



STRAINERS

TYPE FA STRAINERS

For Direct Fitting on Danfoss Valves



FA-15 and 20 without flanges

SUPPLIED WITH BOLTS, NUTS AND GASKETS.

| CAT. NO. | TYPE | CODE NO. | SUITS VALVE TYPE/SIZE | STRAINER AREA | | MAX. TEST PRESS. |
|----------|-------|----------|---|-----------------|-------------------|------------------|
| | | | | cm ² | ins. ² | |
| 18151 | FA-15 | 6-0043 | Bolts onto CV Pilot Valves, EVJA3, EVJDA10 & 15, EVRA10 & 15. | 40 | 6.2 | 2600 kPa |
| 18152 | FA-15 | 6-0042 | Bolts onto TEA20, TEAT20 and TEVA20. | 40 | 6.2 | |
| 18156 | FA-15 | 6-0052 | C/W 1/2" Weld Flanges | 40 | 6.2 | 377 psig |
| 18153 | FA-20 | 6-0046 | Bolts onto EVJDA20 & 25. | 60 | 9.3 | |
| 18154 | FA-20 | 6-0048 | Bolts onto TEA85, TEAT85 and TEVA85. | 60 | 9.3 | |



STRAINERS

Flare



| Cat. No. | Part No. | O.D. of Tube Flare | Length |
|----------|----------|--------------------|--------|
| 18115 | 3400 | 1/4" | 2" |
| 18116 | 3401 | 1/4" | 3" |
| 18117 | 3426 | 1/4" | 6" |
| 18118 | 3410 | 3/8" | 5" |
| 18119 | 3420 | 1/2" | 6" |
| 18120 | 3430 | 5/8" | 6" |
| 18121 | 3431 | 3/4" | 6" |

NON DEMOUNTABLE SOLDER STRAINERS



Copper

| Cat. No. | Part No. | Sweat Size | Body Length |
|----------|----------|------------|-------------|
| 18122 | 3451 | 1/4" | 3" |
| 18123 | 3452 | 3/8" | 3" |
| 18124 | 3453 | 1/2" | 4" |
| 18125 | 3454 | 5/8" | 4" |
| 18126 | 3455 | 3/4" | 6" |
| 18127 | 3457 | 7/8" | 6" |
| 18128 | 3456 | 1" | 6" |
| 18129 | 3450 | 1-1/8" | 6" |

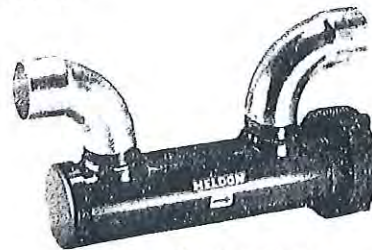
DEMOUNTABLE STRAINERS

Brass Construction — Stainless Steel Gauze



Right Angle Connections

| CAT. NO. | PART NO. | SIZE | MESH SIZE | SCREEN AREA SQ. INS. |
|----------|----------|--------|-----------|----------------------|
| 18136 | 3484-10 | 5/8" | 100 | 15 |
| 18137 | 3484-14 | 7/8" | 80 | 20 |
| 18138 | 3484-18 | 1-1/8" | 80 | 25 |
| 18139 | 3484-22 | 1-3/8" | 80 | 40 |
| 18140 | 3484-26 | 1-5/8" | 80 | 40 |
| 18141 | 3484-34 | 2-1/8" | 80 | 64 |
| 18142 | 3484-42 | 2-5/8" | 80 | 86 |



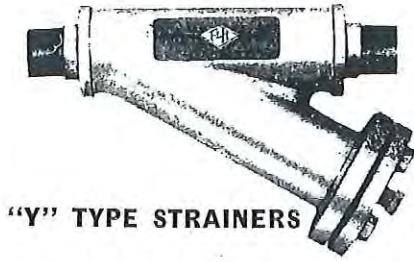
In-Line Connections

| CAT. NO. | PART NO. | SIZE | MESH SIZE | SCREEN AREA SQ. INS. |
|----------|----------|--------|-----------|----------------------|
| 18143 | 3481-10 | 5/8" | 100 | 15 |
| 18144 | 3481-14 | 7/8" | 80 | 20 |
| 18145 | 3481-18 | 1-1/8" | 80 | 25 |
| 18146 | 3481-22 | 1-3/8" | 80 | 40 |
| 18147 | 3481-26 | 1-5/8" | 80 | 40 |
| 18148 | 3481-34 | 2-1/8" | 80 | 64 |
| 18149 | 3481-42 | 2-5/8" | 80 | 86 |

Other Mesh Sizes Available on Request.

STRAINERS

— hudson



"Y" TYPE STRAINERS

| HELDON | | HUDSON | | Size O.D. Sold. | Mesh Size | Screen Area | |
|-------------|-------------|-------------|-------------|-----------------------|--------------|-----------------|-------------------|
| CAT. NO. | Part No. | CAT. NO. | Part No. | | | cm ² | ins. ² |
| 1821H | 3485/14 | 1821L | 12002 | | | | |
| 1822H | 3485/18 | 1822L | 12004 | 1-1/8" | 80 | 155 | 24 |
| 1823H | 3485/22 | 1823L | 12006 | 1-3/8" | 80 | 207 | 32 |
| 1824H | 3485/26 | 1824L | 12008 | 1-5/8" | 80 | 207 | 32 |
| 18224H | 3485/34 | 18224L | 12009 | 2-1/8" | 80 | 387 | 60 |
| 18223 | 3485/42 | — | — | 2-5/8" | 60 | 548 | 85 |

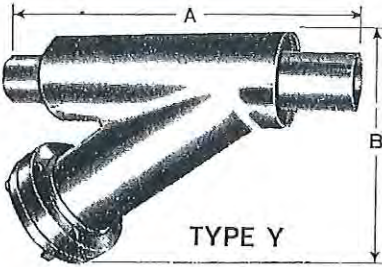
LINE STRAINERS



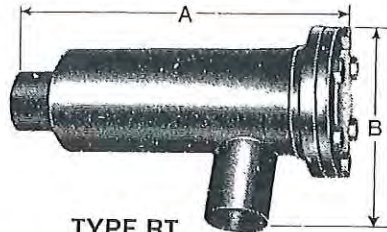
| CAT. NO. | Part No. | M to M Flare | Screen Area | | O/A Length | Screen Size |
|-------------|-------------|-----------------|-----------------|-------------------|---------------|----------------|
| | | | cm ² | ins. ² | | |
| 18217 | A1525 | 1/4" | 41.3 | 6.4 | 5-13/16" | 100 |
| 18218 | A1526 | 3/8" | 52.2 | 8.09 | 7" | 100 |
| 18220 | A1527 | 1/2" | 52.2 | 8.09 | 7-1/8" | 100 |
| 18222 | A1528 | 5/8" | 52.2 | 8.09 | 7-1/8" | 100 |

STRANEX

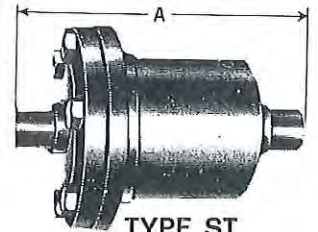
SOLDER CONNECTIONS



TYPE Y



TYPE RT



TYPE ST

| TYPE Y | | | | | |
|----------|---------------|------------|--------|-----------------|------------------|
| Cat. No. | Conn. ins | Dimensions | | Screen Area | |
| | | A | B | cm ² | ins ² |
| 18230 | 5/8" O.D.Fem. | 6 7/8" | 4 1/2" | 77.4 | 12 |
| 18231 | 7/8" " | 7" | 5 1/4" | 129.0 | 20 |
| 18232 | 1 1/8" " | 8 1/4" | 6" | 154.8 | 24 |
| 18233 | 1 3/8" " | 10 1/2" | 7" | 225.8 | 35 |
| 18234 | 1 5/8" " | 10 3/4" | 7" | 258.1 | 40 |
| 18235 | 2 1/8" " | 12 1/2" | 9" | 387.1 | 60 |
| 18236 | 2 5/8" " | 14 1/2" | 9 1/2" | 548.4 | 85 |

| TYPE RT | | | | | |
|----------|---------------|------------|--------|-----------------|------------------|
| Cat. No. | Conn. ins | Dimensions | | Screen Area | |
| | | A | B | cm ² | ins ² |
| 18237 | 5/8" O.D.Fem. | 6 3/4" | 3 1/4" | 77.4 | 12 |
| 18238 | 7/8" " | 7 1/4" | 3 1/2" | 129.0 | 20 |
| 18239 | 1 1/8" " | 8" | 4 1/8" | 154.8 | 24 |
| 18240 | 1 3/8" " | 9 1/4" | 4 7/8" | 225.8 | 35 |
| 18241 | 1 5/8" " | 9 1/2" | 5" | 258.1 | 40 |
| 18242 | 2 1/8" " | 12 1/4" | 6 1/4" | 387.1 | 60 |
| 18243 | 2 5/8" " | 13 1/4" | 7 1/2" | 548.4 | 85 |

| TYPE ST | | | | |
|----------|---------------|---------|-----------------|------------------|
| Cat. No. | Conn. ins | Dims. A | Screen Area | |
| | | | cm ² | ins ² |
| — | 3/8" O.D.Fem. | 4 1/4" | 77.4 | 12 |
| — | 1/2" " | 4 3/8" | 77.4 | 12 |
| 18244 | 5/8" " | 4 5/8" | 77.4 | 12 |
| 18245 | 7/8" " | 7 1/8" | 129.0 | 20 |

REFERENCE TO OTHER STRAINERS IN THIS CATALOGUE

- Alco Solenoid Valves (Ammonia) — Strainer Types JR32 and SR13
Refer Page 123-c
- Refrigerating Specialities/Parker — Strainer Types RSF, NTFF and RSW
Refer Page 121-c

DRYING AGENTS & DESICCANTS

ACTIVATED ALUMINA

One of the most widely used absorption type desiccants. With a rigid, granular porous structure, will not powder or disintegrate even when reaching saturation point. It is highly porous and offers a high ratio of drying surface to desiccant bulk. Suitable for permanent installation in liquid line driers.

| | |
|---------------|-------------------|
| CAT. NO. 1831 | 1 kg Container |
| CAT. NO. 1835 | 2 kg Container |
| CAT. NO. 1832 | 3 kg Container |
| CAT. NO. 1834 | 5 kg Container |
| CAT. NO. 1833 | 12.5 kg Container |

CALCIUM CHLORIDE — FUSED

Fused into granular form, calcium chloride forms a high moisture absorbing material particularly suitable for temporary use in a service dehydrator following installation of new equipment. Owing to calcium chloride's tendency to break down and powder on becoming saturated it is important that the service dehydrator be removed from the line in a reasonably short period after initial plant start-up — say 10 to 15 hours.

| | |
|---------------|----------|
| CAT. NO. 1836 | 1 kg Jar |
|---------------|----------|

CALCIUM CHLORIDE — FLAKED FOR BRINE

When mixed with water to the required specific gravity (density), provides a widely used low freezing point solution for many refrigeration applications.

| | |
|---------------|------------|
| CAT. NO. 1838 | 20 kg Tins |
|---------------|------------|

THAWZONE

A liquid neutralizer and dehydrant for moisture control in refrigeration systems. Added to the refrigerant it acts fast and harmlessly, neutralizing acid and preventing oil breakdown. Chemically dries all fluorinated refrigerants (R12, R22 etc.). Frees frozen systems, does not leave any residue, will not clog capillary tubes or expansion valves.

| | |
|----------------|--------------|
| CAT. NO. 18330 | 4 oz. Bottle |
|----------------|--------------|

SILICA - GEL

Silica-Gel is a manufactured highly porous form of desiccant which can attract and hold a high proportion of its weight in water vapour. The desiccant does not break down or powder when saturated and can be re-activated by heating to approx. 150°C (300°F) under vacuum.

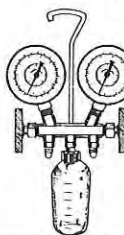
| CAT. NO. | MESH | TYPE/No. | SIZE CONTAINER |
|----------|--------|----------|--------------------|
| 18310 | 8 - 20 | No. 540 | 1½ lb. Container |
| 18311 | 8 - 20 | No. 550 | 6 lb. Container |
| 18316 | 5 - 10 | Type A | 500 gram Container |
| 18319 | 5 - 10 | Type A | 5 kg Container |
| 18318 | 5 - 10 | Type A | 10 kg Container |
| 18317 | 5 - 10 | Type A | 12.5 kg Container |

MOLECULAR SIEVES

Molecular Sieves is a fairly recent development in water absorbing materials and has the capacity to absorb many times more water per given weight than other forms of drying agents. Can be re-activated by purging with dry (-18°C [0°F] dewpoint) 246°C (475°F) air at 96 kPa (14psi), or heating to 150°C (400°F) under vacuum.

| | |
|----------------|-----------|
| CAT. NO. 18313 | 1 kg Jars |
| CAT. NO. 18314 | 5 kg Tins |

LIQUID DEHYDRANT DRY OUT with Vacumatic Kap



Enables insertion of EXACT amounts of dehydrant into the system. DRY OUT's special formula is an acid neutralizer, an oil stabilizer and an aluminium reaction inhibitor.

