting. Range up to 14 bar delivery pressure.

| | Туре | Gas | Entry | Inlet pressure | Outlet pressure | Flow |
|-----------|-------|----------|-------|----------------|-----------------|----------|
| 07 835 95 | HR 14 | Hydrogen | rear | 230 bar | 14 bar | 450 m³/h |
| 07 835 94 | OR 14 | Oxygen | rear | 230 bar | 14 bar | 120 m³/h |

"S150 OL2" series



"S1500L2" series – this pipeline regulator is ideal for tank systems, rear entry to suit panel or line mounting. The large outlet configuration is necessary to give high flow from a relatively low inlet pressure source. Max inlet 24 bar and delivery up to 10 bar.

| | Туре | Gas | Entry | Inlet pressure | Outlet pressure | Flow |
|-----------|-----------|--------|-------|----------------|-----------------|----------|
| 07 835 96 | S 150 OL2 | Oxygen | rear | 24 bar | 10 bar | 240 m³/h |



Special purpose regulator summary

| Regulator summary | | | | | | |
|-------------------|-----------|-----------------|--------|----------------|-----------------|----------|
| | Туре | Gas | Entry | Inlet pressure | Outlet pressure | Flow |
| 07 623 98 | M 600* | CO ₂ | side | 200 bar | 41 bar | 80 m³/h |
| 07 623 97 | M 600 | Flammable | bottom | 300 bar | 41 bar | 108 m³/h |
| 07 835 95 | HR 14 | Hydrogen | rear | 230 bar | 14 bar | 450 m³/h |
| 07 628 64 | S 400 | Inert | bottom | 300 bar | 28 bar | 36 m³/h |
| 07 623 96 | M 600 | Inert | bottom | 300 bar | 41 bar | 108 m³/h |
| 07 623 77 | M 600 | Inert | side | 300 bar | 41 bar | 108 m³/h |
| 07 628 65 | S 1500 | Inert | bottom | 300 bar | 100 bar | 120 m³/h |
| 07 628 66 | S 2500 | Inert | bottom | 300 bar | 170 bar | 150 m³/h |
| 07 835 94 | OR 14 | Oxygen | rear | 230 bar | 14 bar | 120 m³/h |
| 07 625 13 | S 400 | Oxygen | bottom | 230 bar | 28 bar | 33 m³/h |
| 50554 | S 600 | Oxygen | bottom | 230 bar | 40 bar | 98 m³/h |
| 07 623 99 | M 600 | Oxygen | bottom | 230 bar | 41 bar | 100 m³/h |
| 07 628 67 | S 1500 | Oxygen | bottom | 230 bar | 100 bar | 115 m³/h |
| 50555 | S 1500 | Oxygen | bottom | 230 bar | 100 bar | 70 m³/h |
| 07 625 11 | S 2500 | Oxygen | bottom | 230 bar | 170 bar | 140 m³/h |
| 50556 | S 2500 | Oxygen | bottom | 230 bar | 170 bar | 85 m³/h |
| 147 726 | S 150 OL2 | Oxygen | rear | 24 bar | 10 bar | 240 m³/h |

Outlet connections on "S" series regulators with delivery pressures above 28 bar are compression type, suitable for 1/4" OD tube pipework connection. S1500L2 pipeline regulator is fitted with 1" BSP RH female inlet and 3/4" BSP RH male outlet.

* for CO₂ regulators use heaters



Safety devices - flashback arrestors

SAFETY DEVICES

A flashback occurs when gases ignite inside the torch and will, if unchecked, travel back up the hose lines to the regulator and cylinders.

Some common causes of flashbacks are:

Faulty Equipment. Failure to purge hoses prior to lighting torch. Incorrect lighting procedure. Blocked nozzle. Gas starvation. Incorrect pressure settings. Overheating. BUTBRO flashback arrestors are designed to protect the operator. Attention to the following points will greatly reduce the risk of backfire: Ensure all equipment is in good condition and regularly checked. Ensure all hose connectors are gas tight. Follow the manufactures instructions for the torch. Ensure pressure settings are correct. Purge hoses before lighting torch. Keep hands and tools clean. (Oil or grease can cause an explosion when in contact with oxygen). In the event of a backfire do not re-ignite the torch until the cause has been determined and remedied.

BUTBRO flashback arrestors require no routine maintenance other than regular checks for external leaks applicable to all gas equipment.

BUTBRO flashback arrestors are sealed and tested during manufacture and no attempt should be made to dismantle or repair the unit. Should there be any doubt about the performance of the unit it should be replaced or returned to the manufacture for service.

Superguard FR50 reset flashback arrestor



A regulator mounted safety device suitable for all welding and cutting operations, fully complying with EN730, this "lift to reset" unit incorporates the following features:

- FA Sintered flame arresting element
- NV Non return valve to prevent reverse flow of gases
- PV Pressure trip device, activated by pressure wave accompanying a flashback
- TV Thermal trip device, activated by heat to permanently cut off the gas supply
- SI Status indicator shows green when unit is ready for use. In the event of a flashback the item can be reset by lifting and releasing the bonnet.

| | Gas | Working pressure | Inlet connection | Outlet connection |
|-------|----------|------------------|------------------|-------------------|
| 50950 | Oxygen | 0 - 10,0 bar | G 3/8″ | G 3/8″ |
| 50951 | Fuel gas | 1,5 - 5,0 bar* | G 3/8 LH | G 3/8 LH |
| 50953 | Oxygen | 0 - 10,0 bar | G 9/16" RH | G 9/16" RH |
| 50954 | Fuel gas | 1,5 - 5,0 bar* | G 9/16 LH | G 9/16 LH |

* Acetylene 1-5 bar, Propane/Hydrogen/Methane/Natural gas 5,0 bar

Slimguard 99 flashback arrestor

The new Slimguard 99 for regulator mounting has been redesigned incorporating an improved sintered filter and thermal trip device. Complies with EN730.

- FA Sintered flame arresting element
- NV Non return valve to prevent reverse flow of gases
- TV Thermal trip device, activated by heat to permanently cut off the gas supply.

| | Gas | Working pressure | Inlet connection | Outlet connection |
|-------|----------|------------------|------------------|-------------------|
| 50920 | Oxygen | 0 - 10,0 bar | G 3/8″ | G 3/8″ |
| 50921 | Fuel gas | 1,5 - 5,0 bar* | G 3/8 LH | G 3/8 LH |
| 50922 | Oxygen | 0 - 10,0 bar | G 9/16″ RH | G 9/16" RH |
| 50923 | Fuel gas | 1,5 - 5,0 bar* | G 9/16 LH | G 9/16 LH |

* Acetylene 1-5 bar, Propane/Hydrogen/Methane/Natural gas 5,0 bar

FR63 high flow pipeline flashback arrestor



Designed for use with acetylene manifolds up to 1.5 bar, this line mounted arrestor is fitted with BSP11/2" inlet and outlet and 48mm pipe stubs.

Flow Rate 50 M3/H maximum. The unit incorporates the following features:

• FA SINTERED FLASH ARRESTOR element to quench a flashback.

Gas

07 624 52 Acetylene



Flameguard torch mounted flashback arrestors



A lightweight torch flashback arrestor specially designed for torch fitting. The unit incorporates the following features: **• FA** SINTERED FLASH ARRESTOR element to guench a flashback.

• NV NON-RETURN VALVE to prevent reverse flow of gases.

