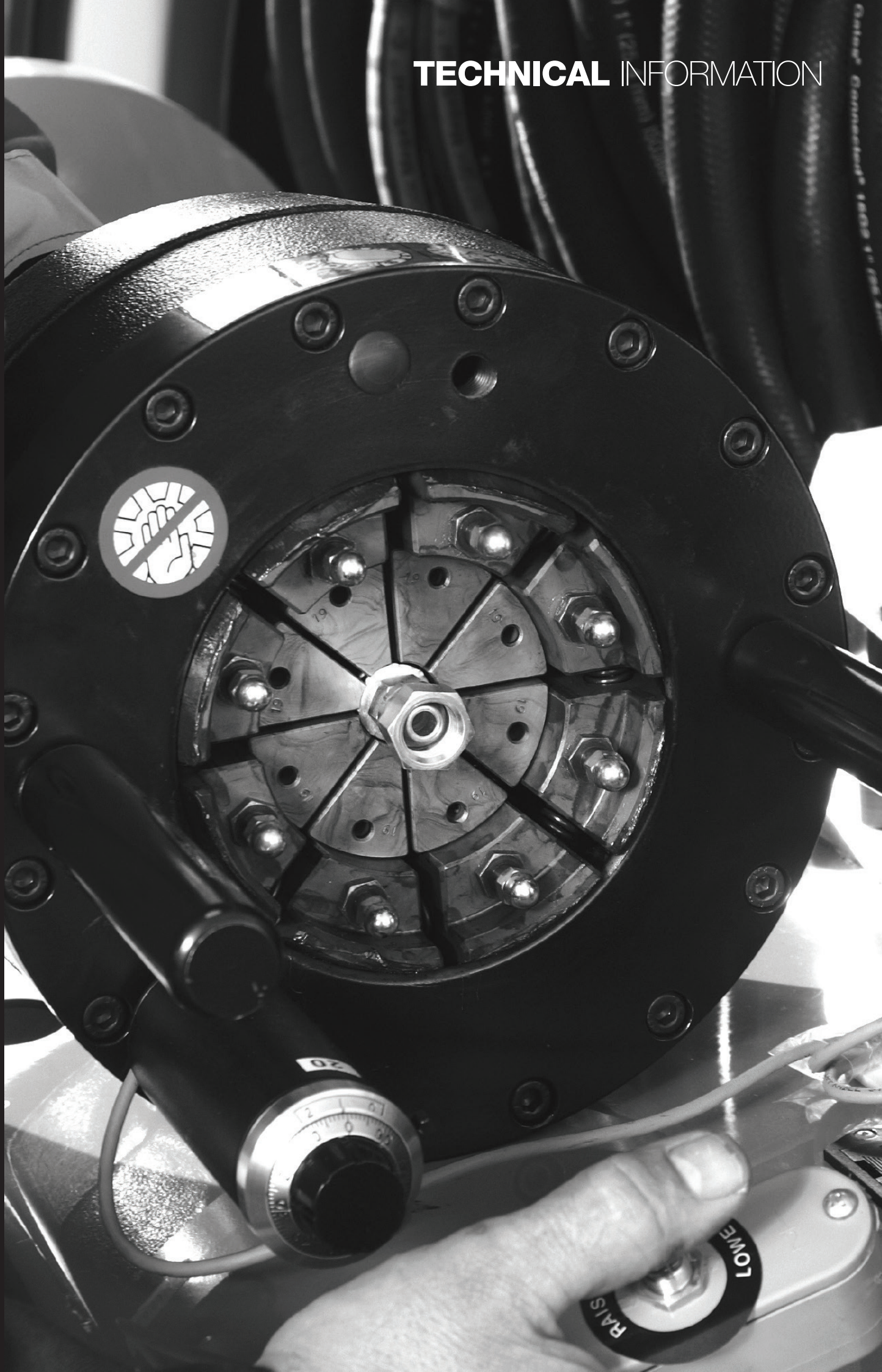
Accessories

TECHNICAL INFORMATION



SECTION 1

Hydraulink Hose and Fittings

PRODUCT SELECTION

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.

INFORMATION - HOSE

HOSE SELECTION & SERVICE LIFE RECOMMENDATIONS

Hydraulic hose (and hose assemblies) have a finite life span that is dependent upon the actual operating conditions the assembly is subjected to. An effective way to remember hose selection criteria is to remember the word STAMPED. STAMPED is an acronym for the following:

S = Size
T = Temperature
A = Application
M = Medium or Media
P = Pressure
E = Ends
D = Delivery

1. Size - Hose Internal Diameter can be determined using the Nomographic Chart found in this section. The correct hose I.D. must be selected for the flow required. Too small an I.D. for a given volume will result in pressure drop, heat generation, fluid turbulence and possible internal tube damage. If in doubt, select the next size up.

2. Temperature. Hose selection is determined by two variables of temperature; the ambient (external) temperature and the fluid/material (internal) temperature. The hose should not be exposed to internal or external temperatures which exceed the manufacturer's stated maximum and minimum limits. Both continual and intermittent temperatures must be accommodated within the recommended limits. Extra care must be taken when specifying hoses that are routed near to (or terminate on) hot components such as engine manifolds.