Bottle screws DIRECTLY onto the manifold — enters system slowly — provides you with "¼ of an ounce" control. Unique design of Vacumatic Kap prevents over or under charging of liquid dehydrants.

| | |
|----------------|-----------------|
| CAT. NO. 18331 | No. DO-3 Bottle |
|----------------|-----------------|

SOLVENTS

'VIRGINIA' No. 10 DEGREASING SOLVENT

A highly effective degreasing solvent expressly designed to meet the requirements of the refrigeration and air-conditioning service and maintenance trades. Non-corrosive. Fast drying. Flashpoint (as shipped) 74°C (165°F), Dielectric strength: 20,000V.

| | |
|----------------|-------------------------------|
| CAT. NO. 18334 | 16 oz. Pressurized Can (D210) |
|----------------|-------------------------------|

REFRIGERANT 11

A popular flushing solvent, particularly following a motor burn-out in sealed unit systems. Boiling point 23.8°C (74.8°F). Available in Cans, Drums, Cylinders — Refer Refrigerants Pages 185/185-a.

| | |
|----------------|-----------|
| CAT. NO. 18337 | 4 oz. Tin |
|----------------|-----------|

CHLOROTHENE N.U.

An effective non-flammable solvent having a boiling point of approx. 74°C (165°F). Readily dissolves oils, greases, waxes, resin fluxes, rubber, lacquers, etc. yet will not damage the highly polished metal surfaces as found in refrigeration compressors. (Refer also Tech. Page 183-a).

| | |
|----------------|-------------|
| CAT. NO. 18322 | 5 kg Tins |
| CAT. NO. 18321 | 30 kg Drums |

TRICHLOROETHYLENE

Another popular solvent with a wide range of cleaning and flushing properties. Boiling point 87°C (189°F).

| | |
|----------------|--------------|
| CAT. NO. 18326 | 5 Litre Tins |
|----------------|--------------|

REFRIGERATION SERVICE AIDS

TRACE

REFRIGERANT LEAK DETECTOR

Trace offers the simplest method of detecting refrigerant leaks. Merely add Trace to the refrigerant, and inspect for red spots. Trace works even when you are away.

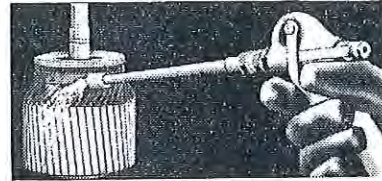
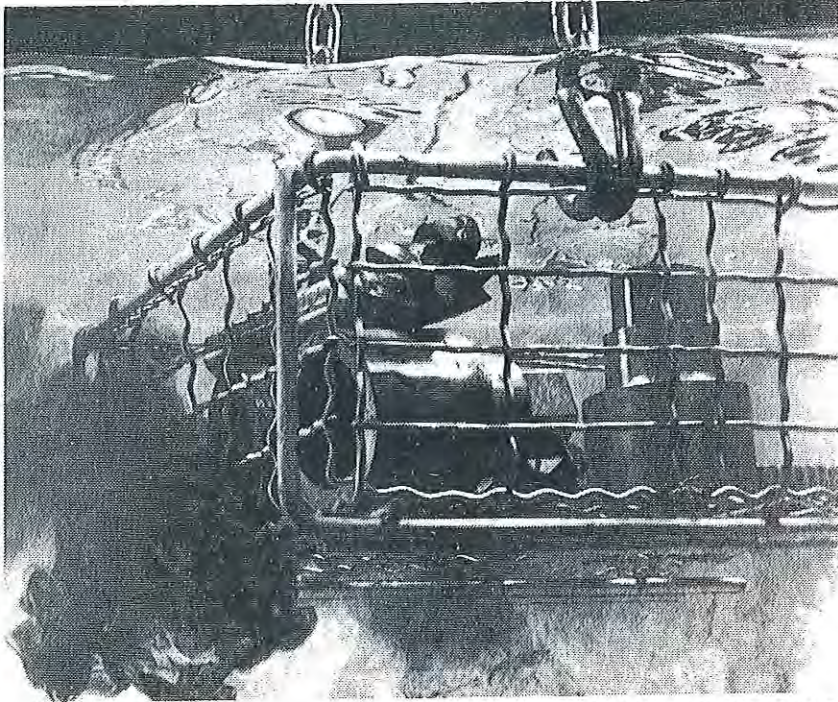
| | |
|----------------|-----------|
| CAT. NO. 18337 | 4 oz. Tin |
|----------------|-----------|

METHANOL

Methyl Alcohol, known as Methanol is a pure, clean, dry, synthetic alcohol, free from moisture and foreign matter, water-white in colour, highly inflammable with very low freezing point. It is especially recommended for use in all Halide Leak Detectors.

| | |
|----------------|-------------------|
| CAT. NO. 1839 | 500 ml. Container |
| CAT. NO. 18312 | 5 Litre Container |

CHLOROTHENE NU. CLEANING SOLVENT



**cuts greases and oils,
cleans with a spray
a dip or a wipe**

Chlorothene* NU cleans stubborn dirt, oils and greases where other cleaning solvents often fail.

It's versatile: equally effective for spray, dip, wipe or bucket cleaning. It's fast: dries rapidly, leaves no residue. It's safe: low toxicity for enclosed areas; no fire or flash point. It's gentle: harmless to sensitive, corrosion-prone metals — even to yarns, threads finished cloth.

WHEN TO USE CHLOROTHENE NU

... any place or time during manufacture when a product or the machinery producing it is soiled with grease, tar, wax, adhesives, or oil. Chlorothene NU solvent cold-cleans products and machinery safely and effectively.

USES

CLEANING ELECTRIC MOTORS

Chlorothene NU cleans electric motors efficiently, especially when spray equipment is used. The mechanical force of the spray combined with the high solvent power of Chlorothene NU speeds motor cleaning. Either in-place or bench cleaning is feasible.

Insulating varnishes such as Lecton and Formvar are not harmed by Chlorothene NU. Certain asphaltic varnishes will soften or dissolve quickly. Some silicone varnishes, whether applied directly to the wire or over cotton-covered wire, are softened within a minute or so. Air dried varnishes in general should be checked for effect before employing Chlorothene NU full scale.

CLEANING GAS CYLINDERS

The high solvent power, low toxicity, reduced flammability hazard and low non-volatile residues of Chlorothene NU make it an excellent solvent for cleaning gas cylinders or equipment used in the manufacture of compressed gas. It is especially valuable as a non-corrosive agent for detecting leaks in gas cylinders.

MOLD CLEANER

From dental molds to tyre molds, Chlorothene NU cleans with a solvent power that dissolves almost all release agents.

RUBBER CLEANING

Rubber may be wiped clean with Chlorothene NU; prolonged contact with Chlorothene NU causes natural rubber and most synthetics to swell.

ULTRASONIC CLEANING

Chlorothene NU approaches the ideal as a solvent for ultrasonic cleaning. Its lack of flash or fire point, excellent solvency at room temperature, low toxicity, ease in distilling, and good ability to cavitate are the properties Chlorothene NU brings to ultrasonic cleaning.

PHOTOGRAPHIC FILM CLEANING

Chlorothene NU is safely and successfully used to clean film. Efficient cleaning is accomplished in a wide variety of film cleaning equipment; manufacturers' instructions for use should be observed.

ADDITIONAL APPLICATIONS FOR CHLOROTHENE NU:

- * Ignition drying.
- * Dilution of polyglycols in the rubber industry.
- * Analytical solvent replacing carbon tetrachloride.
- * Removing layout ink in pattern and fabrication shops.
- * Quench bath to cool small electronic parts.
- * Welding expanded polystyrene.
- * Solvent in rubber cement formulations replacing benzene and toluene.
- * Carrier for silicone paper coating.
- * Liquid glue formulations.
- * Solvent for insecticides.
- * Plastic and rubber mold release carrier.
- * Electric razor cleaner.
- * Clothing spot remover.
- * Solvent for germicides and insecticides in aerosols.
- * Reducing slipping of drive belts by removing glaze and increasing friction.
- * Removing ink from plastic scrap prior to reprocessing.
- * Non-flammable or lowered fire hazard solvent systems for epoxides.
- * Carrier for protective coatings such as those used on machinery.
- * Solvent for printing inks.
- * Solvent in many contact adhesive applications.
- * Polystyrene solvent.
- * Carrier in a graphite plating process.
- * Shoe cleaner (handling soils after mfg.).
- * Business machine cleaning.
- * Cleaning fiberglass.
- * Formulation of lapping compounds.

VAPOR DEGREASING SOLVENT.

Chlorothene NU solvent is not recommended for general vapor degreasing. As with past grades of inhibited 1, 1,1 - trichloroethane, some use latitude in specialty vapor degreasing applications exists for Chlorothene NU.

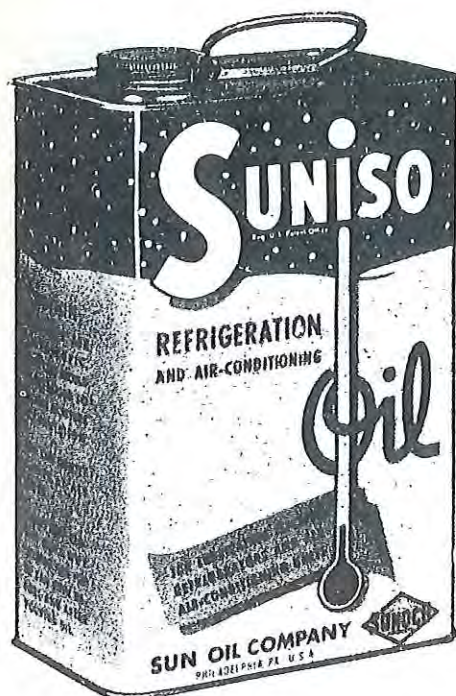
FIRE EXTINGUISHING AGENT.

Chlorothene NU is not an effective fire extinguishing agent or a component of fire extinguishing fluids and should not be used for this purpose.

LIMITATIONS

| | | | |
|-----------|----------------|-------------|---------------|
| 5 kg Tins | CAT. NO. 18322 | 30 kg Drums | CAT.NO. 18321 |
|-----------|----------------|-------------|---------------|

OILS



SUNISO REFRIGERATION OILS HAVE BEEN SPECIALLY PREPARED TO WITHSTAND THE HIGH SPEEDS AND LOW TEMPERATURES ENCOUNTERED IN MODERN REFRIGERATING AND AIR CONDITIONING COMPRESSORS. THE OIL IS NEARLY COMPLETELY DRY, HAVING LESS THAN 30 PARTS OF WATER PER MILLION PARTS OF OIL.

FEATURES

Chemical Stability, to resist chemical reaction with the refrigerant or any other material normally present in the system.
Thermal Stability, to eliminate excessive hard carbon deposits at compressor hot spots such as valves or discharge ports.
Low Wax Content, to prevent separation of flocculant material from the oil-refrigerant mixture at the low temperature points in the system.
Low Pour Point, to prevent separated oil from congealing in refrigerant lines.

High Dielectric Strength, to ensure good insulating properties. In hermetic units, the oil-refrigerant mixture serves as an insulator between the motor and the compressor body.

Proper Viscosity, even when diluted with refrigerant so as to ensure high film strength at elevated operating temperatures and while providing good fluidity under coldest operating conditions.

No Contamination, to prevent scarring of bearing surfaces, plugging of lines or oil ports and general deterioration.

LOW TEMPERATURE PROPERTIES

Refrigeration oils carried with the refrigerant through the system must be compatible with the refrigerant at low temperatures and must not separate waxlike deposits which can clog a system. There are two laboratory tests which are used to measure the low temperature performance of oil.

The more meaningful of these is the wax precipitation, or floc-point test.

The second test is the ASTM pour point test. It determines the lowest temperature at which the oil flows.

Refer Suniso Specifications tabled below.

SELECTION

Unless otherwise specified by the compressor manufacturer, the grade of oil to select can usually be based on the following :-

GRADE 3GS

All NEW compressors during the run-in period.
 All compressors of LESS than 3.5 kW (1 Ton) capacity.
 All LOW TEMPERATURE applications with suction temperature of -40°C to -90°C (-40°F to -130°F).
 For use with fluorinated refrigerants, Ammonia and all other refrigerants. Also for SCREW COMPRESSORS.

GRADE 4GS

All compressors (run-in) other than Ammonia of 3.5 kW (1 Ton) capacity and over, and employed on normal applications with suction temperature of -40°C (-40°F) and higher.

GRADE 4SA
 FILTER POINT TO -60°F.

All Ammonia compressors (run-in) of 3.5 kW (1 Ton) capacity and over and employed on normal applications with suction temperature of -40°C (-40°F) and higher including some Screw Compressors.

GRADE 5GS

CAR AIR CONDITIONING COMPRESSORS. To be used only when specified by the compressor manufacturer, or when a higher viscosity oil is required for any special reason or purpose.

SUNLUBE R31

For high vacuum pumps.

SUNVIC &

For reciprocating and centrifugal compressors as and when specified by the Compressor Manufacturer.