FILTER gauze to prevent foreign matter entering unit. Conforms to BS EN 730.

| | Gas | Connection torch | Connection hose | Suitable for hose |
|-------|--------|------------------|-----------------|-------------------------------------|
| 50965 | Oxygen | G 3/8″ | 6 mm tail | 6 mm hose |
| 50966 | Fuel | G 3/8 LH | 6 mm tail | 6 mm hose |
| 50961 | Oxygen | G 3/8″ | 10 mm tail | 10 mm hose |
| 50962 | Fuel | G 3/8 LH | 10 mm tail | 10 mm hose |
| 50975 | Oxygen | G 3/8″ | G 3/8″ male | Add to existing 6/8/10 installation |
| 50976 | Fuel | G 3/8 LH | G 3/8″ male LH | Add to existing 6/8/10 installation |
| 50971 | Oxygen | G 1/4″ | G 1/4" male | Add to existing 6 installation |
| 50972 | Fuel | G 1/4 LH | G 1/4" male LH | Add to existing 6 installation |

Hose check valves torch mounted



Hose check valves prevent the reverse flow of gases beyond the torch inlets. BUTBRO hose check valves are manufactured to our own approved design and the unique method of assembly eliminates the use of soldered or bonded joints. They are suitable to use with Oxygen, Acetylene, Propane or Natural Gas and operate effectively on either nozzle mix or injector type torches or machine cutting torches.

| | Gas | Connection torch | Suitable for hose |
|---------|--------|------------------|-------------------|
| 871 121 | Oxygen | G 3/8″ | 6 mm hose |
| 871 122 | Fuel | G 3/8 LH | 6 mm hose |
| 871 111 | Oxygen | G 3/8″ | 8 mm hose |
| 871 112 | Fuel | G 3/8 LH | 8 mm hose |
| 871 101 | Oxygen | G 3/8″ | 10 mm hose |
| 871 102 | Fuel | G 3/8 LH | 10 mm hose |
| 871 131 | Oxygen | G 1/4″ | 6 mm hose |
| 871 132 | Fuel | G 1/4 LH | 6 mm hose |



Cutting Machines

Cutting Machine IMP-Speed - Acetylene, Propane, Natural Gas



This rugged, portable and economical machine is designed for accuracy and incorporates many great user benefits. A circle cutting attachment is part of the basic delivery package. The rugged body consists of two light alloy castings containing the transformer, electric motor and gear box. For strip, chamfer and plate edge preparation, a second torch can be fitted.

| 14 088 700 | IMP-Speed Acetylene |
|------------|--|
| 14 088 704 | IMP-Speed Propane/Natural Gas |
| 14 088 705 | IMP-Speed basic |
| 14 088 709 | IMP-Speed Plasma |
| 222 101 4 | Torch nozzle mix |
| 14 088 708 | Plasma torch clamp |
| 14 088 703 | Track 2 m |
| 14 088 701 | Extension set for second torch without nozzles |

Convenient Circle, Strip and Bevel High Speed Cutting

Circle cutting

An attachment is supplied with the machine enabling circles to be cut from 75 up to 1380 mm in single torch form, and up to 1740 mm when fitted with a second torch and a longer radius bar.

Strip Cutting

Torch can be mounted on either side of the machine. Alternatively if narrower strips are required both torches may be positioned on the same side with the counter balance weight fitted to maintain stability Bevel Cutting. IMP can carry two torches for plate edge preparation.

Guided Cutting

The guide bars on the right hand side of the machine enable straight or predetermined curves to be cut with the machine directly on the plate surface.

Straight cutting with track guidance

While straight cutting it is convenient to operate the machine with the specially designed 2 m long light alloy track. Sections can be added and secured by means of simple fully interlocking clip.

High Performance

- NEW higher speed version available up to 1700 mm/min
- Speed range permits low power plasma operation

Easy handling

Lightweight

With its sturdy handle it is easy to carry (app. 9 kg) and to steer. It is well balanced due to its ingenious design and the use of light alloy materials. The heaviest part of the machine is located above the wheel drive to ensure good traction.

Hand steering

The castor wheel is released for hand guidance on slow curves and the machine is placed directly onto the plate. **Easy to operate**

All machine controls within a hand span. Unique clutch design for ease of operation. Changing nozzles is easy by moving the machine to its end.

Technical Data

| Move: | forward and reverse |
|--------------------|--|
| Extension: | up to 2 cutting torches |
| Cutting thickness: | 3 - 150 mm /0,12" - 6" |
| Cutting speed: | 100 - 1700 mm/min |
| Weight: | 9 kg / 20 lbs (complete with single torch and hoses) |
| Input hoses: | Fuel gas: G 3/8 LH, hose diam. 8 mm; Oxygen: G 3/8", hose diam. 8 mm |
| Power supply: | 220 V / 110 V, 50 - 60 Hz |
| Power consumption: | 60 W |

Basic scale of delivery

IMP – Speed basic: Machine body, machine gas distribution manifold for one torch, torch holder, torch bar (length 342 mm), heat shield, radius pole, centerpiece of radius, connecting cable with shock-proof plug, nozzle nut spanner and instruction manual.

IMP – Speed Acetylene / Propane: Equipment of basic version with nozzle mix torch, torch hoses and high speed cutting nozzle set 3-100 mm. IMP – Speed plasma: Equipment of basic version with prismatic clamp for plasma torch(ø25 – 40 mm).



MG 86 SA portable pantograph type cutting machine



This easy to use machine can reproduce profiles from a reusable steel template. The steel template is traced by a powered magnetic roller with a variable speed SCR control system to provide maximum stability. The template mounting arm is fully adjustable. Templates for internal and external tracing are easily produced by simply incorporating an allowance for the tracing roller diameter and kerf.

The torch uses standard PNME or ANME tips for use with Oxy-Propane or Oxy-Acetylene and torch holder for square and bevel cuts and can be swivelled up for easy tip maintenance and replacement.

An automatic switch enables simultaneous use of the cutting Oxygen and the motor. The machine can be used for circle cutting up to 700 mm diameter and can cut up to 1700 mm diameter using the extended circle attachment. Weighing only 50 kg this machine is easily portable for use in any location.



| 60050 | Cutting machine |
|-------|-----------------|
| | |

Technical Data

| Weight: | 50 Kgs |
|----------------------|-------------------|
| Power: | 220 V AC |
| Motor: | 24 V DC |
| Standard circle Ø: | 30 - 700 mm |
| Extended circle Ø: | 1700 mm |
| Square edges length: | 30 - 600 mm |
| Cutting thickness: | 3 - 100 mm |
| Cutting speed: | 100 - 1000 mm/min |
| Cutting accuracy: | +/- 0,5 mm |
| Template magnet Ø: | 10 mm |

Portable Pipe Cutting Machine PCM - Acetylene / Propane



Robust but lightweight portable pipe cutting machine PCM for Oxygen – Acetylene / Propane, Natural gas cutting of square or bevel cuts. The machine body has a light-alloy cast base. The manual torch movement is realized by the chain wheel and chain with standard length 2,2m (approx. 7ft-8in) supplied with each machine. There are two types of the machine. The standard delivery consists flat wheels for easy movement on the tube surface.

The Track band type uses flanged wheels to sit on and be guided by the round steel band mounted on the tube. The track band type for accurate edge preparation is modification of standard machine (field conversion) by special conversion kid supplied on customer request.

60201 Pipe cutting machine

Technical Data

| M | |
|--------------------------|--|
| Move: | manual forward and reverse |
| Pipe wall thickness: | square cutting up to 100 mm (4in), beveling 45° up to 50 mm (2in) |
| Pipe diameter: | 101 - 610 mm (4 - 24 in) standard machine |
| Maximum pipe diameter | |
| (on customer request): | 1220 mm (48 in) |
| Weight: | 9 kg (20 lbs) standard machine |
| Bevel cut angle: | 0 - 45 deg. |
| Input hoses connections: | Oxygen G 3/8", Fuel gas G 3/8 LH |

Welding hoses and clips



Single hose unfitted

A hose which is highly resistant to kinks and abrasion. Conforms to BS EN 559. Working pressure 290 P.S.I., safety factor in excess of 4 to 1. Colour: Blue - Oxygen. Red - Acetylene. Orange - Propane. Supplied in coils of 50 meters.

Single hose-Oxygen

| | | Wall thickness I.D (0.D.) | Length |
|-----------------|--------------|---------------------------|--------|
| 272 321 106 050 | Hose-grooved | 3,5 x 6,3 (13,3) mm | 50 m |
| 272 321 311 304 | Hose-grooved | 3,5 x 8 (15) mm | 50 m |
| 272 321 311 306 | Hose-grooved | 3,5 x 10 (17) mm | 50 m |

Wall thickness I.D (0.D.)



