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Technical Information

Section 1



GENERAL INFORMATION

An essential step in ensuring that a hydraulic system is safe and delivers optimum performance and service life is selecting the correct fluid conveying components.

Although a lot of the work undertaken in this industry is the replacement of existing components with a duplicate it is still good practice to check the product against the application especially if the service life of the product to be replaced was not acceptable or when fault finding on an existing system.

In some cases a problem with a hose assembly or other fluid conveying products can point to an underlying problem with the system itself or possibly the products have been incorrectly specified originally.

A simple method to assist in remembering the key selection criteria is the anagram:

F.A.C.T.O.R.S.

F = Fluid

A = Application

C = Connections

T = Temperature

O = Operating Pressures

R = Rate(s) of Flow

S = Size

F - FLUID

The materials in the products selected must be compatible with the fluid that is to be conveyed. Compatibility considerations will vary between products depending on the fluid in question.

When checking product fluid compatibility the following should be taken into account;

Hose; where the application requires the use of chemicals or special oils it is advisable to ensure that the cover is also resistant. For gaseous applications it is possible that permeation could occur. Permeation, sometimes referred to as effusion, is the migration of fluid through the pores of the tube polymer resulting in gradual fluid loss. Where permeation occurs it is important to ensure that as well as the hose tube the reinforcement and cover are compatible. When conveying gaseous liquids it is advisable to pin-prick the cover to prevent fluid build-up under the cover causing blistering. Continual build-up of fluid in this blistering could eventually cause the cover to split resulting in potential hazards such as the release of toxic fumes, fire or even explosions.

Couplings & other products; As well ensuring the body material is compatible any seals in hose connectors, positional adaptors, quick release couplings, ball Valves, live swivels etc are also compatible.

A - APPLICATION

When selecting products it is important to check how and where they are going to be used as this will help to assess the likely demands that will be placed on the products.

Some of the aspects to consider are;

- Is the product going to be installed on mobile equipment or industrial plant?
- Is the application static or dynamic?
- Any installation constraints?
- Any mechanical loadings? Care should be taken not subject products to tension or torsional loads.
- Will it be subjected to constant impulsing?
- What fluid lines best suit the application? Flexible or rigid?
 - ❖ Flexible (hose). Hose has advantages such as;
 - *Easier to route around obstacles*
 - *Helps to dampen sound*
 - *Can absorb pressure spikes*
 - *Less prone to damage from vibration or movement*
 - *Generally easier to replace in the field*
 - ❖ Rigid (pipe or tube). Advantages of rigid lines;
 - *Less susceptible to mechanical damage*
 - *Good heat dissipation*
 - *Tube can be bent to tight radii*
 - *Does not breakdown through ageing*
- If selecting hose consider the following:
 - ❖ Does the cover need to be abrasion resistant?
 - ❖ Does it need to be non-conductive?
 - ❖ Any requirement for the hose to meet any specific Industry specifications? Such as mining, marine, military etc.
 - ❖ O.D of hose if it to run over pulleys (forklift application)
 - ❖ Composition of hose, rubber or thermoplastic? Note; Thermoplastic hose types are excellent for use in the marine and food industries.

Taking the time to get a good overview of the application will help when considering other aspects in the selection process, some of which are interrelated (such as pressure, flow & size).

Some accessory products such as Quick Release Couplings & Ball valves have specific selection requirements that need to be considered. These are discussed in detail in the relevant training modules.

C - CONNECTIONS

When replacing an existing hose assembly match the existing end connections with the new ones.

If a new assembly is being specified consider what interface (thread/sealing face) type would best suit the application. In most cases the type of connection is determined by the exit thread of the adaptor fitted to the port machined into the component to which the assembly is being fitted.

Confirm what style of hose connection is required (or preferred by the customer), where wire braided hose is being used it is possible to fit either Crimp or Re-usable (field attachable) and in low pressure applications a Push-On.

For 90° hose connections check the configuration required e.g. compact or swept bend style.

Rigid lines: pipe or tube

For pipe the most common connection is the welded type, this can be either a socket or butt weld style. Of these the butt weld should be preferred for high pressure however the socket style is the most commonly used due to the ease of assembly.

For tube there are three main options;

1. Flareless type
2. Flare type
3. Socket weld

T - TEMPERATURE

Two aspects of temperature must be considered when selecting products;

1. Fluid temperature; Check capability of product to withstand system fluid temperature, both minimum and maximum. Hydraulic systems can generate heat but this should not be excessive in well designed systems. The most common causes of excessive heat are undersized components or flow restrictions within the system.

2. Ambient temperature;

The exposure to high or low ambient temperatures should also be considered. Generally there are not many issues associated with this.

Hose is most likely to be affected, some situations where a problem could occur are;

When an installation requires hose to be run near a hot manifold it may be advisable to use a heat shield or sleeving.

Where a hose is subjected to a high ambient temperature in conjunction with an elevated fluid temperature the service life may be reduced.

Hose used in a cold environment, such as hoses on a forklift working in a coolstore, may have exhibit cracking on the cover.

Notes;

1. The viscosity rating of most hydraulic oils is set at a temperature of 40° Celsius.
2. Rubber polymers are affected differently by hot air than hot oil.
3. Rubber stores heat

O - OPERATING PRESSURES

Determine maximum system or circuit pressures, this may vary depending on the circuit function. Always take into account the possibility of pressure spikes when establishing the maximum pressures that could be generated in a system.

Remember to look at the application or function, this will help to visualise the possible loadings on the product.

For example, the crowd cylinder circuit on an excavator is more likely to be subjected to spike pressure than the slew circuit.

Always ensure that the product is working within a 4:1 safety factor. That is; the maximum pressure the product will be exposed to is less than 25% of the products minimum burst pressure. Where pressure spikes or impulsing can occur it is good practice, where this is possible, to specify a product that will be working at 75% of its pressure rating for normal system pressure, this will give a safety buffer to absorb spikes.

Note;

Any product fitted between the pump and valve will always be exposed to the highest pressures of the system.

R - RATES OF FLOW

There are two areas to look at with regards to fluid flow.

Volume;

This is the amount of fluid that will be flowing through the product in a given time. When selecting product it is best to look at the maximum flow that is to be conveyed. Maximum pump output is a good starting point but consideration should also be given to return flow from the piston side of cylinders, this can be high depending on the bore to annulus ratio of the cylinder.

Volume is usually measured in Gallons (imperial) or Litres (metric) per minute.

Velocity;

This is the speed of the fluid through the product and is directly related to the fluid volume and the product size. Fluid speed is a key factor in determining pressure drops and heat build up in systems.

Velocity is stated as; feet per second (imperial) or metres per second (metric)

S - SIZE

The size (flow area) of the product is key part in ensuring the system functions efficiently.

The flow area of the product and the volume of fluid determines the velocity of the fluid in the system. If the fluid velocity is too high then in some cases excessive pressure drop or heat generation can occur. A Nomograph is the easiest method of determining fluid velocity for any given volume versus product size.

Notes;

The potential service life of products can be significantly reduced if they are constantly operating at maximum limits.

Some areas of the selection process are interrelated however the key to correct product selection is the understanding of the application and what is required of the product.

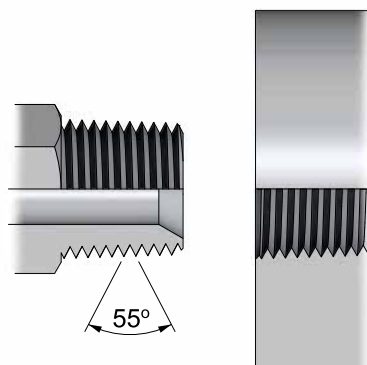
B.S.P.T. - BRITISH STANDARD PIPE TAPER

Taper: 1 in 16 by diameter

Thread Angle: 55°

The BSPT (British Standard Pipe Taper) male is intended to mate with the BSPT female only. Although the taper male will screw into BSP Parallel fixed female sockets, this is not recommended practice where avoidable as a reliable seal cannot be guaranteed.

While many BSPT males are coned 30° and will mate with BSP Parallel swivel nut females, this is not recommended practice as the taper form can deform the parallel thread and reduce the integrity of the seal.



Thread Size & TPI	Male Thread O.D. BSPT*	Female Thread I.D. BSPT
1/8-28	9.7	8.5
1/4-19	13.1	11.4
3/8-19	16.6	14.9
1/2-14	20.9	18.6
5/8-14	22.9	20.6
3/4-14	26.4	24.1
1-11	33.2	30.2
1.1/4-11	41.9	38.9
1.1/2-11	47.8	44.8
2-11	59.6	56.6

*Basic gauge plane diameter at basic gauge depth

THREAD IDENTIFICATION

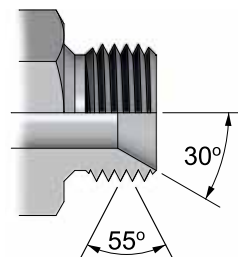
B.S.P.P. - BRITISH STANDARD PIPE PARALLEL

Thread Angle: 55°

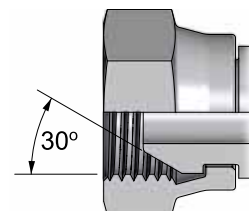
The British Standard Pipe Parallel (BSPP) male is typically coned 30° and will mate with either a BSPP swivel nut female or a BSPP female port.

BSPP female ports are normally spot faced, sealing is by either a soft metal washer, a bonded seal or a captive "O" ring.

In some cases, the port is chamfered to accept an "O" ring seal. (Similar to the U.N.O. style).

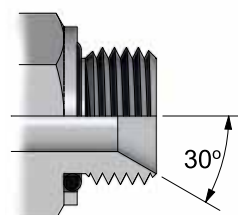


BSPP male



BSPP swivel nut female

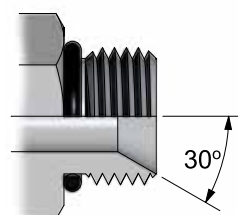
Thread Size & TPI	Male Thread O.D. BSPP	Female Thread I.D. BSPP	Torque Settings BSPP nuts
1/8-28	9.7	8.5	12 Nm
1/4-19	13.1	11.4	26 Nm
3/8-19	16.6	14.9	47 Nm
1/2-14	20.9	18.6	79 Nm
5/8-14	22.9	20.6	104 Nm
3/4-14	26.4	24.1	128 Nm
1-11	33.2	30.2	160 Nm
1.1/4-11	41.9	38.9	200 Nm
1.1/2-11	47.8	44.8	270 Nm
2-11	59.6	56.6	350 Nm



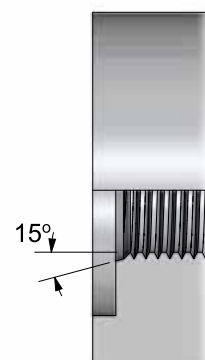
BSPP male with captive o-ring seal



BSPP female port (spot-faced)



BSPP male with o-ring seal



BSPP female port (chamfered)

N.B. Torque values are nominal and supplied as a guide only.

N.P.T. - NATIONAL PIPE THREAD

N.P.T.F.; National Pipe Taper Fuel
N.P.S.M.; National Pipe Straight Mechanical
N.P.S.F.; National Pipe Straight Fuel

Taper: 1 in 16 by diameter.

Thread Angle: 60°

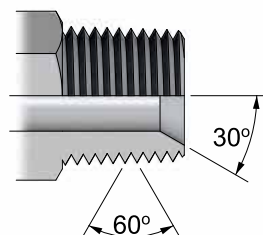
The National Pipe Taper Fuel (NPTF) male is coned 30° and will mate with the NPTF female port (taper), the National Pipe Straight Mechanical (NPSM) female (swivel nut female with 30° sealing cone), or the National Pipe Straight Fuel (NPSF) female port (parallel).

As NPTF is a “dryseal” thread, no sealing medium is required. However a sealing medium can be used to prevent thread galling.

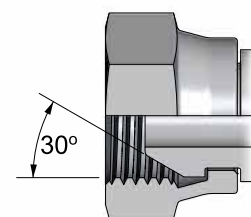
Thread Size & TPI	Male Thread O.D.	Female Thread I.D.	
	NPTF	NPTF	NPSF/SM
1/8-27	10.0	8.6	8.7
1/4-18	13.3	11.2	11.4
3/8-18	16.7	14.7	14.9
1/2-14	20.8	18.2	18.8
3/4-14	26.1	23.5	23.9
1-11.1/2	32.7	29.5	30.2
1.1/4-11.1/2	41.4	38.3	39.1
1.1/2-11.1/2	47.5	44.4	45
2-11.1/2	59.3	56.2	57



**NPTF female
port (taper)**



**NPTF male
(taper)**



**NPSM swivel
nut female**



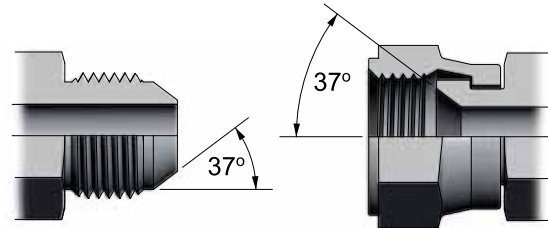
**NPSF female
port (parallel)**

J.I.C / U.N. O-RING THREAD

J.I.C. and U.N.“O”-Ring threads are both of the Unified National Form.

J.I.C. refers to the 37° flare type sealing face. The J.I.C. female is usually a swivel nut, but can also be a fixed socket (port) with a 37° sealing face in the base of the socket.

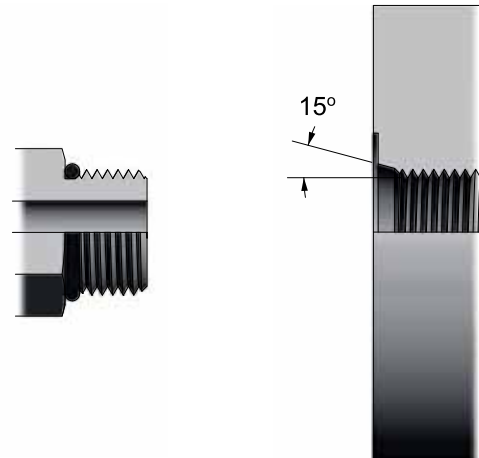
U.N.“O”-Ring refers to the thread type and “O”-Ring for sealing. The female U.N.O port has a chamfer to accept the o-ring.



JIC male

**JIC swivel
nut female**

Thread Size & TPI	Female Thread I.D.	Tube O.D.	Torque Settings	
			JIC	UN"O"
7/16 x 20 UNF	9.8	1/4"	14 Nm	21 Nm
1/2 x 20 UNF	11.5	5/16"	19 Nm	25 Nm
9/16 x 18 UNF	13.0	3/8"	30 Nm	34 Nm
3/4 x 16 UNF	17.4	1/2"	50 Nm	72 Nm
7/8 x 14 UNF	20.3	5/8"	80 Nm	100 Nm
1 1/16 x 12 UN	24.8	3/4"	130 Nm	176 Nm
1 3/16 x 12 UN	28.2	7/8"	140 Nm	220 Nm
1 5/16 x 12 UN	31.2	1"	156 Nm	290 Nm
1 5/8 x 12 UN	39.2	1.1/4"	188 Nm	350 Nm
1 7/8 x 12 UN	45.5	1.1/2"	268 Nm	460 Nm
2 1/2 x 12 UN	61.5	2"	346 Nm	540 Nm



UNO male

**UNO female
port
(chamfered)**

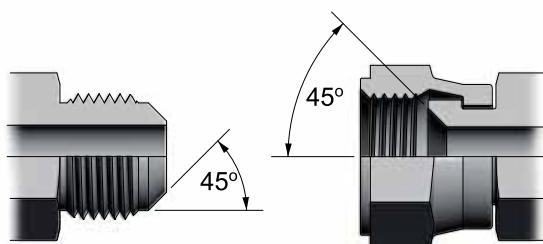
N.B. Torque values are nominal and supplied as a guide only.

THREAD IDENTIFICATION

S.A.E. - SOCIETY OF AUTOMOTIVE ENGINEERS O.R.F.S. - O-RING FACE SEAL

This system utilises the U.N. thread series and a 45° flare sealing face. Primarily used in the automotive and refrigeration industries.

This system uses an "O"-Ring for sealing. The "O"-Ring is housed in the face of the male and is compressed by the face of the female on connection. Connecting threads are U.N. form.

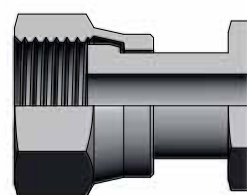


SAE male

**SAE swivel
nut female**



ORFS male



**ORFS swivel
nut female**

Thread Size & TPI	Tube O.D.	Female Thread I.D.
7/16-20	1/4"	9.8
1/2-20	5/16"	11.4
5/8-18	3/8"	14.3
11/16-16	7/16"	16
3/4-16	1/2"	17.5
7/8-14	5/8"	20.5
1.1/16-14	3/4"	24.8
1.1/4-12	7/8"	30.1
1.3/8-12	1"	33.2

Thread Size & TPI	Female Thread I.D.	Tube O.D.	"O"-ring size	Torque Settings *
9/16-18 UNF	12.8	1/4"	5/16x1/16	14-16 Nm
11/16-16 UN	16.0	3/8"	3/8x1/16	24-27 Nm
13/16-16 UN	19.1	1/2"	1/2x1/16	43-47 Nm
1-14 UN	23.5	5/8"	5/8x1/16	60-69 Nm
1.3/16-12UN	26.1	3/4"	3/4x1/16	90-95 Nm
1.7/16-12 UN	34.2	1"	15/16x1/16	125-135 Nm
1.11/16-12 UN	40.6	1.1/4"	1.3/16x1/16	170-190 Nm
2-12 UN	48.0	1.1/2"	1.1/2x1/16	200-225 Nm

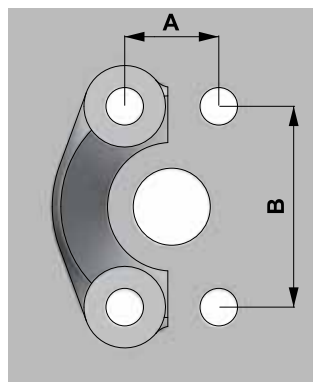
N.B. Torque values are nominal and supplied as a guide only.

S.A.E. O-RING FLANGES (SAE - J518)

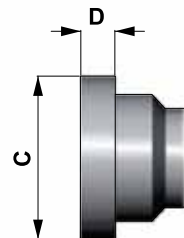
These connections utilise an “O”-Ring for sealing and are widely used for connecting to pump and motor parts as well as end terminations for pipe runs.

The “O”-Ring is housed in the flange head face and seals on a flat face female port, the flange is held in place by two clamp halves (or a one piece clamp) which are secured by four bolts.

SAE flanges are available in two pressure classes: **Standard Series, Code 61**, which goes to 5000 psi (dependent on size), and the **High Pressure Series, Code 62**, which is rated to 6000 psi for all sizes.



**SAE flange
clamp / port
bolt spacing**



**SAE flange
head
dimensions**

Nominal Flange Size	A (mm)		B (mm)		C (mm)		D (mm)	
	Code 61	Code 62	Code 61	Code 62	Code 61	Code 62	Code 61	Code 62
1/2	17.48	18.24	38.1	40.49	30.18	31.75	6.75	7.75
*5/8	19.8	-	42.90	-	34.0	-	6.73	-
3/4	22.23	23.80	47.63	50.80	38.10	41.28	6.73	8.76
1	26.19	27.76	52.37	57.15	44.45	47.63	8.0	9.53
1.1/4	30.18	31.75	58.72	66.68	50.80	53.98	8.0	10.29
1.1/2	35.71	36.50	69.85	79.38	60.33	63.50	8.0	12.57
2	42.88	44.45	77.77	96.82	71.42	79.38	9.53	12.57

Nominal Flange Size	Pressure Rating		"O"-ring size		UNC Bolt size		Bolt torque	
	Code 61	Code 62	Code 61 and 62	AS568A number	Code 61	Code 62	Code 61	Code 62
1/2	5000 psi	6000 psi	3/4x1/8	210	5/16x1.1/4	5/16x1.1/4	20-25 Nm	20-25 Nm
3/4	5000 psi	6000 psi	1x1/8	214	3/8x1.1/4	3/8x1.1/2	28-40 Nm	34-45 Nm
1	5000 psi	6000 psi	1.5/16x1/8	219	3/8x1.1/4	7/16x1.3/4	37-48 Nm	56-68 Nm
1.1/4	4000 psi	6000 psi	1.1/2x1/8	222	7/16x1.1/2	1/2x1.3/4	48-62 Nm	85-102 Nm
1.1/2	3000 psi	6000 psi	1.7/8x1/8	225	1/2x1.1/2	5/8x2.1/4	62-79 Nm	158-181 Nm
2	3000 psi	6000 psi	2.1/4x1/8	228	1/2x1.1/2	3/4x2.3/4	73-90 Nm	271-294 Nm

**The 5/8* size flange is not part of the SAE standard. It is included in the J.I.S. standards and is used by Komatsu and other O.E.M's.*

N.B. Torque values are nominal and supplied as a guide only

Caterpillar flanges used on XT3 hose are the same as the SAE Code 61, XT5 flanges have the same diameter as the SAE Code 62 but are thicker in the flange head.

French Gaz (Poclain) flanges are completely different to, and will not interchange with the SAE flanges.

J.I.S. - JAPANESE INDUSTRIAL STANDARDS

Japanese Industrial Standards (J.I.S.) incorporate B.S.P. and metric threads as well as flanges in their connection standards.

Taper Threads:

Type R; BSPT Male (*Identical to BSP standard*)

Parallel Threads:

Type G; BSPP Male (*Identical to BSP standard*)

Type C; BSPP Swivel Nut Female (*Identical to BSP standard - for thread data please refer to BSPP section*)

Type F; BSPP Swivel Nut Female, 30° Flare Seat

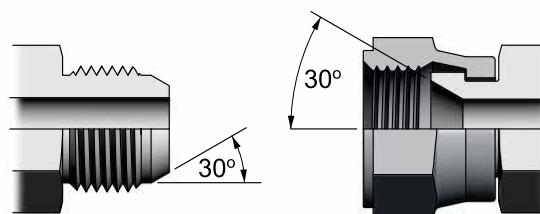
Type M; Metric, Male, 30° Cone

Type MF; Metric, Swivel Nut Female, 30° Flare Seat

“O”-Ring Flanges:

Type I; Equivalent to Code 61 (*Identical to SAE standard*)

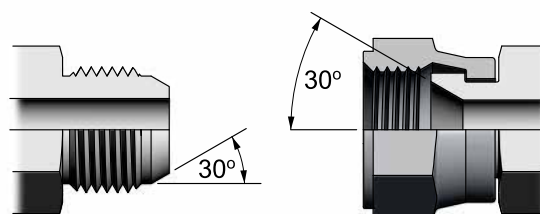
Type II; Equivalent to Code 62 (*Identical to SAE standard*)



Type F JIS male

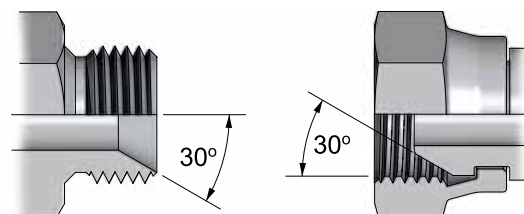
For thread data please refer to BSPP section

Type F JIS swivel nut female



Type MF JIS male

Type MF JIS swivel nut female



Type M JIS male

Type M JIS swivel nut female

THREAD SPECIFICATIONS			
Metric Threads (J.I.S)		Komatsu Threads (Metric)	
14-1.5*	12.5	14-1.5*	12.5
18-1.5*	16.5	18-1.5*	16.5
22-1.5*	20.5	22-1.5*	20.5
27-2.0	25	24-1.5	22.5
33-2.0	31	30-1.5	28.5
42-2.0	40	33-1.5	31.5
50-2.0	48	36-1.5	34.5
60-2.0	58	42-1.5	40.5

* denotes interchange sizes between JIS and Komatsu.

D.I.N. METRICS 24° CONE SYSTEM

The D.I.N. System allows for the connection of hose assemblies and tube in three main pressure series:

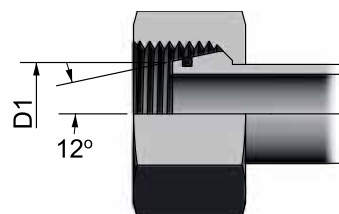
Series LL;	Extra Light, up to 100 bar
Series L;	Light up to 250 bar
Series S;	Heavy up to 640 bar

The pressure ranges are determined by the tube O.D. and the thread size e.g. a 12mm light coupling has an 18mm thread O.D. whereas a 12mm heavy coupling has a 20mm O.D. thread.

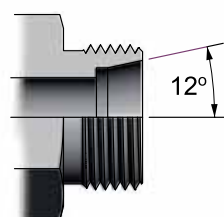
N.B: Rated coupling pressures are subject to the design pressures of the tube or hose being used.