SUNOCO OCNUS

Refer next page for centrifugal compressor oil information.

| OIL TYPE | GRADE | 5 LITRE CANS | 20 LITRE DRUMS | 205 LITRE DRUMS |
|----------|-------|--------------|----------------|-----------------|
| | | CAT. NO. | CAT. NO. | CAT. NO. |
| SUNISO | 3GS | 1842 | 1843 | 1844 |
| SUNISO | 4GS | 1848 | 1849 | 18410 |
| SUNISO | 4SA | — | 18419 | 18420 |
| SUNISO | 5GS | 18415 | 18416 | 18417 |
| SUNISO | R31 | 18423 | — | — |

SPECIFICATIONS

| PROPERTY | METHOD * | SUNISO GRADE | | | |
|-------------------------------|----------|-------------------|-------------------|-------------------|-------------------|
| | | 3GS | 4GS | 5GS | 4SA |
| Viscosity, SUS/100°F (37.8°C) | D2161 | 150 - 160 | 280 - 300 | 500 - 530 | 285 - 305 |
| Flash, COC, °F (°C) | D92 | 330 (165.6) min. | 340 (171.1) min. | 360 (182.2) min. | 390 (199) min. |
| Pour Point °F (°C) | D97 | -40 (-40) max. | -35 (-37.2) max. | -30 (-34.4) max. | -29.2 (-34) max. |
| Floc Point °F (°C) | J-58 ** | -60 (-51.1) max. | -50 (-45.6) max. | -40 (-40) max. | -40 (-40) max. |
| Colour | D1500 | L 1.0 max. | L 1.0 max. | L 1.5 max. | L 2.0 max. |
| Gravity, API | D287 | 22.0 - 24.0 | 20.5 - 23.0 | 19.5 - 22.0 | 26.0 - 27.0 |
| Total Acid No. mg KOH/g | D974 | 0.05 max. | 0.05 max. | 0.05 max. | 0.05 max. |
| Dielectric Strength, KV | D877 | 25 min. | 25 min. | 25 min. | 25 min. |
| Aniline Point, °F (°C) | L611* | 155 - 165 (68-74) | 158 - 168 (70-76) | 160 - 170 (71-77) | 180 - 190 (82-88) |

* ASTM unless otherwise specified. ** Sun method.

Oils Continued next Page.

OILS

MOBIL VACUUM PUMP OIL

5 litre Cans

CAT. NO. 18413

Mobil Vacuum Pump Oil is a high quality straight mineral oil. Its low vapour pressure and other characteristics make it especially suitable for use in vacuum pumps where high vacuums are required. This is a dehydrated oil and containers should be kept well sealed to prevent contamination by moisture.

SPECIFICATIONS

| SPECIFIC GRAVITY AT 15°C | POUR POINT | FLASH POINT | VISCOSITY AT 40°C | VISCOSITY AT 100°C | ISO VISCOSITY GRADE | VISCOSITY INDEX | COLOUR ASTM |
|--------------------------|------------|-------------|-------------------|--------------------|---------------------|-----------------|-------------|
| 0.88 | -18°C max. | 260°C min. | 68/74 cSt. | 8.6 cSt. | 68 | 95 min. | 1.0 max. |

IMPERIAL VACUUM PUMP OIL

A high quality Vacuum Pump Oil
1 Quart Cans — No. 205-P

CAT. NO. 18421

ROBINAIR DEEP VACUUM GREASE

A special low vapour pressure lubricant for deep vacuum valves
No. 13033

CAT. NO. 184150

CENTRIFUGAL & SCREW COMPRESSOR OILS

Listed below are some of the oils available as used in various makes of Centrifugal and Screw type compressors. We do **not** make recommendations on the particular type and grade of oil to suit these compressor types and will only supply your nominated selection without acceptance of any responsibility for its use or misuse.

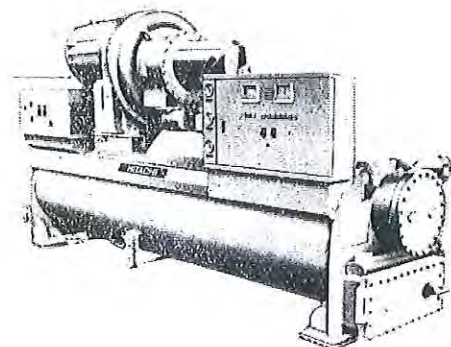
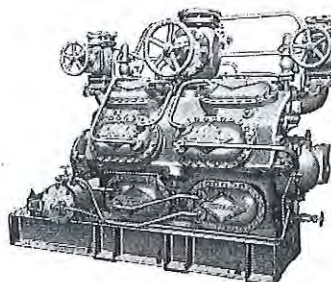
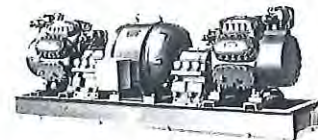
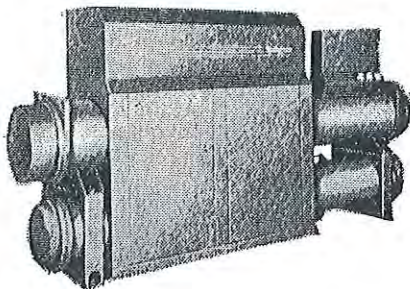
SEE WARNING NOTE BELOW

| CENTRIFUGAL COMPRESSOR OILS | | | SCREW COMPRESSOR OILS | | |
|-----------------------------|--------------------|---|-----------------------|--------------------|-----------------------------------|
| CAT. NO. | DRUMS AVAILABLE IN | DESCRIPTION | CAT. NO. | DRUMS AVAILABLE IN | DESCRIPTION |
| 184138 | 20 litre | CALTEX CAPELLA "D" | 184129 | 20 litre | CASTROL ICEMATIC 299 (Was 499) |
| 184139 | 60 litre | | 184130 | 205 litre | |
| 184140 | 209 litre | | MOBIL (HEAVY) DTE | 1842 | 5 litre |
| 184126 | 20 litre | 1843 | | 20 litre | |
| 184127 | 205 litre | SHELL T68 (Was Turbo 33) | 1844 | 205 litre | SUNISO * 4GS |
| 184132 | 205 litre | | 1848 | 5 litre | |
| 184134 | 20 litre | SHELL TELLUS 33 | 1849 | 20 litre | SUNISO * 4SA |
| 184135 | 60 litre | | 18410 | 205 litre | |
| 184136 | 205 litre | | SUNISO * 5GS | 18419 | 20 litre |
| 18415 | 5 litre | 18420 | | 205 litre | |
| 18416 | 20 litre | * SUNISO OILS — Refer also Page 184 for Cat. Nos. & Tech. Page 184-a. | | | |
| 18417 | 205 litre | | | | |

WARNING

THE SELECTION AND USE OF THE PROPER OIL IN CENTRIFUGAL AND SCREW COMPRESSORS IS MOST IMPORTANT. THE COMPRESSOR MANUFACTURERS'/SUPPLIERS' RECOMMENDATIONS SHOULD BE STRICTLY FOLLOWED.

TYPICAL CENTRIFUGAL, SCREW AND RECIPROCATING CHILLER SETS AND COMPRESSOR SETS



ACID TEST KITS FOR REFRIGERATION OIL



ACID ALERT



CAT. NO. 18442

The NEW ALCO "ACID ALERT" Refrigeration Oil Test Kit is a disposable kit for one, accurate, positive, convenient and inexpensive test. It is easy and simple to use and may be disposed of after the test results are obtained. No confusion with multiple colours or colour comparators — **JUST PURPLE PURPLE** — No acid present. Clear or NOT identical with purple band on box — Acid is present and remedial action must be taken.

PROCEDURE

1. Pour contents of small bottle into large bottle. Bottom layer of mixture should be PURPLE, identical to PURPLE band on box.
2. Fill small bottle completely with oil being tested.
3. Immediately, pour oil sample into large bottle, cap and shake well.

4. Allow the phase separation (Two Layers) to develop. This should take 2 to 3 minutes. If the bottom layer loses its PURPLE colour entirely or if its colour is not identical to the PURPLE band on the box, the sample has an acid number of 0.05 or more.
5. Oils having an acid number of 0.05 or more are unsatisfactory and the system must be cleaned up by means of an oversized liquid line filter-drier and a suction line filter-drier.

The above phase separation allows ease of determining the test results even when checking badly discoloured oil. There is no need to make marginal judgements — the oil is either safe or unsafe.

2



CAUTION
POISONOUS
FLAMMABLE

CAT. NO. 18439

VIRGINIA
TKO REFRIGERATION OIL ACID TEST KIT

Fastest way of telling whether compressor oil is safe or acidic. **One Bottle!** Fill with oil up to line on bottle neck and shake. Purple is safe, Yellow is acidic. Ultra sensitive colour change guarantees accurate test. Inexpensive. Charge off on each job. Colour comparator in every box. Colour changes at neutralization number of 0.05. If oil is very dark and acidic, colour may be more orange than yellow. If light coloured oil gives orange colour, oil acidity is marginal. INHIBITED centrifugal oils will give false acidic test.

| | | |
|------------|---|---|
| PROCEDURE: | ADD OIL AND SHAKE | |
| | IF COLOUR REMAINS PURPLE OIL IS SAFE | IF YELLOW/ORANGE COLOUR DEVELOPS OIL IS ACIDIC |



Accurate "On The Job" Oil Sample Test Method: Henry Acid Test Kits provide a simple and reliable means for detecting the presence of acid in refrigeration oil with Distinctive Colour Separation. When acid is present in a refrigeration system, the oil in the system acts as a scavenger and picks up the acid. Field and laboratory experience have indicated that measurement of the acid concentration of a sample of oil, taken from a system, is a reliable method of determining the extent of contamination in the system. Periodic checks of the oil, with the acid test kit, during a cleanup procedure will indicate when the acid and contamination in the system have been reduced to a safe operating level.

CAT. NO. 18440

"UNI-KIT" ACID TESTER No. UK90



The Henry Uni-Kit Acid Tester is a disposable kit, for one accurate test. Use it then discard it. Save time, work, dollars. Take it with you on all your calls. Each test solution vial in the Uni-Kit contains exactly the right amount of solution to be mixed with the oil in one filled oil sample tube. When these precisely calibrated amounts of testing solutions are brought together in the shake-out tube, you have the properly proportioned mixture for an accurate acid test. If the fluid is "pink", the refrigerant oil is safe. If the fluid is "colourless" you have a clear warning of high acid level. **Exclusive HENRY Feature: The Hermetically Sealed Glass Ampule.***
* Only the Henry UK-90 UNI-KIT gives you this hermetically sealed ampule. Contains a test solution that stays factory fresh. The long life, simple, accurate shake test that assures positive colour identification even when performed on dark contaminated refrigerant compressor oil.

CAT. NO. 18442

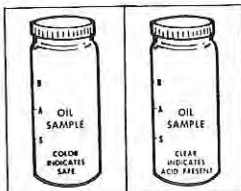
"UNI-COR" ACID TEST KIT No. UC8700



This kit contains enough of each solution to perform 25 tests.



ACCURATE
"Shake Test"
ANALYSIS



PINK is SAFE. WATER CLEAR indicates ACID.

The Uni-Cor Acid Test Kit consists of three separate solutions: a titration solvent solution, a neutralizing solution, and an indicating solution. It also includes a graduated mixing tube, plastic beakers for convenience in pouring the solutions and a plastic bottle for collecting the oil sample. All component parts, together with complete instructions for performing the test, are packaged in a compact, convenient carrying case.

The test is performed simply by combining the oil sample and solutions in specified amounts in a mixing tube, shaking, and observing the colour after the ingredients have been allowed to stand for a few minutes. One-half ounce of oil is sufficient to make a test.

The Henry shake test procedure has a unique and exclusive feature in that it provides for separation of the ingredients after the mixture is allowed to stand for a few minutes. A mixture of oil and solvent rises to the top of the mixing tube and a column of clear liquid settles to the bottom of the mixing tube. This lower column is the test indicator which turns "pink" when the oil is acceptable and remains "colourless" when the oil is unacceptable. This feature permits tests to be performed on dark and discoloured refrigerant oils and still provide accurate results.

The kit contains an extra amount of the solvent solution which can be used to rinse and clean the mixing tube and oil containers after each test. Replacement solutions are available.

PROTECTIVE, CLEANING & LUBRICATING FLUIDS PENTALUBE

PENTALUBE 26 FOR ELECTRICAL EQUIPMENT REMOVES MOISTURE, PROTECTS, PENETRATES, LUBRICATES

Pentalube 26 is a special formulation designed specifically to protect and maintain the operating efficiency of all electrical equipment. It forms a film . . . a water resistant moisture barrier which guards against corrosion, prevents deterioration and improves electrical contacts.

Formula 26 supports the insulating properties of non-conductive materials. Is highly efficient in the lubrication of moving parts and safeguards stored equipment.

APPLICATIONS

AIR CONDITIONERS, ALARMS, ANTENNA INSULATORS, BATTERY TERMINALS, BLOWERS, BUS BARS, CABLES, CAPACITORS, CIRCUIT BREAKERS, COILS, CONTACTORS, CONTROL GEAR, CROSS BARS, CONTROLS, ELECTRONIC COMPONENTS, ELECTRONIC ORGANS, ELEVATORS, ELECTRONIC CIRCUITS, FANS, FUSE HOLDERS, GENERATORS, HOISTS, HOUSINGS, INSULATION, LIFT TRUCKS, METALS, METERS, MOTORS, MULTIPLE CONNECTORS, OSCILLATORS, POKER MACHINES, RADIOS, RADIO CONTROLS, PORTABLE TOOLS, RECEPTACLES, RECTIFIERS, RELAYS, SOLENOIDS, SLOT MACHINES, SWITCHGEAR, SWITCHES, TERMINALS, TESTERS, TELEPHONE SWITCHBOARDS, TV TUNERS, TRANSFORMERS, TRANSMITTERS, VOLUME CONTROLS, ETC., ETC.