Single hose-Acetylene

| 272 321 006 041 | Hose-grooved | 3,5 x 6,3 (13,3) mm | 50 m |
|-----------------|--------------|---------------------|------|
| 272 321 118 050 | Hose-grooved | 3,5 x 8 (15) mm | 50 m |
| 272 321 311 206 | Hose-grooved | 3,5 x 10 (17) mm | 50 m |

Single hose-Propane/Butane

| 272 321 063 035 | Hose-smooth | 3 x 6,3 (12,3) mm | 50 m |
|-----------------|-------------|-------------------|------|
| 272 321 009 136 | Hose-smooth | 3,5 x 8 (15) mm | 50 m |
| 272 321 311 006 | Hose-smooth | 3.5 x 10 (17) mm | 50 m |

Twin hose unfitted





| Twin hose-Oxyger | n/Acetylene | Wall thickness I.D (0.D.) | Length |
|------------------|-----------------|----------------------------------|--------|
| 272 333 066 020 | Twin hose OX/AC | 3,5 x 6,3 x 6,3 (13,3 + 13,3) mm | 25 m |
| 272 333 066 617 | Twin hose OX/AC | 3,5 x 6,3 x 6,3 (13,3 + 13,3) mm | 40 m |
| 272 333 066 100 | Twin hose OX/AC | 3,5 x 6,3 x 6,3 (13,3 + 13,3) mm | 100 m |
| 272 333 088 100 | Twin hose OX/AC | 3,5 x 8 x 8 (15 + 15) mm | 100 m |
| 272 333 110 080 | Twin hose OX/AC | 3,0 x 10 x 10 (16 + 16) mm | 20 m |
| 272 333 110 081 | Twin hose OX/AC | 3,0 x 10 x 10 (16 + 16) mm | 40 m |



Fitted hose conforming to BS EN559 & BS EN1256 with check valve, nut & tail piece





| Single hose-Oxygen | | | |
|--------------------|------------------------------|-------------------|--------|
| | I.D. x Wall thickness x O.D. | Connections | Length |
| 841 065 | 6,3 x 3,5 (6 x 13) mm | G 3/8 - G 1/4 NRV | 5 m |
| 841 069 | 6,3 x 3,5 (6 x 13) mm | G 3/8 - G 1/4 NRV | 10 m |
| 841 062 | 6,3 x 3,5 (6 x 13) mm | G 3/8 - G 1/4 NRV | 20 m |
| 841 067 | 6,3 x 3,5 (6 x 13) mm | G 3/8 - G 3/8 NRV | 5 m |
| 841 068 | 6,3 x 3,5 (6 x 13) mm | G 3/8 - G 3/8 NRV | 10 m |
| 841 063 | 6,3 x 3,5 (6 x 13) mm | G 3/8 - G 3/8 NRV | 20 m |
| 841 085 | 8 x 3,5 (8 x 15) mm | G 3/8 - G 3/8 NRV | 5 m |
| 841 089 | 8 x 3,5 (8 x 15) mm | G 3/8 - G 3/8 NRV | 10 m |
| 841 082 | 8 x 3,5 (8 x 15) mm | G 3/8 - G 3/8 NRV | 20 m |
| 841 105 | 10 x 3,5 (10 x 17) mm | G 3/8 - G 3/8 NRV | 5 m |
| 841 109 | 10 x 3,5 (10 x 17) mm | G 3/8 - G 3/8 NRV | 10 m |
| 841 102 | 10 x 3,5 (10 x 17) mm | G 3/8 - G 3/8 NRV | 20 m |

Single hose-Acetylene

| 849 065 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 1/4LH NRV | 5 m |
|---------|------------------------|-----------------------|------|
| 849 069 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 1/4LH NRV | 10 m |
| 849 062 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 1/4LH NRV | 20 m |
| 849 064 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 3/8LH NRV | 5 m |
| 849 068 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 3/8LH NRV | 10 m |
| 849 070 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 3/8LH NRV | 20 m |
| 849 085 | 8 x 3,5 (8 x 15) mm | G 3/8LH - G 3/8LH NRV | 5 m |
| 849 089 | 8 x 3,5 (8 x 15) mm | G 3/8LH - G 3/8LH NRV | 10 m |
| 849 082 | 8 x 3,5 (8 x 15) mm | G 3/8LH - G 3/8LH NRV | 20 m |
| 849 105 | 10 x 3,5 (10 x 17) mm | G 3/8LH - G 3/8LH NRV | 5 m |
| 849 109 | 10 x 3,5 (10 x 17) mm | G 3/8LH - G 3/8LH NRV | 10 m |
| 849 102 | 10 x 3,5 (10 x 17)) mm | G 3/8LH - G 3/8LH NRV | 20 m |

Single hose-Propane/Butane

| 849 113 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 3/8LH NRV | 5 m |
|---------|------------------------|-----------------------|------|
| 849 114 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 3/8LH | 10 m |
| 849 115 | 6,3 x 3,5 (6 x 13) mm | G 3/8LH - G 3/8LH | 20 m |
| 849 116 | 8 x 3,5 (8 x 13) mm | G 3/8LH - G 3/8LH | 5 m |
| 849 117 | 8 x 3,5 (8 x 15) mm | G 3/8LH - G 3/8LH NRV | 10 m |
| 849 118 | 8 x 3,5 (8 x 15) mm | G 3/8LH - G 3/8LH NRV | 20 m |
| 849 119 | 10 x 3,5 (10 x 17)) mm | G 3/8LH - G 3/8LH NRV | 5 m |
| 849 120 | 10 x 3,5 (10 x 17)) mm | G 3/8LH - G 3/8LH NRV | 10 m |
| 849 121 | 10 x 3,5 (10 x 17)) mm | G 3/8LH - G 3/8LH NRV | 20 m |

Fich

E Set

NRV = non return valve included



Twin hose fitted

| | | I.D. x Wall thickness x O.D. | Connections | Length |
|---------------------------------|---|---|---|--|
| | 849 060 | 6,3 x 3,5-6,3 x 3,5 (6 x 13) mm | G 3/8LH - RH G 1/4LH - RH NRV | 5 m |
| HUILIN TO DATE | 849 066 | 6,3 x 3,5-6,3 x 3,5 (6 x 13) mm | G 3/8LH - RH G 1/4LH - RH NRV | 10 m |
| | 849 071 | 6,3 x 3,5-6,3 x 3,5 (6 x 13) mm | G 3/8LH - RH G 1/4LH - RH NRV | 20 m |
| | 841 060 | 6,3 x 3,5-6,3 x 3,5 (6 x 13) mm | G 3/8 LH - RH G 3/8 - RH NRV | 5 m |
| | 849 061 | 6,3 x 3,5-6,3 x 3,5 (6 x 13) mm | G 3/8 LH - RH G 3/8 - RH NRV | 10 m |
| | 849 063 | 6,3 x 3,5-6,3 x 3,5 (6 x 13) mm | G 3/8 LH - RH G 3/8 - RH NRV | 20 m |
| | 841 080 | 8 x 3,5-8 x 3,5 (8 x 15) mm | G 3/8 LH - RH G 3/8 - RH NRV | 5 m |
| | 841 081 | 8 x 3,5-8 x 3,5 (8 x 15) mm | G 3/8 LH - RH G 3/8 - RH NRV | 10 m |
| | 841 083 | 8 x 3,5-8 x 3,5 (8 x 15) mm | G 3/8 LH - RH G 3/8 - RH NRV | 20 m |
| NRV = non return valve included | 849 110 | 10 x 3,5-10 x 3,5 (10 x 17) mm | G 3/8 LH - RH G 3/8 - RH NRV | 5 m |
| | 849 111 | 10 x 3,5-10 x 3,5 (10 x 17) mm | G 3/8 LH - RH G 3/8 - RH NRV | 10 m |
| | 849 112 | 10 x 3,5-10 x 3,5 (10 x 17) mm | G 3/8 LH - RH G 3/8 - RH NRV | 20 m |
| | | | | |
| | | | | |
| EASY FIX | | | Hoses | Quantity |
| EASY FIX | WP24020 | MUJ-FIT 13(one ear) | Hoses 6 x 13; 6 x 14 mm | Quantity 20 |
| EASY FIX | WP24020 WP24022 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm | Quantity 20 20 |
| EASY FIX | WP24020 WP24022 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm | Quantity 20 20 |
| EASY FIX | WP24020 WP24022 WP90330 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm | Quantity 20 20 20 20 |
| | WP24020 WP24022 WP90330 WP90340 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 Oetiker(two ear) 15-18 | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm | Quantity 20 20 20 20 20 20 20 |
| EASY FIX | WP24020 WP24022 WP90330 WP90340 85034 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 Oetiker(two ear) 15-18 Oetiker(two ear) 17-20 | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 10 x 17 mm | Quantity 20 20 20 20 20 20 |
| EASY FIX | WP24020 WP24022 WP90330 WP90340 85034 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 Oetiker(two ear) 15-18 Oetiker(two ear) 17-20 | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 10 x 17 mm | Quantity 20 20 20 20 20 20 20 20 20 20 20 20 20 |
| | WP24020 WP24022 WP90330 WP90340 85034 WP90346 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 Oetiker(two ear) 15-18 Oetiker(two ear) 17-20 Jubilee (screwdriver)8-12 | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 10 x 17 mm 5 x 12 - 6 x 13; 6 x 14 mm | Quantity 20 20 20 20 20 20 20 20 20 20 20 20 20 |
| | WP24020 WP24022 WP90330 WP90340 85034 WP90346 WP90348 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 Oetiker(two ear) 15-18 Oetiker(two ear) 17-20 Jubilee (screwdriver)8-12 Jubilee (screwdriver)10-16 | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 10 x 17 mm 5 x 12 - 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm | Quantity 20 20 20 20 20 20 20 20 20 20 |
| | WP24020 WP24022 WP90330 WP90340 85034 WP90346 WP90348 WP90352 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 Oetiker(two ear) 15-18 Oetiker(two ear) 17-20 Jubilee (screwdriver)8-12 Jubilee (screwdriver)10-16 Jubilee (screwdriver)12-22 | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 10 x 17 mm 5 x 12 - 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm - | Quantity 20 20 20 20 20 20 20 20 20 20 20 20 |
| EASY FIX | WP24020 WP24022 WP90330 WP90340 85034 WP90346 WP90348 WP90352 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 Oetiker(two ear) 15-18 Oetiker(two ear) 17-20 Jubilee (screwdriver)8-12 Jubilee (screwdriver)10-16 Jubilee (screwdriver)12-22 | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 10 x 17 mm 5 x 12 - 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm - | Quantity 20 20 20 20 20 20 20 20 20 20 20 20 20 |
| | WP24020 WP24022 WP90330 WP90340 85034 WP90346 WP90348 WP90352 WP24024 | MUJ-FIT 13(one ear) MUJ-FIT 15(one ear) Oetiker(two ear) 13-15 Oetiker(two ear) 15-18 Oetiker(two ear) 17-20 Jubilee (screwdriver)8-12 Jubilee (screwdriver)10-16 Jubilee (screwdriver)12-22 O clip pincers | Hoses 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm 10 x 17 mm 5 x 12 - 6 x 13; 6 x 14 mm 8 x 15; 8 x 16 mm - | Quantity 20 20 20 20 20 20 20 20 20 20 20 |