Tubing is connected to the D.I.N. Male by the use of a cutting ring and nut. Hose assemblies can be connected by swivel nut females having either a spherical seal, 24° cone seal (can be fitted with "O"-Ring), or a standpipe with cutting ring and nut. Hose can also be connected directly to tube by use of a hose tail with the D.I.N. Male form

The male form will accept all three female styles shown (right).



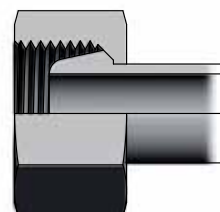
DIN 24° cone female with o-ring



DIN 24° cone male



DIN cutting ring and nut on tube



DIN female swivel nut with spherical seat

THREAD SPECIFICATIONS LIGHT (L) SERIES			
Thread O.D. & Pitch	Female Thread I.D.	Diameter D1 (mm)	Tube O.D.(mm)
M12-1.5	10.5	7.2	6
M14-1.5	12.5	9.2	8
M16-1.5	14.5	11.6	10
M18-1.5	16.5	13.8	12
M22-1.5	20.5	16.8	15
M26-1.5	24.5	19.8	18
M30-2.0	28	23.8	22
M36-2.0	34	29.8	28
M45-2.0	43	37.2	35
M52-2.0	50	44.2	42

THREAD SPECIFICATIONS HEAVY (S) SERIES			
Thread O.D. & Pitch	Female Thread I.D.	Diameter D1 (mm)	Tube O.D.(mm)
M14-1.5	12.5	7.2	6
M16-1.5	14.5	9.2	8
M18-1.5	16.5	11.6	10
M20-1.5	18.5	13.8	12
M22-1.5	20.5	15.8	14
M24-1.5	22.5	17.8	16
M30-2.0	28	22	20
M36-2.0	34	27	25
M42-2.0	40	32	30
M52-2.0	50	40	38

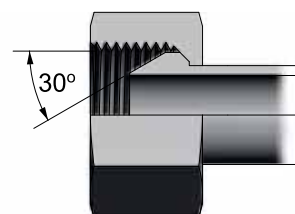
* N.B. Diameter D1 is nominal and may vary between manufacturers.

D.I.N. METRICS 60° CONE SYSTEM

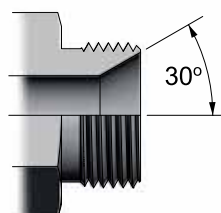
This series utilises a 60° cone seating angle and is used for the connection of hose assemblies and tube. It differs from the 24° series in that the threads are predominately 1.5mm pitch and there is no light or heavy pressure ranges.

The D.I.N. 60° male will accept the universal (spherical seat) female, a 60° coned female and tube fitted with a cutting ring and nut.

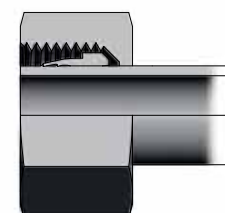
THREAD SPECIFICATIONS		
Thread O.D. & Pitch	Female Thread I.D.	Tube O.D.(mm)
M10-1.0	9.0	5
M12-1.5	10.5	6
M14-1.5	12.5	8
M16-1.5	14.5	10
M18-1.5	16.5	12
M22-1.5	20.5	15
M26-1.5	24.5	18
M30-1.5	28.5	22
M38-1.5	36.5	28
M45-1.5	43.5	35
M52-2.0	56.5	42



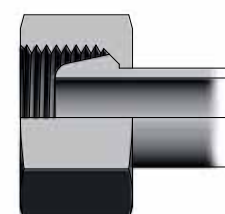
DIN 60° cone female



DIN 60° cone male



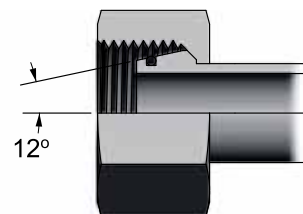
DIN cutting ring and nut on tube



DIN female swivel nut with spherical seat

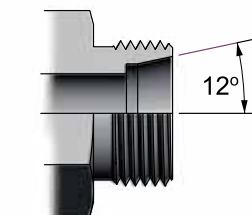
I.S.O. METRICS (INTERNATIONAL STANDARDS ORGANISATION)

The I.S.O. series of couplings is similar to the D.I.N. light and heavy in function. The male has a 24° included angle sealing cone and a recessed counter bore for locating the tube when used in conjunction with a cutting ring and nut. The male will also accept a swivel nut female with either a cone or a spherical seal.

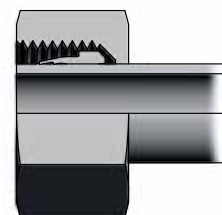


**ISO (24° cone)
female with o-ring**

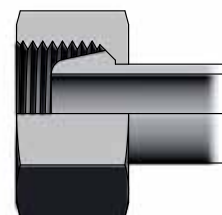
THREAD SPECIFICATIONS		
Thread O.D. & Pitch	Female Thread I.D.	Tube O.D.(mm)
M12-1.0	11.0	6
M14-1.5*	12.5	8
M16-1.5*	14.5	10
M18-1.5*	16.5	12
M20-1.5	18.5	14
M22-1.5*	20.5	15
M24-1.5**	22.5	16
M27-1.5	25.5	18
M30-1.5	28.5	22
M33-1.5	31.5	25
M36-1.5	34.5	28
M39-1.5	37.5	30
M42-1.5	40.5	32
M45-1.5	43.5	35
M48-1.5	46.5	38
M52-1.5	50.5	40



**ISO (24° cone)
male**



**ISO cutting ring and
nut on tube**



**ISO female swivel
nut with spherical
seat**

* Interchange with D.I.N. Light

** Interchange with D.I.N. Heavy

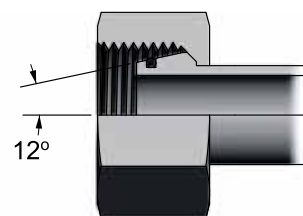
FRENCH METRICS (GAZ & MILLIMETRIQUE SERIES)

The series are similar to the D.I.N. 24° type where the male has a 24° included angle sealing cone and a recessed counterbore for locating the tube.

The male will accept a cutting ring and nut for use with tube or a swivel nut female with either a cone or spherical seal.

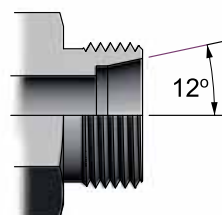
The Gaz and Millimetrique series are identical in all respects except for the O.D. of the tube:

- Gaz series uses fractional number O.D. metric tubing.
- Millimetrique series uses whole number O.D. metric tubing.

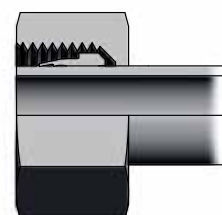


French 24° cone female with o-ring

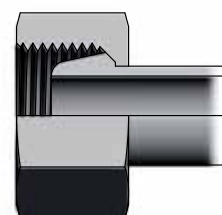
THREAD SPECIFICATIONS LIGHT (L) SERIES			
Thread O.D. & Pitch	Female Thread I.D.	Diameter	
		GAZ	Millimetrique
M12-1.0	11.0	-	6
M14-1.5	12.5	-	8
M16-1.5	14.5	-	10
M18-1.5	16.5	-	12
M20-1.5	18.5	13.25	14
M22-1.5	20.5	-	15
M24-1.5	22.5	16.75	16
M27-1.5	25.5	-	18
M30-1.5	28.5	21.25	22
M33-1.5	31.5	-	25
M36-1.5	34.5	26.75	28
M39-1.5	37.5	-	30
M42-1.5	40.5	-	32
M45-1.5	43.5	33.5	35
M48-1.5	46.5	-	38
M52-1.5	50.5	42.25	40
M54-2.0	52.0	-	45
M58-2.0	56.0	48.25	-



French 24° cone male



Cutting ring and nut on tube

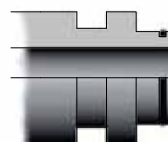


French female swivel nut with spherical seat

STAPLE-LOK COUPLINGS

Originally designed in Germany for underground mining equipment, the Staple-lok requires no spanners for connection or disconnection. The male and female are pushed together and held with a retaining staple or "U" clip.

Sealing is achieved by the captive "O"-Ring located on the male spigot. The female can either be fixed or swivel type. The coupling is not designed to swivel under pressure.

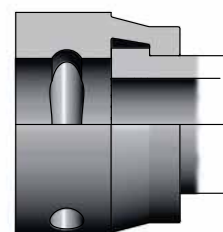


Staple-lok male



Staple-lok fixed female

Coupling Dash Size	Imperial Size	Male O.D.		Female I.D.	
		inch	mm	inch	mm
-4	1/4	0.58	14.8	.59	15.0
-6	3/8	0.78	19.8	.79	20.0
-8	1/2	0.94	23.9	.95	24.1
-12	3/4	1.13	28.8	1.14	29.0
-16	1	1.53	38.9	1.54	39.1
-20	1.1/4	1.80	45.7	1.81	46.0
-24	1.1/2	2.16	54.9	2.17	55.1
-32	2	2.52	64.0	2.53	64.3



Staple-lok swivel female

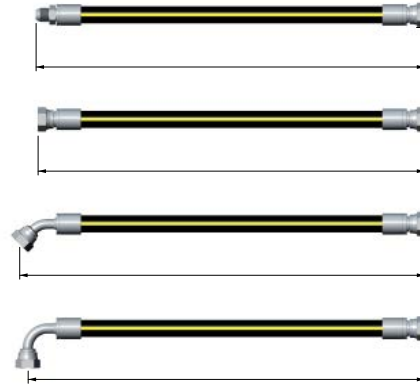


Staple-lok staple

STRAIGHT HOSE ASSEMBLY LENGTH

Overall hose assembly lengths are determined by measuring the centreline length between the coupling end faces for straight couplings, or through the sealing face centreline for angled couplings (examples to right).

Sufficient length allowance should be made to compensate for hose contraction and expansion under operating procedures.



BENT HOSE ASSEMBLY LENGTH

For installations that require a 180° bend in the hose assembly, the overall length can be calculated as follows:

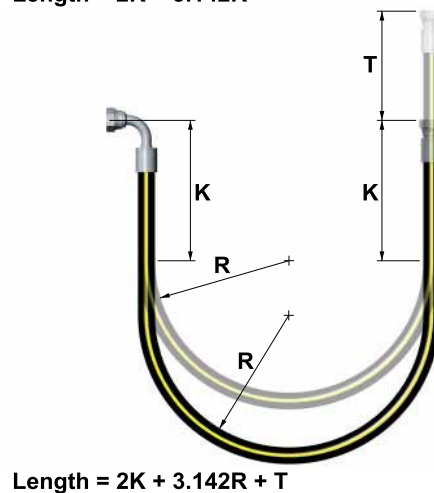
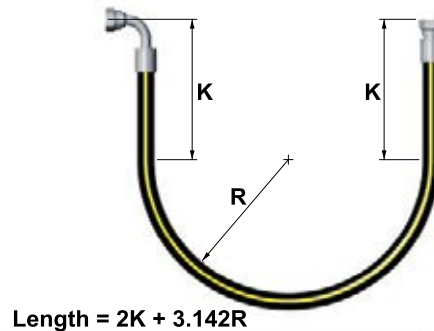
Static Installations

To avoid localised concentration of bending strain on the hose couplings, a free distance (K) of hose should be designed into the length of each assembly. Distance "K" includes length of coupling and adaptor (if used). Dimension "R" should not be less than the manufacturer's recommended bend radius for the hose used. Refer to chart below for "K" dimensions of hoses with I.D. from 3/16" to 2".

Hose I.D.	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	1.1/4	1.1/2	2
K (mm)	110	130	130	160	180	210	210	260	260	260	310

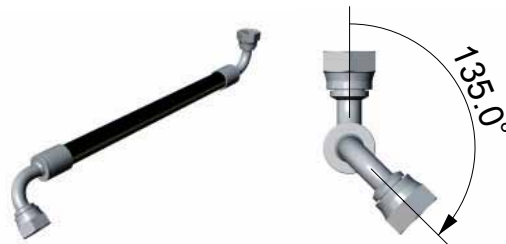
Dynamic Installations

When a hose assembly is subjected to relative motion between the two end couplings, additional hose length is required to accommodate the travel distance. In the diagram (right) "T" represents the amount of travel.



Off-Set Angle Measurement

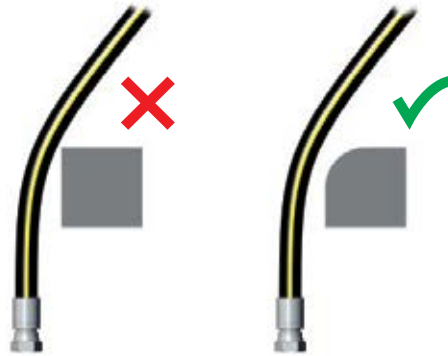
Place hose assembly in line of sight position with coupling furthest away facing upwards. Determine off-set angle by comparing relative position of closest coupling to the far coupling in a clockwise direction.



1. Hose Protection

Protect the hose cover from damage such as abrasion, erosion, snagging, and cutting. Where possible, route hose to reduce abrasion from hose rubbing other hose or objects that may abrade it (Fig. 1). Special abrasion-resistant hoses and hose guards are available for additional protection. Special consideration may also need to be given to hose assemblies near heat sources.

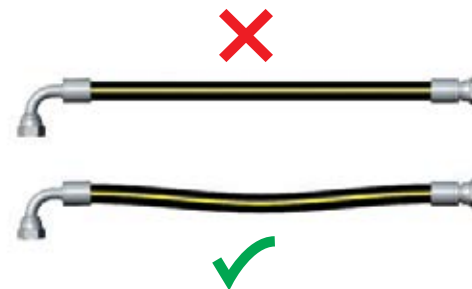
Fig. 1



2. Hose And Machine Tolerances

Avoid tension on hose assemblies and adaptors. Design hose to allow for changes in length due to machine motion and tolerances (Fig. 2). Failure to do so may result in seal or assembly failure.

Fig. 2



3. Torsional Twist

Do not transfer torque to hose while installing. This transfer of torque can result in torsional twist, which may result in premature hose assembly failure. Use swivel type couplings or adaptors for ease of alignment as needed to prevent twisting during installation. Use the brand lay-line as a guide to ensure the hose is not pre-loaded with torsional twist when installed (Fig. 3).

Fig. 3



4. Minimum Bend Radius

The minimum bend radius for hose supplied by Hydraulink is detailed in this catalogue. Routing at less than minimum bend radius is not recommended and may reduce hose life.

Prevent sharp bending at the hose/fitting juncture (Fig. 4a). Unnecessary stress at this point may result in leaking, hose rupturing, or the hose assembly blowing apart.

Stress at this point can be minimised by ensuring adequate hose length (Fig. 4b), or by use of angled adaptors and couplings (Fig 4c).

Fig. 4a

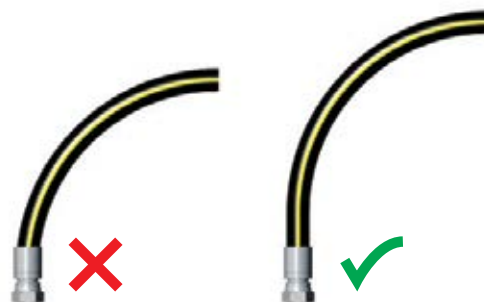


Fig. 4b

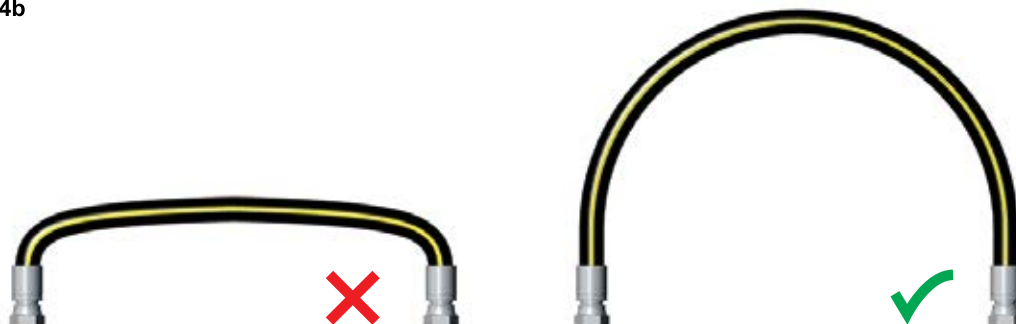


Fig. 4c

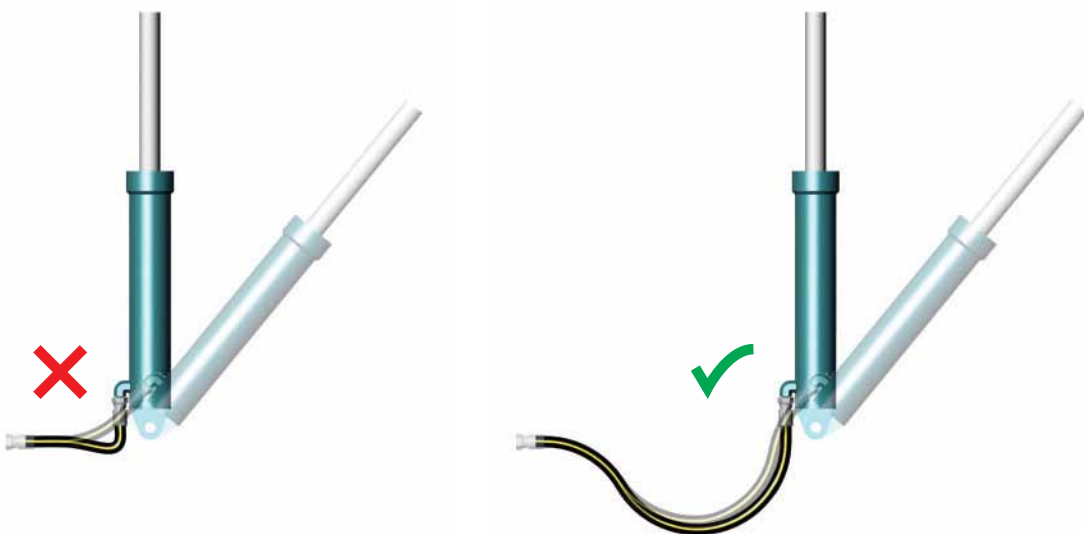


5. Hose Length Change

Hydraulic hose can expand longitudinally when pressurised, and this hose length change must be considered when specifying or installing hose assemblies (Fig. 5) When clamping hose lengths, always place clamps to avoid stressing the fitting end.

Fig. 5**6. Relative Movement**

When specifying or installing hoses that have movement relative to each other, provide adequate hose length to absorb the required movement and prevent bends occurring that are smaller than the minimum bend radius (Fig. 6a).

Fig. 6a



HYDRAULINK BRANDED HOSES



GENERAL INFORMATION

Hydraulink has established itself as a proven hydraulic hose & fitting specialist for over 70 years. With the selection of braided and multi spiral hoses on offer, the Hydraulink range of hoses will satisfy all of your needs.

The Super Tuff “ST” range of braided hoses come standard with flame and abrasion resistant features – ideal for use in harsh and adverse environments.

For general pressure-wash applications up to 400 bar, the Hydraulink range of Jet Wash hoses are designed to be easier to handle and use due to their light, flexible and compact design.

All Hydraulink branded hoses are easily identifiable for fast fix and replacement, and are readily available across our nationwide network of service centres and mobile service vans.



	Range	Construction	Constant Pressure	MSHA (Flame Resist)	HARC Abrasion	Compact
●	Braided	H1T	1 Wire	✓		
		H2T	2 Wire	✓		
●	X SPIRAL	HX4K	Multi Spiral	✓		
		HX5K	Multi Spiral	✓		
		HX6K	Multi Spiral	✓		
●	X SPIRAL Enduro ST	HX4K-ST	Multi Spiral	✓	✓	
		HX6K-ST	Multi Spiral	✓	✓	
●	ST SuperTuff	H17	1 & 2 Wire	✓	✓	✓
		H19	2 Wire	✓	✓	
		H16	2 Wire	✓	✓	✓
●	Jet Wash	HJW250	1 Wire	250bar		
		HJW400	2 Wire	400bar		

HOSE SELECTION & SERVICE LIFE RECOMMENDATIONS

Extracts from SAE J1273 SEP2014: Recommended Practices for Hydraulic Hose Assemblies

1. Scope—SAE J1273 provides guidelines for selection, routing, fabrication, installation, replacement, maintenance, and storage of hose and hose assemblies for fluid-power systems. Many of these SAE Recommended Practices also may be suitable for other hoses and systems.

5. Hose Selection and Routing—A wide variety of interacting factors influence hose service life and the ability of each fluid-power system to operate satisfactorily, and the combined effects of these factors on service life are often unpredictable. Therefore, these documents should not be construed as design standards. For applications outside the specifications in SAE J517, SAE J514, or other relevant design standards, performance of hose assemblies should be determined by appropriate testing. Carefully analyze each system. Then design routings and select hose and related components to meet the system-performance and hose-service-life requirements, and to minimize the risks of personal injury and/or property damage. Consider the following factors:

5.1 System Pressures—Excessive pressure can accelerate hose assembly failure. Analyze the steady-state pressures, and the frequency and amplitude of pressure surges, such as pulses and spikes. These are rapid and transient rises in pressure which may not be indicated on many common pressure gauges and can be identified best on high-frequency-response electronic measuring instruments.

For maximum hose service life, hose selection should be based on a system pressure, including surges, that is less than the hose maximum working pressure. Hose may be used above its maximum working pressure where reduced life expectancy is acceptable. SAE J1927 provides one method to help predict wire-reinforced hose service life for a given hydraulic application, where the surge pressure peaks vary, and/or the highest pressure peaks occur infrequently.

5.2 Suction—For suction applications, such as inlet flow to pumps, select hose to withstand both the negative and positive pressures the system imposes on the hose.

5.3 External Pressure—In certain applications, such as in autoclaves or under water, the external environmental pressures may exceed the fluid pressure inside the hose. In these applications, consider the external pressures, and if necessary, consult the manufacturers.

5.4 Temperature—Exceeding hose temperature ratings may significantly reduce hose life. Select hose so the fluid and ambient temperatures, both static and transient, fall within the hose ratings. The effects of external heat sources should not raise the temperature of the hose above its maximum operating temperature. Select hose, heat shields, sleeving, and other methods for these requirements, and route or shield hose to avoid hose damage from external heat sources.

HOSE SELECTION & SERVICE LIFE RECOMMENDATIONS (cont'd)

5.5 Permeation—Permeation, or effusion, is seepage of fluid through the hose. Certain materials in hose construction are more permeable than others. Consider the effects of permeation when selecting hose, especially with gaseous fluids. Consult the hose and fluid manufacturers for permeability information.

5.6 Hose-Material Compatibility—Variables that can affect compatibility of system fluids with hose materials include, but are not limited to:

- a. Fluid pressure
- b. Temperature
- c. Concentration
- d. Duration of exposure

Because of permeation (see 5.5), consider compatibility of system fluids with the hose, tube, cover, reinforcement, and fittings. Consult the fluid and hose manufacturers for compatibility information.

NOTE— Many fluid/elastomer compatibility tables in manufacturers' catalogs show ratings based on fluids at 21 °C, room temperature. These ratings may change at other temperatures. Carefully read the notes on the compatibility tables, and if in doubt, consult the manufacturer.

5.7 Environment—Environmental conditions can cause hose and fitting degradation. Conditions to evaluate include, but are not limited to:

- a. Ultraviolet light
- b. Salt water
- c. Air pollutants
- d. Temperature (see 5.4)
- e. Ozone
- f. Chemicals
- g. Electricity
- h. Abrasion

If necessary, consult the manufacturers for more information.

5.8 Static-Electric Discharge—Fluid passing through hose can generate static electricity resulting in static-electric discharge. This may create sparks that can puncture hose. If this potential exists, select hose with sufficient conductivity to carry the static-electric charge to ground.

5.9 Sizing—The power transmitted by pressurized fluid varies with pressure and rate of flow. Select hose with adequate size to minimize pressure loss, and to avoid hose damage from heat generation or excessive velocity. Conduct calculations, or consult the manufacturers for sizing at flow velocities.

5.10 Unintended Uses—Hose assemblies are designed for the internal forces of conducted fluids. Do not pull hose or use it for purposes that may apply external forces for which the hose or fittings were not designed.

5.11 Specifications and Standards—When selecting hose and fittings for specific applications, refer to applicable government, industry, and manufacturer's specifications and standards.

HOSE SELECTION & SERVICE LIFE RECOMMENDATIONS (cont'd)

5.12 Unusual Applications—Applications not addressed by the manufacturer or by industry standards may require special testing prior to selecting hose.

5.13 Hose Cleanliness—The cleanliness requirements of system components, other than hose, will determine the cleanliness requirements of the application. Consult the component manufacturers' cleanliness information for all components in the system. Hose assemblies vary in cleanliness levels; therefore, specify hose assemblies with adequate cleanliness for the system.

5.14 Hose Fittings—Selection of the proper hose fittings for the hose and application is essential for proper operation and safe use of hose and related assembly equipment. Hose fittings are qualified with the hose. Therefore, select only hose fittings compatible with the hose for the applications. Improper selection of hose fittings or related assembly equipment for the application can result in injury or damage from leaks, or from hose assemblies blowing apart (see 4.2, 6.2, 6.3, and 6.4).