PENTALUBE 76 FOR COMMUNICATION, ELECTRICAL, ELECTRONIC EQUIPMENT DISPLACES MOISTURE, PENETRATES, DEGREASES

INSTANTLY CLEANS PRECISION EQUIPMENT WITH COMPLETE SAFETY

PENTALUBE 76 - as a spray, it provides a constant source of fresh FREON® T.F. solvent - preventing the contamination so often a problem with dipping and bath cleaning methods.

PENTALUBE 76 - offers a unique combination of high oil solvency with a pronounced washing action due to a low surface tension (19 Dynes/CM @ 25°C).

PENTALUBE 76 - spray is completely volatile - it evaporates fast (boiling point 47.6°C) and clean, leaving no residue. Non-conductive. Completely displaces water from electrical equipment making it immediately operational.

SPECIALLY RECOMMENDED FOR - instruments, relays, distribution panels, switching devices, controls, tuners, cam-operated equipment.

IN THESE INDUSTRIES - Automotive, Electrical, Electronics, Aircraft, Power, Telephone, TV and Radio, Office Equipment, Laboratories, Field Service.



PENTALUBE 56 FOR AUTOMOTIVE, MARINE, FARM, HOME USE

STARTS WET ENGINES, PENETRATES, PROTECTS, LUBRICATES

PENTALUBE 56 is an all purpose protective lubricant which has the ability to remove water - impregnate metal and form a film which lubricates and guards against rust and corrosion.

PENTALUBE 56 is used on both mechanical and electrical parts. Will not harm paintwork or chrome . . . displacing moisture caused by condensation and drying after degreasing.

Use inside doors for rust protection and free movement of windows. Use on hinges and locks . . . it lubricates and eliminates squeaks.

APPLICATIONS - Aerials, Air Conditioners, Alternators, Ball Joints, Battery terminals, Brackets, Brake Assemblies, Bushings, Carburettor Linkage, Chokes, Chrome Parts, Coils, Distributors, Exhaust Systems, Generators, Heat Risers, Hinges, Linkages, Locks and Latches, Motors, Nuts and Bolts, Poker Machines, Shock Absorbers, Slot Machines, Spark Plugs, Springs, Starters, Switches and Controls, Tie Rods, Tools etc.



PENTALUBE 36 FOR METALS AND MACHINERY

INHIBITS RUST CORROSION AND PREVENTS PLASTER BURN ON

ALUMINIUM AND CHROME FITTINGS - LUBRICATES AND PROTECTS

A special formulation designed for the protection of metals and machinery. It has the ability to penetrate and form a water resistant film which guards against corrosion. Pentalube 36 can be used on Aluminium, Steel, Iron, Copper, Brass, Magnesium, Plated Surfaces.

APPLICATIONS - ENGINEERING - Tools, Instruments, Dies, Jigs, Sub-Assemblies, Precision Machined Surfaces, Storage and Transport of Machinery.

BUILDING - Aluminium Windows and Doors, Chrome Fittings, Taps, Hardware, Stainless Steel Sinks, Sliding Door Tracks, etc.



| TYPE | 175 GRAM AEROSOL PRESSURE CAN | 400 & 300 GRAM AEROSOL PRESSURE CAN | 500 GRAM AEROSOL PRESSURE CAN | 5 LITRE CAN |
|--------------|-------------------------------|-------------------------------------|-------------------------------|-------------|
| | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. |
| PENTALUBE 26 | — | 18436 (400 g) | — | 18437 |
| PENTALUBE 76 | — | — | 18434 | — |
| PENTALUBE 56 | 18430 | 18428 (300 g) | — | 18429 |
| PENTALUBE 36 | — | — | — | — |

HAND CLEANERS & PROTECTORS



Helps protect the hands from the harmful and unpleasant effects of paint, grime, grease, carbon, oil, printers' inks and dyes, tar, fine metal dust and many other industrial soils that can injure the skin.

Protectolene is a stable, concentrated, highly efficient water soluble cream of the combined emulsifier and solvent type containing soothing emollients.



DIRECTIONS FOR USE : Rub then rinse. To ensure maximum efficiency and protection with Protectolene all that is required is to rub it in thoroughly. It is important that particular attention be paid to skin crevices and around fingernails. Once the cream is properly spread all over the soiled hands, rinse with water then dry. If water is unavailable, simply wipe hands on clean rag, cotton waste or paper towelling.

2

| PROTECTOLENE | | | | | | | |
|---------------|--------------|--------------|-------------|--------------------------------------|-----------------------|-------------|-------------|
| 100 GRAM TUBE | 500 GRAM TIN | 1.75 kg. TIN | 3.5 kg. TIN | DISPENSER UNIT AND EMPTY CAN 3.5 kg. | DISPENSER CAN 3.5 kg. | 19 kg. DRUM | 50 kg. DRUM |
| CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. |
| 18458 | 18451 | 18452 | 18453 | 18457 | 18456 | 18454 | 18455 |

WHITE GENIE ANTISEPTIC INDUSTRIAL HAND CREAM

WHITE GENIE contains especially selected oils plus the miracle germ killer hexachloraphine, to protect hands and to assist in the control of industrial dermatitis and kindred ailments.

DIRECTIONS

Apply a small quantity of WHITE GENIE to the hands, rub in well then either rinse or wipe off.

WHITE GENIE effectively sterilizes grease, grime, dirt, carbon black, inks, semi-dry paint and most dyes and is ideally suited for mechanics, plumbers, engineers, painters, fitters, printers and commercial artists, etc.

| WHITE GENIE | | | | |
|---------------|------------|-------------|------------------|-------------------|
| 450 GRAM TINS | 4 kg. TINS | 16 kg. TINS | 4 kg. DISPENSERS | 16 kg. DISPENSERS |
| CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. |
| 18463 | 18464 | 18465 | 18466 | 18467 |

BON GARD ANTISEPTIC HAND GEL

WHATEVER INDUSTRY, WHATEVER SIZE, BON GARD IS THE IDEAL PROTECTIVE GEL IN PROTECTING WORKERS' HANDS AND ARMS AGAINST THE TOUGHEST WORK GRIME, GREASE, PAINT, METAL DUST, CARBON, DUPLICATION INK, AND EVEN THE MOST INGRAINED DIRT

Bon Gard antiseptic protective gel fights infection! It's a pure white gel that you simply rub on and wipe off - with or without water. Bon Gard leaves only a layer of pure lanolin on the skin - protecting even the toughest working man's hands against dryness and infection.

Bon Gard contains Lanolin Esters, an effective Emollient to relieve the condition of skin irritation. Bon Gard also contains Chloroxylenol, an active germicidal ingredient which aids healing of cuts and assists in prevention of industrial dermatitis.

| BON GARD | | | | | | | |
|--------------|--------------|-----------|-------------|-------------|--------------|--------------------|------------------|
| 450 GRAM TIN | 3.75 kg. TIN | 4 kg. TIN | 19 kg. DRUM | 50 kg. DRUM | 180 kg. DRUM | 3.75 kg. DISPENSER | 19 kg. DISPENSER |
| CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. |
| 18468 | 18469 | 18470 | 18471 | 18472 | 18473 | 18474 | 18475 |

OUR COMPLETE INVENTORY ASSURES PROMPT SERVICE

VIRGINIA METAL CLEANERS & SCALE REMOVERS



VIRGINIA METAL CLEANING DETERGENT

For cleaning grease and dirt-contaminated fin coils, evaporators, metal filters and fan blades.

Excellent for use on electronic air filters.

Emulsified for better penetrating and coating properties.

Apply as a spray, full strength or diluted, then rinse away with water.

Packed: 1 Gal. Polyethylene Bottles — No. WD1



VIRGINIA ICE MACHINE CLEANER

Liquid — for fast penetration and quick removal of scale.

Packed: Half-Pint Bottles — No. H418



VIRGINIA LIQUID SCALE REMOVER

For fast penetration of hard-to-remove scales. Special anti-foam reagent included if control of foaming is needed. Special inhibitor included to provide excellent protection for all metal parts of the equipment system.

Packed: 1 Gal. Bottles — No. WL1



VIRGINIA SOLID SCALE REMOVER (V-803)

Removes scale quickly. Protects metal from damage. A dry 97% sulfamic acid formulation, specially inhibited, to protect such vulnerable metal surfaces as aluminium, hot zinc dip coated and galvanized. Packed in polyethylene lined, weather-proof containers.

Packed: 10 lb. Drum — No. WS10

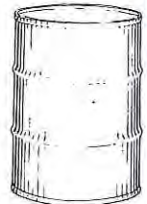
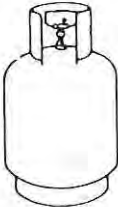
| VIRGINIA | | | |
|--|-------------------------------|---------------------------|-------------------------|
| METAL CLEANING DETERGENT | ICE MACHINE CLEANER | LIQUID SCALE REMOVER | SOLID SCALE REMOVER |
| 1 Gal. Polyethylene Bottles No. WD1 | Half Pint Bottles No. H418 | 1 Gal. Bottles No. WL1 | 10 lb. Drum No. WS10 |
| CAT. NO. | CAT. NO. | CAT. NO. | CAT. NO. |
| 18449 | 18448 | 18446 | 18447 |

REFRIGERANTS

THE REFRIGERANTS LISTED BELOW ARE AVAILABLE IN :

- A. — CYLINDERS, TANKS OR DRUMS.
Related to quantity ordered.
- B. — THROWAWAY OR DISPOSABLE CYLINDERS AND CANS.
Refrigerants R12, R22, R114 and R502 are available in non-returnable/non-refillable Throwaway or Disposable cylinders and cans. (Refer Tech. Page 185-b).
- C. — DEPOSITS.
As manufacturers deposit conditions vary from time to time, deposits charged will be in accordance with the conditions ruling at the date of sale.
- D. — CUSTOMER CYLINDERS.
When CUSTOMER CYLINDERS are forwarded for filling, they must be clearly labelled with Customer's name, type of refrigerant and method of return.
The Company reserves the right to refuse to fill a customer cylinder if same does not conform to "Code" requirements.

PRECAUTIONS : Never mix refrigerants unless a plant was originally so charged by the manufacturer. Mixed refrigerants boil or condense over different ranges of temperatures. Experiments indicate that under carefully controlled conditions some mixed refrigerants may have certain benefits. Among these are azeotropes which are mixtures which have a constant boiling point under constant pressure. Field charging of the individual components of mixtures should not be attempted. One exception to the use of mixtures occurs with R22 and some manufacturers advise the addition of a small amount of R12 to a plant charged with R22 in order to help an oil return scheme to work. This is quite in order and will not upset the R22 characteristics because only some 2 to 3% of R12 is added. For successful operation you must use a guaranteed pure, dry refrigerant and it must be charged into a guaranteed clean, dry and air-free system.



2

FILLING OF CYLINDERS

Cylinders may be filled to a maximum weight in accordance with the following table:-

| REFRIGERANT | FILLING RATIO | REFRIGERANT | FILLING RATIO |
|-------------|---------------|-------------|---------------|
| R11 | 1.36 | R40 | 0.82 |
| R12 | 1.15 | R113 | |
| R13 | 0.96 | R114 | 1.31 |
| R13B1 | 1.15 | R500 | 1.00 |
| R14 | | R502 | 1.04 |
| R21 | 1.15 | R503 | |
| R22 | 1.03 | R764 | 1.23 |

MAXIMUM NET WEIGHT FILLED
= Water Capacity of Cylinder kg (lbs)
Multiplied by FILLING RATIO

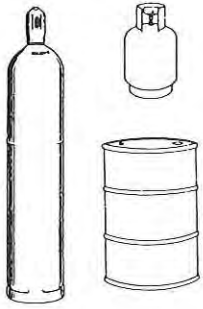
Filling Ratios as per -
Australian Standard 2030 - 1977
SAA GAS CYLINDERS CODE

SPECIFICATIONS AND APPLICATIONS OF REFRIGERANTS.