Safety Curtains / Welding Screens



A portable free standing screen enabling the welding area to be enclosed thus protecting the surrounding workspace from the effects of glare and spatter. Constructed from green translucent PVC. This material complies with EN 1598 and is both UV stabilised and self extinguishing. Overall size - $6' \times 6'$ (Curtain: 5'9" x 5'3").

| | Size | Size | Colour |
|----------|-------------------------|---------|--------|
| 554 40TC | Portable welding screen | 6' x 6' | Green |

Hose connection and fittings



Hose tailpieces

| | 32BS | | Hose inner diameter | Suitable for nut |
|--|-------|-------|--------------------------------|---------------------------|
| | | 32BS | 5 mm (3/16") | G 1/4" LH and RH |
| Contraction of the local division of the loc | 31BEN | 31AEN | 5 mm (3/16″) | G 3/8" LH and RH |
| | | 32B | 5-6 mm (1/4"-3/16") TAPER STEM | G 1/4" LH and RH |
| () | 314EN | 32C | 5-6 mm (1/4"-3/16") TAPER STEM | G 1/4" LH and RH bent 90° |
| | SINEN | 32 | 5-6 mm (1/4"-3/16") TAPER STEM | G 3/8" LH and RH |
| | 31EN | 31BEN | 6 mm (1/4″) | G 1/4" LH and RH |
| | JIEN | 31EN | 6 mm (1/4″) | G 3/8" LH and RH |
| | 2051 | 32DB | 6 mm (1/4″) | 9/16" x 18 TPI LH and RH |
| | 30EN | 30EN | 8 mm (5/16″) | G 3/8" LH and RH |
| - | | 29AEN | 10 mm (3/8″) | G 3/8" LH and RH |
| Contraction of the local division of the loc | 29AEN | 64 | 10 mm (3/8") | G 3/8″LH and RH bent 90° |

Hose splicers

| R | 11 | 1 | | | Hose inner diameter |
|----|----|------------|----------|----|---------------------|
| | | <u>I</u> L | <u></u> | 18 | 5 mm (3/16") |
| 6 | 11 | B | 16 | 17 | 6 mm (1/4") |
| | 11 | | | 16 | 8 mm (5/16") |
| | | 17 | U | 15 | 10 mm (3/8") |
| 18 | 17 | 16 | 15 | | |

Hose connection nuts



| RH | Туре | |
|-------|-------------------|--|
| 28AEN | G 1/4" RH | |
| 27AEN | G 3/8″ RH | |
| 28C | 9/16" x 18 TPI RH | |
| LH | | |

| | Туре |
|-------|-------------------|
| 28BEN | G 1/4″LH |
| 27BEN | G 3/8″LH |
| 28D | 9/16″ x 18 TPI LH |



Hose couplers



| RH | |
|------------|--|
| | |
| 25A | G 1/4" equal |
| 26A | G 3/8" x G 1/4" unequal |
| 24A | G 3/8″ equal |
| 79A | G 1/2" equal |
| 78A | G 3/4" equal |
| 77A | G 1″ equal |
| LH | |
| 25B | G 1/4" equal |
| 26B | G 3/8" x G 1/4" unequal |
| 24B | |
| | G 3/8″ equal |
| 79B | G 3/8" equal G 1/2" equal |
| 79B 78B | G 3/8" equal G 1/2" equal G 3/4" equal |

Hose adaptors



LH

| RH | | |
|-----|-------------------------------------|----------|
| | | Туре |
| 9A | G 1/4" FEMALE x G 3/8" MALE | Bent |
| 9C | G 3/8" FEMALE x G 1/4" MALE | Straight |
| 9E | G 3/8" FEMALE x G 1/4" MALE | Solid |
| 9G | 9/16" x 18 TPI FEMALE x G 1/4" MALE | Straight |
| 9J | 9/16" x 18 TPI FEMALE x G 3/8" MALE | Straight |
| 9L | 9/16" x 18 TPI FEMALE x G 3/8" MALE | Bent |
| 9P | 9/16" x 18 TPI MALE x G 3/8" FEMALE | Straight |
| 9AS | G 3/8" MALE x G 1/4" FEMALE | Straight |
| | | |

| 9B | G 1/4" FEMALE x G 3/8" MALE | Bent |
|-----|-------------------------------------|----------|
| 9D | G 3/8" FEMALE x G 1/4" MALE | Straight |
| 9F | G 3/8" FEMALE x G 1/4" MALE | Solid |
| 9H | 9/16" x 18 TPI FEMALE x G 1/4" MALE | Straight |
| 9K | 9/16" x 18 TPI FEMALE x G 3/8" MALE | Straight |
| 9M | 9/16" x 18 TPI FEMALE x G 3/8" MALE | Bent |
| 9Q | 9/16" x 18 TPI MALE x G 3/8" FEMALE | Straight |
| 9BS | G 3/8" MALE x G 1/4" FEMALE | Straight |



Outlet points

Main benefits: simple installation and lower cost, individual work station control, non-return valves fitted to prevent back flow and pipeline contamination, quick visual indication of status with quarter turn isolation valves, complies with all current EN and British Standards, meets BCGA Codes of Practice.

Linemaster Outlet Points



Maximum inlet pressure 30 bar except outlets fitted with flashback arresters, which are inert 10 bar, flammable 5 bar and Acetylene 1.5 bar. Inlet connections: inert & flammable 15 mm solder socket, Acetylene $G^{1/2}$ female. Outlet points are fitted with a non-return valve, isolation valve, regulator block, wall mounting bracket. The Acetylene outlet always has a flashback arrestor but on outlets for Oxygen and flammable gases it is optional.

| MM0268 | Acetylene | with flasback arrestor FR 34 |
|--------|-----------|------------------------------|
| MM0269 | Inert | |
| MM1748 | Oxygen | |

Line regulators LINEMASTER



Maximum inlet pressure 30 bar. Inlet ¼" NPT male, outlet G3/8 RH or LH male cone. For a new installation both a Linemaster regulator and Linemaster Outlet Point are required.

| | Gas | Outlet pressure |
|-----------|----------------|-----------------|
| 07 817 08 | Acetylene | 1,5 bar |
| 07 817 07 | Flammable (LH) | 2,0 bar |
| 07 817 04 | Flammable (LH) | 4,0 bar |
| 07 816 97 | Flammable (LH) | 12,5 bar |
| 07 817 06 | Inert | 2,0 bar |
| 07 817 03 | Inert | 4,0 bar |
| 07 816 99 | Inert | 12,5 bar |