3. Application. The determination of how the hydraulic hose or hose assembly will be used. Questions that may need to be answered to ensure correct hose selection could include: What is the suitable hose construction? What type of equipment is it used on? What are the end connections? Are there applicable Government or Industry standards to be satisfied? Questions that may need to be answered to ensure correct hose selection could include; What are the environmental conditions the hose will be used in? Does the hose require a special cover or armour? Are there unusual mechanical loads or excessive movement? What are the routing requirements? What are the required lengths and bend radius to satisfy those routing requirements? (Further data regarding Hose Installation Recommendation can be found in this section.)

4. Medium (or media, material) to be conveyed. Hose selection must ensure compatibility of the hose tube (liner) and outer cover with the oil, chemical or gas to be conveyed. A chemical resistance table to rubber compounds can be found in this section. Similar care to ensure compatibility should be taken when specifying end connections (hosetails and adaptors), especially those that contain o-rings.

5. Pressure. The pressure in a hydraulic system should not exceed the stated hose working pressure at any time. System pressure spikes and surges must be considered and accommodated within the stated working pressure limits. Minimum burst pressures are reference pressures, and are intended for destructive testing and design purposes only.

6. Ends. The thread portions of the hose assembly must of course, be compatible with what it is connecting to. Different thread types have different working pressures, always insure that the threaded ends selected meet or exceed the designed working pressure. Check the technical section of this catalogue for pressure ratings. Also the chemical compatibility of the end fittings must be checked as per the hose. Ensure that the ends chosen are of the type matched to the hose.

7. Delivery. When a product is actually needed is important. A decision of what product is used can need to be altered by what is available when needed. Always specify up, not down to meet a timeline. A simple change of adaptor may be all that is needed to meet a requirement.

Exposure of hose or hose assemblies to operating conditions which exceed recommended or stated limits will significantly reduce the expected service life. If in doubt, over-specify hose assemblies to ensure as much safety margin on the recommended limits as possible.

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.

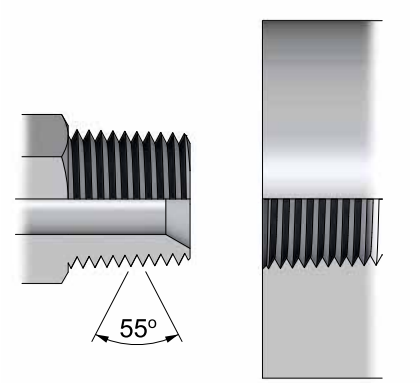
B.S.P.T. - BRITISH STANDARD PIPE TAPER

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*

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

Thread Angle: 55°

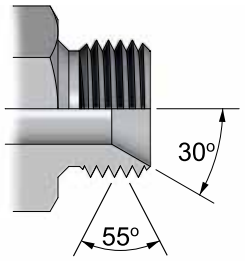
The British Standard Pipe Parallel (BSPP) male is typically coned 30° and will mate with either a BSPP swivel nut female or a BSPP female port.

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

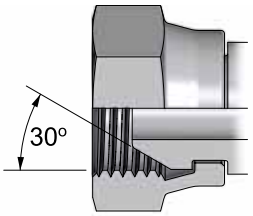
In some cases,the port is chamfered to accept an “O” ring seal. (Similar to the U.N.O. style).

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

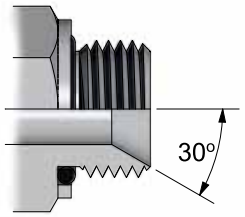
N.B. Torque values are nominal and supplied as a guide only.



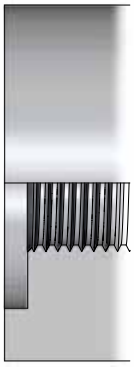
BSPP male



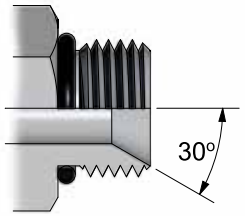
BSPP swivel nut female



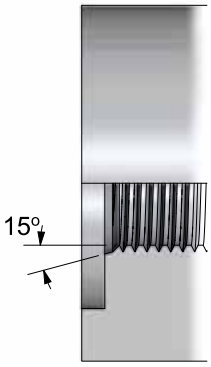
BSPP male with captive o-ring seal



BSPP female port (spot-faced)



BSPP male with o-ring seal



BSPP female port (chamfered)

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

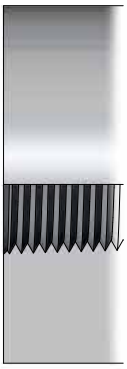
Taper: 1 in 16 by diameter.