5.15 Vibration—Vibration can reduce hose service life. If required, conduct tests to evaluate the frequency and amplitude of system vibration. Clamps or other means may be used to reduce the effects of vibration. Consider the vibration requirements when selecting hose and predicting service life.

5.16 Hose Cover Protection—Protect the hose cover from abrasion, erosion, snagging, and cutting. Special abrasion-resistant hoses and hose guards are available for additional protection. Route hose to reduce abrasion from hose rubbing other hose or objects that may abrade it.

5.17 External Physical Abuse—Route hose to avoid:

- a. Tensile loads
- b. Side loads
- c. Flattening
- d. Thread damage
- e. Kinking
- f. Damage to sealing surfaces
- g. Abrasion
- h. Twisting

5.18 Swivel-Type Adapters—Swivel-type fittings or adapters do not transfer torque to hose while being tightened. Use these as needed to prevent twisting during installation.

5.19 Live Swivels—If two components in the system are rotating in relation to each other, live swivels may be necessary. These connectors reduce the torque transmitted to the hose.

5.20 Slings and Clamps—Use slings and clamps to support heavy or long hose and to keep it away from moving parts. Use clamps that prevent hose movement that will cause abrasion.

5.21 Minimum Bend Radius—The minimum bend radius is defined in SAE J343 and is specified in other SAE standards and hose manufacturer's product literature. Routing at less than minimum bend radius may reduce hose life. Sharp bending at the hose/fitting juncture may result in leaking, hose rupturing, or the hose assembly blowing apart (see 4.2)

5.22 Elbows and Adapters—In special cases, use elbows or adapters to relieve hose strain.

5.23 Lengths—Unnecessarily long hose can increase pressure drop and affect system performance.

HOSE SELECTION & SERVICE LIFE RECOMMENDATIONS (cont'd)

When pressurized, hose that is too short may pull loose from its fittings, or stress the fitting connections, causing premature metallic or seal failures. When establishing hose length, use the following practices:

5.23.1 MOTION ABSORPTION—Provide adequate hose length to distribute movement and prevent bends smaller than the minimum bend radius.

5.23.2 HOSE AND MACHINE TOLERANCES—Design hose to allow for changes in length due to machine motion and tolerances.

5.23.3 HOSE LENGTH CHANGE DUE TO PRESSURE—Design hose to accommodate length changes from changing pressures. Do not cross or clamp together high- and low-pressure hoses. The difference in length changes could wear the hose covers.

5.24 Hose Movement and Bending—Hose allows relative motion between system components. Analyze this motion when designing hose systems. The number of cycles per day may significantly affect hose life. Also avoid multiple planes of motion and twisting motion. Consider the motion of the hose when selecting hose and predicting service life. In applications that require hose to move or bend, use these practices:

5.24.1 BEND IN ONLY ONE PLANE TO AVOID TWISTING

5.24.2 PREVENT HOSE BENDING IN MORE THAN ONE PLANE—If hose follows a compound bend, couple it into separate segments, or clamp it into segments that flex in only one plane.

7. Hose Installation and Replacement—Use the following practices when installing hose assemblies in new systems or replacing hose assemblies in existing systems:

7.1 Pre-Installation Inspection—Before installing hose assemblies, examine:

- a. Hose length and routing for compliance with original design
- b. Assemblies for correct style, size, length, and visible nonconformities
- c. Fitting sealing surfaces for burrs, nicks, or other damage

NOTE— When replacing hose assemblies in existing systems, verify that the replacement is of equal quality to the original assembly.

7.2 Handling During Installation—Handle hose with care during installation. Kinking hose, or bending at less than minimum bend radius may reduce hose life. Avoid sharp bending at the hose/fitting juncture (see 5.21).

7.3 Twist Angle and Orientation—Pressure applied to a twisted hose may shorten the life of the hose or loosen the connections. To avoid twisting, use the hose lay line or marking as a reference.

7.4 Securement and Protection—Install necessary restraints and protective devices. Determine that such devices do not create additional stress or wear points.

7.5 Routing—Review proper routing practices provided in Section 5 and make appropriate corrections to obtain optimum performance.

HOSE SELECTION & SERVICE LIFE RECOMMENDATIONS (cont'd)

7.6 Assembly Torque—The connection end of a hose fitting is normally threaded to obtain a tight pressure seal when attached to a port, an adapter, or another fitting. Sometimes bolts or screws provide the threaded connection. Each size and type of connection requires different torque values, and these may vary due to type of material or exterior coating.

Follow appropriate torquing instructions to obtain a proper pressure seal without over-torquing. A properly calibrated torque wrench should be used to tighten each connection, except when the manufacturer specifies tightening a specified number of hex flat turns beyond finger tight to obtain a seal.

7.7 System Checkouts—In hydraulic or other liquid systems, eliminate all air entrapment after completing the installation. Follow manufacturers' instructions to test the system for possible malfunctions and leaks.

7.7.1 TO AVOID INJURY DURING SYSTEM CHECKOUTS:

- a. Do not touch any part of the system when checking for leaks (see 4.1).
- b. Stay out of potentially hazardous areas while testing hose systems (see Section 4).
- c. Relieve system pressure before tightening connections.

8. Maintenance Inspection—A hose and fitting maintenance program may reduce equipment downtime, maintain peak operating performance, and reduce the risk of personal injury and/or property damage. The user should design and implement a maintenance program that suits the specific application and each specific hose in that application.

8.1 Inspection Frequency—Evaluate factors such as the nature and severity of the application, past history, and manufacturers' information to establish the frequency of visual inspections and functional tests.

8.2 Visual Inspection (Hose and Fittings)—Visually inspect hose and fittings for:

- a. Leaks at hose fitting or in hose
- b. Damaged, cut, or abraded cover
- c. Exposed reinforcement
- d. Kinked, crushed, flattened, or twisted hose
- e. Hard, stiff, heat cracked, or charred hose
- f. Blistered, soft, degraded, or loose cover
- g. Cracked, damaged, or badly corroded fittings
- h. Fitting slippage on hose
- i. Other signs of significant deterioration

If any of these conditions exist, evaluate the hose assemblies for correction or replacement.

8.3 Visual Inspection (All Other Components)—When visually inspecting hose and fittings, inspect for related items including:

- a. Leaking ports
- b. Damaged or missing hose clamps, guards, or shields
- c. Excessive dirt and debris around hose
- d. System fluid: level, type, contamination, condition, and air entrainment

If any of these are found, address them appropriately.

HOSE SELECTION & SERVICE LIFE RECOMMENDATIONS (cont'd)

8.4 Functional Test—Functional tests determine if systems with hose are leak free and operating properly. Carry out functional tests per information from equipment manufacturers.

9. Hose Storage—Age control and the manner of storage can affect hose life. Use the following practices when storing hose.

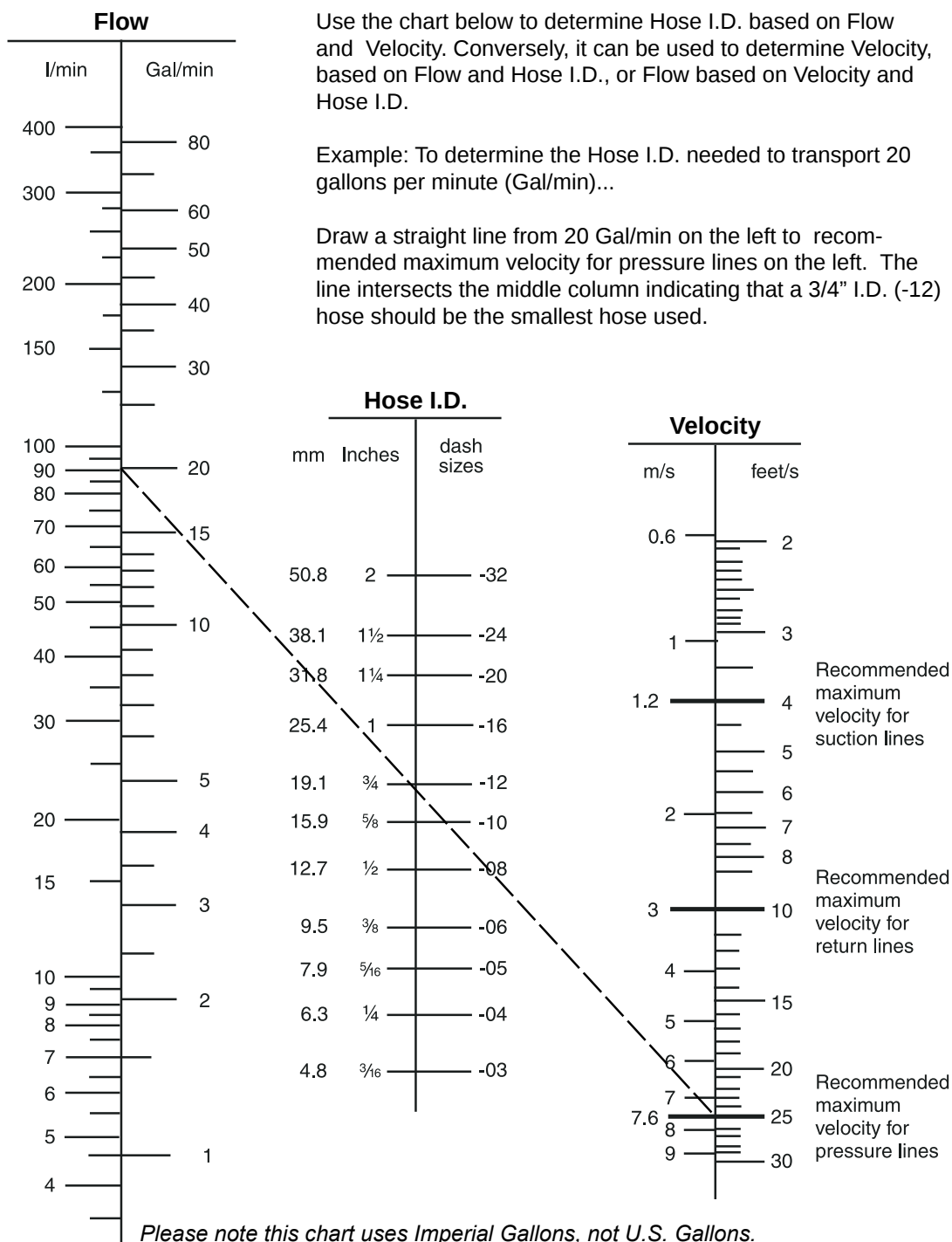
9.1 Age Control—Maintain a system of age control to determine that hose is used before its shelf life has expired. Shelf life is the period of time when it is reasonable to expect the hose to retain full capabilities for rendering the intended service.

Store hose in a manner that facilitates age control and first-in, first-out usage based on manufacturing date on hose or hose assembly. Per SAE J517:

- a. Shelf life of rubber hose in bulk form, or in hose assemblies passing visual inspection and proof test, is forty quarters (ten years) from the date of vulcanization.
- b. Shelf life of thermoplastic and polytetrafluoroethylene hose is considered to be unlimited.

NOMOGRAPHIC CHART

Flow Capacity of Hose Assemblies Recommended Flow Velocities



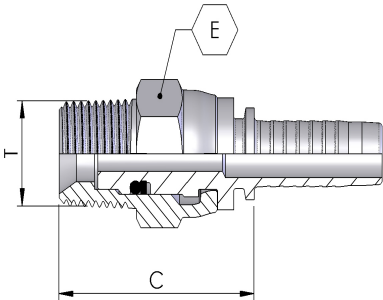
To convert Imperial Gallons to U.S. Gallons, multiply the volume by 1.201

Our product range is constantly evolving and Hydraulink reserve the right to change technical specifications without notice

BSP TAPER

S14

BSPT MALE STRAIGHT
BSP TAPERED MALE STRAIGHT SWIVEL

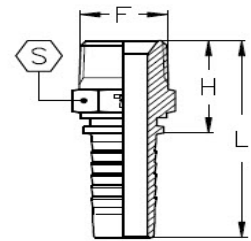


Part Number	BSPT Male Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (E)	Cutoff - C
S14-0606	3/8-28	3/8	9.5	06	22	45.6
S14-0808	1/2-28	1/2	12.7	08	25	47.3

S15

BSPT MALE STRAIGHT

BSP TAPERED MALE STRAIGHT



Part Number	BSPT Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S15-0203	1/8-28	3/16	5	03	12	20	45	350	5000
S15-0204	1/8-28	1/4	6.3	04	12	21	49	350	5000
S15-0404	1/4-19	1/4	6.3	04	15	25	53	350	5000
S15-0406	1/4-19	3/8	10	06	15	26	56	350	5000
S15-0408	1/4-19	1/2	12.7	08					
S15-0604	3/8-19	1/4	6.3	04	19	26	54	280	4000
S15-0605	3/8-19	5/16	8	05	19	26	54	280	4000
S15-0606	3/8-19	3/8	10	06	19	27	57	280	4000
S15-0608	3/8-19	1/2	12.5	08	19	28	64	280	4000
S15-0804	1/2-14	1/4	6.4	04					
S15-0806	1/2-14	3/8	10	06	22	32	63	280	4000
S15-0808	1/2-14	1/2	12.5	08	22	33	66	280	4000
S15-0810	1/2-14	5/8	16	10	22	33	69	280	4000
S15-0812	1/2-14	3/4	19	12					
S15-1010	5/8-14	5/8	15.9	10	25	35			
S15-1208	3/4-14	1/2	12.7	08	27	36.2			
S15-1210	3/4-14	5/8	16	10	27	35	71	280	4000
S15-1212	3/4-14	3/4	19	12	27	36	77	280	4000
S15-1216	3/4-14	1	25.4	16	35	41.7			
S15-1612	1-11	3/4	19	12	36	41	82	280	4000
S15-1616	1-11	1	25	16	36	44	101	280	4000
S15-1620	1-11	1 1/4	31.8	20	44.45	52			
S15-2016	1 1/4-11	1	25.4	16	46	45.6			
S15-2020	1 1/4-11	1 1/4	31.5	20	46	51	118	210	3000
S15-2424	1 1/2-11	1 1/2	38	24	50	54	137	185	2700
S15-3232	2-11	2	51	32	65	64	160	175	2500

BSP PARALLEL

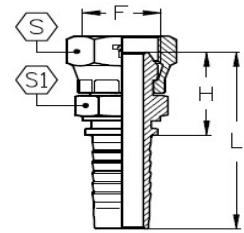
S01H

BSP FEMALE STRAIGHT

BSP 60° CONE FEMALE SWIVEL NUT STRAIGHT

BACK HEX

- ISO 12151-6



Part Number	BSPF Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Hex A/F (S1)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S01H-0204	1/8-28	1/4	6.4	04	14	16	25		
S01H-0404	1/4-19	1/4	6.3	04	19	14	24	52	450
S01H-0405	1/4-19	5/16	7.9	05	19	16	25		
S01H-0406	1/4-19	3/8	9.5	06	19	19	27		
S01H-0408	1/4-19	1/2	12.7	08	19	22	27		
S01H-0604	3/8-19	1/4	6.3	04	22	17	26	54	450
S01H-0605	3/8-19	5/16	7.9	05	22	19	26		
S01H-0606	3/8-19	3/8	10	06	22	17	26	57	445
S01H-0608	3/8-19	1/2	12.7	08	22	22	29		
S01H-0806	1/2-14	3/8	10	06	27	22	29	60	415
S01H-0808	1/2-14	1/2	12.5	08	27	22	30	63	415
S01H-0810	1/2-14	5/8	15.9	10	27	25	31		
S01H-0812	1/2-14	3/4	19	12	27	28	35		
S01H-1008	5/8-14	1/2	12.7	08	28	25	32		
S01H-1010	5/8-14	5/8	15.9	10	28	25	32		
S01H-1206	3/4-14	3/8	9.5	06	32	28	33		
S01H-1208	3/4-14	1/2	12.7	08	32	28	33		
S01H-1210	3/4-14	5/8	15.9	10	32	28	35		
S01H-1212	3/4-14	3/4	19	12	32	27	36	76	350
S01H-1216	3/4-14	1	25.4	16	32	35	42		
S01H-1612	1-11	3/4	19	12	38	38	39		
S01H-1616	1-11	1	25.4	16	38	38	42		
S01H-1620	1-11	1 1/4	31.8	20	38	44	48		
S01H-2016	1 1/4-11	1	25.4	16	51	41	43		
S01H-2020	1 1/4-11	1 1/4	31.8	20	51	44	47		
S01H-2424	1 1/2-11	1 1/2	38.1	24	55	51	51		
S01H-3232	2-11	2	50.8	32	70	70	58		

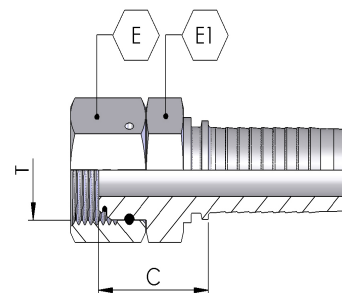
S01XH

BSP FEMALE STRAIGHT

BSP 60° CONE FEMALE SWIVEL NUT STRAIGHT

BACK HEX HEAVY DUTY

- ISO 12151-6

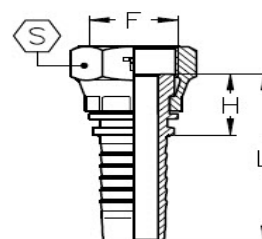


Part Number	BSPP Female Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (E)	Hex A/F (E1)	Cutoff - C
S01XH-1212	3/4-14	3/4	19	12	32	28	36
S01XH-1616	1-11	1	25.4	16	38	38	42

S02C

BSP FEMALE STRAIGHT

BSP FLAT FACE FEMALE SWIVEL NUT STRAIGHT



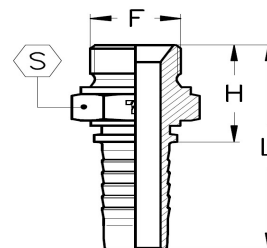
Part Number	BSPP Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S02C-0404	1/4-19	1/4	6.3	04	19	15	43	450	6500
S02C-0606	3/8-19	3/8	10	06	22	17	47	445	6500
S02C-0608	3/8-19	1/2	12.7	08	22	16			
S02C-0806	1/2-14	3/8	10	06	27	19	49	415	6000
S02C-0808	1/2-14	1/2	12.5	08	27	19	52	415	6000
S02C-1208	3/4-14	1/2	12.5	08	32	23	56	350	5000
S02C-1212	3/4-14	3/4	19	12	32	22	63	350	5000

S12

BSP MALE STRAIGHT

BSP 60° CONE MALE STRAIGHT

- ISO 12151-6



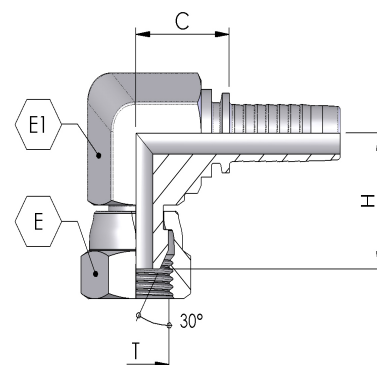
Part Number	BSPP Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S12-0404	1/4-19	1/4	6.3	04	19	25	53	450	6500
S12-0406	1/4-19	3/8	10	06	19	25	55	445	6500
S12-0604	3/8-19	1/4	6.3	04	22	27	55	450	6500
S12-0605	3/8-19	5/16	8	05	22	27	55	350	5000
S12-0606	3/8-19	3/8	10	06	22	27	58	445	6500
S12-0608	3/8-19	1/2	12.5	08	22	28	61	415	6000
S12-0804	1/2-14	1/4	6.3	04	27	32	60	415	6000
S12-0806	1/2-14	3/8	10	06	27	32	62	415	6000
S12-0808	1/2-14	1/2	12.5	08	27	33	66	415	6000
S12-0812	1/2-14	3/4	19	12	27	34	74	350	5000
S12-1208	3/4-14	1/2	12.5	08	32	36	69	350	5000
S12-1212	3/4-14	3/4	19	12	32	37	77	350	5000
S12-1616	1-11	1	25	16	41	45	101	380	5500

S25

BSP FEMALE 90° ELBOW

BSP 60° CONE FEMALE SWIVEL NUT 90° ELBOW

COMPACT



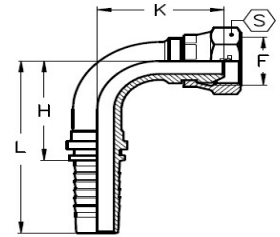
Part Number	T	Hose ID (Inches)	Hose ID (mm)	Hose Dash Size	E	E1	C	H	PN (bar)
S25-0404	1/4-19	1/4	6.3	04	19	14	19	21	400
S25-0604	3/8-19	1/4	6.3	04	22	19	22	25	400
S25-0606	3/8-19	3/8	10.0	06	22	19	23	25	400
S25-0806	1/2-14	3/8	10.0	06	27	24	25	31	350
S25-0808	1/2-14	1/2	12.5	08	27	24	25	31	350
S25-1010	5/8-14	5/8	15.9	10	29	30	32		
S25-1212	3/4-14	3/4	19.0	12	32	27	32	36	315
S25-1616	1-11	1	25.0	16	41	36	42	42	250
S25-2020	1 1/4-11	1 1/4	31.8	20	51	47	64		

S51

BSP FEMALE 90° ELBOW

BSP 60° CONE FEMALE SWIVEL NUT 90° ELBOW

- ISO 12151-6

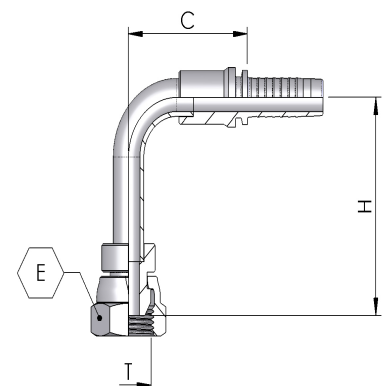


Part Number	BSPP Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S51-0204	1/8-28	1/4	6.3	04	14	28	26	54	350
S51-0404	1/4-19	1/4	6.3	04	19	28	26	54	450
S51-0604	3/8-19	1/4	6.3	04	22	32	26	54	450
S51-0606	3/8-19	3/8	10	06	22	35	31	61	445
S51-0806	1/2-14	3/8	10	06	27	38	31	61	415
S51-0808	1/2-14	1/2	12.5	08	27	42	37	70	415
S51-1010	5/8-14	5/8	16	10	30	46	45	80	350
S51-1208	3/4-14	1/2	12.5	08	32	48	37	70	350
S51-1210	3/4-14	5/8	16	10	32	50	45	80	350
S51-1212	3/4-14	3/4	19	12	32	56	54	95	350
S51-1616	1-11	1	25	16	41	72	71	128	380
S51-2020	1 1/4-11	1 1/4	31.5	20	50	88	87	154	325
S51-2424	1 1/2-11	1 1/2	38	24	60	104	105	188	290
S51-3232	2-11	2	51	32	75	137	140	237	250

S57

BSP FEMALE 90° ELBOW

BSP 60° CONE FEMALE SWIVEL NUT 90° ELBOW EXTENDED



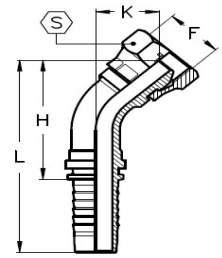
Part Number	BSPP Female Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (E)	Drop	Cutoff mm (C)
S57-0606	3/8-19	3/8	9.5	06	22	60	53
S57-0808	1/2-20	1/2	12.7	08			

S60

BSP FEMALE 45° ELBOW

BSP 60° CONE FEMALE SWIVEL NUT 45° ELBOW

- ISO 12151-6



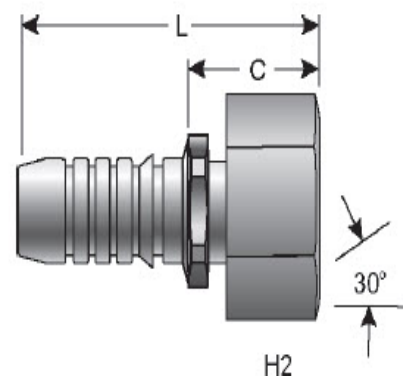
Part Number	BSPP Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S60-0404	1/4-19	1/4	6.3	04	19	16	37	65	450
S60-0604	3/8-19	1/4	6.3	04	22	19	40	68	450
S60-0606	3/8-19	3/8	10	06	22	19	42	73	445
S60-0806	1/2-14	3/8	10	06	27	21	44	75	415
S60-0808	1/2-14	1/2	12.5	08	27	22	49	82	415
S60-1010	5/8-14	5/8	16	10	30	24	54	90	350
S60-1212	3/4-14	3/4	19	12	32	28	66	106	350
S60-1616	1-11	1	25	16	36	41	86	142	380
S60-2020	1 1/4-11	1 1/4	31.5	20	43	50	103	169	325
S60-2424	1 1/2-11	1 1/2	38	24	51	60	123	203	290
S60-3232	2-11	2	51	32	65	75	160	257	250

GS-FBSPORX (GS01)