| REFRIG. | CHEMICAL NAME | FORMULAE | BOILING POINT °C °F | APPLICATION |
|---------|---|--------------------------------------|------------------------|--|
| R 11 | Trichlorofluoromethane | CCl ₃ F | +23.8 (+74.8) | Refrigerant used in large centrifugal compressors. Also flushing solvent for sealed-unit systems after motor burn-out. |
| R 12 | Dichlorodifluoromethane | CCl ₂ F ₂ | -29.8 (-21.6) | Universal refrigerant for all types of compressors and for all applications. |
| R 13 | Chlorotrifluoromethane | CClF ₃ | -81.4 (-114.6) | Used in cascade with R12 or R22 to attain temperatures approaching -101°C (-150°F.) |
| R 13B1 | Bromotrifluoromethane | CBrF ₃ | -57.8 (-72.0) | Probably the lowest temperature, highest vapour pressure refrigerant with which it is feasible to operate a single stage unit. Favoured for specialised applications such as simulating conditions at high altitudes. |
| R 14 | Tetrafluoromethane (Carbon tetrafluoride) | CF ₄ | -128.0 (-198.4) | Extremely high pressure, low temperature refrigerant for highly specialised applications. Used in a three-stage cascade system with R22 & R13 to attain ultra-low temperature. |
| R 21 | Dichlorofluoromethane | CHCl ₂ F | +8.9 (+48.0) | Has very limited use — mainly used in vapour pressure control instruments. |
| R 22 | Chlorodifluoromethane | CHClF ₂ | -40.8 (-41.4) | Universal refrigerant particularly for L.T. applications. Higher capacity permits the use of smaller equipment. Refrigerant for standard commercial applications but now being superseded by chloro-fluoro-hydrocarbons. |
| R 40 | Methyl-Chloride | CH ₃ CL | -23.3 (-10.0) | Refrigerant used in many earlier standard commercial applications but now being superseded by chloro-fluoro-hydrocarbon refrigerants. Note: Only available in States where the use of it is not banned. |
| R 113 | Trichlorotrifluoroethane | CCl ₂ F.CClF ₂ | +47.6 (+117.6) | Very low vapour pressure refrigerant used in centrifugal compressors. Also a useful flushing and dry cleaning solvent. |
| R 114 | Dichlorotetrafluoroethane | CClF ₂ .CClF ₂ | + 3.6 (+38.4) | Moderately low vapour pressure refrigerant used in small rotary compressors. |
| R 500 | 74.2% —R12, 25.8% —R152A. | — | -33.3 (-28.0) | An azeotropic mixture of R12 and R152A giving higher performance in airconditioning systems. |
| R 502 | 48.8% —R22, 51.2% —R115. | — | -45.6 (-50.1) | An azeotropic mixture of R22 and R115 giving increased capacity at considerably lower discharge temperatures. |
| R 503 | 59.9% —R13, 40.1% —R23. | — | -88.6 (-127.6) | An azeotropic mixture of R13 and R23 offering significantly greater refrigerating performance than either refrigerant alone. R503 is still very much in the development stage but there are strong indications that its use as the low stage refrigerant in cascade systems will be of considerable benefit in attaining the low temperatures required for environmental test chambers, pharmaceutical processing etc. |
| R 764 | Sulphurdioxide | SO ₂ | -10.6 (+13.0) | General refrigerant for early model small reciprocating compressors. |
| R 717 | Ammonia | NH ₃ | -33.3 (-28.0) | A widely used refrigerant in the larger sizes of industrial vapour-compression systems as well as absorption systems. |

185-a

REFRIGERANTS & REFRIGERATION SERVICE AIDS



REFRIGERANT

AVAILABLE IN :

Cylinders — 11 kg, 22 kg, 43 kg, 65 kg.

Drums — 800 kg.

Special Sizes on application

Filling Ratios — Refer Tech. Page 185-a

| REFRIGERANT | CAT. NO. |
|-----------------------------------|----------|
| R 12 | 1851 |
| R 22 | 1852 |
| R 11 | 18530 |
| R 13 | 18531 |
| R113 | 18533 |
| R114 | 18534 |
| R500 | 18535 |
| R502 | 18536 |
| SO ₂ (Sulphur Dioxide) | 18537 |
| R13B1 | 18540 |
| Methyl - Chloride | 18541 |

AMMONIA (R717)
(LIGHT WEIGHT CYLINDERS)
Other sizes on application

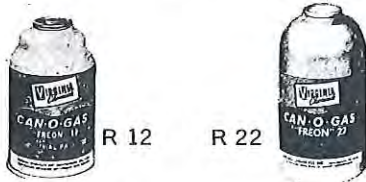
| REFRIGERANT | CYL. SIZE | CAT. NO. |
|-------------------|-----------|----------|
| AMMONIA (R717) | 24 kg | 18520 |
| | 35 kg | 18521 |

LIQUEFIED PETROLEUM GAS (LPG) also available

LIQUEFIED PETROLEUM GAS (LPG)
(Customer Cylinders filled to order)

| CAT. NO. | 18539 |
|----------|-------|
| | |

VIRGINIA CAN-O-GAS®



FREON® - A Du Pont TM.

The handy refrigerant in the throwaway container

- Easy, reliable way to add refrigerant to:
 - automotive air conditioners
 - window air conditioners
 - freezers
 - refrigerators
 - water coolers
 - vending machines
 - ice cream cabinets

| | CAT. NO. |
|---------------------------------------|----------|
| R12 14 oz. Can No. CF121FT (Flat Top) | 18584 |
| R22 1 lb. Can No. CF221ST (Screw Top) | 18564 |
| R22 2 lb. Can No. CF222ST (Screw Top) | 18561 |
| R114 1 lb. Can | 18562 |
| R502 1 lb. Can | 18563 |
| DYTEL * CONCENTRATE 14 oz. Can | |

- * DYTEL CONCENTRATE — DYTEL® is a bright red dye used for detecting leaks in air conditioning and refrigeration systems
- Easy to use — has good solubility and stability with the refrigerants and oils — at low and high temperatures.
 - It pinpoints the leaks — the red colour appears at the location of the leak, sometimes in a matter of minutes. Locates both large and also multiple leaks close together.
 - It is a liquid — no solid residues to cause plugging of expansion devices, strainers, or filter-driers.
 - It is non-inflammable — can be used in areas where a flammable atmosphere may present a hazard as with some types of leak detectors.
 - It is non-reactive — has no effect on metals, oils, or insulation materials in refrigeration systems. Does not affect performance of liquid line moisture indicators.
 - Especially useful for automotive air conditioning.



VIRGINIA CAN-O-GAS® SAFETY RELIEF TOP CAN

Refrigerant 12, 14 oz. Can with Safety Relief Tapping Ring Top to prevent accidental bursting of can due to excessive internal pressure during charging. Pierce tapping of can through plastic ring.

| | |
|-----------------------------|----------------|
| 14 oz. Can | CAT. NO. 18584 |
| Plastic Safety Tapping Ring | CAT. NO. 18585 |

REFRIGERANTS & REFRIGERATION SERVICE AIDS

DISPOSABLE REFRIGERANT CYLINDERS



FREON® - A Du Pont TM.

| CAT. NO. | REFRIGERANT | CYLINDER SIZE | PART No. |
|----------|-------------|---------------|----------|
| 185103 | R12 | 15 lb. | G12/15 |
| 185104 | R12 | 30 lb. | G12/30 |
| 185105 | R12 | 50 lb. | G12/50 |
| 185106 | R22 | 15 lb. | G22/15 |
| 185107 | R22 | 30 lb. | G22/30 |
| 185108 | R22 | 50 lb. | G22/50 |
| 185111 | R502 | 15 lb. | G502/15 |
| 185109 | R502 | 30 lb. | G502/30 |
| 185110 | R502 | 50 lb. | G502/50 |
| 185115 | R11 | 30 lb. | G11/30 |

IMPERIAL TAP-A-CAN® Valves

FEATURES

- BALL CHECK
- LONG LASTING DURABILITY
- POSITIVE SHUT-OFF
- QUALITY FORGED BRASS BODY
- HARDENED STEEL PIERCING NEEDLE



Spud-Can Type
339-C

339-C Tap-A-Can Valve for use with male spud screw top cans. 1/4" flare connection fits standard charging lines. 64293 Gasket for 339-C.



338-C Universal Tap-A-Can Valve fits all refrigerant cans — both plain and threaded spud top. 1/4" flare connection fits standard charging lines. 80470-01 Gasket for 338-C.



Clamp
Partially
Open



Clamp Locked
Closed. Valve
Prevents Clamp
From Opening.



Universal Type
338-C

| CAT. NO. | DESCRIPTION | MANUF. P/N |
|----------|------------------|------------|
| 18568 | Tap-A-Can Valve | 338-C |
| 18572 | Gasket for 338-C | 80470-01 |
| 18574 | Tap-A-Can Valve | 339-C |
| 18567 | Gasket for 339-C | 64293 |

ROBINAIR REFRIGERANT CAN DISPENSING VALVES

"TAPS ALL" VALVE

Fits all flat top or threaded top cans. Installed in a second by simply pressing the cam type locking device. Positive cam action locking device insures against accidental blow-off. Unit has quality forged brass valve body, hardened tool steel piercing needle, rugged metal handle and replaceable gasket.

Pt. No. 11001 Valve.

Pt. No. 11001-26 Gaskets (package of 12).

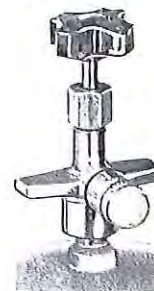


DISPENSING VALVE FOR 12-lb. DISPOSABLE CYLINDERS

Dispos-A-Can (DuPont Trade Name) valve with quick seal cap has a needle that upsets Schrader core in cylinder top. Precision machined all brass construction with moulded plastic handle. Needle is tool steel. Valve body is designed to provide a handle for carrying the disposable cylinder.

Pt. No. 14381 Dispensing Valve.

Pt. No. 40001 Gasket.



| | |
|---------------------|----------------|
| Valve Pt. No. 11001 | CAT. NO. 18575 |
|---------------------|----------------|

| | |
|---------------------|----------------|
| Valve Pt. No. 14381 | CAT. NO. 18577 |
|---------------------|----------------|

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LINE FITTINGS - BRASS





FLARE NUTS, CAP NUTS, BONNETS, SEAL PLUGS, WASHERS

| FLARE NUTS — PLAIN | | | | FLARE NUTS — SHORT BARREL | | | FLARE NUTS — FROST-PROOF | | | FLARE NUTS — FROST-PROOF GROOVED | | | | |
|---|----------|--------|--------|-----------------------------------|--------|--------|---|--------|--------|----------------------------------|-----------|------------|------------|------|
| SIZE | CAT. NO. | HELDON | HUDSON | CAT. NO. | HELDON | HUDSON | CAT. NO. | HELDON | HUDSON | CAT. NO. | HELDON | HUDSON | | |
| 3/16 | 1901 | 807 | 1651 | 19011 | 857 | — | 19021 | 907 | 1701 | — | — | — | | |
| 1/4 | 1902 | 800 | 1652 | 19012 | 850 | 1671 | 19022 | 900 | 1702 | 19032 | 950 | 1830 | | |
| 5/16 | 1903 | 801 | 1653 | 19013 | 851 | 1670 | 19023 | 901 | 1703 | — | — | — | | |
| 3/8 | 1904 | 802 | 1654 | 19014 | 852 | 1672 | 19024 | 902 | 1704 | 19034 | 951 | 1832 | | |
| 1/2 | 1905 | 804 | 1656 | 19015 | 854 | 1673 | 19025 | 904 | 1706 | 19035 | 952 | 1833 | | |
| 5/8 | 1906 | 805 | 1657 | 19016 | 855 | 1674 | 19026 | 905 | 1707 | 19036 | 953 | 1834 | | |
| 3/4 | 1907 | 806 | 1658 | 19017 | 856 | 1675 | 19027 | 906 | 1708 | 19037 | 954 | 1835 | | |
| 7/8 | 1908 | 810 | 1659 | 19018 | 860 | — | 19028 | 910 | 1709 | — | — | — | | |
| FLARE NUTS — PLAIN REDUCING | | | | FLARE NUTS — FROST-PROOF REDUCING | | | FLARE NUTS — FROST-PROOF — GROOVED — REDUCING | | | FLARE NUTS — LIGHT TUBE REDUCING | | | | |
| 1/4 3/16 | — | — | — | — | — | — | — | — | — | 19071 | Brass 870 | Steel 870S | Brass 1770 | |
| 5/16 1/4 | 19041 | 1000 | 1751 | 19051 | 1100 | 1801 | — | — | — | 19072 | 871 | 871S | 1771 | |
| 3/8 1/4 | 19042 | 1001 | 1752 | 19052 | 1101 | 1802 | 19062 | 1150 | — | 19073 | 872 | 872S | 1772 | |
| 3/8 5/16 | 19043 | 1006 | 1753 | 19053 | 1106 | — | — | — | — | 19074 | 873 | 873S | 1773 | |
| 1/2 3/8 | 19044 | 1002 | 1754 | 19054 | 1102 | 1803 | 19064 | 1151 | — | — | — | — | — | |
| 5/8 3/8 | 19045 | 1005 | — | 19055 | 1105 | — | — | — | — | 19076 | 874 | 874S | 1774 | |
| 5/8 1/2 | 19046 | 1003 | 1755 | 19056 | 1103 | 1804 | 19066 | 1152 | — | 19077 | 875 | 875S | 1775 | |
| 3/4 5/8 | 19047 | 1004 | 1756 | 19057 | 1104 | 1805 | 19067 | 1153 | — | — | — | — | — | |
| FLARE NUTS — LIGHT TUBE PLAIN (EXT'D BRASS) | | | | FLARE NUTS — PLAIN STEEL | | | COPPER BONNETS | | | COPPER FLARE WASHERS | | | | |
| 1/8 | 19081 | 880 | — | 19091 | 880S | — | — | — | — | — | — | — | — | |
| 3/16 | 19082 | 881 | 1660 | 19092 | 881S | — | — | — | — | — | — | — | — | |
| 1/4 | 19083 | 882 | 1661 | 19093 | 882S | 1821* | 190103 | 3000 | 1901 | 190113 | 3050 | 1951 | — | |
| 5/16 | 19084 | 883 | 1662 | 19094 | 883S | 1822* | 190104 | — | 1907 | — | — | — | — | |
| 3/8 | 19085 | 884 | 1663 | 19095 | 884S | 1823* | 190105 | 3001 | 1902 | 190115 | 3051 | 1952 | — | |
| 1/2 | 19086 | 886 | 1665 | 19096 | 886S | — | 190106 | 3002 | 1903 | 190116 | 3052 | 1953 | — | |
| 5/8 | 19087 | 887 | 1666 | 19097 | 887S | — | 190107 | 3003 | 1904 | 190117 | 3053 | 1954 | — | |
| 3/4 | 19088 | 888 | 1667 | 19098 | 888S | — | 190108 | 3004 | 1905 | 190118 | 3054 | 1955 | — | |
| 7/8 | 19089 | 889 | — | 19099 | 889S | — | — | — | — | — | — | — | — | |
| 1" | 19090 | 890 | — | 19100 | 890S | — | — | — | — | — | — | — | — | |
| | | | | | | | | | | | | | | |
| FLARE SEAL CAP NUTS | | | | FLARE SEAL PLUGS | | | BSP PIPE PLUGS | | | COPPER FLAT WASHERS | | | | |
| 1/8 | — | — | — | — | — | — | 190141 | 3100* | 2051* | I.D. O.D. | | | | |
| 3/16 | 190121 | 2907 | 1850 | 190131 | 2806 | 2000 | — | — | — | 1/4 | 7/16 | 190153 | C7/4 | 1970 |
| 1/4 | 190122 | 2900 | 1851 | 190132 | 2800 | 2001 | 190142 | 3101* | 2052 | 5/16 | 1/2 | 190154 | C8/5 | 1971 |
| 5/16 | 190123 | 2905 | 1852 | 190133 | 2805 | 2002 | — | — | — | 3/8 | 9/16 | 190155 | C9/6 | 1972 |
| 3/8 | 190124 | 2901 | 1853 | 190134 | 2801 | 2003 | 190143 | 3102* | 2053 | 7/16 | 3/4 | 190156 | C12/7 | 1973 |
| 7/16 | — | — | — | 190135 | 2807 | — | — | — | — | 1/2 | 7/8 | — | — | — |
| 1/2 | 190126 | 2902 | 1855 | 190136 | 2802 | 2004 | 190144 | 3103* | 2054 | 5/8 | 7/8 | 190158 | C14/10 | 1974 |
| 5/8 | 190127 | 2903 | 1856 | 190137 | 2803 | 2005 | — | — | — | 3/4 | 1 | — | — | — |
| 3/4 | 190128 | 2904 | 1857 | 190138 | 2804 | 2006 | 190145 | 3104* | 2055 | 7/8 | 1 1/4 | — | — | — |
| 7/8 | — | — | — | — | — | — | — | — | — | 1 | 1 1/4 | 190161 | C20/16 | — |
| 1 | — | — | — | — | — | — | 190146 | 3105* | — | — | — | — | — | — |