Thread Angle: 60°

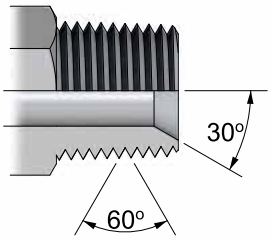
The National Pipe Taper Fuel (NPTF) male is coned 30° and will mate with the NPTF female port (taper), the National Pipe Straight Mechanical (NPSM) female (swivel nut female with 30° sealing cone), or the National Pipe Straight Fuel (NPSF) female port (parallel).

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

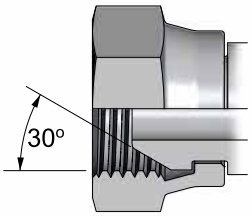
Thread Size & TPI	Male Thread O.D.	Female Thread I.D.	
	NPTF	NPTF	NPSF/SM
1/8-27	10.0	8.6	8.7
1/4-18	13.3	11.2	11.4
3/8-18	16.7	14.7	14.9
1/2-14	20.8	18.2	18.8
3/4-14	26.1	23.5	23.9
1-11.1/2	32.7	29.5	30.2
1.1/4-11.1/2	41.4	38.3	39.1
1.1/2-11.1/2	47.5	44.4	45
2-11.1/2	59.3	56.2	57



NPTF female port (taper)



NPTF male (taper)



NPSM swivel nut female

NPSF female port (parallel)

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

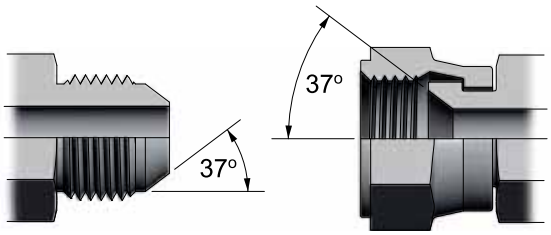
J.I.C. and U.N.“O”-Ring threads are both of the Unified National Form.

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.

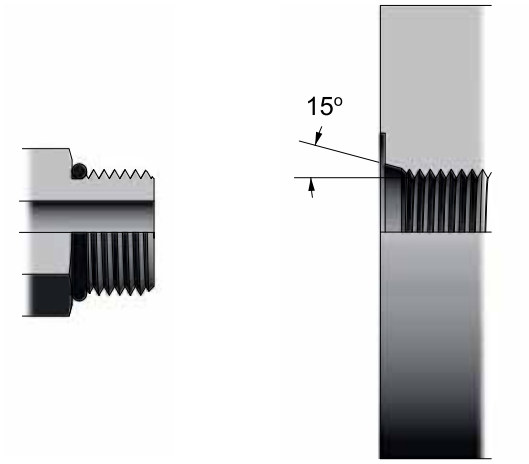
U.N.“O”-Ring refers to the thread type and “O”-Ring for sealing. The female U.N.O port has a chamfer to accept the o-ring.

Thread Size & TPI	Female Thread I.D.	Tube O.D.	Torque Settings JIC	Torque Settings 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

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



JIC male **JIC swivel nut female**

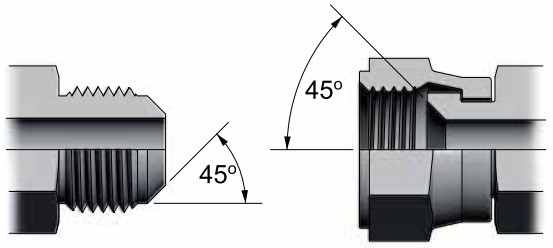


UNO male **UNO female port (chamfered)**

THREAD IDENTIFICATION

S.A.E. - SOCIETY OF AUTOMOTIVE ENGINEERS

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

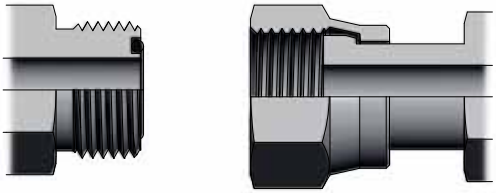


SAE male **SAE swivel nut female**

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

O.R.F.S. - O-RING FACE SEAL

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.



ORFS male **ORFS swivel nut female**

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

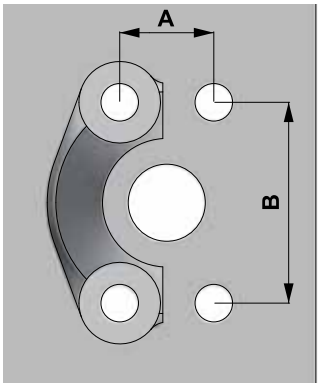
N.B. Torque values are nominal and supplied as a guide only.

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

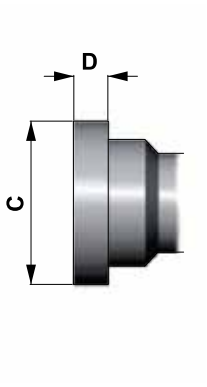
These connections utilise an “O”-Ring for sealing and are widely used for connecting to pump and motor parts as well as end terminations for pipe runs.