BSP FEMALE STRAIGHT

GATES GS BSP 60° CONE FEMALE SWIVEL NUT STRAIGHT

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



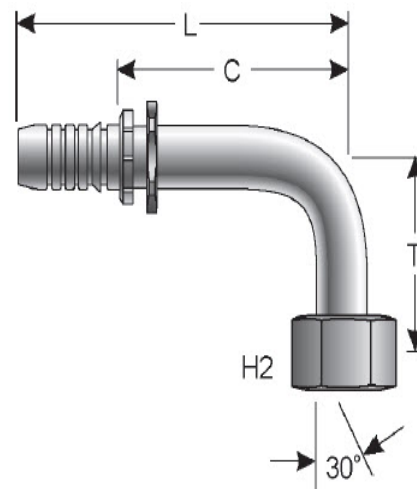
Part Number	BSPP Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	H2 (mm)	Cutoff mm (C)
20GS-20FBSP ORX	1 1/4-11	1 1/4	31.8	20	116.6	50	45.5

GS-FBSPORX90 (GS51)

BSP FEMALE 90° ELBOW

GATES GS BSP 60° CONE FEMALE SWIVEL NUT 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



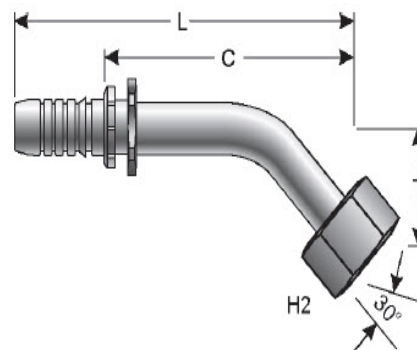
Part Number	BSPP Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	H2 (mm)	Cutoff mm (C)	Drop mm (T)
20GS-20FBS PORX90	1 1/4-11	1 1/4	31.8	20	180.6	50	109.5	80

GS-FBSPORX45 (GS60)

BSP FEMALE 45° ELBOW

GATES GS BSP 60° CONE FEMALE SWIVEL NUT 45° ELBOW

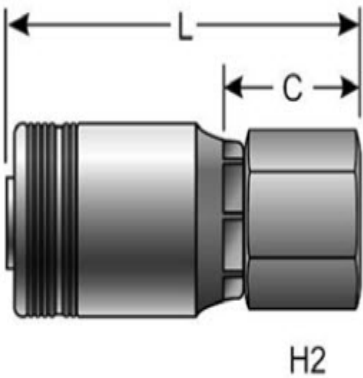
- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



Part Number	BSPP Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	H2 (mm)	Cutoff mm (C)	Drop mm (T)
20GS-20FBS PORX45	1 1/4-11	1 1/4	31.8	20	191	50	119.9	37.6

GSM-FBSPORX (GSM01)
BSP FEMALE STRAIGHT
GATES GSM BSP 60° CONE FEMALE SWIVEL NUT
STRAIGHT ONE PIECE

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



Part Number	BSPP Female Thread	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	H2 (mm)	Cutoff mm (C)
24GSM-24FBS PORX	1 1/2 - 11	1 1/2	24	38.1	154	55	58.8
32GSM-32FBS PORX	2 - 11	2	32	50.8	183.9	70.1	69.9

JIC

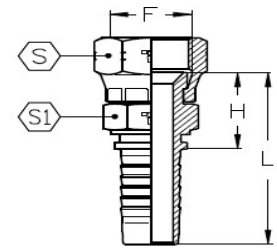
S05H

JIC FEMALE STRAIGHT

JIC 37° FLARE FEMALE SWIVEL NUT STRAIGHT

BACK HEX

- ISO 12151-5/SAE J516



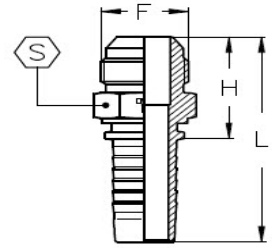
Part Number	JIC Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Hex A/F (S1)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S05C-0905	9/16-18	5/16	8	05	19		15.5	43.5	350
S05H-0703	7/16-20	3/16	5	03	14	12	19	44	415
S05H-0704	7/16-20	1/4	6.3	04	14	14	20.5	48.5	415
S05H-0706	7/16-20	3/8	10	06	14	16	21	51.5	350
S05H-0804	1/2-20	1/4	6.3	04	17	14	21	49	400
S05H-0806	1/2-20	3/8	10	06	17	16	21.5	52	350
S05H-0904	9/16-18	1/4	6.3	04	19	14	22	50	350
S05H-0906	9/16-18	3/8	10	06	19	16	22.5	53	350
S05H-0908	9/16-18	1/2	12.5	08	19	19	24.5	57.5	350
S05H-1206	3/4-16	3/8	10	06	22	19	24.5	55	350
S05H-1208	3/4-16	1/2	12.5	08	22	19	25.5	58.5	350
S05H-1210	3/4-16	5/8	16	10	22	22	26.7	62.5	350
S05H-1408	7/8-14	1/2	12.5	08	27	22	27.5	60.5	350
S05H-1410	7/8-14	5/8	16	10	27	22	27.7	63.5	350
S05H-1412	7/8-14	3/4	19	12	27	27	30	70.5	350
S05H-1708	1 1/16-12	1/2	12.5	08	32	25	30.3	63.3	350
S05H-1710	1 1/16-12	5/8	16	10	32	25	30.5	66.3	350
S05H-1712	1 1/16-12	3/4	19	12	32	27	31.8	72.3	350
S05H-1716	1 1/16-12	1	25.4	16	32	32	35		
S05H-1912	1 3/16-12	3/4	19	12	36	30	34.5	75	280
S05H-1916	1 3/16-12	1	25.4	16	35	35	39		
S05H-2112	1 5/16-12	3/4	19	12	41	32	35.5	76	280
S05H-2116	1 5/16-12	1	25	16	41	32	39.5	96	280
S05H-2616	1 5/8-12	1	25	16	50	41	46	102.5	210
S05H-2620	1 5/8-12	1 1/4	31.5	20	50	41	42.8	114.5	210
S05H-2624	1 5/8-12	1 1/2	38.1	24	50	41			
S05H-3020	1 7/8-12	1 1/4	31.5	20	60	46	51	117.5	185
S05H-3024	1 7/8-12	1 1/2	38	24	60	46	53	135.5	185
S05H-4032	2 1/2-12	2	51	32	75	60	69	165.5	175

S18

JIC MALE STRAIGHT

JIC 37° FLARE MALE STRAIGHT

- ISO 12151-5/SAE J516



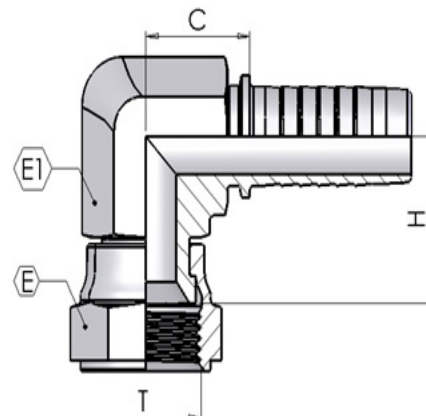
Part Number	JIC Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S18-0704	7/16-20	1/4	6.3	04	12	25.5	53.5	400	5800
S18-0804	1/2-20	1/4	6.3	04	14	25.5	53.5	400	5800
S18-0904	9/16-18	1/4	6.3	04	15	26.6	54.6	350	5000
S18-0905	9/16-18	5/16	8	05	15	26.6	54.6	350	5000
S18-0906	9/16-18	3/8	10	06	15	26.6	57.1	350	5000
S18-1204	3/4-16	1/4	6.4	04	22	32			
S18-1206	3/4-16	3/8	10	06	19	29.7	60.2	350	5000
S18-1208	3/4-16	1/2	12.5	08	19	30.7	63.7	350	5000
S18-1406	7/8-14	3/8	10	06	24	34.3	64.8	350	5000
S18-1408	7/8-14	1/2	12.5	08	24	35.3	68.3	350	5000
S18-1410	7/8-14	5/8	16	10	24	35.5	71.3	350	5000
S18-1412	7/8-14	3/4	19	12	27	37.3	77.8	350	5000
S18-1708	1 1/16-12	1/2	12.5	08	27	38.9	71.9	350	5000
S18-1710	1 1/16-12	5/8	16	10	27	39.1	74.9	350	5000
S18-1712	1 1/16-12	3/4	19	12	27	39.9	80.4	350	5000
S18-1716	1 1/16-12	1	25	16	32	43	99.5	350	5000
S18-1912	1 3/16-12	3/4	19	12	32	41.6	82.1	280	4000
S18-1916	1 3/16-12	1	25.4	16	32	46	94		
S18-2112	1 5/16-12	3/4	19	12	34	42.1	82.6	280	4000
S18-2116	1 5/16-12	1	25	16	36	45	101.5	280	4000
S18-2616	1 5/8-12	1	25	16	46	48	104.5	210	3000
S18-2620	1 5/8-12	1 1/4	31.5	20	46	50.5	117	210	3000
S18-3024	1 7/8-12	1 1/2	38	24	50	57	139.5	185	2700
S18-4032	2 1/2-12	2	51	32	65	68.5	165	175	2500

S29

JIC FEMALE 90° ELBOW

JIC 37° FLARE FEMALE SWIVEL NUT 90° ELBOW

COMPACT



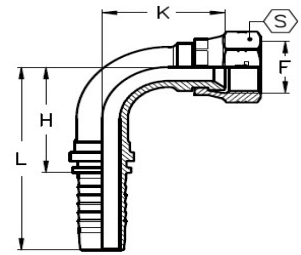
Part Number	T	Hose ID (Inches)	Hose ID (mm)	Hose Dash Size	E	E1	C	H	PN (bar)
S29-0704	7/16-20	1/4	6.3	04	14	14	18	17	350
S29-0804	1/2-20	1/4	6.4	04	16	21	20		
S29-0904	9/16-18	1/4	6.3	04	19	14	18	19	350
S29-0906	9/16-18	3/8	10.0	06	19	19	23	22	350
S29-1206	3/4-16	3/8	10.0	06	22	19	23	23	310
S29-1208	3/4-16	1/2	12.5	08	22	24	25	27	310
S29-1408	7/8-14	1/2	12.5	08	27	24	25	27	240
S29-1410	7/8-14	5/8	16.0	10	27	24	25	27	240
S29-1708	1 1/16-12	1/2	12.7	08	32	36	32		
S29-1710	1 1/16-12	5/8	15.9	10	32	36	32		
S29-1712	1.1/16-12	3/4	19.0	12	32	27	32	30	240
S29-1912	1 3/16-12	3/4	19	12	35	45	40		
S29-2116	1.5/16-12	1	25.0	16	41	36	42	38	210

S55

JIC FEMALE 90° ELBOW

JIC 37° FLARE FEMALE SWIVEL NUT 90° ELBOW

- ISO 12151-5/SAE J516

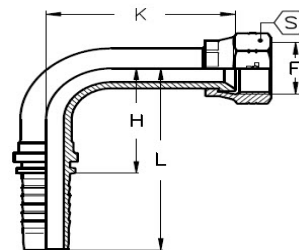


Part Number	JIC Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure(bar)
S55-0703	7/16-20	3/16	5	03	14	21	21	46	415
S55-0704	7/16-20	1/4	6.3	04	14	26	25.5	53.5	415
S55-0804	1/2-20	1/4	6.3	04	17	26	25.5	53.5	400
S55-0904	9/16-18	1/4	6.3	04	19	27	25.5	53.5	350
S55-0906	9/16-18	3/8	10	06	19	33	31	61.5	350
S55-1206	3/4-16	3/8	10	06	22	33	31	61.5	350
S55-1208	3/4-16	1/2	12.5	08	22	39	37	70	350
S55-1406	7/8-14	3/8	10	06	27	31	31	61.5	350
S55-1408	7/8-14	1/2	12.5	08	27	40	37	70	350
S55-1410	7/8-14	5/8	16	10	27	45	45	81	350
S55-1412	7/8-14	3/4	19	12	27	54	55	95	350
S55-1708	1 1/16-12	1/2	12.5	08	32	40	40	73	350
S55-1710	1 1/16-12	5/8	16	10	32	47	45	81	350
S55-1712	1 1/16-12	3/4	19	12	32	53	55	95	350
S55-1716	1 1/16-12	1	25	16	32	71	71	122	280
S55-1912	1 3/16-12	3/4	19	12	36	54	55	95	280
S55-1916	1 3/16-12	1	25.4	16	35	69	64		
S55-2112	1 5/16-12	3/4	19	12	41	56	55	95	280
S55-2116	1 5/16-12	1	25	16	41	67	71	128	280
S55-2616	1 5/8-12	1	25	16	50	69	71	128	210
S55-2620	1 5/8-12	1 1/4	31.5	20	50	81	87	154	210
S55-3024	1 7/8-12	1 1/2	38	24	60	82	87	154	185
S55-4032	2 1/2-12	2	51	32	75	132	140	237	175

S58

JIC FEMALE 90° ELBOW

JIC 37° FLARE FEMALE SWIVEL NUT 90° ELBOW
EXTENDED



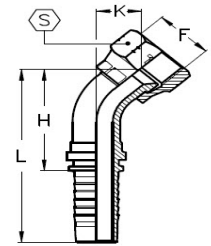
Part Number	JIC Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S58-0704	7/16-20	1/4	6.3	04	14	46	25.5	53.5	400
S58-0904	9/16-18	1/4	6.3	04	17	46	25.5	53.5	350
S58-0906	9/16-18	3/8	10	06	19	54	31	61.5	350
S58-1206	3/4-16	3/8	10	06	22	64	31	61.5	350
S58-1208	3/4-16	1/2	12.5	08	22	64	38	71	350
S58-1408	7/8-14	1/2	12.5	08	27	70	38	71	350
S58-1712	1 1/16-12	3/4	19	12	32	96	55	95	350
S58-2116	1 5/16-12	1	25	16	41	116	71	128	280

S64

JIC FEMALE 45° ELBOW

JIC 37° FLARE FEMALE SWIVEL NUT 45° ELBOW

- ISO 12151-5/SAE J516



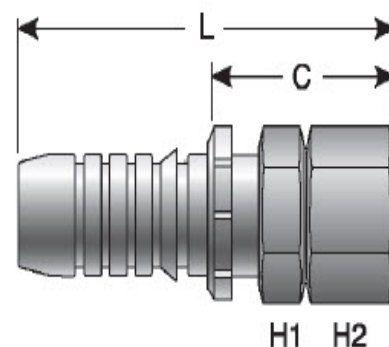
Part Number	JIC Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S64-0704	7/16-20	1/4	6.3	04	14	10	31	59	400
S64-0706	7/16-20	3/8	9.5	06	14				
S64-0804	1/2-20	1/4	6.3	04	17	11	32	60	400
S64-0904	9/16-18	1/4	6.3	04	19	12	33	61	350
S64-0906	9/16-18	3/8	10	06	19	12	35.5	66	350
S64-1206	3/4-16	3/8	10	06	22	14	37.5	68	350
S64-1208	3/4-16	1/2	12.5	08	22	14.5	41	76	350
S64-1408	7/8-14	1/2	12.5	08	27	16	43	76	350
S64-1410	7/8-14	5/8	16	10	27	16	47	83	350
S64-1412	7/8-14	3/4	19	12	27	27	64	105	350
S64-1708	1 1/16-12	1/2	12.5	08	32	19	50	86	350
S64-1710	1 1/16-12	5/8	16	10	32	19	45.5	78.5	350
S64-1712	1 1/16-12	3/4	19	12	32	22	59	99	350
S64-1912	1 3/16-12	3/4	19	12	36	22	59	100	280
S64-2112	1 5/16-12	3/4	19	12	41	24	61	101	280
S64-2116	1 5/16-12	1	25	16	41	32	82	138	280
S64-2620	1 5/8-12	1 1/4	31.5	20	50	38	98	164	210
S64-3024	1 7/8-12	1 1/2	38	24	60	46	118	201	185
S64-4032	2 1/2-12	2	51	32	75	62	157	253	175

GS-FJX (GS05)

JIC FEMALE STRAIGHT

GATES GS JIC 37° FLARE FEMALE SWIVEL NUT STRAIGHT

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



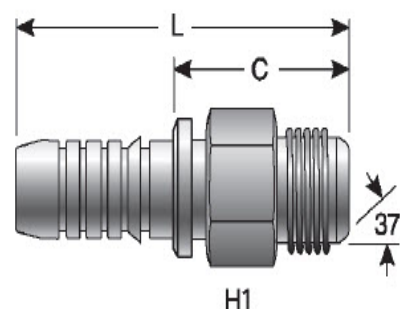
Part Number	JIC Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	H1 (mm)	H2 (mm)
20GS-20FJX	1 5/8-12	1 1/4	31.8	20	134.4	65	47.6	50.8
20GS-24FJX	1 7/8-12	1 1/4	31.8	20	136.9	65.8	47.6	60.3

GS-MJ (GS18)

JIC MALE STRAIGHT

GATES GS JIC 37° FLARE MALE STRAIGHT

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



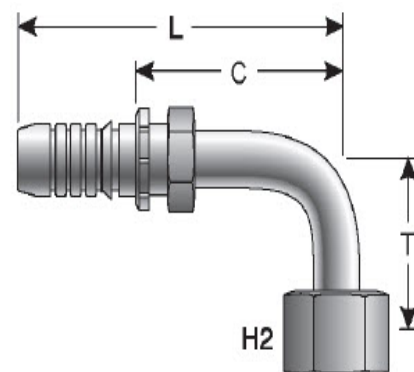
Part Number	JIC Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	H1 (mm)
20GS-20MJ	1 5/8-12	1 1/4	31.8	20	125	53.9	44.5

GS-FJX90M (GS55)

JIC FEMALE 90° ELBOW

GATES GS JIC 37° FLARE FEMALE SWIVEL NUT 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



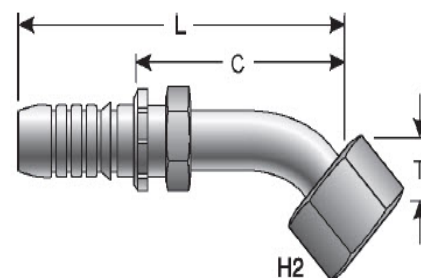
Part Number	JIC Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Drop mm (T)	H2 mm
20GS-20FJX 90M	1 5/8-12	1 1/4	31.8	20	174	102.9	64	50.8

GS-FJX45-038 (GS64)

JIC FEMALE 45° ELBOW

GATES GS JIC 37° FLARE FEMALE SWIVEL NUT 45° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



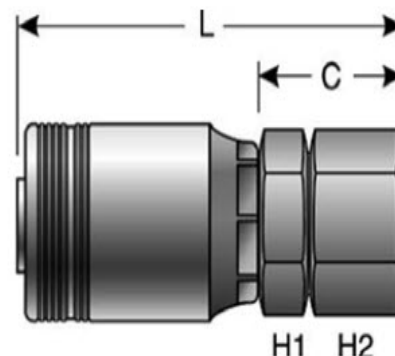
Part Number	JIC Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Drop mm (T)	H2 mm
20GS-20FJX 45-038	1 5/8-12	1 1/4	31.8	20	180.1	109	38.1	50.8

GSM-FJX (GSM05)

JIC FEMALE STRAIGHT

GATES GSM JIC 37° FLARE FEMALE SWIVEL NUT
STRAIGHT

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



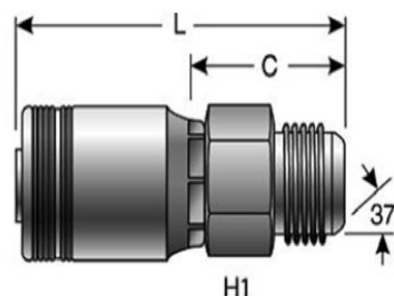
Part Number	JIC Female Thread	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	H2 (mm)	H1 (mm)	Cutoff mm (C)
24GSM-24FJ X	1 7/8 - 12	1 1/2	24	38.1	172.2	59.9	55	77.2

GSM-24MJ (GSM18)

JIC MALE STRAIGHT

GATES GSM JIC 37° FLARE MALE STRAIGHT

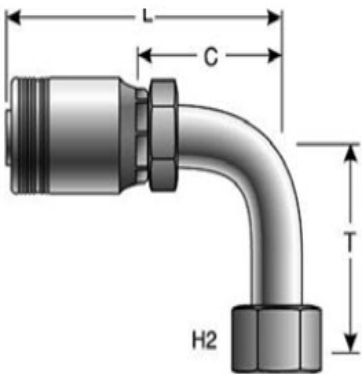
- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



Part Number	JIC Male Thread	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	H1 (mm)
24GSH-24MJ	1 7/8 - 12	1 1/2	24	38.1	162.3	67.3	50

GSM-FJX90M (GSM55)
JIC FEMALE 90° ELBOW
GATES GSM JIC 37° FLARE FEMALE SWIVEL NUT
90° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



Part Number	JIC Female Thread	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	H2 (mm)	Cutoff mm (C)	Drop mm (T)
24GSM-24FJX90M	1 7/8 - 12	1 1/2	24	38.1	227.6	60	132.3	86.1

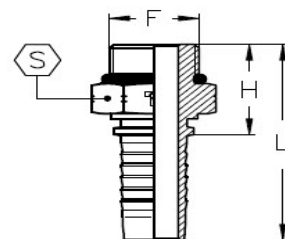
UNO

S20

UNO MALE STRAIGHT

UNO FIXED STUD STRAIGHT

- SAE J516

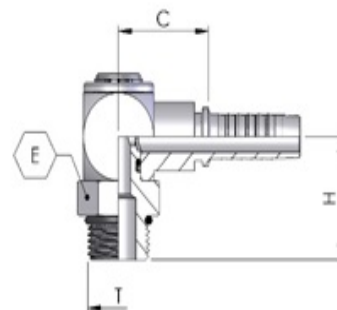


Part Number	Uno Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	O-Ring	Working Pressure (bar)
S20-0704	7/16-20	1/4	6.3	04	14	21.5	49.5	8.92x1.83	400
S20-0906	9/16-18	3/8	10	06	17	23.5	54	11.89x1.98	350
S20-1206	3/4-16	3/8	10	06	22	26	56.5	16.36x2.021	350
S20-1208	3/4-16	1/2	12.5	08	22	27	60	16.36x2.21	350
S20-1408	7/8-14	1/2	12.5	08	25	29.5	62.5	19.18x2.46	350

S32

UNO MALE 90° ELBOW

UNO FIXED STUD 90° ELBOW SWIVEL



Part Number	Uno Male Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (E)	Drop mm (H)	Cutoff (C)	O-Ring	Working Pressure (psi)
S32-1408K	7/8-14	1/2	12.5	08	25.4	36	32	19.18x2.46	3000

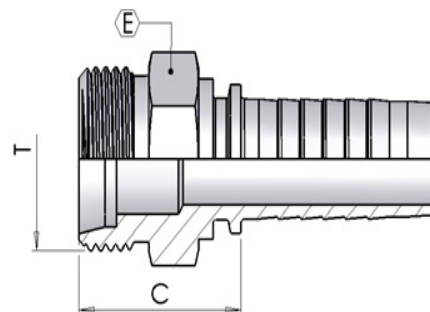
FLARELESS TUBE STRAIGHT

S94

FLARELESS TUBE STRAIGHT

IMPERIAL TUBE FLARELESS 24° CONE MALE

- SAE J516



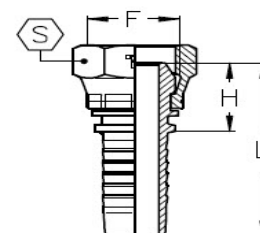
Part Number	SAE Male Thread (T)	Hose I.D inches	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (E)	Cutoff - C
S94-0606	9/16-18	3/8	9.5	06	3/8	19	28
S94-0808	3/4-16	1/2	12.7	08	1/2	22	31

NPT

S07

NPSM FEMALE STRAIGHT

NPSM 60° CONE FEMALE SWIVEL NUT STRAIGHT

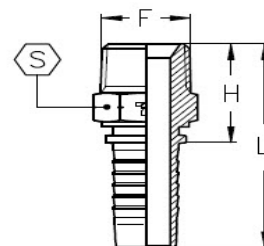


Part Number	NPSM Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S07C-0404	1/4-18	1/4	6.3	04	17	19	47	350	5000
S07C-0405	1/4-18	5/16	7.9	05	19	18			
S07C-0606	3/8-18	3/8	10	06	22	21	51	280	4000
S07C-0808	1/2-14	1/2	12.5	08	25	23	56	280	4000