Series 300 Outlet Point Assemblies



Maximum inlet pressure 25 bar. Inlet connections. inert & flammable 15 mm solder socket, Acetylene $G_{12}^{\prime\prime}$ female. Outlet is G3/8 RH or LH male cone to suit standard welding hose, this can be removed leaving L'NPT female for use with compression fittings or similar. All outlets points are fitted with a non-return valve, isolation valve, regulator, outlet pressure gauge, dirt inlet filter, wall mounting bracket. The Acetylene outlet always has a flashback arrestor. If a flashback arrestor is required for Oxygen and flammable gases, it can be fitted to the outlet of the assembly. Flammable gases: Hydrogen + mixtures, Methane + mixtures, Propane. Please state gas and service pressure when ordering.

| | Gas | Outlet pressure |
|-----------|----------------|-----------------|
| MM2010-22 | Acetylene | 1,5 bar |
| 07 817 76 | Inert (RH) | 2,0 bar |
| 07 817 77 | Inert (RH) | 5,0 bar |
| 07 817 78 | Inert (RH) | 10,0 bar |
| 07 817 79 | Flammable (LH) | 2,0 bar |
| 07 817 81 | Flammable (LH) | 10,0 bar |

Single Cylinder Couplers





Design Features

- Typically wall mounted system
- Cylinder securing restraints
- Regulator mounting block
- Compact in size
- Ease of installation
- Simple, low cost design

Point block/valve, manifold regulator, connecting arm, cylinder rack, safety valve, etc. require to be ordered separately. Point block/valves are wall mounted.

Point Block

All flexibles and connecting arms listed below fit to the inlet of the point blocks. All outlet connections are British to BS.341(except NEVOC). The point blocks come complete with wall mounting bracket. Connecting arm, manifold regulator, safety valve, etc. require to be ordered separately. Flammable (LH.) cannot be used for Acetylene.

| MM1481 Inert (RH) | |
|------------------------------------|--|
| MM1480 Flammable (LH) | |
| MM1482 Carbon Dioxide | |
| MM1483 Nitrous Oxide | |
| MM3366 N ₂ NEVOC | |

Point Valve

All flexibles and connecting arms listed below fit to the inlet of the point valves. All outlet connections are British to BS.341 (except NEVOC). The point blocks come complete with wall mounting bracket. Connecting arm, manifold regulator, safety valve, etc. require to be ordered separately. Flammable (LH.) cannot be used for Acetylene (see data sheet).

| | Gas |
|--------|----------------------|
| MM1489 | Inert (RH) |
| MM1488 | Flammable (LH) |
| MM1490 | Carbon Dioxide |
| MM1491 | Nitrous Oxide |
| MM3367 | N ₂ NEVOC |

Flexible Hoses

Connecting arms cylinder connections are British to BS.341 (except NEVOC). Both the point block and point valve can be used with flexibles. Point blocks and point valves can be used to connect Multi-cylinder packs/bundles by using 2000 mm long flexible hoses.

| | Gas |
|-----------|----------------------|
| MM1476 | Inert (RH) |
| MM1477 | Flammable (LH) |
| MM1478 | Carbon Dioxide |
| MM1479 | Nitrous Oxide |
| MM3361 | N ₂ NEVOC |
| 101012201 | N ₂ NEVOC |

Cylinder Racks

Wall mounted racks come complete with cylinder secure restraints. The rack is made from corrosion resistant angle. Standard racks are designed for 230 mm diameter cylinders, other sizes available. Floor mounting kit MM1635 is available.

| | Туре |
|--------|-------------|
| MM2581 | 1 cylinder |
| MM2582 | 2 cylinders |
| MM2583 | 3 cylinders |
| MM2584 | 4 cylinders |
| MM2585 | 5 cylinders |
| MM2586 | 6 cylinders |
| MM2587 | 7 cylinders |
| MM2588 | 8 cylinders |

Manifold Equipment



Manifolds - complete packages

Manifolds are available in manual or automatic changeover versions. Packages are supplied complete with frames, header pipework, pigtails, non return valves, HP isolating valves, 10 bar regulator, 11.2 bar relief valve and line isolation kit. Acetylene versions are also available on request.

Please refer to latest edition of "Central Gas Supply" catalogue, available on request.

Manifolds - couplers, adaptors and fitting

59B

34B

60B

50861

50353B

MM0546

50321

Adaptor - 2 branch adaptor

Blanking plug

Adaptor 1/4NPTM x G3/8M LH

Adaptor - G 1/4" MALE x G 3/8 LH loose nut

Adaptor - soldering 3/8 loose nut for 15 mm

Line valve 1/4 turn butterfly operated

Line valve 1/4 turn lever operated

| | C== |
|-----|-----|
| | 1 📌 |
| Ţ | 61A |
| 59B | 63A |

| RH | | | | |
|-----------|---|---------|------------------|-------------------|
| | Туре | Rating | Inlet connection | Outlet connection |
| 63A | Adaptor - 90° cylinder adaptor | 230 bar | G 5/8″M | G 5/8″F |
| 63C | Adaptor - straight cylinder adaptor | 230 bar | G 5/8″M | G 5/8″F |
| 61A | Adaptor - 3 branch adaptor | 230 bar | G 5/8″M | G 5/8″F |
| 59A | Adaptor - 2 branch adaptor | 230 bar | G 5/8″M | G 5/8″F |
| 50860 | Adaptor - G 1/4" MALE x G 3/8 loose nut | 30 bar | G 1/4" M RH | G 3/8″F |
| 50353A | Adaptor - soldering 3/8 loose nut for 15 mm | 30 bar | 3/8″ | 15 mm tube |
| 34A | Adaptor 1/4NPTM x G3/8M | 30 bar | 1/4NPTM | G3/8M |
| 60A | Blanking plug | 230 bar | G 5/8″M | - |
| 25C | Coupler - 1/4NPT Equal coupler RH | 30 bar | 1/4" NPT M | 1/4" NPT M |
| MM0547 | Line valve 1/4 turn butterfly operated | 30 bar | G 3/8″ M | G 3/8″ M |
| MM1400 | Line valve 1/4 turn butterfly operated | 30 bar | 1/4" NPT F | 1/4 NPT F |
| 50320 | Line valve 1/4 turn lever operated | 30 bar | G 3/8″ M | G 3/8″ M |
| 07 652 78 | Shut off valve - handwheel | 300 bar | W 21,8 x 1/14 RH | W 21,8 x 1/14 LH |
| LH | | | | |
| | Туре | Rating | Inlet connection | Outlet connection |
| 63B | Adaptor - 90° cylinder adaptor | 230 bar | G 5/8″M LH | G 5/8″F LH |
| 63D | Adaptor - straight cylinder adaptor | 230 bar | G 5/8"M LH | G 5/8″F LH |
| 61B | Adaptor - 3 branch adaptor | 230 bar | G 5/8″M LH | G 5/8″F LH |

G 5/8"M LH

G 1/4" M RH

1/4NPT M

G 5/8″M LH

G 3/8″ M LH

G 3/8" M LH

3/8" LH

230 bar

30 bar

30 bar

30 bar

230 bar

30 bar

30 bar

G 5/8"F LH

G 3/8"F LH

G3/8 M LH

15 mm tube

G 3/8" M LH

G 3/8" M LH

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Pipeline adaptors



| 50860 | 1/4" NPT x 3/8" H/D loose nut RH |
|-------|----------------------------------|
| 34A | 1/4" NPT x 3/8" RH |
| 50861 | 1/4" NPT x 3/8 H/D loose nut LH |
| 34B | 1/4" NPT x 3/8 LH |



Flexible hoses

Can be used with most cylinder orientation. Fitted with full length restraining/anti-whip wire. Inlet filters fitted to all cylinder connection flexibles. Gas quality linings. End fittings high strength brass. Cleaned to Oxygen Cleanliness Standards. Acetylene flexible fitted with non-return valve.