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

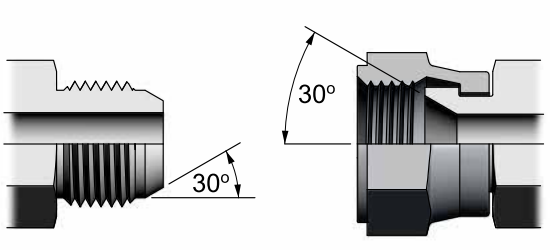
Type M; Metric, Male, 30° Cone

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

"O"-Ring Flanges:

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

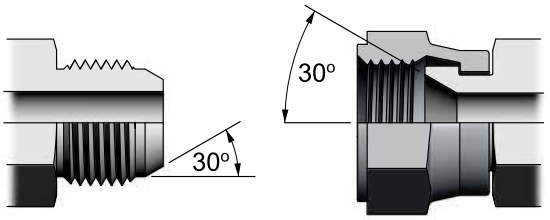
Type II; Equivalent to Code 62 *(Identical to SAE standard)*



Type F JIS male

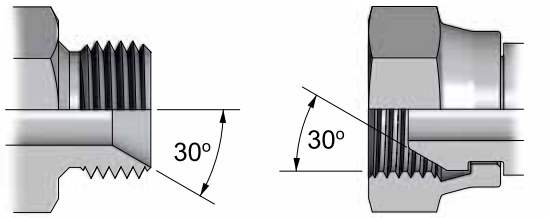
For thread data please refer to BSPP section

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 assembies and tube in three main pressure series:

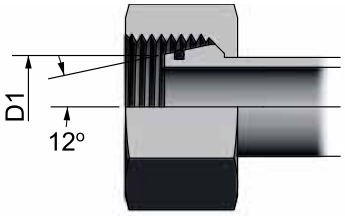
Series LL;	Extra Light, up to 100 bar
Series L;	Light up to 250 bar
Series S;	Heavy up to 640 bar

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.

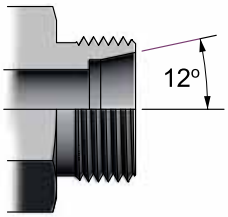
N.B: Rated coupling pressures are subject to the design pressures of the tube or hose being used.

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 cuttting ring and nut. Hose can also be connected directly to tube by use of a hose tail with the D.I.N. Male form

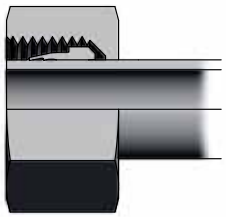
The male form will accept all three female styles shown (right).



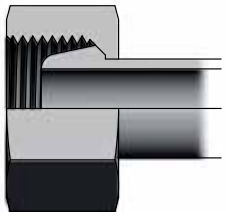
DIN 24° cone female with o-ring



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

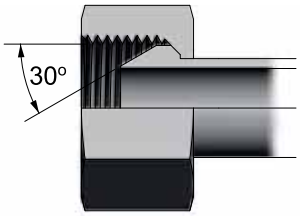
** N.B. Diameter D1 is nominal and may vary between manufacturers.*

D.I.N. METRICS 60° CONE SYSTEM

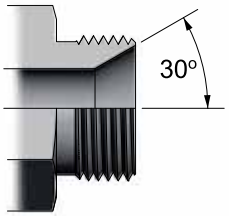
This series utilises a 60° cone seating angle and is used for the connection of hose assemblies and tube. It differs from the 24° series in that the threads are predominately 1.5mm pitch and there is no light or heavy pressure ranges.

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.

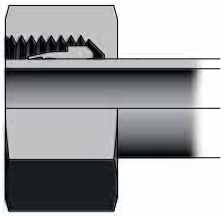
THREAD SPECIFICATIONS		
Thread O.D. & Pitch	Female Thread I.D.	Tube O.D.(mm)
M10-1.0	9.0	5
M12-1.5	10.5	6
M14-1.5	12.5	8
M16-1.5	14.5	10
M18-1.5	16.5	12
M22-1.5	20.5	15
M26-1.5	24.5	18
M30-1.5	28.5	22
M38-1.5	36.5	28
M45-1.5	43.5	35
M52-2.0	56.5	42



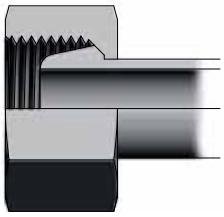
DIN 60° cone female



DIN 60° cone male



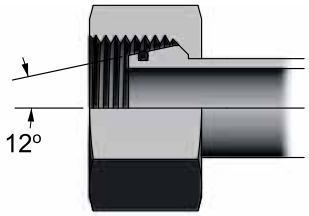
DIN cutiing ring and nut on tube



DIN female swivel nut with spherical seat

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

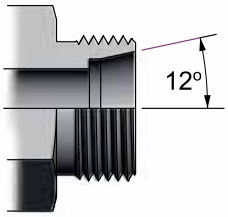
The I.S.O. series of couplings is similar to the D.I.N. light and heavy in function. The male has a 24° included angle sealing cone and a recessed counter bore for locating the tube when used in conjunction with a cutting ring and nut. The male will also accept a swivel nut female with either a cone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