S16

NPTF MALE STRAIGHT
NPTF MALE 30° CONE

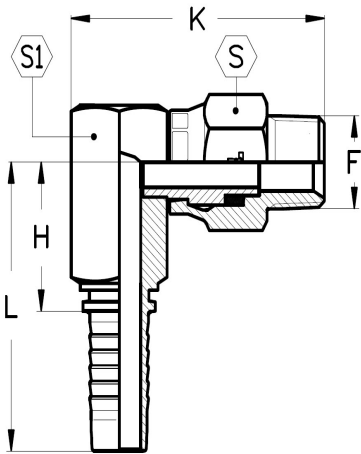
- SAE J516



Part Number	NPTF Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S16-0203	1/8-27	3/16	5	03	12	20.5	45.5	350	5000
S16-0204	1/8-27	1/4	6.3	04	12	21	49	350	5000
S16-0403	1/4-18	3/16	5	03	14	26.5	51.5	350	5000
S16-0404	1/4-18	1/4	6.3	04	14	27	55	350	5000
S16-0405	1/4-18	5/16	8	05	14	27	55	350	5000
S16-0406	1/4-18	3/8	10	06	16	27.5	58	350	5000
S16-0604	3/8-18	1/4	6.3	04	19	28.5	56.5	280	4000
S16-0606	3/8-18	3/8	10	06	19	28.5	59	280	4000
S16-0608	3/8-18	1/2	12.5	08	22	30.5	63.5	280	4000
S16-0806	1/2-14	3/8	10	06	22	34	64.5	280	4000
S16-0808	1/2-14	1/2	12.5	08	22	35	68	280	4000
S16-0812	1/2-14	3/4	19	12	27	37.5	78	280	4000
S16-1212	3/4-14	3/4	19	12	27	38	78.5	280	4000
S16-1616	1-11.5	1	25	16	36	48.5	105	280	4000
S16-2020	1 1/4-11.5	1 1/4	31.5	20	46	55	121.5	210	3000
S16-2424	1 1/2-11.5	1 1/2	38	24	50	61	143.5	185	2700
S16-3232	2-11.5	2	51	32	65	70.5	167	175	2500

S116
NPTF MALE COMPACT SWIVEL
NPTF MALE 30° CONE

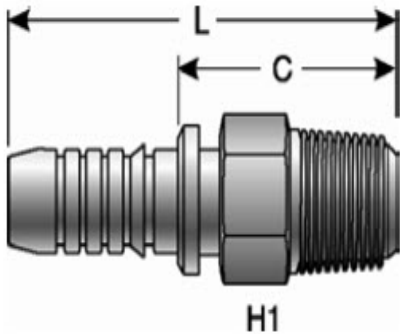
- SAE J516



Part Number	NPTF Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Hex A/F (S1)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S116-0404	1/4-18	1/4	6.3	04	17	17	29	57	210

GS-MP (GS16)
NPTF MALE STRAIGHT
GATES GS NPTF MALE 30° CONE

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



Part Number	NPTF Male Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	H1 (mm)
20GS-20MP	1 1/4-11 5	1 1/4	31.8	20	127	55.9	44.5

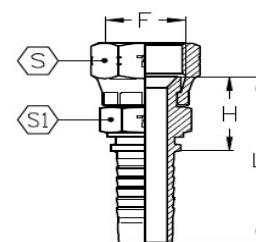
SAE

S03H

SAE FEMALE STRAIGHT

SAE 45° FLARE FEMALE SWIVEL NUT STRAIGHT

BACK HEX

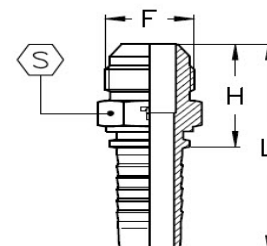


Part Number	SAE Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Hex A/F (S1)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S03H-0704	7/16 - 20	1/4	6.4	04	15	14	21		
S03H-1004	5/8 - 18	1/4	6.4	04	19	16	24		
S03H-1006	5/8 - 18	3/8	10	06	22	16	23.5	54	350
S03H-1208	3/4 - 16	1/2	12.7	08	24	22	27		
S03H-1712	1 1/16 - 14	3/4	19	12	32	27	31.8	72.3	350

S09

SAE MALE STRAIGHT

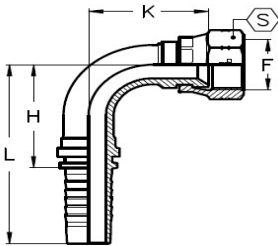
SAE 45° FLARE MALE STRAIGHT



Part Number	SAE Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S09-1006	5/8-18	3/8	10	06	16	28.2	58.7	350	5000
S09-1208	3/4-16	1/2	12.7	08	22	33			

S41

SAE FEMALE 90° ELBOW
SAE 45° FLARE FEMALE SWIVEL NUT 90° ELBOW



Part Number	SAE Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S41-1006	5/8 - 18	3/8	10	06	22	31	31	61	350

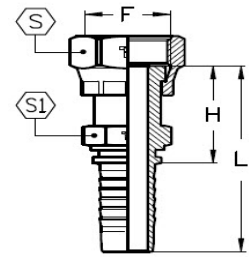
ORFS

S13H

ORFS FEMALE STRAIGHT

ORFS FEMALE SWIVEL NUT STRAIGHT BACK HEX

- ISO 12151-1/SAE J516

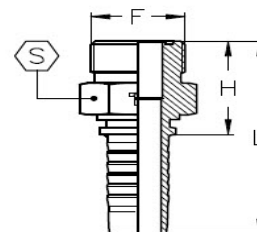


Part Number	ORFS Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Hex A/F (S1)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S13H-0904	9/16-18	1/4	6.3	04	17	14	26.5	54.5	450
S13H-1104	11/16-16	1/4	6.3	04	22	16	28.5	56.5	450
S13H-1105	11/16-16	5/16	8	05	22	16	28.5	56.5	450
S13H-1106	11/16-16	3/8	10	06	22	16	28.5	59	450
S13H-1306	13/16-16	3/8	10	06	24	19	32.5	63	450
S13H-1308	13/16-16	1/2	12.5	08	24	19	33.5	66.5	415
S13H-1310	13/16 - 16	5/8	15.9	10	24	25.4	38.5		
S13H-1608	1-14	1/2	12.5	08	30	24	39.5	72.5	415
S13H-1610	1-14	5/8	16	10	30	24	39.5	75.5	350
S13H-1612	1-14	3/4	19	12	30	27	41.5	82	350
S13H-1908	1 3/16-12	1/2	12.5	08	36	27	43.5	76.5	415
S13H-1910	1 3/16-12	5/8	16	10	36	27	43.5	79.5	350
S13H-1912	1 3/16-12	3/4	19	12	36	27	44.5	85	350
S13H-1916	1 3/16-12	1	25.4	16	36	27			
S13H-2312	1 7/16-12	3/4	19	12	41	36	47.5	88	350
S13H-2316	1 7/16-12	1	25	16	41	36	51	107	415
S13H-2716	1 11/16-12	1	25	16	50	41	52	109	345
S13H-2720	1 11/16-12	1 1/4	31.5	20	50	41	55	121	345
S13H-3224	2-12	1 1/2	38	24	60	50	60	142	290

S40

ORFS MALE STRAIGHT

- ISO 12151-1/SAE J516



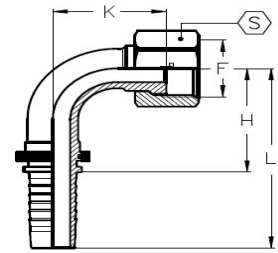
Part Number	ORFS Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	O-Ring	Working Pressure (bar)
S40-0904	9/16-18	1/4	6.3	04	17	23.5	51.5	7.65X1.78	450
S40-1104	11/16-16	1/4	6.3	04	19	25.5	53.5	9.25X1.78	450
S40-1105	11/16-16	5/16	8	05	19	25.5	53.5	9.25X1.78	350
S40-1106	11/16-16	3/8	10	06	19	25.5	56	9.25X1.78	450
S40-1306	13/16-16	3/8	10	06	22	28.5	59	12.42X1.78	450
S40-1308	13/16-16	1/2	12.5	08	22	29.5	62.5	12.42X1.78	415
S40-1608	1-14	1/2	12.5	08	27	34	67	15.6X1.78	415
S40-1610	1-14	5/8	16	10	27	34	70	15.6X1.78	350
S40-1910	1 3/16-12	5/8	16	10	32	37	73	18.77X1.78	350
S40-1912	1 3/16-12	3/4	19	12	32	38	78.5	18.77X1.78	350
S40-1916	1 3/16-12	1	25	16	35	42			
S40-2312	1 7/16-12	3/4	19	12	41	42.5	83	23.52x1.78	350
S40-2316	1 7/16-12	1	25	16	41	41	97	23.52x1.78	415
S40-2716	1 11/16-12	1	25	16	46	38			
S40-2720	1 11/16-12	1 1/4	31.5	20	46	44	111	29.87x1.78	345

S52

ORFS FEMALE 90° ELBOW

ORFS FEMALE SWIVEL NUT 90° ELBOW

- ISO 12151-1/SAE J516



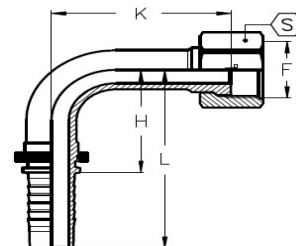
Part Number	ORFS Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S52-0904	9/16-18	1/4	6.3	04	17	21	27	55	450
S52-1104	11/16-16	1/4	6.3	04	22	24	27	55	450
S52-1105	11/16-16	5/16	8	05	22	25	29	57	350
S52-1106	11/16-16	3/8	10	06	22	24.5	31.5	62	450
S52-1306	13/16-16	3/8	10	06	24	30	31	61	450
S52-1308	13/16-16	1/2	12.5	08	24	31	39	72	415
S52-1608	1-14	1/2	12.5	08	30	34	39	72	415
S52-1610	1-14	5/8	16	10	30	35	45	81	350
S52-1910	1 3/16-12	5/8	16	10	36	42	45	81	350
S52-1912	1 3/16-12	3/4	19	12	36	45	55	95	350
S52-1916	1 3/16-12	1	25.4	16					
S52-2312	1 7/16-12	3/4	19	12	41	49	55	95	350
S52-2316	1 7/16-12	1	25	16	41	62	71	127	415
S52-2720	1 11/16-12	1 1/4	31.5	20	50	75	87	153	345
S52-3224	2-12	1 1/2	38	24	60	90	105	187	290

S56

ORFS FEMALE 90° ELBOW

ORFS FEMALE SWIVEL NUT 90° ELBOW EXTENDED

- ISO 12151-1/SAE J516



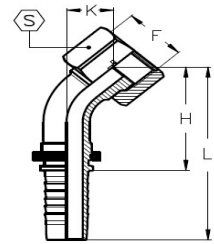
Part Number	ORFS Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S56-0904	9/16-18	1/4	6.3	04	17	46	29	57	450
S56-1104	11/16-16	1/4	6.3	04	22	54	27	55	450
S56-1106	11/16-16	3/8	10	06	22	54	34	64.5	450
S56-1306	13/16-16	3/8	10	06	24	64	34	64.5	450
S56-1308	13/16-16	1/2	12.5	08	24	64	39	72	415
S56-1608	1-14	1/2	12.5	08	30	70	39	72	415
S56-1610	1-14	5/8	16	10	30	70	45	81	350
S56-1610-C ROWN	1-14	5/8	15.9	10	30	119	36		
S56-1912	1 3/16-12	3/4	19	12	36	96	55	95	350
S56-2316	1 7/16-12	1	25	16	41	114	71	127	415

S63

ORFS FEMALE 45° ELBOW

ORFS FEMALE SWIVEL NUT 45° ELBOW

- ISO 12151-1/SAE J516



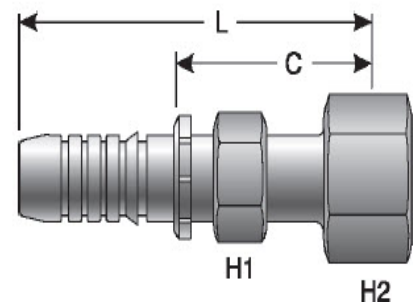
Part Number	ORFS Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S63-0904	9/16-18	1/4	6.3	04	17	10.5	32.5	60.5	450
S63-1104	11/16-16	1/4	6.3	04	22	12.5	34.5	62.5	450
S63-1106	11/16-16	3/8	10	06	22	12.5	36	66.5	450
S63-1306	13/16-16	3/8	10	06	24	15	38.5	69	450
S63-1308	13/16-16	1/2	12.5	08	24	15.5	42.5	75.5	415
S63-1608	1-14	1/2	12.5	08	30	17.5	45	78	415
S63-1610	1-14	5/8	16	10	30	18	49	85	350
S63-1910	1 3/16-12	5/8	16	10	36	20.5	51.5	87.5	350
S63-1912	1 3/16-12	3/4	19	12	36	21	58	99	350
S63-2312	1 7/16-12	3/4	19	12	41	23.5	60.5	101	350
S63-2316	1 7/16-12	1	25	16	41	29	78	134	415
S63-2720	1 11/16-12	1 1/4	31.5	20	50	34	93	159	345
S63-3224	2-12	1 1/2	38	24	60	41	113	195	290

GS-FFORX (GS13)

ORFS FEMALE STRAIGHT

GATES GS ORFS FEMALE SWIVEL NUT STRAIGHT BACK HEX

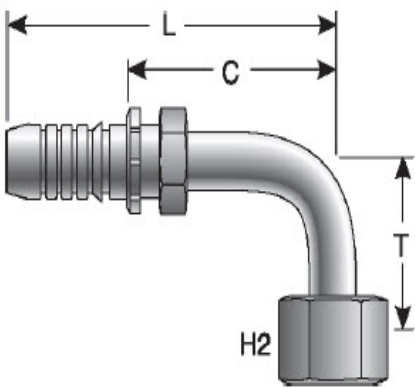
- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



Part Number	ORFS Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	H1 (mm)	H2 (mm)
20GS-20FFORX	1 11/16-12	1 1/4	31.8	20	128	56.9	50	50

GS-FFORX90M (GS52)
ORFS FEMALE 90° ELBOW
GATES GS ORFS FEMALE SWIVEL NUT 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



Part Number	ORFS Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Drop mm (T)	H2 mm
20GS-20FFO RX90M	1 11/16-12	1 1/4	31.8	20	172	100.8	78	50

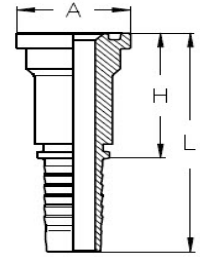
SAE FLANGES

S23

SAE C61 STRAIGHT

SAE FLANGE CODE 61 STRAIGHT

- ISO 12151-3/SAE J516



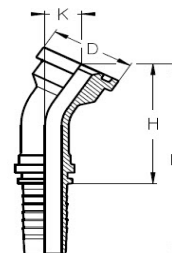
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S23-0808	1/2	1/2	12.5	08	30.2	47	80	350	5000
S23-1208	3/4	1/2	12.5	08	38.1	51	80	350	5000
S23-1210	3/4	5/8	16	10	38.1	55	84	350	5000
S23-1212	3/4	3/4	19	12	38.1	62	94.5	350	5000
S23-1216	3/4	1	25	16	38.1	58	114.5	350	5000
S23-1610	1	5/8	15.9	16	44.5				
S23-1612	1	3/4	19	12	44.5	64	94.5	350	5000
S23-1616	1	1	25	16	44.5	58	114.5	350	5000
S23-1620	1	1 1/4	31.5	20	44.5	94	120	210	3000
S23-2012	1 1/4	3/4	19	12	50.8	61			
S23-2016	1 1/4	1	25	16	50.8	63	119.5	280	4000
S23-2020	1 1/4	1 1/4	31.5	20	50.8	65	130.5	280	4000
S23-2024	1 1/4	1 1/2	38.1	24	50.8	69			
S23-2416	1 1/2	1	25	16	60.4	55	115.5	210	3000
S23-2420	1 1/2	1 1/4	31.5	20	60.4	68	134.5	210	3000
S23-2424	1 1/2	1 1/2	38	24	60.4	73	155.5	210	3000
S23-3224	2	1 1/2	38	24	71.4	76	158.5	210	3000
S23-3232	2	2	51	32	71.4	77	176.5	210	3000
S23-4032	2 1/2	2	51	32	84.1	90	186.5	175	2500

S45

SAE C61 30° ELBOW

SAE FLANGE CODE 61 30° ELBOW

- ISO 12151-3/SAE J516



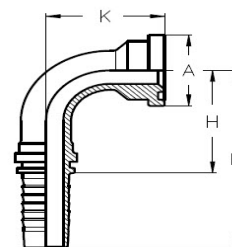
Part Number	Nominal SAE Flange size (D)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (D)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S45-1212	3/4	3/4	19	12	38.1	16	65	106	350
S45-1612	1	3/4	19	12	44.5	17	68	108	350
S45-1616	1	1	25	16	44.5	17	84	140	350
S45-2016	1 1/4	1	25	16	50.8	17	84	140	280
S45-2020	1 1/4	1 1/4	31.5	20	50.8	19	98	164	280
S45-2420	1 1/2	1 1/4	31.5	20	60.4	19	98	164	210
S45-2424	1 1/2	1 1/2	38	24	60.4	22	116	199	210
S45-3232	2	2	51	32	71.4	31	162	258	210

S59

SAE C61 90° ELBOW

SAE FLANGE CODE 61 90° ELBOW

- ISO 12151-3/SAE J516



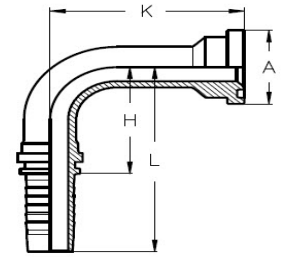
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S59-0808	1/2	1/2	12.5	08	30.2	40	38	71	350
S59-0812	1/2	3/4	19	12	30.2	54	55	95	350
S59-1208	3/4	1/2	12.5	08	38.1	45	38	71	350
S59-1210	3/4	5/8	16	10	38.1	47	45	81	350
S59-1212	3/4	3/4	19	12	38.1	51	55	95	350
S59-1612	1	3/4	19	12	44.5	54	55	95	280
S59-1616	1	1	25	16	44.5	61	71	128	350
S59-1620	1	1 1/4	31.5	20	44.5	79	87	154	350
S59-2016	1 1/4	1	25	16	50.8	61	71	128	280
S59-2020	1 1/4	1 1/4	31.5	20	50.8	71	87	154	280
S59-2024	1 1/4	1 1/2	25.4	16	50.8	76	90		
S59-2416	1 1/2	1	25	16	60.4	61	71	128	210
S59-2420	1 1/2	1 1/4	31.5	20	60.4	71	87	154	210
S59-2424	1 1/2	1 1/2	38	24	60.4	83	105	188	210
S59-3224	2	1 1/2	38	24	71.4	81	105	188	210
S59-3232	2	2	51	32	71.4	122	140	237	210

S59L

SAE C61 90° ELBOW

SAE FLANGE CODE 61 90° ELBOW EXTENDED

- ISO 12151-3/SAE J516



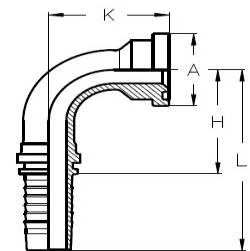
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S59L-1212	3/4	3/4	19	12	38.1	127	55	95	350
S59L-1616	1	1	25	16	44.5	118	71	128	350
S59L-2020	1 1/4	1 1/4	31.5	20	50.8	168	87	154	280

S61

SAE C62 90° ELBOW

SAE FLANGE CODE 62 90° ELBOW

- ISO 12151-3/SAE J516



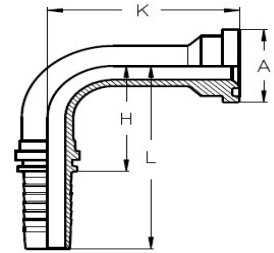
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S61-0808	1/2	1/2	12.5	08	31.8	40	38	71	415
S61-1208	3/4	1/2	12.5	08	41.3	47	38	71	415
S61-1210	3/4	5/8	16	10	41.3	50	45	81	350
S61-1212	3/4	3/4	19	12	41.3	54	55	95	350
S61-1216	3/4	1	25	16	41.3	65	71	128	415
S61-1612	1	3/4	19	12	47.6	63	56		415
S61-1616	1	1	25	16	47.6	64	71	128	415
S61-1620	1	1 1/4	31.5	20	47.6	79	87	154	415
S61-2016	1 1/4	1	25	16	54	64	71	128	415
S61-2020	1 1/4	1 1/4	31.5	20	54	74	87	154	415
S61-2020-X 160	1 1/4	1 1/4	31.8	20	54	160	87	154	415
S61-2420	1 1/2	1 1/4	31.5	20	63.5	76	87	154	415
S61-2424	1 1/2	1 1/2	38.1	24	63.5	88	105	188	415
S61-3232	2	2	50.8	32	79.4	123	140	237	415

S61L

SAE C62 90° ELBOW

SAE FLANGE CODE 62 90° ELBOW EXTENDED

- ISO 12151-3/SAE J516



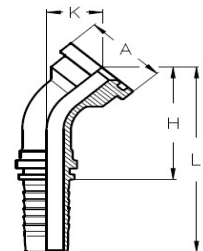
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S61L-1212	3/4	3/4	19	12	41.3	100	55	95	350
S61L-1616	1	1	25	16	47.6	120	71	128	415
S61L-2020	1 1/4	1 1/4	31.5	20	54	120	87	154	415

S62

SAE C62 45° ELBOW

SAE FLANGE CODE 62 45° ELBOW EXTENDED

- ISO 12151-3/SAE J516



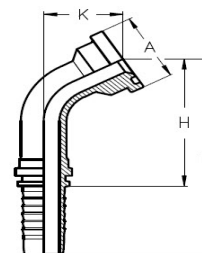
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S62-0808	1/2	1/2	12.5	08	31.8	20	47	80	415
S62-1210	3/4	5/8	16	10	41.3	26	57	93	350
S62-1212	3/4	3/4	19	12	41.3	26	64	104	350
S62-1610	1	5/8	15.9	10	47.6	32	77		350
S62-1612	1	3/4	19	12	47.6	31	68	108	350
S62-1616	1	1	25	16	47.6	30	80	136	415
S62-1620	1	1 1/4	31.5	20	47.6	37	96	136	415
S62-2016	1 1/4	1	25	16	54	30	80	136	415
S62-2020	1 1/4	1 1/4	31.5	20	54	34	93	160	415
S62-2420	1 1/2	1 1/4	31.5	20	63.5	35	94	161	415
S62-2424	1 1/2	1 1/2	38.1	24	63.5	40	112	195	415
S62-3232	2	2	50.8	32	79.4	56	150	247	415

S66

SAE C61 60° ELBOW

SAE FLANGE CODE 61 60° ELBOW EXTENDED

- ISO 12151-3/SAE J516



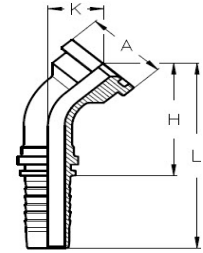
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S66-1212	3/4	3/4	19	12	38.1	34	73	113	350
S66-1612	1	3/4	19	12	44.5	36	74	114	350
S66-1616	1	1	25	16	44.5	40	98	154	350
S66-2016	1 1/4	1	25	16	50.8	40	98	154	280
S66-2020	1 1/4	1 1/4	31.5	20	50.8	45	118	184	280
S66-2420	1 1/2	1 1/4	31.5	20	60.4	45	118	184	210
S66-2424	1 1/2	1 1/2	38	24	60.4	52	140	223	210
S66-3232	2	2	51	32	71.4	73	192	289	210

S68

SAE C61 45° ELBOW

SAE FLANGE CODE 61 45° ELBOW EXTENDED

- ISO 12151-3/SAE J516

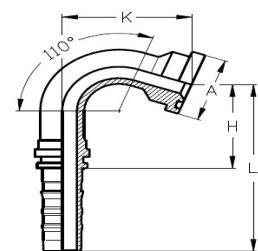


Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Drop mm (K)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)
S68-0808	1/2	1/2	12.5	08	30.2	20	47	80	350
S68-1208	3/4	1/2	12.5	08	38.1	24	51	84	350
S68-1212	3/4	3/4	19	12	38.1	25	62	102	350
S68-1612	1	3/4	19	12	44.5	27	64	104	350
S68-1616	1	1	25	16	44.5	28	78	134	350
S68-2016	1 1/4	1	25	16	50.8	28	78	134	280
S68-2020	1 1/4	1 1/4	31.5	20	50.8	32	91	157	280
S68-2416	1 1/2	1	25.4	16	60.3	26	78		
S68-2420	1 1/2	1 1/4	31.5	20	60.4	32	91	157	210
S68-2424	1 1/2	1 1/2	38	24	60.4	36	108	191	210
S68-3224	2	1 1/2	38	24	71.4	35	107	189	210
S68-3232	2	2	51	32	71.4	57	151	245	210

S110

SAE C61 110° ELBOW

SAE FLANGE CODE 61 110° ELBOW



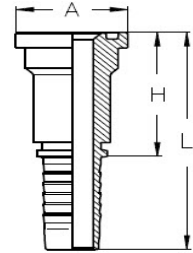
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Drop mm (K)	Cutoff mm (C)	Length mm (L)	Working Pressure (bar)
S110-1616	1	1	25	16	44.5	73	65	121	350
S110-2016	1 1/4	1	25	16	50.8	73	65	121	280
S110-2020	1 1/4	1 1/4	31.5	20	50.8	83	82	148	280
S110-2420	1 1/2	1 1/4	31.5	20	60.4	83	82	148	210