Low pressure fine adjustment valves and adaptors(10 bar)

Fine adjustment valves

| | | Gas | Inlet connection | Outlet connection |
|--------|-----|-----------|------------------|-------------------|
| | 37A | Oxygen | G 3/8" RH MALE | G 3/8″ RH MALE |
| THE R. | 37B | Acetylene | G 3/8" LH MALE | G 3/8″LH MALE |
| | 38C | Oxygen | 1/4" NPT MALE | G 3/8" RH MALE |
| | 38D | Acetylene | 1/4" NPT MALE | G 3/8″LH MALE |

Fine adjustment valves with swivel nut

| | Gas | Swivel nut | Outlet connection | |
|-----|-----------|------------|-------------------|--|
| 390 | Oxygen | G 3/8″ RH | G 3/8" RH MALE | |
| 39D | Acetylene | G 3/8″LH | G 3/8" LH MALE | |

Twin outlet valves with swivel nut ("Y" valves)



| These allow two blowpipes to be used from one regulator outlet. | | | | | | | | | | |
|---|-----------|------------|-------------------|--|--|--|--|--|--|--|
| | Gas | Swivel nut | Outlet connection | | | | | | | |
| 47A | Oxygen | G 3/8″ RH | G 3/8" RH MALE | | | | | | | |
| 47B | Acetylene | G 3/8″LH | G 3/8″LH MALE | | | | | | | |

'Y' pieces, 'T' pieces for branching two hose from one



| RH | |
|-----|--|
| 65A | 'Y' piece with swivel nut G 3/8" fitted with nuts and 10 mm nipples |
| 66A | 'T' piece with G 3/8" RH/LH nuts and 10 mm nipples |
| LH | |
| 65B | 'Y' piece with swivel nut G 3/8" LH fitted with nuts and 10 mm nipples |
| 66B | 'T' piece with G 3/8"LH nuts and 10 mm nipples |



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Cylinder valves

Cylinder valves

| | | All industrial valv | es are manufaci alves are handv | tured to EN 84 wheel operate | 9. Medical p d, supplied | in boxes of 20. | are manfactured t | o EN 850 an | d are CE marked. |
|-----------|-----------|---------------------|------------------------------------|---------------------------------|-----------------------------|-----------------|-------------------|-------------|-------------------|
| | ciib. | | Туре | Gas | Service | Inlet | Outlet | Finish | Residual pressure |
| | | 07 652 56 | Industrial | Acetylene | 25 bar | 25E | BS4 - G 5/8 LH | Brass | |
| 020.066.1 | 375 | 07 655 73 | Industrial | Ar/N_2-CO_2 | 230 bar | 25E | BS3 - G 5/8 | Brass | Redidual pressure |
| 939.000 1 | 15 | 07 657 26 | Industrial | Ar/N_2-CO_2 | 230 bar | 25E | BS3 - G 5/8 | Brass | |
| | 07 655 73 | 07 655 72 | Industrial* | CO ₂ | 190 bar | 25E | BS8 - W 21,8 | Brass | Redidual pressure |
| | مريونه | 07 657 25 | Industrial* | CO ₂ | 190 bar | 25E | BS8 - W 21,8 | Brass | |
| | | 07 751 12 | Industrial | H ₂ /Mixes | 300 bar | 25E | BS4 - G 5/8 LH | Brass | |
| | | 07 750 49 | Industrial | Helium | 230 bar | 25E | BS3 - G 5/8 | Brass | |
| | | 07 759 56 | Industrial | Oxygen | 230 bar | 25E | BS3 - G 5/8 | Brass | |
| | | 07 653 89 | Pin index | Air | 200 bar | 25E | Air pin | Chromed | |
| 938 367 0 | 07 655 72 | 07 755 35 | Pin index | Air | 200 bar | M 18 | Air pin | Chromed | |
| 1.10 | | 07 654 14 | Pin index | Entonox | 200 bar | 18T (0,715) | Entonox pin | Chromed | |
| | | 07 653 40 | Pin index | Oxygen | 200 bar | 17E | Oxy pin | Chromed | |
| | | 07 653 97 | Pin index | Oxygen | 200 bar | 18T (0,715) | Oxy pin | Chromed | |
| | | 07 653 39 | Pin index | Oxygen | 200 bar | 25E | Oxy pin | Chromed | |
| | | 07 754 67 | Pin index | Oxygen | 200 bar | M 18 | Oxy pin | Chromed | |
| 07 750 56 | | 938 367 0 | Fill adaptor | CO ₂ | 190 bar | G 1/4 M | BS8 - W 21,8 | Brass | use with 0765572 |
| 0/ /29 20 | 07 653 97 | 939 066 1 | Fill adaptor | Ar/N_2-CO_2 | 230 bar | BS3 - G 5/8F | BS3 - G 5/8 M | Brass | use with 0765573 |
| | | K000 000 02 | 8 Burst disc* | CO ₂ | 190 bar | | | Monel | 0765572/0765725 |

* Burst Disc - 190 bar

Cylinder trolleys



Perfectly balanced trolleys of welded steel construction with solid tyres and safety retaining chains/bars. Two models available for large and small cylinders.

86001 Large twin oxy acetylene cylinder trolley (accepts cylinder diameter 240mm x 310mm max)548 901 256 793 Small caddypak cylinder trolley (accepts cylinder diameter 175mm x 175mm max)



Welding, cutting & heating data

Welding - ORBIT & MK 3/A torches

| | | | | (| Operatin | g pressure | | Gas consumption | | | |
|-----|-----------|------|--------|-----------|----------|------------|-----|-----------------|-------|--------|-------|
| Mid | Steel Tk' | ness | Nozzle | Acetylene | | Оху | gen | Acetylene | | Oxygen | |
| mm | in | swg | size | bar | PSI | bar | PSI | l/h | ft3/h | l/h | ft3/h |
| 0,9 | | 20 | 1 | 0,14 | 2 | 0,14 | 2 | 28 | 1 | 28 | 1 |
| 1,2 | | 18 | 2 | 0,14 | 2 | 0,14 | 2 | 57 | 1 | 57 | 2 |
| 2 | | 14 | 3 | 0,14 | 2 | 0,14 | 2 | 86 | 3 | 86 | 3 |
| 2,6 | | 12 | 5 | 0,14 | 2 | 0,14 | 2 | 140 | 5 | 140 | 5 |
| 3,2 | 1/8 | 10 | 7 | 0,14 | 2 | 0,14 | 2 | 200 | 7 | 200 | 7 |
| 4 | 5/32 | 8 | 10 | 0,21 | 3 | 0,21 | 3 | 280 | 10 | 280 | 10 |
| 5 | 3/16 | 6 | 13 | 0,28 | 4 | 0,28 | 4 | 370 | 13 | 370 | 13 |
| 6,5 | 1/4 | 3 | 18 | 0,28 | 4 | 0,28 | 4 | 520 | 18 | 520 | 18 |
| 8,2 | 5/16 | 0 | 25 | 0,42 | 6 | 0,42 | 6 | 710 | 25 | 710 | 25 |
| 10 | 3/8 | 4/0 | 35 | 0,63 | 9 | 0,63 | 9 | 1000 | 35 | 1000 | 35 |
| 13 | 1/2 | 7/0 | 45 | 0,35 | 5 | 0,35 | 5 | 1300 | 45 | 1300 | 45 |
| 25 | 1+ | | 90 | 0,63 | 9 | 0,63 | 9 | 2500 | 90 | 2500 | 90 |

Flame Cleaning - MK 3/A torches

| Acetylene fuel gas | Fuel gas pressure | | Oxygen pressure | | Fuel gas consumption | | Oxygen consumption | |
|--------------------|-------------------|-----|-----------------|-----|----------------------|-------|--------------------|-------|
| Nozzle Type | bar | PSI | bar | PSI | l/h | ft3/h | l/h | ft3/h |
| 50 mm flat | 0,49 | 7 | 0,57 | 8 | 1050 | 37 | 1200 | 41 |
| 100 mm flat | 0,7 | 10 | 0,7 | 10 | 2000 | 70 | 2200 | 78 |
| 150 mm flat | 0,85 | 12 | 0,85 | 12 | 2700 | 94 | 3000 | 104 |

Super Heating - PROPANE - MK 3/A & Super Heating torches

The flame size and heat output of these nozzles varies considerable with the pressure settings used. Two typical alternatives are given for each size of nozzle.

| Nozzle | Propar | Propane pres | | Oxygen pres | | Propane cons | | n cons | Heat output (app.) | |
|--------|--------|--------------|-----|-------------|------|--------------|-------|--------|--------------------|--------|
| Тур | bar | PSI | bar | PSI | l/h | ft3/h | l/h | ft3/h | w | Btu/h |
| 1H | 0,14 | 2 | 0,7 | 10 | 830 | 29 | 350 | 121 | 244800 | 72000 |
| | 0,49 | 7 | 2,1 | 30 | 1900 | 65 | 7300 | 255 | 554200 | 163000 |
| 2H | 0,21 | 3 | 1,1 | 15 | 1200 | 41 | 4800 | 168 | 348800 | 102000 |
| | 0,46 | 8 | 2,5 | 35 | 2100 | 75 | 8700 | 304 | 639200 | 188000 |
| зн | 0,28 | 4 | 1,8 | 25 | 2100 | 75 | 8300 | 290 | 622200 | 183000 |
| | 1,1 | 15 | 5,0 | 70 | 4100 | 144 | 16500 | 575 | 1227400 | 361000 |
| 4H | 0,35 | 5 | 2,5 | 35 | 2700 | 94 | 10600 | 370 | 802400 | 236000 |
| | 1,3 | 18 | 5,7 | 80 | 4800 | 162 | 18800 | 650 | 1380400 | 406000 |
| 5H | 0,85 | 12 | 3,5 | 50 | 3200 | 112 | 12700 | 444 | 955400 | 281000 |
| | 2.1 | 30 | 8.7 | 125 | 7000 | 246 | 28000 | 964 | 2101200 | 618000 |