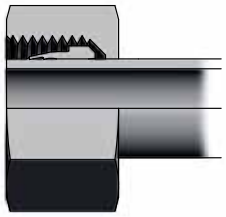
ISO (24° cone) female with o-ring

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

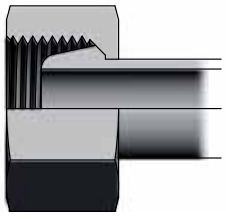
** Interchange with D.I.N. Light*
*** Interchange with D.I.N. Heavy*



ISO (24° cone) male



ISO cutting ring and nut on tube



ISO female swivel nut with spherical seat

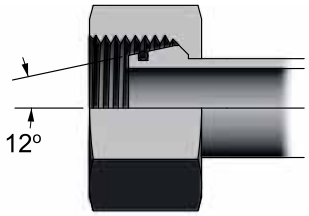
FRENCH METRICS (GAZ & MILLIMETRIQUE SERIES)

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.

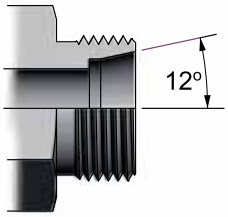
The male will accept a cutting ring and nut for use with tube or a swivel nut female with either a cone or spherical seal.

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

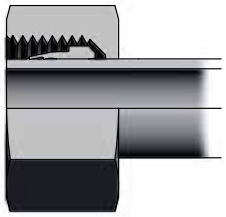
- Gaz series uses fractional number O.D. metric tubing.
- Millimetrique series uses whole number O.D. metric tubing.



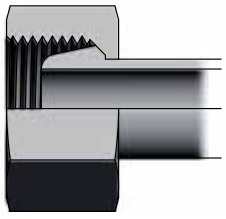
French 24° cone female with o-ring



French 24° cone male



Cutting ring and nut on tube



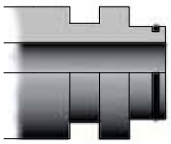
French female swivel nut with spherical seat

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	-

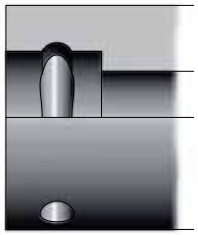
STAPLE-LOK COUPLINGS

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.

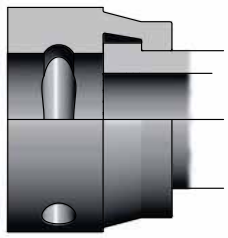


Staple-lok male



Staple-lok fixed female

THREAD SPECIFICATIONS					
Coupling Dash Size	Imperial Size	Male O.D. inch	Male O.D. mm	Female I.D. inch	Female I.D. 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

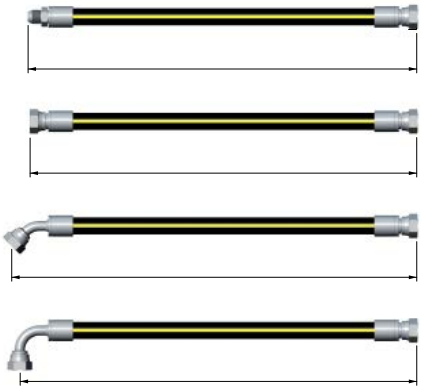
Hydraulink Hose and Fittings

HOSE ASSEMBLY MEASUREMENT

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.



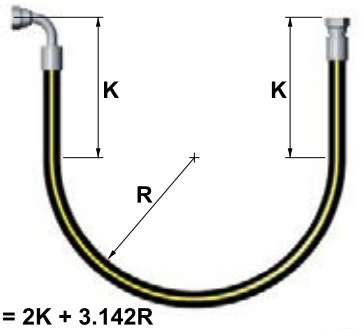
BENT HOSE ASSEMBLY LENGTH

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”.

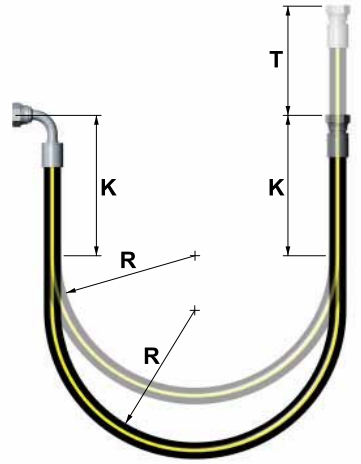
Hose I.D.	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	1.1/4	1.1/2	2
K (mm)	110	130	130	160	180	210	210	260	260	260	310



Length = 2K + 3.142R

Dynamic Installations

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



Length = 2K + 3.142R + T

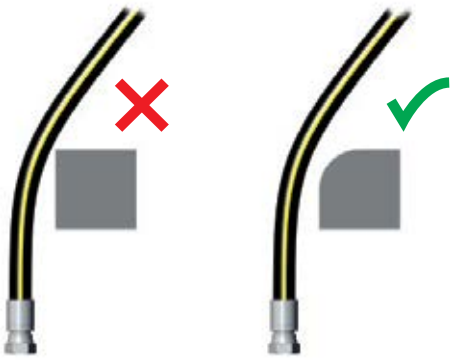
Off-Set Angle Measurement

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.