* Zinc Pltd.

* Tinned on application

LINE FITTINGS - BRASS

| UNIONS | | | | | UNIONS | | | | | UNIONS | | | | |
|---|-------|---------|--------|--------|---|-------|---------|--------|--------|---|-------|---------|--------|--------|
| Double Flare | | | | | Double Flare Reducing | | | | | Male Flare to Male BSP | | | | |
|  | | | | |  | | | | |  | | | | |
| Size | | Cat.No. | Heldon | Hudson | Size | | Cat.No. | Heldon | Hudson | Size | | Cat.No. | Heldon | Hudson |
| Flare | Flare | | | | Flare | Flare | | | | Flare | MBSP | | | |
| 1/8 | 1/8 | 1911 | 1208 | — | 1/4 | 3/16 | 19161 | 1317 | — | 3/16 | 1/8 | 191121 | 1524 | 2698 |
| 3/16 | 3/16 | 1912 | 1207 | 2601 | 5/16 | 1/4 | 19162 | 1300 | 2651 | 3/16 | 1/4 | 191122 | 1529 | 2699 |
| 1/4 | 1/4 | 1913 | 1200 | 2602 | 3/8 | 3/16 | 19163 | — | — | 3/16 | 3/8 | 191123 | — | — |
| 1/4HD | 1/4HD | 1914 | — | 2602HD | 3/8 | 1/4 | 19164 | 1301 | 2652 | 3/16 | 1/2 | 191124 | — | — |
| 5/16 | 5/16 | 1915 | 1201 | 2603 | 3/8 | 5/16 | 19165 | 1313 | 2655 | 1/4 | 1/8 | 191125 | 1500 | 2702 |
| 3/8 | 3/8 | 1916 | 1202 | 2604 | 1/2 | 1/4 | 19166 | 1302 | 2653 | *1/4 | 1/8LT | 191126 | — | 2703 |
| 1/2 | 1/2 | 1917 | 1204 | 2606 | 1/2 | 5/16 | 19167 | 1309 | 2656 | 1/4 | 1/4 | 191127 | 1501 | 2704 |
| 5/8 | 5/8 | 1918 | 1205 | 2607 | 1/2 | 3/8 | 19168 | 1303 | 2657 | *1/4 | 1/4LT | 191128 | — | 2705 |
| 3/4 | 3/4 | 1919 | 1206 | 2608 | 1/2 | 1/4 | 19169 | 1304 | 2654 | 1/4 | 3/8 | 191129 | 1502 | 2706 |
| 7/8 | 7/8 | 19110 | 1209 | 2609 | 5/8 | 1/4 | 19170 | 1305 | 2659 | 1/4 | 1/2 | 191130 | 1503 | 2707 |
| 1 | 1 | 19111 | 1210 | — | 5/8 | 3/8 | 19171 | 1306 | 2661 | 1/4 | 3/4 | 191131 | 1534 | — |
| | | | | | 5/8 | 1/2 | 19172 | 1307 | 2662 | 5/16 | 1/8 | 191132 | 1504 | 2708 |
| | | | | | 3/4 | 1/2 | 19173 | 1308 | 2663 | 5/16 | 1/4 | 191133 | 1505 | 2709 |
| | | | | | 3/4 | 5/8 | 19174 | 1310 | — | 5/16 | 3/8 | 191134 | 1538 | 2728 |
| | | | | | 7/8 | 3/4 | 19175 | 1311 | — | 5/16 | 1/2 | 191135 | 1530 | — |
| | | | | | 1" | 3/4 | 19176 | 1312 | — | 3/8 | 1/8 | 191136 | 1506 | 2710 |
| | | | | | | | | | | 3/8 | 1/4 | 191137 | 1507 | 2711 |
| | | | | | | | | | | 3/8 | 3/8 | 191138 | 1508 | 2712 |
| | | | | | | | | | | 3/8 | 1/2 | 191139 | 1509 | 2713 |
| | | | | | | | | | | 3/8 | 3/4 | 191140 | 1525 | 2714 |
| | | | | | | | | | | 3/8 | 1-1/4 | 191141 | 1526 | — |
| | | | | | | | | | | 1/2 | 1/8 | 191142 | 1523 | A2715 |
| | | | | | | | | | | 1/2 | 1/4 | 191143 | 1511 | 2716 |
| | | | | | | | | | | 1/2 | 3/8 | 191144 | 1512 | 2717 |
| | | | | | | | | | | 1/2 | 1/2 | 191145 | 1513 | 2718 |
| | | | | | | | | | | 1/2 | 3/4 | 191146 | 1514 | 2719 |
| | | | | | | | | | | 1/2 | 1" | 191147 | 1535 | — |
| | | | | | | | | | | 5/8 | 1/4 | 191148 | 1515 | 2720 |
| | | | | | | | | | | 5/8 | 3/8 | 191149 | 1516 | 2721 |
| | | | | | | | | | | 5/8 | 1/2 | 191150 | 1517 | 2722 |
| | | | | | | | | | | 5/8 | 3/4 | 191151 | 1518 | 2723 |
| | | | | | | | | | | 5/8 | 1" | 191152 | 1527 | — |
| | | | | | | | | | | 5/8 | 1-1/4 | 191153 | 1539 | — |
| | | | | | | | | | | 3/4 | 3/8 | 191154 | 1537 | — |
| | | | | | | | | | | 3/4 | 1/2 | 191155 | 1519 | 2724 |
| | | | | | | | | | | 3/4 | 3/4 | 191156 | 1520 | 2725 |
| | | | | | | | | | | 3/4 | 1" | 191157 | 1531 | 2726 |
| | | | | | | | | | | 7/8 | 3/4 | 191158 | 1540 | 2727 |
| | | | | | | | | | | 1" | 3/4 | 191159 | 1533 | — |
| | | | | | | | | | | 1 | 1 | 191160 | 1528 | — |
| | | | | | | | | | | 1 | 1-1/4 | 191161 | 1532 | — |
| | | | | | | | | | | 1-1/4 | 1-1/4 | 191162 | 1543 | — |
| | | | | | | | | | | * Long Taper | | | | |
| | | | | | | | | | | Male BSP to Male BSP | | | | |
| | | | | | | | | | |  | | | | |
| F.Flare | | | | | BSP | BSP | | | | BSP | BSP | | | |
| 1/4 | 1/8 | 19144 | — | — | 3/16 | 1/8 | 19191 | — | — | 1/8 | 1/8 | 191171 | 1734 | 2735 |
| 1/4 | 1/4 | 19145 | 1760 | 2851 | 3/16 | 1/4 | 19192 | — | — | 1/4 | 1/4 | 191172 | 1735 | 2736 |
| 5/16 | 5/16 | 19146 | — | — | 3/16 | 3/8 | 19193 | — | — | 3/8 | 3/8 | 191173 | 1731 | 2737 |
| 3/8 | 1/4 | 19147 | 1763 | — | 3/16 | 1/2 | 19194 | — | — | 1/2 | 1/2 | 191174 | 1732 | 2738 |
| 3/8 | 3/8 | 19148 | 1762 | 2853 | 1/4 | 1/8 | 19195 | 1400 | 2801 | 3/4 | 3/4 | 191175 | 1736 | 2739 |
| 1/2 | 3/8 | 19149 | 1764 | — | 1/4 | 1/4 | 19196 | 1401 | 2802 | 1" | 1" | 191176 | 1744-3 | — |
| 1/2 | 1/2 | 19150 | 1761 | 2855 | 1/4 | 3/8 | 19197 | 1402 | 2803 | 1-1/4 | 1-1/4 | 191177 | 1743-3 | — |
| 5/8 | 5/8 | 19151 | — | 2856 | 1/4 | 1/2 | 19198 | 1414 | — | Reducing | | | | |
| | | | | | 5/16 | 1/8 | 19199 | 1403 | 2804 | 1/4 | 1/8 | 191181 | 1738 | 2681 |
| | | | | | 5/16 | 1/4 | 191100 | 1417 | 2805 | 3/8 | 1/8 | 191182 | 1733 | — |
| | | | | | 5/16 | 3/8 | 191101 | 1418 | 2806 | 3/8 | 1/4 | 191183 | 1741-3 | 2682 |
| | | | | | 3/8 | 1/8 | 191102 | 1421-2 | 2807 | 1/2 | 1/4 | 191184 | 1730 | 2685 |
| | | | | | 3/8 | 1/4 | 191103 | 1406 | 2808 | 1/2 | 3/8 | 191185 | 1740-3 | 2683 |
| | | | | | 3/8 | 3/8 | 191104 | 1407 | 2809 | 3/4 | 1/2 | 191186 | 1737 | 2684 |
| | | | | | 3/8 | 1/2 | 191105 | 1408 | 2810 | | | | | |
| | | | | | 3/8 | 3/4 | 191106 | 1404 | A2810 | | | | | |
| | | | | | 1/2 | 1/4 | 191107 | 1419 | 2811 | | | | | |
| | | | | | 1/2 | 3/8 | 191108 | 1412 | 2812 | | | | | |
| | | | | | 1/2 | 1/2 | 191109 | 1415 | 2813 | | | | | |
| | | | | | 1/2 | 3/4 | 191110 | 1405 | 2814 | | | | | |
| | | | | | 5/8 | 3/8 | 191111 | 1413 | — | | | | | |
| | | | | | 5/8 | 1/2 | 191112 | 1411 | 2815 | | | | | |
| | | | | | 5/8 | 3/4 | 191113 | 1409 | 2816 | | | | | |
| | | | | | 3/4 | 1/2 | 191114 | 1416 | — | | | | | |
| | | | | | 3/4 | 3/4 | 191115 | 1410 | 2817 | | | | | |