S22

SAE C62 STRAIGHT

SAE FLANGE CODE 62 STRAIGHT

- ISO 12151-3/SAE J516



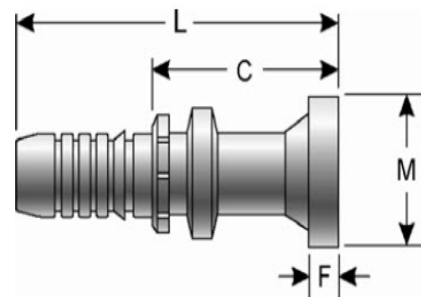
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange O.D mm (A)	Cutoff mm (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S22-0808	1/2	1/2	12.5	08	31.8	47	80	415	6000
S22-1208	3/4	1/2	12.5	08	41.3	47	80	415	6000
S22-1212	3/4	3/4	19	12	41.3	58	98.5	350	5000
S22-1216	3/4	1	25	12	41.3	58	98.5	415	6000
S22-1612	1	3/4	19	12	47.6	58	98.5	350	5000
S22-1616	1	1	25	16	47.6	65	121.5	415	6000
S22-1620	1	1 1/4	31.5	20	47.6	70	136.5	415	6000
S22-2016	1 1/4	1	25	16	54	69	125.5	415	6000
S22-2020	1 1/4	1 1/4	31.5	20	54	70	136.5	415	6000
S22-2420	1 1/2	1 1/4	31.5	20	63.5	80	146.5	415	6000
S22-2424	1 1/2	1 1/2	38.0	24	63.5			415	6000
S22-3224	2	1 1/2	38.0	24	71.4			415	6000
S22-3232	2	2	51.0	32	71.4			415	6000

GS-FLH (GS22)

SAE C62 STRAIGHT

GATES GS SAE FLANGE CODE 62 STRAIGHT

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



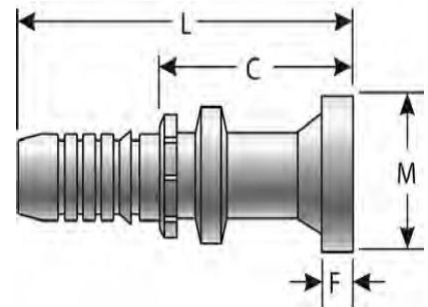
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Thickness mm (F)
20GS-16FLH	1	1 1/4	31.8	20	163.1	92	47.8	9.7
20GS-20FLH	1 1/4	1 1/4	31.8	20	146.1	74.9	54.1	10.4
20GS-24FLH	1 1/4	1 1/4	31.8	20	160	88.9	63.5	12.7

GS-FL (GS23)

SAE C61 STRAIGHT

GATES GS SAE FLANGE CODE 61 STRAIGHT

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



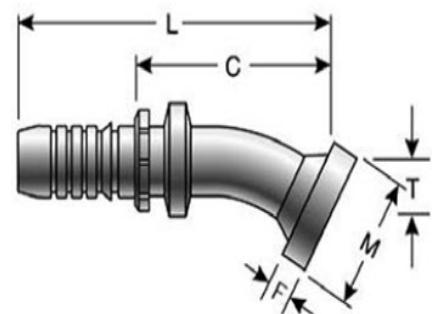
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Thickness mm (F)
20GS-16FL	1	1 1/4	31.8	20	135.9	64.8	44.5	8.1
20GS-20FL	1 1/4	1 1/4	31.8	20	146.1	74.9	50.8	8.1
20GS-24FL	1 1/2	1 1/4	31.8	20	160	88.9	60.5	8.1

GS-FL30M (GS45)

SAE C61 30° ELBOW

GATES GS SAE FLANGE CODE 61 30° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



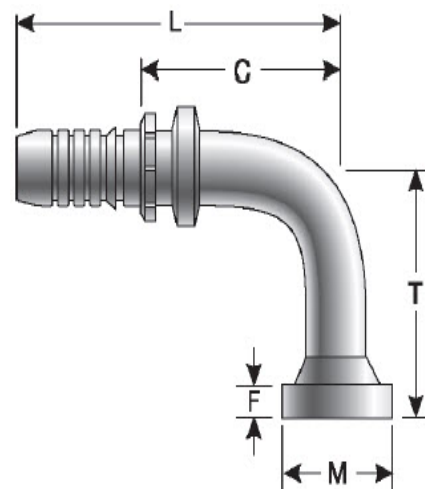
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-24FL 30M	1 1/2	1 1/4	31.8	20	182.1	111	60.5	30	8.1

GS-FL90M (GS59)

SAE C61 90° ELBOW

GATES GS SAE FLANGE CODE 61 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



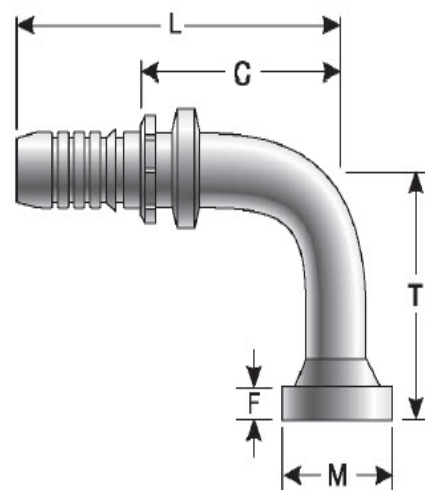
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-16FL 90M	1	1 1/4	31.8	20	160	88.9	44.5	70.1	8.1
20GS-20FL 90M	1 1/4	1 1/4	31.8	20	165.1	94	50.8	89.9	8.1

GS-FL90-215 (GS59)

SAE C61 90° ELBOW

GATES GS SAE FLANGE CODE 61 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



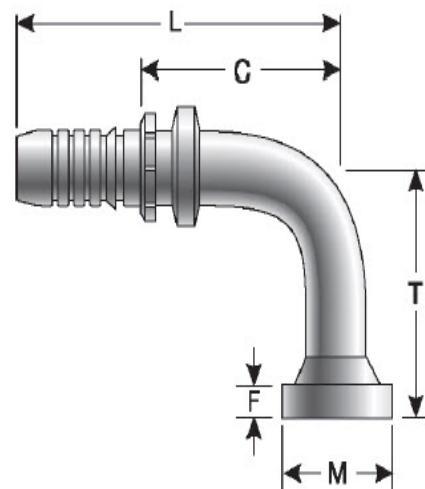
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-16FL 90-215	1	1 1/4	31.8	20	160	88.9	44.5	214.9	8.1

GS-FL90-168 (GS59)

SAE C61 90° ELBOW

GATES GS SAE FLANGE CODE 61 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



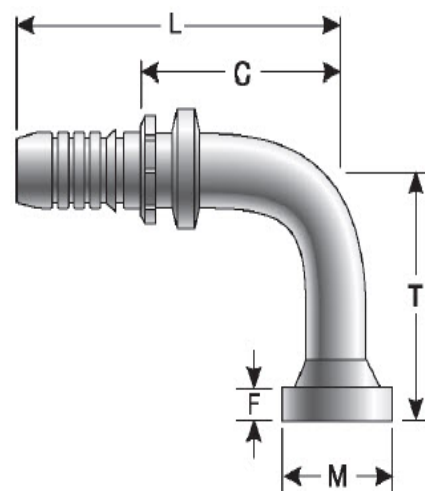
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-20FL 90-168	1 1/4	1 1/4	31.8	20	166.1	95	50.8	167.9	8.1

GS-FL90S (GS59)

SAE C61 90° ELBOW

GATES GS SAE FLANGE CODE 61 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



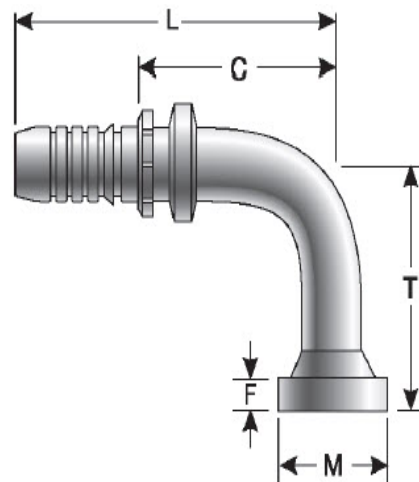
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-24FL 90S	1 1/2	1 1/4	31.8	20	165.1	94	60.5	81	8.1

GS-FLH90M (GS61)

SAE C62 90° ELBOW

GATES GS SAE FLANGE CODE 62 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



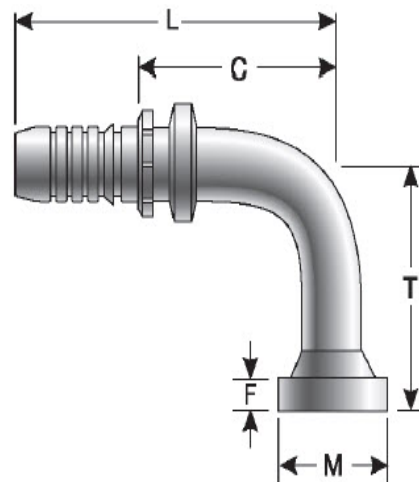
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-16FL H90M	1	1 1/4	31.8	20	160	88.9	47.8	70.1	9.7
20GS-20FL H90M	1 1/4	1 1/4	31.8	20	165.1	94	54.1	89.9	10.4

GS-FLH90-120 (GS61)

SAE C62 90° ELBOW

GATES GS SAE FLANGE CODE 62 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



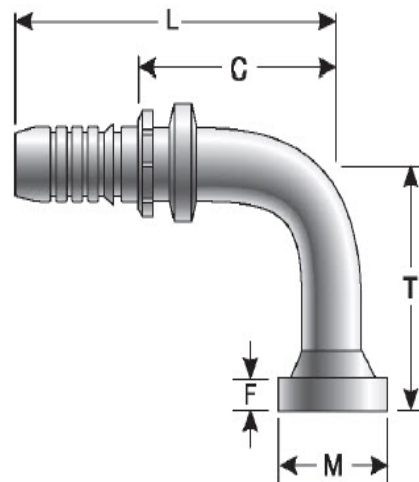
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-20FL H90-120	1 1/4	1 1/4	31.8	20	165.1	94	54.1	119.9	10.4

GS-FLH90-152 (GS61)

SAE C62 90° ELBOW

GATES GS SAE FLANGE CODE 62 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



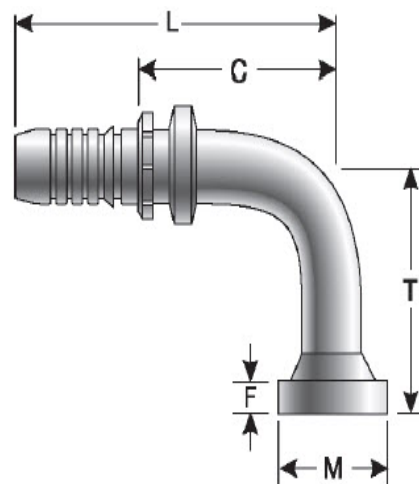
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-20FL H90-152	1 1/4	1 1/4	31.8	20	165.1	94	54.1	151.9	10.4

GS-FLH90S (GS61)

SAE C62 90° ELBOW

GATES GS SAE FLANGE CODE 62 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



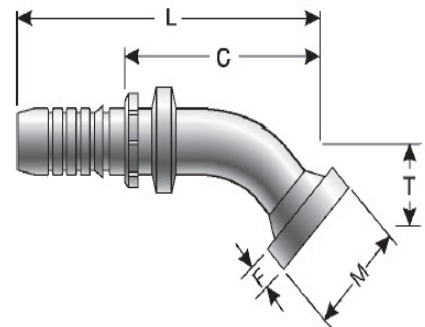
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-24FL H90S	1 1/2	1 1/4	31.8	20	165.1	94	63.5	81	12.7

GS-FLH45M (GS62)

SAE C62 45° ELBOW

GATES GS SAE FLANGE CODE 62 45° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



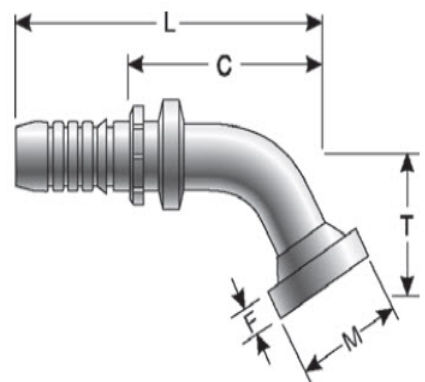
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-16FL H45M	1	1 1/4	31.8	20	170.9	99.8	47.8	32	9.7
20GS-20FL H45M	1 1/4	1 1/4	31.8	20	176	104.9	54.1	38.1	10.4
20GS-24FL H45M	1 1/2	1 1/4	31.8	20	176	104.9	63.5	43.9	12.7

GS-FL60M (GS66)

SAE C61 60° ELBOW

GATES GS SAE FLANGE CODE 61 60° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



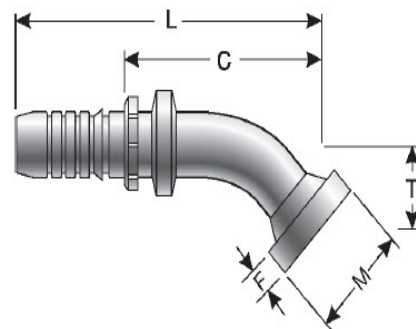
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
20GS-20FL 60M	1 1/4	1 1/4	31.8	20	186.9	115.8	50.8	55.1	8.1

GS-FL45S (GS68)

SAE C61 45° ELBOW

GATES GS SAE FLANGE CODE 61 45° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



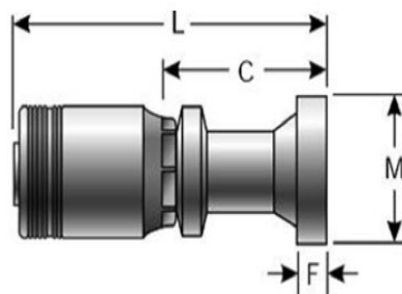
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Length (mm)	Thickness mm (F)
20GS-20FL 45S	1 1/4	1 1/4	31.8	20	169.9	98.8	50.8	30	8.1
20GS-24FL 45S	1 1/2	1 1/4	31.8	20	176	104.9	60.5	38.1	8.1

GSM-FLH (GSM22)

SAE C62 STRAIGHT

GATES GSM SAE FLANGE CODE 62 STRAIGHT

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



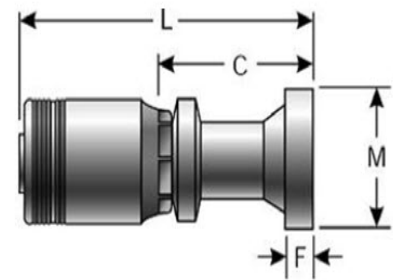
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Thickness mm (F)
24GSM-32FL H	2	1 1/2	24	38.1	199.9	104.9	79.5	12.7
32GSM-32FL H	2	2	32	50.8	251.4	137.4	79.5	12.7

GSM-FL (GSM23)

SAE C61 STRAIGHT

GATES GSM SAE FLANGE CODE 61 STRAIGHT

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



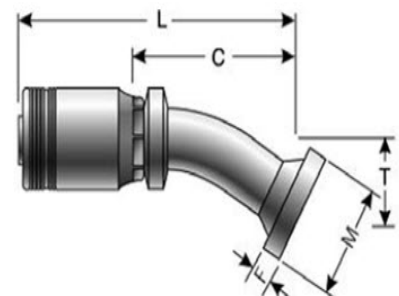
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Thickness mm (F)
24GSM-24FL	1 1/2	1 1/2	24	38.1	180.0	85.1	60.5	7.9
24GSM-32FL	2	1 1/2	24	38.1	188.0	93.0	71.4	9.7
32GSM-32FL	2	2	32	50.8	251.4	137.4	71.4	9.7

GSM-FL30M (GSM45)

SAE C61 30° ELBOW

GATES GSM SAE FLANGE CODE 61 30° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



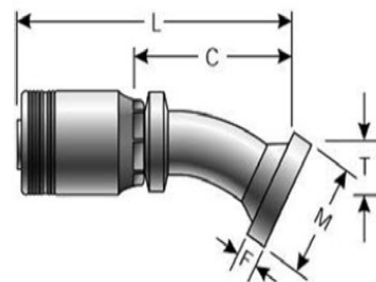
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Drop mm (T)	Thickness mm (F)
24GSM-24FL 30M	1 1/2	1 1/2	24	38.1	216.4	127	45	8.1

GSM-FLH30M (GSM46)

SAE C62 30° ELBOW

GATES GSM SAE FLANGE CODE 62 30° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



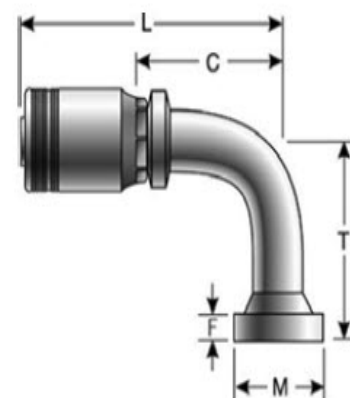
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
24GSH-24F LH30M	1 1/2	1 1/2	24	38.1	240	144.8	63.5	89.9	12.7

GSM-FL90S (GSM59)

SAE C61 90° ELBOW

GATES GSM SAE FLANGE CODE 61 90° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



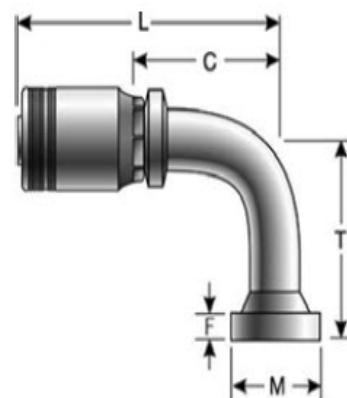
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	T (mm)	Flange O.D mm (M)	Thickness mm (F)
24GSM-24F L90S	1 1/2	1 1/2	24	38.1	214.9	119.9	81.0	60.5	7.9

GSM-FL90-130 (GSM59)

SAE C61 90° ELBOW

GATES GSM SAE FLANGE CODE 61 90° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



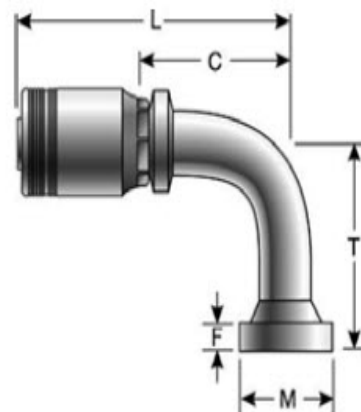
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	T (mm)	Flange O.D mm (M)	Thickness mm (F)
32GSM-32F L90-130	2	2	32	50.8	264.0	150.5	130.0	71.4	9.7

GSM-FLH90S (GSM61)

SAE C62 90° ELBOW

GATES GSM SAE FLANGE CODE 62 90° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



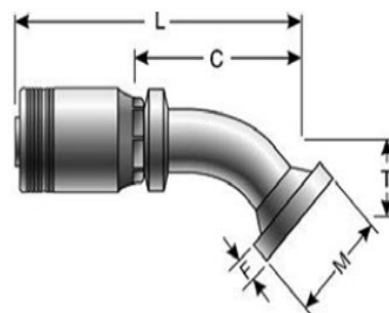
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
24GSM-32F LH90S	2	1 1/2	24	38.1	213.9	118.9	79.5	119.9	12.7
32GSM-32F LH90S	2	2	32	50.8	264	150	79.5	120	12.7

GSM-FLH45M (GSM62)

SAE C62 45° ELBOW

GATES GSM SAE FLANGE CODE 62 45° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



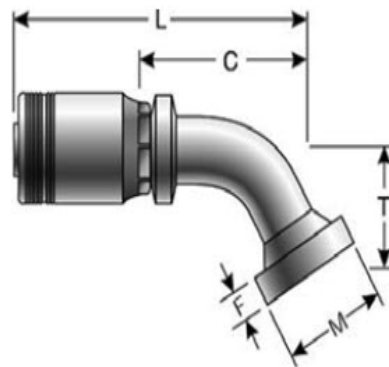
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Drop mm (T)	Flange O.D mm (M)	Thickness mm (F)
24GSM-24F LH45M	1 1/2	1 1/2	24	38.1	232	137	43.9	63.5	12.7
24GSM-32F LH45M	2	1 1/2	24	38.1	240.8	146	55.9	79.5	12.7

GSM-FL60M (GSM66)

SAE C61 60° ELBOW

GATES GSM SAE FLANGE CODE 61 60° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



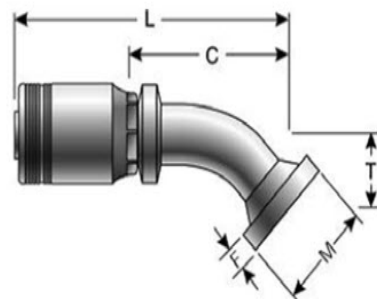
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Drop mm (T)	Thickness mm (F)
24GSH-24F L60	1 1/2	1 1/2	24	38.1	241.3	146.1	60.5	64	7.9

GSM-FL45M (GSM68)

SAE C61 45° ELBOW

GATES GSM SAE FLANGE CODE 61 45° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



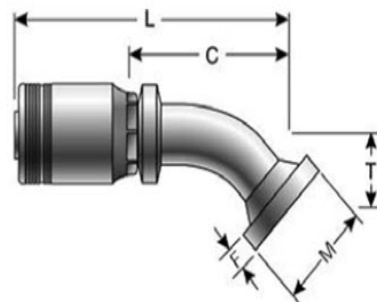
Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Drop mm (T)	Flange O.D mm (M)	Thickness mm (F)
24GSM-24FL45M	1 1/2	1 1/2	24	38.1	230.0	135.0	44.0	60.5	7.9
32GSM-32FL45M	2	2	32	50.8	287.0	173.5	56.0	79.5	12.7

GSM-32FL45S (GSM68)

SAE C61 45° ELBOW

GATES GSM SAE FLANGE CODE 61 45° ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.