HOSE INSTALLATION RECOMMENDATIONS

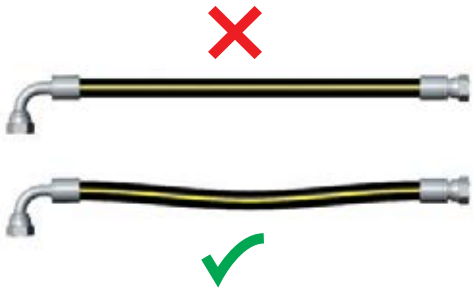
1. Hose Protection
Protect the hose cover from damage such as abrasion, erosion, snagging, and cutting. Where possible, route hose to reduce abrasion from hose rubbing other hose or objects that may abrade it (Fig. 1). Special abrasion-resistant hoses and hose guards are available for additional protection.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

Fig. 1



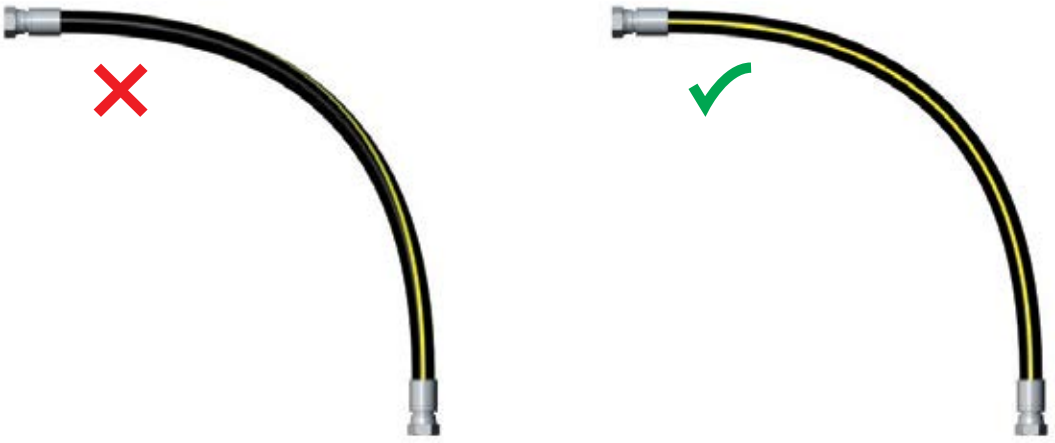
2. Hose And Machine Tolerances
Avoid tension on hose assemblies and adaptors. Design hose to allow for changes in length due to machine motion and tolerances (Fig. 2). Failure to do so may result in seal or assembly failure.

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

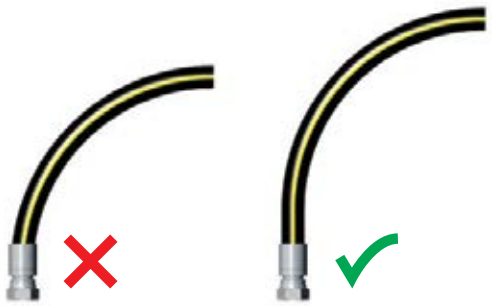


Fig. 4b

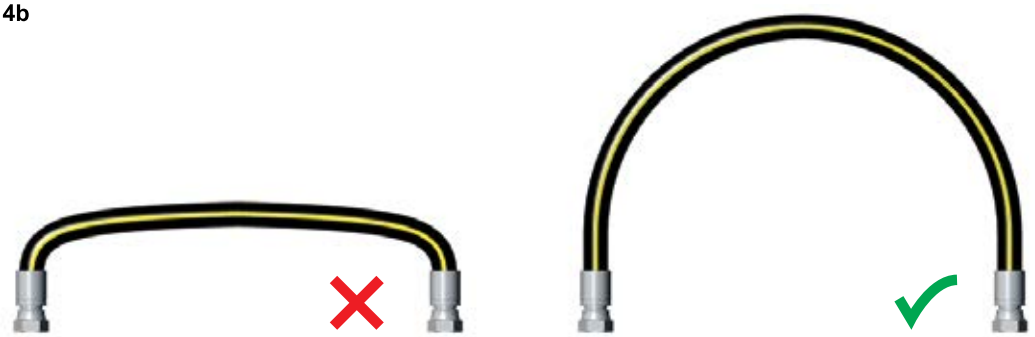
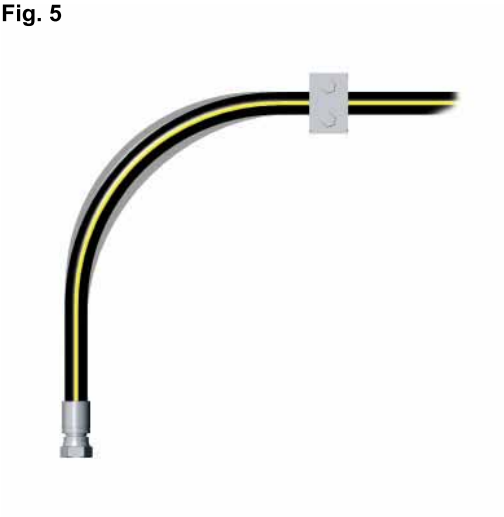