Heating - ACETYLENE - MK 3/A torch (AHT Nozzles)

| Nozzle | Acetylene Gas pressure | | Oxygen pressure | | Propane pres | | Oxygen cons | | Heat output (app.) | |
|--------|---------------------------|-----|--------------------|-----|--------------|-------|-------------|-------|--------------------|--------|
| Туре | bar | PSI | bar | PSI | l/h | ft3/h | l/h | ft3/h | w | Btu/h |
| A-HT25 | 0,35 | 4 | 0,35 | 4 | 1100 | 36 | 100 | 40 | 176800 | 57000 |
| A-HT50 | 0,43 | 6 | 0,43 | 6 | 1800 | 63 | 2000 | 70 | 309400 | 91000 |
| A-HT10 | 0,63 | 9 | 0,85 | 12 | 3200 | 115 | 3600 | 125 | 472600 | 139000 |

Cutting - ACETYLENE - ORBIT torch

| | | Nozzla | Operating pressure | | | | | | Approx | Cutting | | | | |
|----------|----------|---------|--------------------|------|-------|------|---------|--------|---------|---------|-----|-------|------|------|
| laterial | I k'ness | 1402210 | Oxy | /gen | Acety | lene | Cutting | Oxygen | Heating | oxygen | Ace | tylen | Spe | eds |
| mm | in | size | bar | PSI | bar | PSI | l/h | ft3/h | l/h | ft3/h | l/h | ft3/h | mm/m | in/m |
| 3 | 1/8 | S/M | 2,1 | 30 | 0,3 | 4 | 650 | 30 | 120 | 4,5 | 220 | 8 | 110 | 4 |
| 6 | 1/4 | 1/32 | 2,1 | 30 | 0,15 | 2 | 710 | 25 | 255 | 9 | 255 | 8 | 255 | 8 |
| 20 | 3/4 | 3/64 | 2,1 | 30 | 0,15 | 2 | 1415 | 50 | 255 | 9 | 225 | 8 | 225 | 8 |
| 25 | 1 | 1/16 | 3,8 | 55 | 0,15 | 2 | 3400 | 120 | 255 | 9 | 225 | 8 | 225 | 8 |
| 50 | 2 | 1/16 | 5,3 | 75 | 0,20 | 3 | 4530 | 60 | 310 | 11 | 285 | 10 | 285 | 10 |

Cutting - ACETYLENE - MK 3/A & 18/90 cutters (ANM Nozzles)

| | | | C | Operating | pressure | e | | Approx Cutting | | | | | | |
|------------------|-----|--------|---------|-----------|-----------|-----|----------------|----------------|----------------|-------|----------|-------|--------|------|
| Material Tk'ness | | Nozzle | Oxygen | | Acetylene | | Cutting Oxygen | | Heating oxygen | | Acetylen | | Speeds | |
| mm | in | size | bar | PSI | bar | PSI | l/h | ft3/h | l/h | ft3/h | l/h | ft3/h | mm/m | in/m |
| Sheet | | ASNM | 1,5 | 20 | 0,14 | 2 | 800 | 28 | 85 | 3 | 85 | 3 | - | - |
| 6 | 1/4 | 1/32 | 1,8 | 25 | 0,14 | 2 | 800 | 28 | 480 | 15 | 400 | 14 | 510 | 20 |
| 13 | 1/2 | 3/64 | 2,1 | 30 | 0,21 | 3 | 1900 | 67 | 570 | 20 | 510 | 18 | 480 | 19 |
| 25 | 1 | 1/16 | 2,8 | 40 | 0,14 | 2 | 4000 | 140 | 540 | 19 | 470 | 17 | 400 | 16 |
| 50 | 2 | 1/16 | 3,2/3,5 | 45/50 | 0,14 | 2 | 4500 | 160 | 620 | 22 | 560 | 19 | 300 | 12 |
| 75 | 3 | 1/16 | 3,5/4,2 | 50/60 | 0,14 | 2 | 4800 | 170 | 680 | 24 | 620 | 22 | 205 | 8 |
| 100 | 4 | 5/64 | 3,2/4,8 | 45/70 | 0,14 | 2 | 6800 | 240 | 850 | 30 | 790 | 27 | 150 | 6 |
| 150 | 6 | 3/32 | 3,2/5,5 | 45/80 | 0,21 | 3 | 9400 | 330 | 960 | 34 | 850 | 30 | 125 | 5 |
| 200 | 8 | 1/8 | 4,2 | 60 | 0,28 | 4 | 14800 | 510 | 1380 | 48 | 1250 | 44 | 100 | 4 |
| 250 | 10 | 1/8 | 5,3 | 75 | 0,28 | 4 | 21500 | 760 | 1560 | 55 | 1420 | 50 | 75 | 3 |
| 300 | 12 | 1/8 | 6,3 | 90 | 0,28 | 4 | 25000 | 880 | 1560 | 55 | 1420 | 50 | 50 | 2 |

Gouging - MK 3/A & 18/90 cutters (AGNM Nozzles)

| | | | | | Operatin | g pressure | e | Gas consumption | | | | | | Approx Cutting Speeds | |
|---|---------|---------|--------|--------|----------|------------|-----|------------------|-------|----------------|-------|----------|-------|--------------------------|------|
| М | aterial | Tk'ness | Nozzle | Oxygen | | Acetylene | | Cutting Oxygen H | | Heating oxygen | | Acetylen | | | |
| Ŀ | mm | in | size | bar | PSI | bar | PSI | l/h | ft3/h | l/h | ft3/h | l/h | ft3/h | mm/m | in/m |
| Г | 8 | 5/16 | 13 | 4,0 | 60 | 0,5 | 7 | 3680 | 130 | 990 | 35 | 905 | 32 | 610 | 24 |
| L | 11 | 7/16 | 19 | 5,0 | 75 | 0,5 | 7 | 9340 | 330 | 1870 | 66 | 1700 | 60 | 1970 | 42 |
| | 12 | 1/2 | 25 | 5,5 | 85 | 0,55 | 8 | 16270 | 575 | 2290 | 81 | 2100 | 74 | 1220 | 48 |

Cutting - PROPANE - MK 3/A & 18/90 cutters (ANM Nozzles)

| | | | (| Operating | g pressure | e | | Approx Cutting Speeds | | | | | | |
|----------|---------|--------|--------|-----------|------------|-----|----------------|--------------------------|------|----------------|------|---------|------|------|
| Vaterial | Tk'ness | Nozzle | Oxygen | | Propane | | Cutting Oxygen | | | Heating oxygen | | Propane | | |
| mm | in | size | bar | PSI | bar | PSI | l/h | ft3/h | l/h | ft3/h | l/h | ft3/h | mm/m | in/m |
| 6 | 1/4 | 1/32 | 2,1 | 30 | 0,2 | 3 | 1000 | 36 | 1300 | 48 | 300 | 12 | 430 | 17 |
| 13 | 1/2 | 3/64 | 2,1 | 30 | 0,2 | 3 | 1800 | 65 | 1600 | 57 | 300 | 14 | 360 | 14 |
| 25 | 1 | 1/16 | 2,8 | 40 | 0,2 | 3 | 3000 | 140 | 1700 | 62 | 400 | 15 | 280 | 11 |
| 50 | 2 | 1/16 | 3,2 | 45 | 0,3 | 4 | 4500 | 160 | 1800 | 66 | 400 | 16 | 205 | 8 |
| 75 | 3 | 1/16 | 3,5 | 50 | 0,3 | 4 | 4800 | 170 | 2000 | 73 | 500 | 18 | 205 | 8 |
| 100 | 4 | 5/64 | 3,5 | 50 | 0,3 | 4 | 7300 | 260 | 2600 | 93 | 600 | 23 | 152 | 6 |
| 150 | 6 | 3/32 | 4,2 | 60 | 0,4 | 6 | 12300 | 435 | 3300 | 120 | 800 | 30 | 125 | 5 |
| 250 | 10 | 1/8 | 5,6 | 80 | 0,6 | 8 | 22300 | 790 | 4600 | 165 | 1100 | 42 | 50 | 2 |
| 300 | 12 | 1/8 | 6,7 | 95 | 0,8 | 8 | 26300 | 930 | 5900 | 210 | 1400 | 50 | 50 | 2 |

1. Data is for guidance only and may vary with operating conditions, materials etc. 2. Gas pressures are shown in BAR- 1 bar - 1 kg cm² 1 PSI - 0,069 bar.