LINE FITTINGS - BRASS










| UNIONS | | | | | UNIONS | | | | | UNIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Female BSP to Female Flare | | | | | Female Flare to Male BSP | | | | | Female BSP to Female BSP (Gas Couplings) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Size | | Cat. No. | Heldon | Hudson | Size | | Cat. No. | Heldon | Hudson | Size | | Cat. No. | Heldon | Hudson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F.BSP | F.Flare | | | | F.Flare | BSP | | | | F.BSP | F.BSP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/8 | 1/4 | 1921 | 1743 | — | 1/4 | 1/8 | 19261 | 1660 | — | 1/8 | 1/8 | 192131 | 1726 | 2900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/4 | 1/4 | 1922 | 1742 | — | 1/4 | 1/4 | 19262 | 1662 | — | 1/4 | 1/4 | 192132 | 1720 | 2901 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/8 | 3/8 | 1923 | 1741 | — | 3/8 | 3/8 | 19263 | 1668 | — | 1/4 | 1/2 | 192133 | 1721 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/8 | 1/2 | 1924 | 1740 | — | 1/2 | 1/4 | 19264 | 1663 | — | 3/8 | 1/4 | 192134 | 1722 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Male BSP to Female BSP (Gas Bushings) | | | | | 1/2 | 1/2 | 19265 | 1667 | — | 3/8 | 3/8 | 192135 | 1723 | 2902 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 5/8 | 3/4 | 19266 | 1661 | — | 1/2 | 3/8 | 192136 | 1725 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | Male BSP to Solder | | | | | Female BSP to Solder | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| M.BSP | F.BSP | | | | B.S.P. | Tube | | | | F.BSP | Tube | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/8 | 1/8 | 19211 | 1755 | — | 1/8 | 1/4 | 19271 | 60365 | W23500 | 1/8 | 1/4 | 192141 | 60247 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/8 | 1/4 | 19212 | 1752 | — | 1/4 | 1/4 | 19272 | 60300 | W23510 | 1/4 | 1/4 | 192142 | 60248 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/8 | 3/8 | 19213 | 1763-4 | — | 1/4 | 5/16 | 19273 | 60366 | — | 1/4 | 5/16 | 192143 | 60250 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/4 | 1/8 | 19214 | 1751 | 2875 | 1/4 | 3/8 | 19274 | 60301 | W23512 | 1/4 | 3/8 | 192144 | 60251 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/4 | 1/4 | 19215 | 1758 | — | 1/4 | 1/2 | 19275 | 60303 | W23513 | 1/4 | 1/2 | 192145 | 60254 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/4 | 3/8 | 19216 | 1782-4 | — | 1/4 | 5/8 | 19276 | 60306 | — | 1/4 | 5/8 | 192146 | 60257 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/4 | 1/2 | 19217 | 1781-4 | — | 1/4 | 3/4 | 19277 | 60310 | — | 1/4 | 3/4 | 192147 | 60261 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/8 | 1/8 | 19218 | 1767-4 | 2881 | 3/8 | 1/4 | 19278 | 60367 | — | 3/8 | 1/4 | 192148 | 60249 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/8 | 1/4 | 19219 | 1766-4 | 2876 | 3/8 | 3/8 | 19279 | 60302 | W23521 | 3/8 | 3/8 | 192149 | 60252 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/8 | 1/2 | 19220 | 1762-4 | — | 3/8 | 1/2 | 19280 | 60304 | W23522 | 3/8 | 1/2 | 192150 | 60255 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/2 | 1/8 | 19221 | 1756 | 2880 | 3/8 | 5/8 | 19281 | 60307 | W23523 | 3/8 | 5/8 | 192151 | 60258 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/2 | 1/4 | 19222 | 1757 | 2879 | 3/8 | 3/4 | 19282 | 60311 | — | 3/8 | 3/4 | 192152 | 60262 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/2 | 3/8 | 19223 | 1754 | 2877 | 1/2 | 3/8 | 19283 | 60368 | W23530 | 1/2 | 3/8 | 192153 | 60253 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/2 | 1/2 | 19224 | 1768-4 | — | 1/2 | 1/2 | 19284 | 60305 | W23531 | 1/2 | 1/2 | 192154 | 60200 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/4 | 1/4 | 19225 | 1759 | — | 1/2 | 5/8 | 19285 | 60308 | W23532 | 1/2 | 5/8 | 192155 | 60201 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/4 | 3/8 | 19226 | 1760-4 | A2877 | 1/2 | 3/4 | 19286 | 60312 | W23533 | 1/2 | 3/4 | 192156 | 60203 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/4 | 1/2 | 19227 | 1750 | 2878 | 1/2 | 7/8 | 19287 | 60393 | W23534 | 1/2 | 7/8 | 192157 | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3/4 | 19228 | 1765-4 | 2882 | 1/2 | 1 | 19288 | 60315 | — | 1/2 | 1 | 192158 | 60204 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.1/4 | 3/8 | 19229 | 1753 | — | 1/2 | 1.1/8 | 19289 | — | — | 1/2 | 1.1/8 | 192159 | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.1/4 | 1 | 19230 | 1783-4 | 2885 | 1/2 | 1.1/4 | 19290 | 60319 | — | 1/2 | 1.1/4 | 192160 | 60207 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Male Flare to Solder | | | | | 1/2 | 1.1/2 | 19291 | 60324 | — | 1/2 | 1.1/2 | 192161 | 60211 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 3/4 | 1/2 | 19292 | 60369 | W23540 | 3/4 | 1/2 | 192162 | 60256 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | 3/4 | 5/8 | 19293 | 60370 | W23541 | 3/4 | 5/8 | 192163 | 60269 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"><thead><tr><th>Flare</th><th>Tube</th><td></td><td></td><td></td></tr></thead><tbody><tr><td>1/4</td><td>1/4</td><td>19231</td><td>1700</td><td>W23010</td></tr><tr><td>1/4</td><td>5/16</td><td>19232</td><td>—</td><td>W23011</td></tr><tr><td>1/4</td><td>3/8</td><td>19233</td><td>1701</td><td>W23012</td></tr><tr><td>1/4</td><td>1/2</td><td>19234</td><td>1710</td><td>—</td></tr><tr><td>1/4</td><td>5/8</td><td>19235</td><td>1709</td><td>—</td></tr><tr><td>5/16</td><td>1/4</td><td>19236</td><td>—</td><td>—</td></tr><tr><td>5/16</td><td>5/16</td><td>19237</td><td>—</td><td>W23021</td></tr><tr><td>5/16</td><td>3/8</td><td>19238</td><td>—</td><td>—</td></tr><tr><td>3/8</td><td>5/16</td><td>19239</td><td>—</td><td>—</td></tr><tr><td>3/8</td><td>3/8</td><td>19240</td><td>1702</td><td>W23031</td></tr><tr><td>3/8</td><td>1/2</td><td>19241</td><td>1703</td><td>W23032</td></tr><tr><td>3/8</td><td>5/8</td><td>19242</td><td>—</td><td>W23033</td></tr><tr><td>3/8</td><td>3/4</td><td>19243</td><td>1713</td><td>—</td></tr><tr><td>1/2</td><td>3/8</td><td>19244</td><td>1715</td><td>W23040</td></tr><tr><td>1/2</td><td>1/2</td><td>19245</td><td>1704</td><td>W23041</td></tr><tr><td>1/2</td><td>5/8</td><td>19246</td><td>1705</td><td>W23042</td></tr><tr><td>1/2</td><td>3/4</td><td>19247</td><td>1720-24</td><td>W23043</td></tr><tr><td>1/2</td><td>1</td><td>19248</td><td>1711</td><td>—</td></tr><tr><td>5/8</td><td>3/8</td><td>19249</td><td>—</td><td>—</td></tr><tr><td>5/8</td><td>1/2</td><td>19250</td><td>1714</td><td>W23051</td></tr><tr><td>5/8</td><td>5/8</td><td>19251</td><td>1706</td><td>W23052</td></tr><tr><td>5/8</td><td>3/4</td><td>19252</td><td>1707</td><td>W23053</td></tr><tr><td>5/8</td><td>7/8</td><td>19253</td><td>—</td><td>W23054</td></tr><tr><td>3/4</td><td>1/2</td><td>19254</td><td>—</td><td>—</td></tr><tr><td>3/4</td><td>5/8</td><td>19255</td><td>1712</td><td>W23061</td></tr><tr><td>3/4</td><td>3/4</td><td>19256</td><td>1708</td><td>W23062</td></tr><tr><td>3/4</td><td>7/8</td><td>19257</td><td>—</td><td>W23063</td></tr><tr><td>3/4</td><td>1.1/8</td><td>19258</td><td>1716</td><td>—</td></tr><tr><td>7/8</td><td>7/8</td><td>19259</td><td>—</td><td>—</td></tr></tbody></table> | | | | | Flare | Tube | | | | 1/4 | 1/4 | 19231 | 1700 | W23010 | 1/4 | 5/16 | 19232 | — | W23011 | 1/4 | 3/8 | 19233 | 1701 | W23012 | 1/4 | 1/2 | 19234 | 1710 | — | 1/4 | 5/8 | 19235 | 1709 | — | 5/16 | 1/4 | 19236 | — | — | 5/16 | 5/16 | 19237 | — | W23021 | 5/16 | 3/8 | 19238 | — | — | 3/8 | 5/16 | 19239 | — | — | 3/8 | 3/8 | 19240 | 1702 | W23031 | 3/8 | 1/2 | 19241 | 1703 | W23032 | 3/8 | 5/8 | 19242 | — | W23033 | 3/8 | 3/4 | 19243 | 1713 | — | 1/2 | 3/8 | 19244 | 1715 | W23040 | 1/2 | 1/2 | 19245 | 1704 | W23041 | 1/2 | 5/8 | 19246 | 1705 | W23042 | 1/2 | 3/4 | 19247 | 1720-24 | W23043 | 1/2 | 1 | 19248 | 1711 | — | 5/8 | 3/8 | 19249 | — | — | 5/8 | 1/2 | 19250 | 1714 | W23051 | 5/8 | 5/8 | 19251 | 1706 | W23052 | 5/8 | 3/4 | 19252 | 1707 | W23053 | 5/8 | 7/8 | 19253 | — | W23054 | 3/4 | 1/2 | 19254 | — | — | 3/4 | 5/8 | 19255 | 1712 | W23061 | 3/4 | 3/4 | 19256 | 1708 | W23062 | 3/4 | 7/8 | 19257 | — | W23063 | 3/4 | 1.1/8 | 19258 | 1716 | — | 7/8 | 7/8 | 19259 | — | — | 3/4 | 7/8 | 19295 | 60373 | W23543 | 3/4 | 7/8 | 192165 | 60264 | — |
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| 1/4 | 5/16 | 19232 | — | W23011 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 3/8 | 1/2 | 19241 | 1703 | W23032 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 1/2 | 5/8 | 19246 | 1705 | W23042 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/2 | 3/4 | 19247 | 1720-24 | W23043 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | 3/4 | 1.1/8 | 19297 | 60375 | W23545 | 3/4 | 1.1/8 | 192167 | 60266 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 3/4 | 1.1/4 | 19298 | 60321 | — | 3/4 | 1.1/4 | 192168 | 60208 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 3/4 | 1.1/2 | 19299 | 60326 | — | 3/4 | 1.1/2 | 192169 | 60212 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 5/8 | 192100 | 60371 | W23550 | 1 | 5/8 | 192170 | 60260 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 3/4 | 192101 | 60372 | W23551 | 1 | 3/4 | 192171 | 60263 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 7/8 | 192102 | 60374 | W23552 | 1 | 7/8 | 192172 | 60265 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 1 | 192103 | 60318 | W23553 | 1 | 1 | 192173 | 60206 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 1.1/8 | 192104 | 60376 | W23554 | 1 | 1.1/8 | 192174 | 60267 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 1.1/4 | 192105 | 60322 | — | 1 | 1.1/4 | 192175 | 60209 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 1.3/8 | 192106 | 60378 | W23555 | 1 | 1.3/8 | 192176 | 60269 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 1.1/2 | 192107 | 60327 | — | 1 | 1.1/2 | 192177 | 60213 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 1.5/8 | 192108 | 60381 | W23556 | 1 | 1.5/8 | 192178 | 60272 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 1.3/4 | 192109 | 60330 | — | 1 | 1.3/4 | 192179 | 60273 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 2 | 1 | 192110 | 60334 | — | 1 | 2 | 192180 | 60217 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/4 | 1.1/8 | 192111 | 60377 | — | 1.1/4 | 1.1/8 | 192181 | 60268 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/4 | 1.1/4 | 192112 | 60323 | W23559 | 1.1/4 | 1.1/4 | 192182 | 60210 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/4 | 1.3/8 | 192113 | 60379 | W23561 | 1.1/4 | 1.3/8 | 192183 | 60270 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/4 | 1.1/2 | 192114 | 60328 | — | 1.1/4 | 1.1/2 | 192184 | 60214 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/4 | 1.5/8 | 192115 | — | — | 1.1/4 | 1.5/8 | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/4 | 1.3/4 | 192116 | 60331 | — | 1.1/4 | 1.3/4 | 192186 | 60274 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/4 | 2 | 192117 | 60335 | — | 1.1/4 | 2 | 192187 | 60218 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 2.1/2 | 192118 | 50345 | — | 1.1/4 | 2.1/2 | 192188 | 60227 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 1.1/8 | 192119 | 60399 | — | 1.1/2 | 1.1/8 | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 1.1/2 | 192120 | 60329 | — | 1.1/2 | 1.1/2 | 192190 | 60215 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 1.5/8 | 192121 | — | (W23571) | 1.1/2 | 1.5/8 | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 1.3/4 | 192122 | 60332 | — | 1.1/2 | 1.3/4 | 192192 | 60275 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 2 | 192123 | 60336 | — | 1.1/2 | 2 | 192193 | 60219 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 2.1/4 | 192124 | 60341 | — | 1.1/2 | 2.1/4 | — | — | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 2.1/2 | 192125 | 60346 | — | 1.1/2 | 2.1/2 | 192195 | 60228 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1.1/2 | 3 | 192126 | 60351 | — | 1.1/2 | 3 | 192196 | 60234 | — | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Larger sizes on application