Fig. 4c

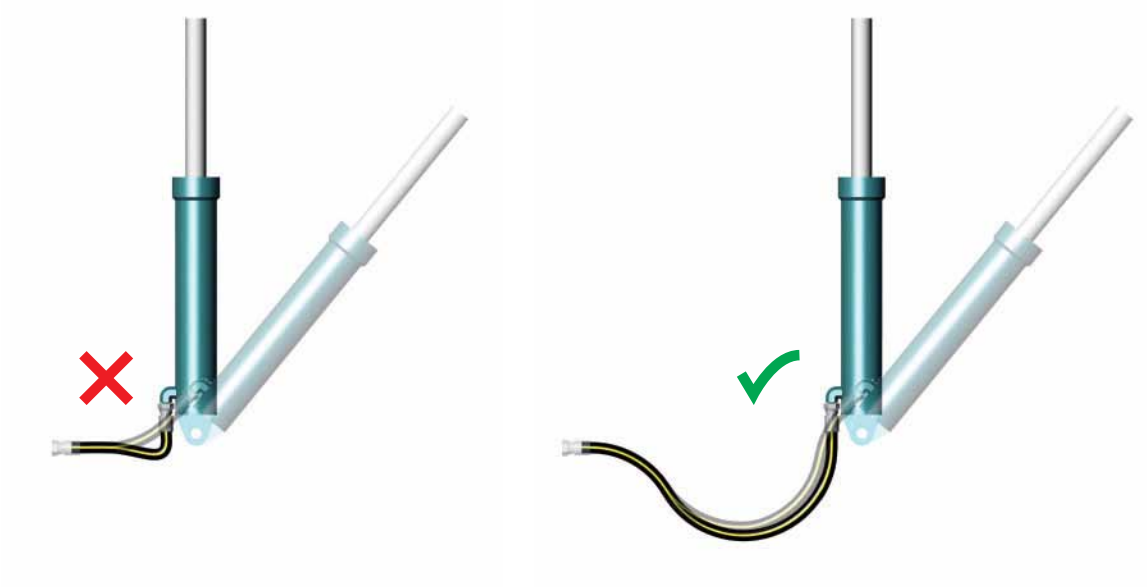
5. Hose Length Change
Hydraulic hose can expand longitudinally when pressurised, and this hose length change must be considered when specifying or installing hose assemblies (Fig. 5) When clamping hose lengths, always place clamps to avoid stressing the fitting end.

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 occuring that are smaller than the minimum bend radius (Fig. 6a).

Fig. 6a



ACCESSORIES

SECTION 17

INFORMATION - ACCESSORIES

GENERAL INFORMATION

Hydraulink stock a comprehensive range of accessories, from individual seals for adaptors to spill kits for rapid and convenient containment and disposal of hydraulic oil spills.

Various types of protective hose armour are available, to protect and prolong the service life of hose assemblies whether in conventional or aggressive environments. Some of these armours require clamping in place, and the ranges of clamps to do so are also in this section as well as tables for easy selection of protective hose armour based on hose size.

Bolts and washers for S.A.E. flanges and a wide variety of seals are among the essentials for new installations or for service work. Also listed are projectile cleaning kits to ensure every assembly manufactured is contamination free, and robust threaded plastic caps and plugs to protect those assemblies from further contamination once assembled.

For the mobile service vehicle, workshop or hose shop, Hydraulink supply a standardised bin and racking system detailed in this section, as well as various sizes of spill kit and environmentally responsible organic absorbent to contain either hydraulic oil or general spills.

HOSE PROTECTION

BR

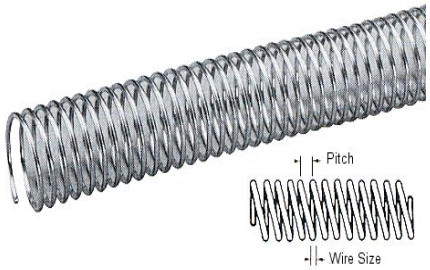
VINYL BEND RESTRICTOR
TAPERED BLACK PVC SLEEVE

Part Number	I.D - mm	I.D - inches	Overall Length - mm	Overall Length - inches	Suits Hose
BR1055	13.46	0.53	134.6	5.3	4R7
BR1050	16	0.63	139.7	5.5	1/4 - 1 and 2 Wire
BR1051	18.54	0.73	152.4	6	3/8 - 1 and 2 Wire
BR1054	19.56	0.77	177.8	7	6G2& 6PC5000
BR1052	21.34	0.84	177.8	7	8G1
BR1053	25.4	1	203.2	8	10G1& 10M2T& 10M3K