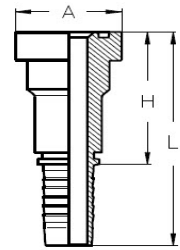


Part Number	Nominal SAE Flange size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Drop mm (T)	Flange O.D mm (M)	Thickness mm (F)
24GSH-32FL45S	2	1 1/2	24	38.1	231.9	136.6	52.1	71.4	9.7

SUPERCAT FLANGE

S225

SUPERCAT STRAIGHT

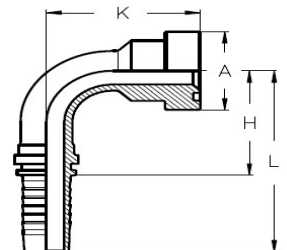


Part Number	Nominal SAE Flange size - A	Hose I.D (in)	Hose I.D (mm)	Dash size	Flange O.D - A (mm)	Cutoff - H (mm)	Length - L (mm)	Working Pressure (bar)	Working Pressure (psi)
S225-1212	3/4	3/4	19	12	41.3	66	106.5	350	5000
S225-1616	1	1	25.4	16	47.6	90	146.5	420	6000
S225-2016	1 1/4	1	25.4	16	54	90	146.5	420	6000
S225-2020	1 1/4	1 1/4	31.8	20	54	88	154.4	420	6000
S225-2424	1 1/2	1 1/2	38.1	24	63.5	84	166.5	420	6000

S615

SUPERCAT 90° ELBOW

CATERPILLAR XT5 STYLE FLANGE 90° ELBOW

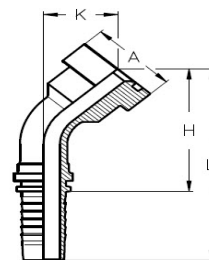


Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange OD mm (A)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S615-1212	3/4	3/4	19	12	41.3	64	55	95	350
S615-1612	1	3/4	19	12	47.6	67	55	95	350
S615-1616	1	1	25	16	47.6	73	71	128	415
S615-2020	1 1/4	1 1/4	31.5	20	54	77	87	154	415

S625

SUPERCAT 45° ELBOW

CATERPILLAR XT5 STYLE FLANGE 45° ELBOW



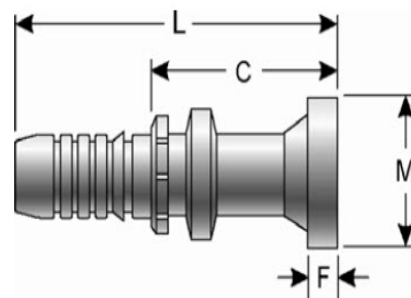
Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange OD mm (A)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S625-1212	3/4	3/4	19	12	41.3	34	71	112	350
S625-1616	1	1	25	16	47.6	36	86	143	415

GS-FLC (GS225)

SUPERCAT STRAIGHT

GATES GS CATERPILLAR XT5 STYLE FLANGE STRAIGHT

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



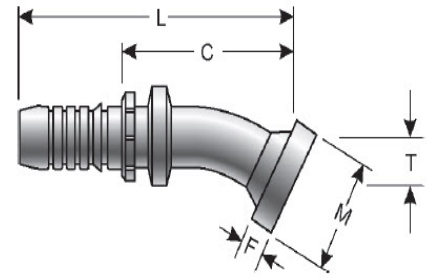
Part Number	CAT Flange Size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Thickness mm (F)
20GS-20FLC	1 1/4	1 1/4	31.8	20	186.9	115.8	54.1	14.2
20GS-24FLC	1 1/2	1 1/4	31.8	20	186.9	115.8	63.5	14.2

GS-FLC30 (GS465)

SUPERCAT 30° ELBOW

GATES GS CATERPILLAR XT5 STYLE FLANGE 30° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



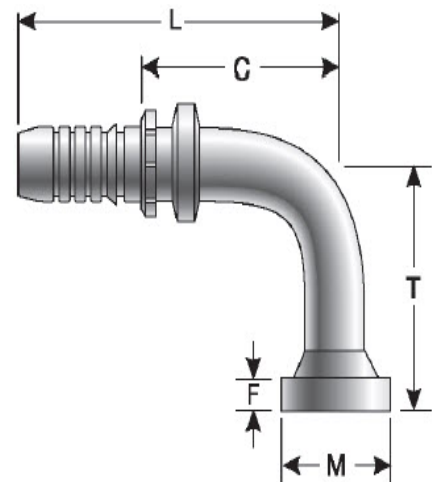
Part Number	CAT Flange Size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Drop mm (T)	Flange O.D mm (M)	Thickness mm (F)
20GS-20FL C30	1 1/4	1 1/4	31.8	20	182.9	112	23.9	54.1	14.2

GS-FLC90 (GS615)

SUPERCAT 90° ELBOW

GATES GS CATERPILLAR XT5 STYLE FLANGE 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



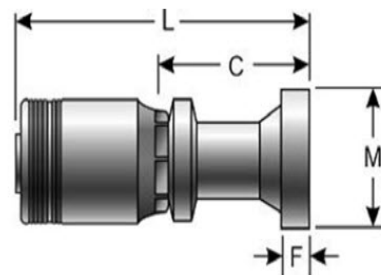
Part Number	CAT Flange Size (M)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Length mm (L)	Cutoff mm (C)	Drop mm (T)	Flange O.D mm (M)	Thickness mm (F)
20GS-20FL C90	1 1/4	1 1/4	31.8	20	166.1	95	77	54.1	14.2
20GS-24FL C90	1 1/2	1 1/4	31.8	20	166.1	95	77	63.5	14.2

GSM-FLC (GSM225)

SUPERCAT STRAIGHT

GATES GSM CATERPILLAR XT5 STYLE FLANGE
STRAIGHT

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



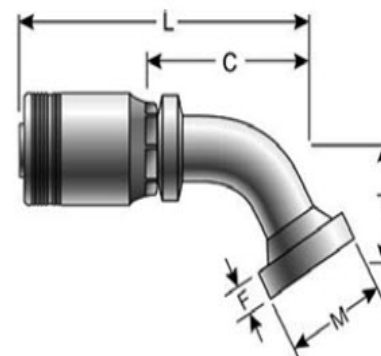
Part Number	CAT Flange Size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Flange O.D mm (M)	Thickness mm (F)
24GSM-24FLC	1 1/2	1 1/2	24	38.1	189.0	94.2	63.5	14.2
24GSM-32FLC	2	1 1/2	24	38.1	199.9	104.9	79.5	14.2

GSM-FLC60 (GSM545)

SUPERCAT 60° ELBOW

GATES GSM CATERPILLAR XT5 STYLE FLANGE 60°
ELBOW

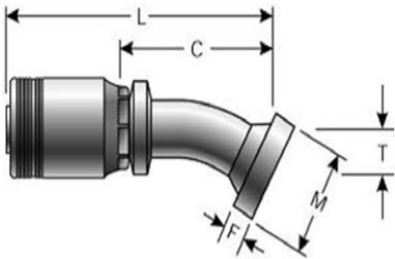
- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



Part Number	CAT Flange Size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Drop mm (T)	Flange O.D mm (M)	Thickness mm (F)
24GSM-24FLC60	1 1/2	1 1/2	24	38.1	251.7	156.7	55.1	63.5	14.2

GSM-FLC22 (GSM675)
SUPERCAT 22° ELBOW
GATES GSM CATERPILLAR XT5 STYLE FLANGE 22°
ELBOW

- FOR GATES 24 AND 32 EFG5K OR EFG6K HOSE ONLY.



Part Number	CAT Flange Size (M)	Hose I.D (Inches)	Dash Size	Hose I.D. (mm)	Length mm (L)	Cutoff mm (C)	Drop mm (T)	Flange O.D mm (M)	Thickness mm (F)
24GSM-24F LC22	1 1/2	1 1/2	24	38.1	236	141.5	16.8	63.5	14.2

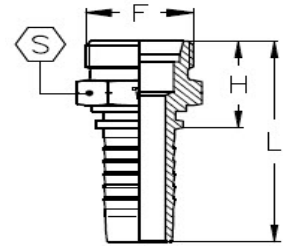
METRIC 24°

S78

MET HEAVY MALE STRAIGHT

METRIC 24° CONE HEAVY MALE STRAIGHT

- ISO 12151-5

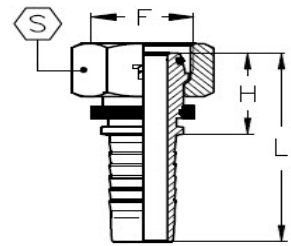


Part Number	Metric Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S78-M1404	M14x1.5	1/4	6.3	04	6	14	23	51	450
S78-M1604	M16x1.5	1/4	6.3	04	8	17	23	51	450
S78-M1606	M16x1.5	3/8	9.5	06	8	17	28		450
S78-M1804	M18x1.5	1/4	6.3	04	10	19	24	52	450
S78-M1806	M18x1.5	3/8	10	06	10	19	24	55	445
S78-M1808	M18x1.5	1/2	12.7	08	10	22	28		415
S78-M2005	M20x1.5	5/16	8	05	12	22	25	53	350
S78-M2006	M20x1.5	3/8	10	06	12	22	25	56	445
S78-M2008	M20x1.5	1/2	12.5	08	12	22	27	60	415
S78-M2206	M22x1.5	3/8	10	06	14	22	27	58	445
S78-M2208	M22x1.5	1/2	12.5	08	14	22	28	61	415
S78-M2408	M24x1.5	1/2	12.5	08	16	24	29	62	415
S78-M3010	M30x2	5/8	16	10	20	30	32	68	350
S78-M3012	M30x2	3/4	19	12	20	30	33	74	350
S78-M3612	M36x2	3/4	19	12	25	36	37	78	350
S78-M3616	M36x2	1	25	16	25	36	40	97	380
S78-M4216	M42x2	1	25	16	30	46	44	101	380
S78-M5220	M52x2	1 1/4	31.5	20	38	55	51	117	325

S79C

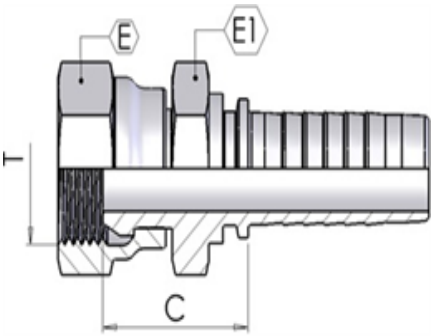
MET HEAVY FEMALE STRAIGHT
METRIC 24° CONE HEAVY FEMALE SWIVEL NUT
STRAIGHT

- ISO 12151-5



Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S79C-M1404	M14x1.5	1/4	6.3	04	6	17	23	51	450
S79C-M1604	M16x1.5	1/4	6.3	04	8	19	22	50	450
S79C-M1606	M16x1.5	3/8	9.5	06	8	19	26		450
S79C-M1804	M18x1.5	1/4	6.3	04	10	22	24	52	450
S79C-M1806	M18x1.5	3/8	10	06	10	22	25	55	450
S79C-M2005	M20x1.5	5/16	8	05	12	24	24	52	350
S79C-M2006	M20x1.5	3/8	10	06	12	24	24	54	450
S79C-M2008	M20x1.5	1/2	12.5	08	12	22	28	61	415
S79C-M2206	M22x1.5	3/8	10	06	14	27	28	58	445
S79C-M2208	M22x1.5	1/2	12.5	08	14	27	28	61	415
S79C-M2408	M24x1.5	1/2	12.5	08	16	30	29	62	415
S79C-M3010	M30x2	5/8	16	10	20	36	33	69	350
S79C-M3012	M30x2	3/4	19	12	20	36	36	76	350
S79C-M3612	M36x2	3/4	19	12	25	46	38	78	350
S79C-M3616	M36x2	1	25	16	25	46	41	97	380
S79C-M4216	M42x2	1	25	16	30	50	42	98	380
S79C-M4220	M42x2	1 1/4	31.5	20	30	50	43	109	325
S79C-M5220	M52x2	1 1/4	31.5	20	38	60	48	115	325

S79H
MET HEAVY FEMALE STRAIGHT
METRIC 24° CONE HEAVY FEMALE SWIVEL NUT
STRAIGHT BACK HEX



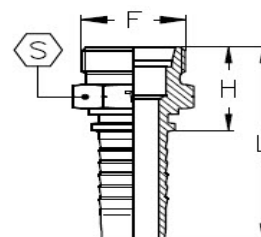
Part Number	Metric Female Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (E)	Hex A/F (E1)	Cutoff - C
S79H-M5224	M52x2	1 1/2	38.1	24	38	60	60	54

S80

MET LIGHT MALE STRAIGHT

METRIC 24° CONE LIGHT MALE STRAIGHT

- ISO 12151-5

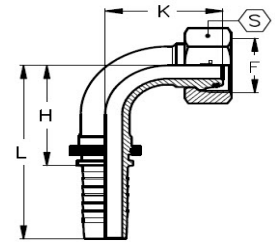


Part Number	Metric Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S80-M1204	M12x1.5	1/4	6.3	04	6	12	21	49	280
S80-M1404	M14x1.5	1/4	6.3	04	8	14	21	49	280
S80-M1604	M16x1.5	1/4	6.3	04	10	17	23	51	280
S80-M1605	M16x1.5	5/16	8	05	10	17	23	51	280
S80-M1606	M16x1.5	3/8	10	06	10	17	23	53	280
S80-M1804	M18x1.5	1/4	6.3	04	12	19	23	51	280
S80-M1806	M18x1.5	3/8	10	06	12	19	23	53	280
S80-M1808	M18x1.5	1/2	12.7	08	12	22	27		
S80-M2206	M22x1.5	3/8	10	06	15	22	25	56	280
S80-M2208	M22x1.5	1/2	12.5	08	15	22	26	59	280
S80-M2608	M26x1.5	1/2	12.5	08	18	27	28	61	210
S80-M2610	M26x1.5	5/8	16	10	18	27	28	64	210
S80-M2612	M26x1.5	3/4	19	12	18	27	29	70	210
S80-M3012	M30x2	3/4	19	12	22	30	31	72	210
S80-M3616	M36x2	1	25.4	16	28	36	32		
S80-M4520	M45x2	1 1/4	31.8	20	35	47	42		
S80-M5224	M52x2	1 1/2	38.1	24	42	55	46		

S83

MET HEAVY FEMALE 90° ELBOW
METRIC 24° CONE HEAVY FEMALE SWIVEL NUT
90° ELBOW

- ISO 12151-5



Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)
S83-M1404	M14x1.5	1/4	6.3	04	6	17	26	25	53
S83-M1604	M16x1.5	1/4	6.3	04	8	19	29	29	57
S83-M1804	M18x1.5	1/4	6.3	04	10	22	30	29	57
S83-M1806	M18x1.5	3/8	10	06	10	22	33	30	61
S83-M1808	M18x1.5	1/2	12.7	08	12	24	52	37	
S83-M2005	M20x1.5	5/16	8	05	12	24	32	28	56
S83-M2006	M20x1.5	3/8	10	06	12	24	33	31	61
S83-M2008	M20x1.5	1/2	12.7	08	12	25	52	37	
S83-M2206	M22x1.5	3/8	10	06	14	27	37	34	64
S83-M2208	M22x1.5	1/2	12.5	08	14	27	41	39	71
S83-M2408	M24x1.5	1/2	12.5	08	16	30	42	39	71
S83-M3010	M30x2	5/8	16	10	20	36	50	44	80
S83-M3012	M30x2	3/4	19	12	20	36	55	54	94
S83-M3612	M36x2	3/4	19	12	25	46	57	54	94
S83-M3616	M36x2	1	25	16	25	46	69	71	128
S83-M4216	M42x2	1	25	16	30	50	67	71	128
S83-M5220	M52x2	1 1/4	31.5	20	38	60	80	87	154

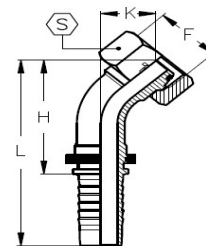
S84

MET HEAVY FEMALE 45° ELBOW

METRIC 24° CONE HEAVY FEMALE SWIVEL NUT

45° ELBOW

- ISO 12151-5



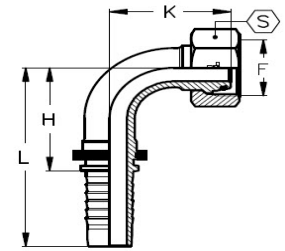
Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)
S84-M1404	M14x1.5	1/4	6.3	04	6	17	14	35	63
S84-M1604	M16x1.5	1/4	6.3	04	8	19	14	36	64
S84-M1804	M18x1.5	1/4	6.3	04	10	22	16	38	66
S84-M1806	M18x1.5	3/8	10	06	10	22	17	40	70
S84-M2006	M20x1.5	3/8	10	06	12	24	18	40	71
S84-M2206	M22x1.5	3/8	10	06	14	27	19	42	72
S84-M2208	M22x1.5	1/2	12.5	08	14	27	20	46	79
S84-M2408	M24x1.5	1/2	12.5	08	16	30	21	47	80
S84-M3010	M30x2	5/8	16	10	20	36	25	56	92
S84-M3012	M30x2	3/4	19	12	20	36	27	64	105
S84-M3612	M36x2	3/4	19	12	25	46	28	64	105
S84-M3616	M36x2	1	25	16	25	46	34	83	140
S84-M4216	M42x2	1	25	16	30	50	32	82	138
S84-M5220	M52x2	1 1/4	31.5	20	38	60	38	97	164

S86

MET LIGHT FEMALE 90° ELBOW

METRIC 24° CONE LIGHT FEMALE SWIVEL NUT 90° ELBOW

- ISO 12151-5

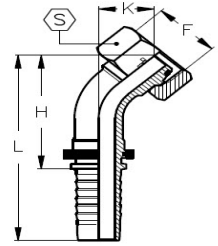


Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)
S86-M1204	M12x1.5	1/4	6.3	04	6	17	26	26	53
S86-M1404	M14x1.5	1/4	6.3	04	8	17	29	29	57
S86-M1406	M14x1.5	3/8	9.5	06	8	19	45	29	
S86-M1604	M16x1.5	1/4	6.3	04	10	19	30	29	57
S86-M1605	M16x1.5	5/16	8	05	10	19	33	31	59
S86-M1606	M16x1.5	3/8	10	06	10	19	31	31	61
S86-M1806	M18x1.5	3/8	10	06	12	22	33	31	61
S86-M1808	M18x1.5	1/2	12.7	08	12	22			
S86-M2206	M22x1.5	3/8	10	06	15	27	35	31	61
S86-M2208	M22x1.5	1/2	12.5	08	15	27	38	37	70
S86-M2608	M26x1.5	1/2	12.5	08	18	32	40	37	70
S86-M2610	M26x1.5	5/8	16	10	18	32	45	44	80
S86-M2612	M26x1.5	3/4	19	12	18	32	57	54	94
S86-M3012	M30x2	3/4	19	12	22	36	52	54	94
S86-M3612	M36x2	3/4	19	12	28	41	51	49	
S86-M3616	M36x2	1	25.4	16	28	41	63	72	
S86-M4520	M45x2	1 1/4	31.8	20	38	50	73	63	

S87

MET LIGHT FEMALE 45° ELBOW
METRIC 24° CONE LIGHT FEMALE SWIVEL NUT 45°
ELBOW

- ISO 12151-5

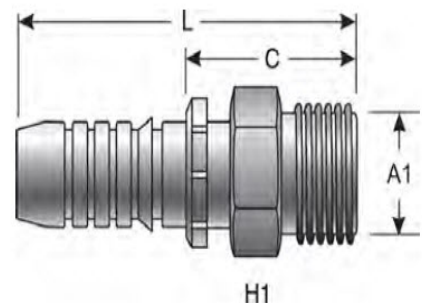


Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (S)	Drop mm (K)	Cutoff (H)	Length mm (L)
S87-M1204	M12x1.5	1/4	6.3	04	6	17	14	35	63
S87-M1404	M14x1.5	1/4	6.3	04	8	17	14	36	64
S87-M1604	M16x1.5	1/4	6.3	04	10	19	16	38	66
S87-M1605	M16x1.5	5/16	8	05	10	19	17	39	67
S87-M1606	M16x1.5	3/8	10	06	10	19	16	39	69
S87-M1806	M18x1.5	3/8	10	06	12	22	18	40	71
S87-M2206	M22x1.5	3/8	10	06	15	27	19	42	72
S87-M2208	M22x1.5	1/2	12.5	08	15	27	19	46	79
S87-M2608	M26x1.5	1/2	12.5	08	18	32	21	47	80
S87-M2610	M26x1.5	5/8	16	10	18	32	22	53	89
S87-M2612	M26x1.5	3/4	19	12	18	32	29	66	107
S87-M3012	M30x2	3/4	19	12	22	36	25	62	103
S87-M3616	M36x2	1	25.4	16	28	41	32	102	
S87-M4520	M45x2	1 1/4	31.8	20	28	50	34	72	

GS-MDH (GS78)

MET HEAVY MALE STRAIGHT
GATES GS METRIC 24° CONE HEAVY MALE
STRAIGHT

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



Part Number	Metric Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Length mm (L)	Cutoff - C	H1 mm
20GS-38MD H	M52x2	1 1/4	31.8	20	28	122.9	51.8	55

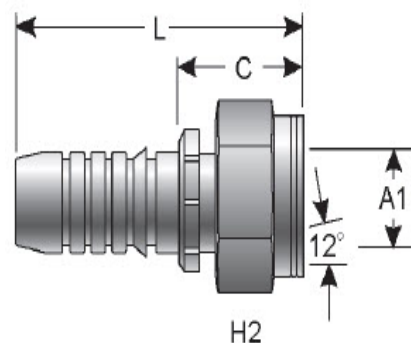
GS-FDHORX (GS79)

MET HEAVY FEMALE STRAIGHT

GATES GS METRIC 24° CONE HEAVY FEMALE

SWIVEL NUT STRAIGHT

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



Part Number	Metric Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Length mm (L)	Cutoff mm - C	H2 mm
20GS-38FDH ORX	M52x2	1 1/4	31.8	20	28	145	73.9	60

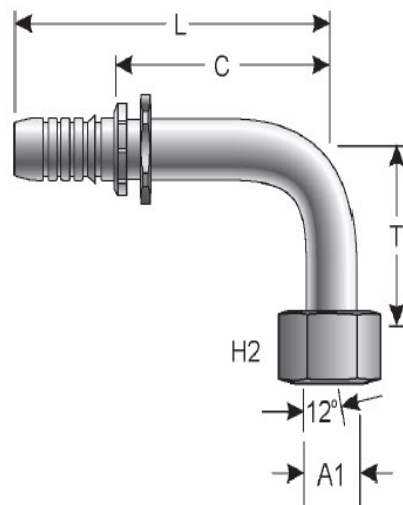
GS-FDHORX90 (GS83)

MET HEAVY FEMALE 90° ELBOW

GATES GS METRIC 24° CONE HEAVY FEMALE

SWIVEL NUT 90° ELBOW

- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.

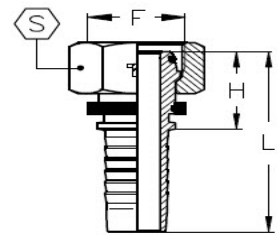


Part Number	Metric Female Thread	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Length mm (L)	Cutoff - C	Drop mm (T)	H2 mm
20GS-38FDH ORX90	M52x2	1 1/4	31.8	20	28	180.6	109.5	87.1	60

S81C

MET LIGHT FEMALE STRAIGHT
METRIC 24° CONE LIGHT FEMALE SWIVEL NUT
STRAIGHT

- ISO 12151-5

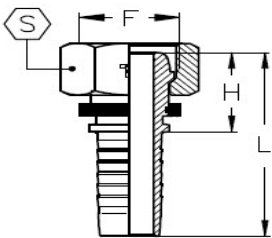


Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S81C-M1004	M10x1	1/4	6.4	04	8				
S81C-M1203	M12x1.5	3/16	5	03	6	14	21	46	280
S81C-M1204	M12x1.5	1/4	6.3	04	6	17	23	51	280
S81C-M1404	M14x1.5	1/4	6.3	04	8	17	22	50	280
S81C-M1405	M15x1.5	5/16	7.9	05	8	17	24	50	280
S81C-M1406	M14x1.5	3/8	9.5	06	10				
S81C-M1604	M16x1.5	1/4	6.3	04	10	19	24	52	280
S81C-M1605	M16x1.5	5/16	8	05	10	19	24	52	280
S81C-M1606	M16x1.5	3/8	10	06	10	19	23	54	280
S81C-M1804	M18x1.5	1/4	6.3	04	12	22	24	52	280
S81C-M1806	M18x1.5	3/8	10	06	12	22	24	54	280
S81C-M1808	M18x1.5	1/2	12.7	08	12	22	28		
S81C-M2206	M22x1.5	3/8	10	06	15	27	24	54	280
S81C-M2208	M22x1.5	1/2	12.5	08	15	27	24	57	280
S81C-M2608	M26x1.5	1/2	12.5	08	18	32	26	59	210
S81C-M2610	M26x1.5	5/8	16	10	18	32	27	62	210
S81C-M2612	M26x1.5	3/4	19	12	18	32	34	75	210
S81C-M3010	M30x2	5/8	16	10	22	36	28	64	210
S81C-M3012	M30x2	3/4	19	12	22	36	31	71	210
S81C-M3612	M36x2	3/4	6.3	12	28	41	28		

S81C-M3616	M36x2	1	25.4	16	28	41	30
S81C-M4520	M45x2	1 1/4	31.8	20	35	50	40
S81C-M5224	M52x2	1 1/2	38.1	24	42		

METRIC MULTI SEAL

S77C
MET FEMALE STRAIGHT
METRIC MULTI-SEAL CONE FEMALE SWIVEL NUT
STRAIGHT

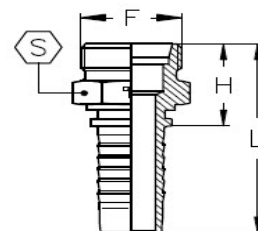


Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)
S77C-M1404	M14-1.5	1/4	6.4	04	17	19
S77C-M2006	M20x1.5	3/8	9.5	06		
S77C-M2008	M20x1.5	1/2	12.7	08		
S77C-M2208	M22x1.5	1/2	12.7	08	27	22

METRIC FRENCH GAZ

S47

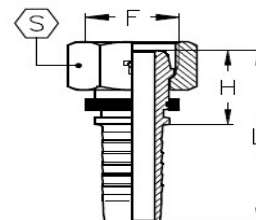
FRENCH GAZ MALE STRAIGHT
METRIC 24° CONE FRENCH GAZ TYPE MALE
STRAIGHT



Part Number	Metric Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S47-M2006	M20x1.5	3/8	10	06	22	25	55.5	330	4800
S47-M2408	M24x1.5	1/2	12.5	08	24	27	60	280	4000
S47-M3010	M30x1.5	5/8	16	10	30	30	66	280	4000
S47-M3012	M30x1.5	3/4	19	12	30	31	71.5	280	4000
S47-M3612	M36x1.5	3/4	19	12	36	33	73.5	210	3000
S47-M4516	M45x1.5	1	25	16	46	38.5	89.5	210	3000

S74C

FRENCH GAZ FEMALE STRAIGHT
METRIC 24° CONE FRENCH GAZ TYPE FEMALE
STRAIGHT



Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S74C-M1404	M14x1.5	1/4	6.4	04	17	19			
S74C-M3312	M33x1.5	3/4	19	12					
S74C-M3612	M36x1.5	3/4	19	12	41	29	68.5	210	3000
S74C-M4516	M45x1.5	1	25.4	16	55	30			

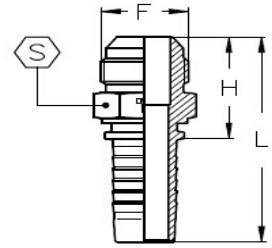
JIS

S35

JIS BSP MALE STRAIGHT

JIS BSP 30° FLARE MALE

- JIS B 8363



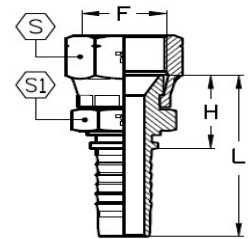
Part Number	JIS Male Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F - S (mm)	Cutoff - H (mm)	Length - L (mm)	Working Pressure (bar)	Working Pressure (psi)
S35-0404	1/4-19	1/4	6.3	04	16	28	56	350	5000
S35-0606	3/8-19	3/8	10	06	19	31.5	62	350	5000