3. Gas consumption in LITRES PER HOUR (I/h).



General safety precautions and recommended procedures

BUTBRO RUBBER HOSE

Use only hose in good condition, fitted with special hose connections attached by permanent ferrules. Do not expose the hose to heat, traffic, slag and sparks from welding and cutting operations, oil or grease. Scrap it as soon as it becomes leaky. Good hose will re-pay the cost many times by long life, safe operation and elimination of waste through leaks.

BUTBRO PRESSURE REGULATORS

Always treat a regulator as a precision instrument. Do not expose it to knocks, jars or violent pressure caused by the sudden opening of the cylinder valve. Release the pressure on the control spring when shutting down. Never use the regulator on any gas except for that for which it was designed do not use regulator with broken gauges. Never use oil or grease.

BUTBRO BLOW PIPES / CUTTERS

For lighting up and extinguishing any type of blow pipe the maker's instructions should always be followed. To clean the nozzle, use the manufacturer's nozzle cleaner set.

BUTBRO GOGGLES

Goggles should be worn at all times when welding and cutting.

ASSEMBLY OF EQUIPMENT

1. Stand both both cylinders vertical. Oxygen cylinders are painted black. Acetylene are painted maroon, and propane cylinders are painted red.

2. See that joining surfaces in cylinder valves and regulators are free from oil and grease.

3. Open the valve on the oxygen cylinder momentarily in order to snift the cylinder valve, dislodging dirt or obstructions, close valve.

4. Open a fuel gas cylinder valve as in item 3.

5. Check pressure rating on regulator is suitable for cylinder in use. Screw the oxygen regulator in to the oxygen cylinder valve. The cylinder valve and the regulator inlet stem, and the regulator outlet connection have a right hand screw thread.

6. Screw the fuel gas regulator in to the gas cylinder valve. The cylinder valve, the regulator inlet and the regulator outlet have left hand screw thread.

7. Tighten the regulator in to the cylinder valve Do not use excessive force, but make certain that the joints are gas tight.

8. Connect the hose to the screwed outlets of the regulator by means of screw connections secured in the ends of the hose. Blow the hose through before attaching to regulator or to the blow pipe in order to remove dust or dirt, or chalk when the hose is new. OXYGEN MUST NOT BE USED FOR THIS PURPOSE.

9. Connect the other ends of the hose, that fitted with a hose check valve; to the blow pipe, the fuel gas hose to the left hand connections, the oxygen hose to the right hand connection. Keep the blow pipe control valves closed.

10. Fit the appropriate sized nozzle to the blow pipe. To obtain best possible results from BUTBRO blow pipes always use BUTBRO precision nozzles.

LIGHTNING UP PROCEDURE WELDING BLOW PIPES

11. Open the cylinder valve slowly by means of the cylinder key. Do not open suddenly or there may be serious damage

to the regulator and the possibility of an accident. Open the cylinder valve spindle one turn only.Open the fuel gas control valve on the blowpipe and adjust the regulator to give the correct working pressure (this ensures that any air or oxygen is purged from the hose). Repeat the above procedure for the oxygen side.

12A. Open the fuel gas control valve and light gas preferably by means of a BUTBRO spark light making sure that the spark lighter is held at right angles to the nozzle.
12B. Reduce or increase the acetylene supply to the blow pipe valve until the flame just ceases to smoke.
12C. Slowly turn on the oxygen by the blow pipe control valve until the white inner cone in the flame is sharply defined with the merest trace of an acetylene haze. The blow pipe is now correctly adjusted for welding.

CUTTING BLOW PIPES

A. Proceed with assembly of the equipment exactly as outlined for the welding equipment, but remember the following points.

B. After fitting the correct size cutting nozzle, open the cylinder valves and after purging both hoses set the working oxygen pressure on the regulator with the oxygen passing through the cutting oxygen valve on the cutter, hence out through the nozzle. Shut all the valves on the blow pipe, open the fuel gas valve slowly and ignite the gas. Open the heating oxygen valve on the cutter slowly, and adjust the flame to neutral. Now depress the cutting oxygen lever and again adjust the heating oxygen lever, and the cutter is ready for use. These instructions apply to the nozzle mix type cutters since these are of the most modern design.

C. When cutting with a combined welding/cutting torch, the oxygen valve on the shank should remain fully open and all adjustments to the oxygens stream made with the oxygen valve on the cutting attachment, as detailed in (B above).

CLOSING DOWN PROCEDURE 13A WELDING EQUIPMENT

Turn off the acetylene first by the blow pipe control valve and then the oxygen. Close the cylinder valve. Open the blow pipe valves one at a time to release the pressure in the hose, i.e. open the oxygen valve and close it; open the fuel gas valve and close it. Unscrew the pressure regulating screws on the oxygen and acetylene regulators.

13B. CUTTING BLOWPIPES

On completion of the work, close the oxygen cutting valve, then the fuel gas and heating oxygen valves. Close the cylinder valves, open and close the cutter, oxygen and fuel gas valves one at a time to release pressure in the hose, unscrew the pressure regulating screws on the oxygen and acetylene regulators.

14. It is most important to emphasise the earlier instructions, that prior to re-lighting either the welding blow pipe or the cutter, the hoses must be purged to ensure a pure and adequate supply of oxygen/fuel gas. Back-fires may occur by one of a combination of circumstances, e.g. defective equipment, incorrect gas pressures, incorrect lighting-up procedure or careless handling of the blow pipe in use, such as permitting the nozzle to touch the work, overheating the tip of the nozzle, or working with a loose nozzle. Usually the back-fire is arrested at the injector in case of low pressure equipment or the source where the gases are mixed, e.g. the head of the cutting blowpipe, and if prompt action is taken in turning off first the oxygen, and then the blowpipe may be re-lit as soon as the cause of the trouble has been eliminated. In some cases, however, a back-fire may pass beyond the

torch and go back into either the oxygen or the fuel gas hoses; it is then termed a 'flash-back' and its effect is more serious in that it may result in immediate damage to hoses and regulators. In extreme cases there is also a possibility of injury to the operator. The outward signs of flash-back my be squealing or hissing noise, sparks coming out of the nozzle; heavy black smoke; or the blowpipe handle may get hot. If the flame burns back far enough it may even burst through the hose.

Both blow-backs and flash-backs can be avoided by adherence to recommended procedure in the case of equipment. Investigation shows that such occurences often occur purely through overfamiliarity leading eventually to neglect of ordinary safeguards. For example, the blowpipe settings, or a light being applied before the flow of fuel gas is properly established.

If the flame snaps out when the blow pipe is in use it is because:-

A. The regulator pressure, and/or gas flow, are incorrect - either too high or too low.

B. The nozzle has been obstructed.

C. The nozzle is held too close to the work.

D. The nozzle has become overheated.

When this happens completely shut both the blowpipe valves, check the regulator setting, cylinder pressures, and re-light in accordance with the proceedure. In the case of 'D', close the acetylene valve, reduce oxygen flow to a trickle, and plunge the nozzle and head into cold water.

BUTBRO HOSE CHECK VALVES

The hose check valve is a safeguard which will operate independently and without attention from the operator. The device is essentially a non-return valve, the purpose of which is to prevent back feeding or the reverse flow of gases. It must in all cases be fitted to the inlet connections of the blowpipe.

BUTBRO FLASHBACK ARRESTORS

The Butbro flashback arrestor is a device to be fitted in the system to protect the upstream equipment. Butbro flashback arrestors can be mounted to regulators, in line or to torches depending on the application. The flashback arrestor will contain between 1 and 5 features, depending on its specification.

FA Sintered flame arresting element to put out the flame.

NV Non return valve to prevent the reverse flow of gases.

PV Pressure trip device to temporarily shut off gas supply. The device can be reset after the problem is corrected.

TV Thermal trip device - to permanently shut off gas supply in the case of overheating.

SI Status indicator shows if the unit is ready for use.



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