Larger sizes on application

3

LINE FITTINGS - BRASS

| ELBOWS | | | | | ELBOWS | | | | | ELBOWS | | | | |
|---|---------|--------|---------|--------|---|---------|--------|--------|------|---|---------|--------|--------|--------|
| Double Flare | | | | | Male BSP to Male BSP | | | | | Male Flare to Solder | | | | |
|  | | | | |  | | | | |  | | | | |
| Size | Cat.No. | Heldon | Hudson | | Size | Cat.No. | Heldon | Hudson | | Size | Cat.No. | Heldon | Hudson | |
| Flare | Flare | | | | M.BSP | M.BSP | | | | Flare | Tube | | | |
| 3/16 | | 1931 | 1806 | 2100 | 1/8 | 1/8 | 19371 | 2150-6 | 2315 | 1/4 | 1/4 | 193141 | 2137 | W20500 |
| 1/4 | | 1932 | 1800 | 2101 | 1/4 | 1/4 | 19372 | 2140 | 2316 | 1/4 | 5/16 | 193142 | 2138 | — |
| 5/16 | | 1933 | 1801 | 2102 | 3/8 | 1/4 | 19373 | 2145 | — | 5/16 | 1/4 | 193143 | 2139 | — |
| 3/8 | | 1934 | 1802 | 2103 | 3/8 | 3/8 | 19374 | 2142 | 2317 | 5/16 | 5/16 | 193144 | 2140-7 | 20506 |
| 1/2 | | 1935 | 1803 | 2105 | 1/2 | 1/4 | 19375 | 2147 | — | 5/16 | 1/4 | 193145 | 2141-7 | — |
| 5/8 | | 1936 | 1804 | 2106 | 1/2 | 3/8 | 19376 | 2146 | — | 3/8 | 5/16 | 193146 | 2142-7 | 20511 |
| 3/4 | | 1937 | 1805 | 2107 | 3/4 | 3/8 | 19377 | 2143 | 2318 | 3/8 | 3/8 | 193147 | 2134 | 20512 |
| 7/8 | | 1938 | 1809 | 2108 | 1 | 1 | 19379 | 2149 | — | 3/8 | 1/2 | 193148 | 2143-7 | — |
| 1 | | 1939 | 1807 | — | | | 19380 | 2144 | — | 1/2 | 1/4 | 193149 | 2144-7 | — |
| | | | | | | | 19381 | 2141 | — | 1/2 | 5/16 | 193150 | 2145-7 | — |
| Male Flare to Female Flare | | | | | Female BSP to Male BSP | | | | | | | | | |
|  | | | | |  | | | | | | | | | |
| Flare | F.Flare | | | | F.BSP | M.BSP | | | | | | | | |
| 1/4 | 1/4 | 19311 | 2120 | — | 1/8 | 1/8 | 19385 | 2163 | 2329 | | | | | |
| 3/8 | 1/4 | 19312 | 2125 | — | 1/8 | 1/4 | 19386 | 2173-9 | — | | | | | |
| 3/8 | 5/16 | 19313 | 2140-5 | — | 1/4 | 1/8 | 19387 | 2174-9 | — | | | | | |
| 3/8 | 3/8 | 19314 | 2124 | 2301 | 1/4 | 1/4 | 19388 | 2160 | 2330 | | | | | |
| 1/2 | 1/4 | 19315 | 2126 | — | 1/4 | 3/8 | 19389 | 2161 | 2340 | | | | | |
| 1/2 | 3/8 | 19316 | 2123 | — | 3/8 | 1/4 | 19390 | 2166 | 2340 | | | | | |
| 1/2 | 1/2 | 19317 | 2121 | 2302 | 3/8 | 3/8 | 19391 | 2162 | 2331 | | | | | |
| 5/8 | 1/4 | 19318 | 2127 | — | 3/8 | 1/2 | 19392 | 2167 | — | | | | | |
| 5/8 | 3/8 | 19319 | 2128 | — | 1/2 | 1/4 | 19393 | 2168 | — | | | | | |
| 5/8 | 1/2 | 19320 | 2129 | — | 1/2 | 3/8 | 19394 | 2169 | — | | | | | |
| 5/8 | 5/8 | 19321 | 2122 | — | 1/2 | 1/2 | 19395 | 2164 | 2332 | | | | | |
| 3/4 | 3/8 | 19322 | 2130-5 | — | 1/2 | 3/4 | 19396 | 2165 | — | | | | | |
| 3/4 | 1/2 | 19323 | 2131-5 | — | 3/4 | 1/2 | 19397 | 2170-9 | — | | | | | |
| 3/4 | 5/8 | 19324 | 2132-5 | — | 3/4 | 3/4 | 19398 | 2171-9 | 2333 | | | | | |
| 7/8 | 1/2 | 19325 | 2133-5 | — | 3/4 | 1 | 19399 | 2172-9 | — | | | | | |
| 7/8 | 5/8 | 19326 | 2134-5 | — | | | | | | | | | | |
| 7/8 | 3/4 | 19327 | 2135-5 | — | | | | | | | | | | |
| 1 | 5/8 | 19328 | 2136-5 | — | | | | | | | | | | |
| 1 | 3/4 | 19329 | 2137-5 | — | | | | | | | | | | |
| Male Flare to Female BSP | | | | | Female BSP to Female BSP | | | | | | | | | |
|  | | | | |  | | | | | | | | | |
| Flare | F.BSP | | | | F.BSP | F.BSP | | | | | | | | |
| 1/4 | 1/8 | 19331 | 2185 | — | 1/8 | 1/8 | 193101 | 2043 | — | | | | | |
| 1/4 | 1/4 | 19332 | 2187 | 2249 | 1/4 | 1/4 | 193102 | 2040 | 2345 | | | | | |
| 1/4 | 3/8 | 19333 | 2186 | 2250 | 3/8 | 3/8 | 193103 | 2041 | 2346 | | | | | |
| 5/16 | 1/8 | 19334 | 2171 | — | 1/2 | 1/2 | 193104 | 2042 | 2347 | | | | | |
| 5/16 | 1/4 | 19335 | 2188 | — | 3/4 | 3/4 | 193105 | 2044 | — | | | | | |
| 3/8 | 1/4 | 19336 | 2190-20 | 2251 | | | | | | | | | | |
| 3/8 | 3/8 | 19337 | 2181 | 2252 | | | | | | | | | | |
| 3/8 | 1/2 | 19338 | 2192-20 | A2252 | | | | | | | | | | |
| 1/2 | 1/4 | 19339 | 2180 | — | | | | | | | | | | |
| 1/2 | 3/8 | 19340 | 2182 | 2253 | | | | | | | | | | |
| 1/2 | 1/2 | 19341 | 2189 | A2253 | | | | | | | | | | |
| 1/2 | 3/4 | 19342 | 2173 | — | | | | | | | | | | |
| 5/8 | 3/8 | 19343 | 2183 | — | | | | | | | | | | |
| 5/8 | 1/2 | 19344 | 2184 | 2255 | | | | | | | | | | |
| 5/8 | 3/4 | 19345 | 2174 | — | | | | | | | | | | |
| 3/4 | 1/2 | 19346 | 2193-20 | — | | | | | | | | | | |
| 3/4 | 3/4 | 19347 | 2191-20 | — | | | | | | | | | | |
| 1 | 1/2 | 19348 | 2194-20 | — | | | | | | | | | | |
| 1 | 3/4 | 19349 | 2195-20 | — | | | | | | | | | | |
| Male Flare to Male BSP | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| Flare | M.BSP | | | | | | | | | | | | | |
| 3/16 | 1/8 | 193111 | 2028 | 2200 | | | | | | | | | | |
| 1/4 | 1/8 | 193112 | 2000 | 2201 | | | | | | | | | | |
| 1/4 | 1/4 | 193113 | 2001 | 2202 | | | | | | | | | | |
| 1/4 | 3/8 | 193114 | 2002 | 2203 | | | | | | | | | | |
| 1/4 | 1/2 | 193115 | 2035 | A2203 | | | | | | | | | | |
| 5/16 | 1/8 | 193116 | 2003 | 2204 | | | | | | | | | | |
| 5/16 | 1/4 | 193117 | 2004 | 2205 | | | | | | | | | | |
| 5/16 | 3/8 | 193118 | 2027 | A2205 | | | | | | | | | | |
| 3/8 | 1/8 | 193119 | 2005 | 2206 | | | | | | | | | | |
| 3/8 | 1/4 | 193120 | 2006 | 2207 | | | | | | | | | | |
| 3/8 | 3/8 | 193121 | 2007 | 2208 | | | | | | | | | | |
| 3/8 | 1/2 | 193122 | 2008 | 2209 | | | | | | | | | | |
| 3/8 | 3/4 | 193123 | — | 2222 | | | | | | | | | | |
| 1/2 | 1/8 | 193124 | — | — | | | | | | | | | | |
| 1/2 | 1/4 | 193125 | 2009 | 2210 | | | | | | | | | | |
| 1/2 | 3/8 | 193126 | 2010 | 2211 | | | | | | | | | | |
| 1/2 | 1/2 | 193127 | 2011 | 2212 | | | | | | | | | | |
| 1/2 | 3/4 | 193128 | 2018 | 2223 | | | | | | | | | | |
| 5/8 | 1/4 | 192129 | 2016 | — | | | | | | | | | | |
| 5/8 | 3/8 | 193130 | 2017 | 2214 | | | | | | | | | | |
| 5/8 | 1/2 | 193131 | 2012 | 2215 | | | | | | | | | | |
| 5/8 | 3/4 | 193132 | 2013 | A2215 | | | | | | | | | | |
| 3/4 | 1/2 | 193133 | 2014 | 2216 | | | | | | | | | | |
| 3/4 | 3/4 | 193134 | 2015 | 2217 | | | | | | | | | | |
| 3/4 | 1 | 193135 | 2033 | — | | | | | | | | | | |
| 7/8 | 1/2 | 193136 | 2019 | — | | | | | | | | | | |
| 7/8 | 3/4 | 193137 | 2020 | — | | | | | | | | | | |
| 1 | 1/2 | 193138 | 2021 | — | | | | | | | | | | |
| 1 | 3/4 | 193139 | 2022 | — | | | | | | | | | | |
| 1 | 1 | 193140 | 2023 | — | | | | | | | | | | |
| Male BSP to Solder | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| M.BSP | Tube | | | | | | | | | | | | | |
| 1/8 | 1/4 | 193181 | 2155 | W21000 | | | | | | | | | | |
| 1/4 | 1/4 | 193182 | 2156 | W21005 | | | | | | | | | | |
| 1/4 | 5/16 | 193183 | 2157 | W21006 | | | | | | | | | | |
| 1/4 | 3/8 | 193184 | 2158 | W21007 | | | | | | | | | | |
| 1/4 | 1/2 | 193185 | 2159 | W21008 | | | | | | | | | | |
| 3/8 | 1/4 | 193186 | 2154- | W21015 | | | | | | | | | | |
| 3/8 | 5/16 | 193187 | 2160-8 | W21016 | | | | | | | | | | |
| 3/8 | 3/8 | 193188 | 2153 | W21017 | | | | | | | | | | |
| 3/8 | 1/2 | 193189 | 2161-8 | W21018 | | | | | | | | | | |
| 3/8 | 5/8 | 193190 | 2162-8 | W21019 | | | | | | | | | | |
| 1/2 | 1/4 | 193191 | 2163-8 | W21025 | | | | | | | | | | |
| 1/2 | 5/16 | 193192 | 2164-8 | W21026 | | | | | | | | | | |
| 1/2 | 3/8 | 193193 | 2165-8 | W21027 | | | | | | | | | | |
| 1/2 | 1/2 | 193194 | 2151 | W21028 | | | | | | | | | | |
| 1/2 | 5/8 | 193195 | 2166-8 | W21029 | | | | | | | | | | |
| 1/2 | 3/4 | 193196 | 2152- | W21030 | | | | | | | | | | |
| 3/4 | 3/8 | 193197 | 2167-8 | W21040 | | | | | | | | | | |
| 3/4 | 1/2 | 193198 | 2168-8 | W21041 | | | | | | | | | | |
| 3/4 | 5/8 | 193199 | 2169-8 | W21042 | | | | | | | | | | |
| 3/4 | 3/4 | 193200 | 2150 | W21043 | | | | | | | | | | |
| 3/4 | 7/8 | 193201 | 2170-8 | W21044 | | | | | | | | | | |
| 3/4 | 1 | 193202 | 2171-8 | W21045 | | | | | | | | | | |
| 3/4 | 1.1/8 | 193203 | 2172-8 | W21046 | | | | | | | | | | |
| 1 | 3/4 | 193204 | 2173-8 | W21050 | | | | | | | | | | |
| 1 | 7/8 | 193205 | 2174-8 | W21051 | | | | | | | | | | |
| 1 | 1 | 193206 | 2175-8 | W21052 | | | | | | | | | | |
| 1 | 1.1/8 | 193207 | 2176-8 | W21053 | | | | | | | | | | |