S70H

JIS MET FEMALE STRAIGHT

JIS MET KOMATSU STYLE 30° FLARE FEMALE

SWIVEL NUT STRAIGHT



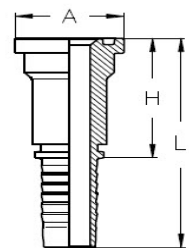
Part Number	JIS Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Hex A/F (S1)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S70H-M1204	M12x1.5	1/4	6.4	04	16	16	22		
S70H-M1404	M14x1.5	1/4	6.3	04	19	17	21.5	49.5	350
S70H-M1406	M14x1.5	3/8	10	06	19	17	21.5	52	350
S70H-M1605	M16x1.5	5/16	8	05	22	17	22	50	350
S70H-M1606	M16x1.5	3/8	10	06	22	17	22	52.5	350
S70H-M1804	M18x1.5	1/4	6.4	04	24	19	26		
S70H-M1806	M18x1.5	3/8	10	06	24	19	22.5	53	350
S70H-M1808	M18x1.5	1/2	12.7	08	24	22	27		
S70H-M2006	M20x1.5	3/8	9.5	06	25	19	27		
S70H-M2008	M20x1.5	1/2	12.7	08	25	22	27		

S70H-M2206	M22x1.5	3/8	9.5	06	27	22	28		
S70H-M2208	M22x1.5	1/2	12.5	08	27	22	26	59	350
S70H-M2212	M22x1.5	3/4	19	12	27	29	29		
S70H-M2408	M24x1.5	1/2	12.5	08	32	27	30	63	350
S70H-M2410	M24x1.5	5/8	16	10	32	27	60	66	280
S70H-M2412	M24x1.5	3/4	19	12	32	29	28		
S70H-M3012	M30x1.5	3/4	19	12	36	32	33.5	74	280
S70H-M3312	M33x1.5	3/4	19	12	38	32	36		
S70H-M3316	M33x1.5	1	25.4	16	41	36	33		
S70H-M3612	M36x1.5	3/4	19.0	12	42	35	36		
S70H-M3616	M36x1.5	1	25.4	16	42	35	37		
S70H-M3620	M36x1.5	1 1/4	31.8	20	42	41	41		
S70H-M4220	M42x1.5	1 1/4	31.8	20	51	44	44		
S70H-M4224	M42x1.5	1 1/2	38.1	24	51	47	47		

S71

JIS FLANGE STRAIGHT

JIS KOMATSU STYLE FLANGE STRAIGHT

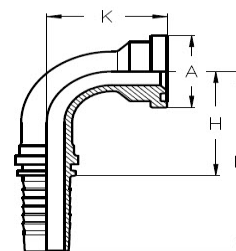


Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange OD mm (A)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S71-1010	5/8	5/8	16	10	34 x 6.7	48	84	350	5000
S71-1012	5/8	3/4	19	12	34 x 6.7	54			

S72

JIS FLANGE 90° ELBOW

JIS KOMATSU STYLE FLANGE 90° ELBOW

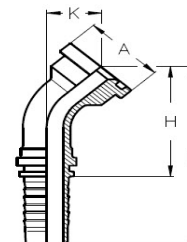


Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange OD mm (A)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S72-1010	5/8	5/8	16	10	34	44	45	81	350
S72-1010X80	5/8	5/8	16	10	34	80	50	86	350
S72-1012	5/8	3/4	19	12	34	45	51	92	350
S72-1012X80	5/8	3/4	19	12	34	80	51	92	350

S73

JIS FLANGE 45° ELBOW

JIS KOMATSU STYLE FLANGE 45° ELBOW



Part Number	Nominal SAE Flange size (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Flange OD mm (A)	Drop mm (K)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S73-1010	5/8	5/8	16	10	34	22	53	89	350
S73-1012	5/8	3/4	19	12	34	20	55		

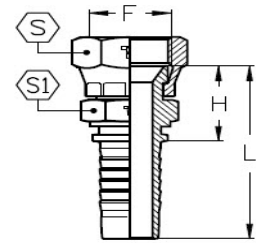
S75H

JIS BSP FEMALE STRAIGHT

JIS BSP 30° FLARE FEMALE SWIVEL NUT STRAIGHT

BACK HEX

- JIS B 8363



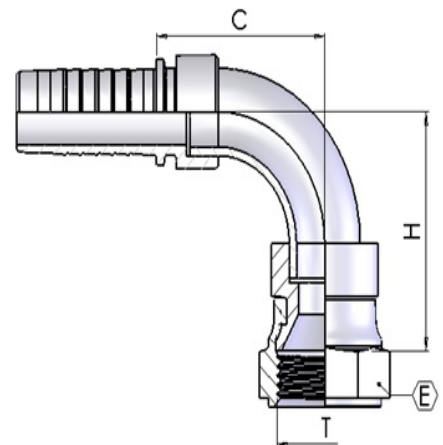
Part Number	JIS (BSP) Female Thread (A)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Hex A/F (S1)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S75H-0404	1/4-19	1/4	6.3	04	19	17	21.5	49.5	350
S75H-0606	3/8-19	3/8	10	06	22	19	22.5	53	350
S75H-0808	1/2-14	1/2	12.5	08	27	22	26	59	350
S75H-1212	3/4-14	3/4	19	12	32	27	31	71.5	280
S75H-1616	1-11	1	25.4	16	38	36	31		
S75H-2020	1 1/4-11	1 1/4	31.8	20	51	44	44		
S75H-2424	1 1/2-11	1 1/2	38.1	24	55	51	46		

S89

JIS MET FEMALE 90° ELBOW

JIS MET KOMATSU STYLE 30° FLARE FEMALE

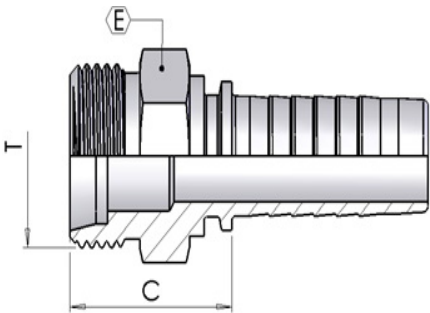
SWIVEL NUT 90° ELBOW



Part Number	JIS Female Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (E)	Drop - H	Cutoff - C
S89-M1404	M14-1.5	1/4	6.4	04	19	35	38
S89-M1406	M14-1.5	3/8	9.5	06	19	33	31
S89-M1606	M16x1.5	3/8	9.5	06	22	34	30
S89-M1806	M18x1.5	3/8	9.5	06	24	33	31
S89-M2208	M22x1.5	1/2	12.7	08	27	39	33
S89-M2410	M24x1.5	5/8	15.9	10	30	48	42
S89-M3012	M30x1.5	3/4	19	12	36	43	48

METRIC KOBELCO

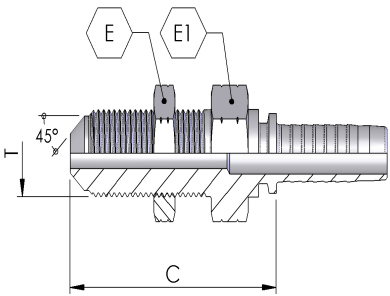
S44
KOBELCO MALE STRAIGHT
METRIC KOBELCO STYLE 24° CONE MALE



Part Number	Metric Male Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Tube Size	Hex A/F (E)	Cutoff - C
S44-M2812	M28x1.5	3/4	19	12	20	32	39
S44-M3010	M30x1.5	5/8	16	10			
S44-M3612	M36x1.5	3/4	19	12			

METRIC 45° FLARE

S109
MET 45° MALE
METRIC 45° FLARE BULKHEAD GB/T 5626

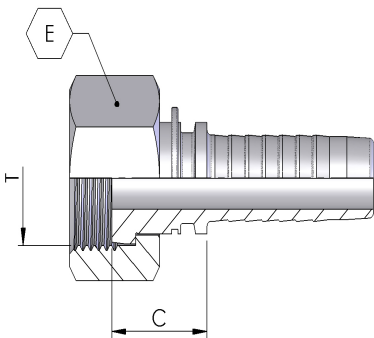


Part Number	Metric Male Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex E (mm)	Hex E1 (mm)	Cutoff C (mm)
S109-M1606	M16x1.5	1/4	6.3	04	22	19	48.5
S109-M2006	M20x1.5	3/8	9.5	06	27	27	56.5
S109-M2008	M20x1.5	1/2	12.7	08	27	27	58.5
S109-M2208	M22x1.5	1/2	12.7	08	30	27	62.5

METRIC FLAT FACE

S131

MET FEMALE STRAIGHT
METRIC FLAT FACE FEMALE SWIVEL NUT
STRAIGHT GB/T 9065.3



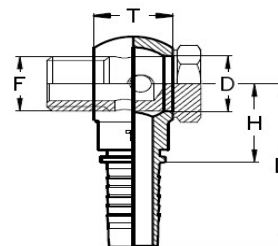
Part Number	Metric Female Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (E)	Cutoff - C
S131-M1604	M16x1.5	1/4	6.4	04	19	16.5
S131-M1606	M16x1.5	3/8	9.5	06	19	17
S131-M1806	M18x1.5	3/8	9.5	06	22	17.5
S131-M2006	M20x1.5	3/8	9.5	06	24	17.5
S131-M2206	M22x1.5	3/8	9.5	06	27	17.5
S131-M2208	M22x1.5	1/2	12.7	08	27	18
S131-M2408	M24x1.5	1/2	12.7	08	30	18
S131-M2710	M27x1.5	5/8	15.9	10	32	19.5
S131-M3012	M30x2	3/4	19	12	36	21.5
S131-M3312	M33x2	3/4	19	12	41	21.5

BANJO TAIL

S38

BSP BANJO

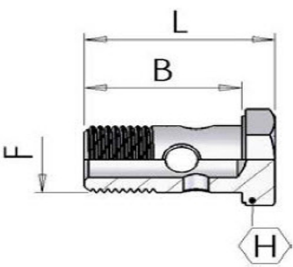
BSP BANJO TAIL TO SUIT BSP BOLT



Part Number	Banjo ID mm (D)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Suits BSP Bolt	Radius (T)	Cutoff (H)	Length mm (L)	Working Pressure (bar)
S38-0204	10.2	1/4	6.3	04	1/8-28	10	23	51	280
S38-0404	13.3	1/4	6.3	04	1/4-19	14	23	51	280
S38-0604	16.8	1/4	6.3	04	3/8-19	17.5	26.5	54.5	280
S38-0606	16.8	3/8	10	06	3/8-19	17.5	24	54.5	280
S38-0806	21	3/8	10	06	1/2-14	23	32	62.5	250
S38-0808	21	1/2	21.5	08	1/2-14	23	28.5	61.5	250
S38-1212	26.5	3/4	19	12	3/4-14	29.5	37.5	78	210

BANJO BOLT

BJ-B
BSP BANJO BOLT



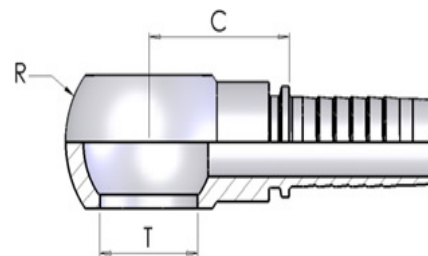
Part Number	BSPP Thread (F)	Bolt Length mm (B)	Overall Length mm (L)	Hex A/F (H)
BJ-B02	1/8-27			
BJ-B04	1/4-19	29	34	19
BJ-B06	3/8-19	33	41	22
BJ-B08	1/2-14	38	46	27
BJ-B10	5/8-14	44	54	30
BJ-B12	3/4-14	47	56	32
BJ-B16	1-11	58	69	38

METRIC BANJO TAIL

S38-M

MET BANJO

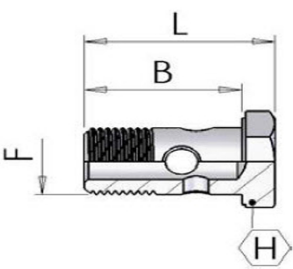
METRIC BANJO TAIL TO SUIT METRIC BOLT



Part Number	Banjo ID mm (T)	Hose I.D (mm)	Dash size	Suits Bolt	Radius R	Cutoff - C	Length (mm)	Working Pressure (bar)	Working Pressure (psi)
S38-M1003	10.2	5	03	M10x1	10	20	45	200	2900
S38-M1004	10.2	6.3	04	M10x1	10	23	51	200	2900
S38-M1204	12.1	6.3	04	M12x1.5	12	23	51	200	2900
S38-M1206	12	9.5	06	M12x1.5					
S38-M1404	14.2	6.3	04	M14x1.5	14	23	51	200	2900
S38-M1406	14.2	10	06	M14x1.5	14	24	54.5	200	2900
S38-M1604	16.2	6.3	04	M16x1.5	17.5	26.5	54.5	200	2900
S38-M1606	16.2	10	06	M16X1.5	17.5	24	54.5	200	2900
S38-M1806	18.2	10	06	M18X1.5	20.5	27	57.5	200	2900
S38-M1808	18.2	12.5	08	M18X1.5	20.5	28.1	61.1	200	2900
S38-M2208	22.2	12.5	08	M22X1.5	22.55	28.5	61.5	200	2900

METRIC BANJO BOLT

BJ-M
MET BANJO BOLT



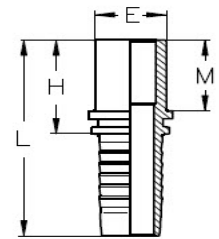
Part Number	BSPP Thread (F)	Bolt Length mm (B)	Overall Length mm (L)	Hex A/F (H)
BJ-M10	M10x1.0	19	24	14
BJ-M12	M12x1.5	26	31	17
BJ-M14	M14-1.5	29	34	19
BJ-M16	M16x1.5	33	41	22
BJ-M18	M18x1.5	37	44	24
BJ-M22	M22x1.5	38	46	27

METRIC STANDPIPE

S82

MET STANDPIPE STRAIGHT

METRIC TUBE STANDPIPE STRAIGHT



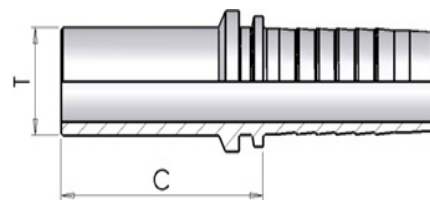
Part Number	Standpipe O.D mm (E)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Din Std	Cutoff (H)	Stand Length mm (M)	Length mm (L)	Working Pressure (bar)
S82-M1204	12	1/4	6.3	04	L/S	32	25	60	450
S82-M1206	12	3/8	10	06	L/S	31.5	25	62	445
S82-M1406	14	3/8	10	06	S	34.5	28	65	445
S82-M604	6	1/4	6.3	04	L	27.5	21	55.5	280

IMPERIAL STRAIGHT STANDPIPE

S92

IMPERIAL STANDPIPE STRAIGHT

IMPERIAL TUBE STANDPIPE STRAIGHT



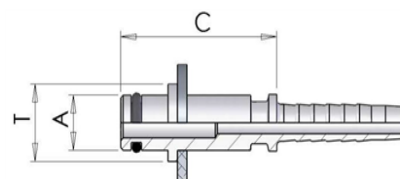
Part Number	Standpipe O.D mm (T)	Hose I.D inches	Hose I.D (mm)	Dash size	Cutoff - C
S92-0404	1/4	1/4	6.4	04	34
S92-0606	3/8	3/8	9.5	06	38
S92-0808	1/2	1/2	12.7	08	41
S92-1008	5/8	1/2	12.7	08	43
S92-1010	5/8	5/8	15.9	10	42
S92-1212	3/4	3/4	19	12	
S92-1612	1	3/4	19	12	55
S92-2020	1 1/4	1 1/4	31.8	20	51

KARCHER

KARCHER

KARCHER GUN TAIL

10MM SPIGOT

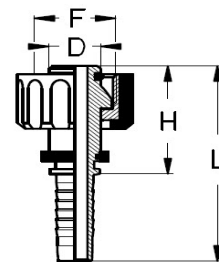


Part Number	Metric Male Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Spigot Diameter (A)	Cutoff - C
KARCHER-04	M22x1.5	1/4	6.4	04	10	33

S113

KARCHER GUN TAIL
11MM SPIGOT

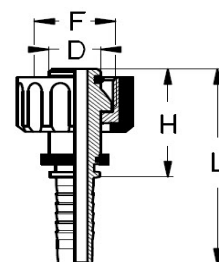
- Designed to be installed directly onto the spray-gun as per the original OEM fitting



Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Spigot Diameter (A)	Cutoff - C
S113-M1104	M22x1.5	1/4	6.3	04	11	40.5

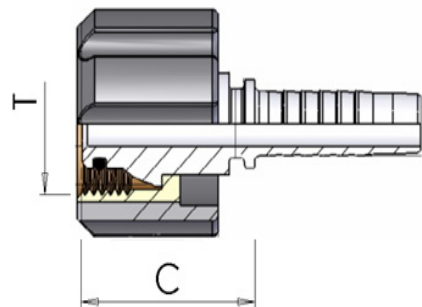
S30

KARCHER FEMALE STRAIGHT
KARCHER STYLE JET WASH FEMALE



Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Cutoff (H)	Length mm (L)	O-Ring
S30-M2204	M22x1.5	1/4	6.3	04	34.8	62.8	10x2
S30-M2205	M22x1.5	5/16	8	05	37.8	65.8	10x2
S30-M2206	M22x1.5	3/8	10	06	37.8	68.9	10x2

S30L
KARCHER FEMALE STRAIGHT
KARCHER STYLE JET WASH FEMALE EXTENDED
NUT

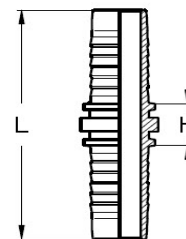


Part Number	Metric Female Thread (T)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Cutoff - C
S30L-M2204	M22x1.5	1/4	6.4	04	31
S30L-M2205	M22x1.5	5/16	7.9	05	31
S30L-M2206	M22x1.5	3/8	9.5	06	31

HOSE JOINER

S90

HOSE JOINER STRAIGHT



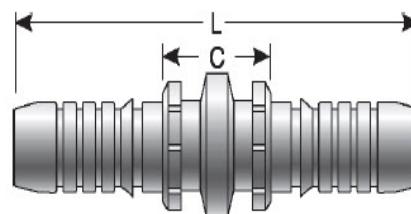
Part Number	Hose ID inches	Hose I.D mm	Dash size	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S90-0404	1/4	6.3	04	13	69	450	6500
S90-0505	5/16	8	05	13	69	350	5000
S90-0606	3/8	10	06	13	74	445	6500
S90-0808	1/2	12.5	08	15	81	415	6000
S90-1010	5/8	16	10	16	88	350	5000
S90-1212	3/4	19	12	18	99	350	5000
S90-1616	1	25.4	16	21			
S90-2020	1 1/4	31.8	20	24			

GS-HLE (GS90)

HOSE JOINER STRAIGHT

GATES GS HOSE JOINER STRAIGHT

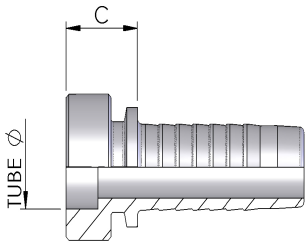
- FOR GATES 20EFG4K, 20EFG5K, OR 20EFG6K HOSE ONLY.
- USE WITH GATES GSF4N OR GSF6N FERRULES ONLY.



Part Number	Hose I.D inches	Hose I.D mm	Dash size	Length mm (L)	Cutoff - C
20GS-20HLE	1 1/4	31.8	20	172	29.7

BRAZE SOCKET

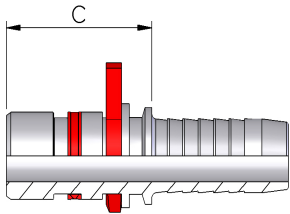
S96
IMPERIAL BRAZE SOCKET
IMPERIAL TUBE (LIFESAVER) BRAZE SOCKET
STRAIGHT



Part Number	Socket I.D mm	Hose I.D inches	Hose I.D (mm)	Dash size	O.D mm	Cutoff - C
S96-0404	1/4	1/4	6.4	04	13	12
S96-0505	5/16	5/16	7.9	05	16	12
S96-0606	3/8	3/8	9.5	06	19	13
S96-0808	1/2	1/2	12.7	08	22	14
S96-1010	5/8	5/8	15.9	10	25	15
S96-1212	3/4	3/4	19	12	26	22
S96-1616	1	1	25.4	16	32	25
S96-2020	1 1/4	1 1/4	31.8	20	44	29
S96-2424	1 1/2	1 1/2	38.1	24	50	33
S96-3232	2	2	50.8	32	60	34

CEJN CONNECTOR STRAIGHT

S97
WEO PUSH CONNECT STRAIGHT
TO SUIT WEO PUSH CONNECT ADAPTORS



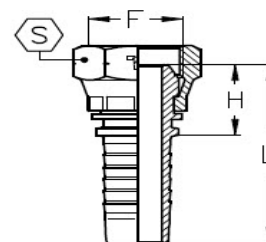
Part Number	Hose I.D inches	Hose I.D (mm)	Dash size	O.D mm	Cutoff - C
S97-0404	1/4	6.4	04	10	30
S97-0606	3/8	9.5	06	13	33
S97-0806	1/2	12.7	06	16	33
S97-0808	1/2	12.7	08	16	33

METRIC 60°

S76C

MET FEMALE STRAIGHT

METRIC 60° CONE FEMALE SWIVEL NUT STRAIGHT

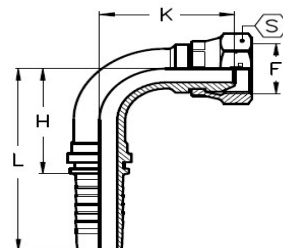


Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Length mm (L)	Working Pressure (bar)	Working Pressure (psi)
S76C-M1204	M12x1.5	1/4	6.3	04	15	16.5	44.5	280	4000
S76C-M1404	M14-1.5	1/4	6.3	04	17	18.5	46.5	280	4000
S76C-M1604	M16x1.5	1/4	6.3	04	19	18.5	46.5	280	4000
S76C-M1605	M16x1.5	5/16	7.9	05	19	18	46	280	4000
S76C-M1606	M16x1.5	3/8	10	06	19	18.5	49	280	4000
S76C-M1806	M18x1.5	3/8	10	06	22	20.5	51	280	4000
S76C-M2006	M20x1.5	3/8	10	06	24	20.5	51	280	4000
S76C-M2208	M22x1.5	1/2	12.5	08	27	23	56	280	4000
S76C-M2610	M26x1.5	5/8	16	10	32	23.5	63	280	4000
S76C-M2612	M26x1.5	3/4	19	12	32	26.5	67	280	4000
S76C-M2710	M27x1.5	5/8	16	10	32	22	63	280	4000
S76C-M3816	M38x1.5	1	25	16	46	31	82	165	2400

S95

MET FEMALE 90° ELBOW

METRIC 60° CONE FEMALE SWIVEL NUT 90° ELBOW

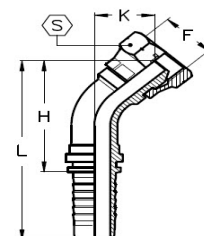


Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Drop mm (K)
S95-M1204	M12x1.5	1/4	6.4	04	17	28	35
S95-M1404	M14-1.5	1/4	6.4	04	19	25	28
S95-M1606	M16x1.5	3/8	9.5	06	22	33	34
S95-M1806	M18x1.5	3/8	9.5	06	24	33	34
S95-M2208	M22x1.5	1/2	12.7	08	27	39	41
S95-M2610	M26x1.5	5/8	15.9	10	32	45	48
S95-M2612	M26x1.5	3/4	19	12	32	56	58
S95-M2710	M27x1.5	5/8	15.9	10	32	45	50
S95-M3816	M38x1.5	1	25.4	16	46	68	81

S98

MET FEMALE 45° ELBOW

METRIC 60° CONE FEMALE SWIVEL NUT 45° ELBOW



Part Number	Metric Female Thread (F)	Hose I.D (Inches)	Hose I.D (mm)	Dash size	Hex A/F (S)	Cutoff (H)	Drop mm (K)
S98-M1204	M12x1.5	1/4	6.4	04	17	41	20
S98-M1404	M14-1.5	1/4	6.4	04	19	37	16
S98-M1606	M16x1.5	3/8	9.5	06	22	44	19
S98-M1806	M18x1.5	3/8	9.5	06	24	44	19
S98-M2208	M22x1.5	1/2	12.7	08	27	53	24
S98-M2610	M26x1.5	5/8	15.9	10	32	60	25
S98-M2710	M27x1.5	5/8	15.9	10	32	57	26
S98-M2612	M26x1.5	3/4	19	12	32	70	28