HSG

WIRE SPRING GUARD

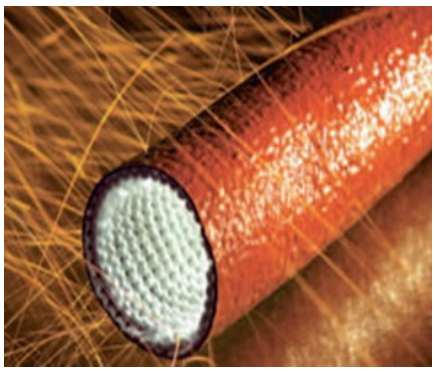
HIGH TENSILE WIRE SPRING GUARD FOR HOSE



Part Number	Nominal I.D - mm	Nominal I.D - inches	Wire O.D (B) - mm	Wire O.D (B) - inches	Pitch (C) - mm	Pitch (C) - inches	Standard Length - m
HSG-7	7	0.275	1.25	0.05	4.0	0.16	6
HSG-14	14	0.55	2	0.08	5.6	0.22	6
HSG-17	17.5	0.69	2	0.08	4.0	0.16	6
HSG-19	18.8	0.738	2	0.08	5.6	0.22	6
HSG-21	21.6	0.852	2	0.08	5.6	0.22	6
HSG-23	23.2	0.915	2	0.08	5.6	0.22	6
HSG-25	24.8	0.977	2	0.08	5.6	0.22	6
HSG-26	26.4	1.04	2	0.08	5.6	0.22	6
HSG-28	28.5	1.122	2	0.08	5.6	0.22	6
HSG-32	32.5	1.278	2	0.08	5.6	0.22	6
HSG-34	34	1.34	3	0.12	8.8	0.35	6
HSG-40	40.1	1.578	3	0.12	8.8	0.35	6
HSG-41	41.5	1.63	3	0.12	8.8	0.35	6
HSG-47	46.9	1.847	3	0.12	10.4	0.41	6
HSG-51	50.5	2	3	0.12	10.4	0.41	6
HSG-54	53.7	2.112	3	0.12	10.4	0.41	6
HSG-59	58.7	2.312	3	0.12	10.4	0.41	6

HTG

HeatGuard« PROTECTIVE SLEEVING
KNITTED COATED FIBREGLASS HOSE SLEEVING



Part Number	I.D - mm	I.D - inches
HTG-6	9.53	3/8
HTG-8	12.7	1/2
HTG-12	19.05	3/4
HTG-14	22.35	7/8
HTG-16	25.4	1
HTG-18	28.45	1.1/8
HTG-22	35.05	1.3/8
HTG-28	44.45	1.3/4
HTG-32	50.8	2
HTG-36	57.15	2.1/4
HTG-40	63.5	2.1/2
HTG-44	69.85	2.3/4
HTG-56	76.2	3.1/2
HTG-64	101.6	4

PHG

PROTECTIVE HOSE GUARD
HIGH DENSITY POLYETHYLENE PROTECTIVE HOSE WRAP

Part Number	Nominal O.D - mm	Nominal O.D - inches	Nominal I.D - mm	Nominal I.D - inches	Suits hose - Min O.D - mm	Suits hose - Min O.D - inches	Suits hose - Max O.D - mm	Suits hose - Max O.D - inches	Colour
PHG-12	12	0.47	9.5	0.35	10	.35	17	0.56	BLACK
PHG-12R	12	0.47	9.5	0.35	10	0.35	17	0.47	RED
PHG-16	16	0.63	12.5	0.5	12	0.67	22	0.87	BLACK
PHG-16R	16	0.63	12.5	0.49	12	0.47	22	0.67	RED
PHG-16Y	16	0.63	12.5	0.49	12	0.47	22	0.67	YELLOW
PHG-20	20	0.79	16	0.63	16	0.91	27	1.02	BLACK
PHG-20R	20	0.79	16	0.63	16	0.63	27	0.87	RED
PHG-20Y	20	0.79	16	0.63	16	0.63	27	0.87	YELLOW
PHG-25	25	0.98	21	0.83	22	1.06	35	1.14	BLACK
PHG-25R	25	0.98	21	0.83	22	0.87	35	1.06	RED
PHG-25Y	25	0.98	21	0.83	22	0.87	35	1.06	YELLOW
PHG-32	32	1.26	27	1.03	27	1.18	43	1.54	BLACK
PHG-32R	32	1.26	27	1.06	27	1.06	43	1.3	RED
PHG-32Y	32	1.26	27	1.06	27	1.06	43	1.3	YELLOW
PHG-40	40	1.57	34	1.34	33	1.69	55	1.97	BLACK
PHG-40Y	40	1.57	34	1.39	33	1.3	55	1.65	YELLOW
PHG-50	50	1.97	44	1.73	42	2.09	64	2.64	BLACK
PHG-50Y	50	1.97	44	1.73	42	1.65	64	2.17	YELLOW
PHG-63	63	2.48	55	2.17	52	2.68	75	3.03	BLACK
PHG-75	75	2.95	66	2.6	65	3.07	96	3.31	BLACK
PHG-90	90	3.54	79	3.1	80	3.35	110	3.94	BLACK
PHG-110	110	4.34	97	3.8	97	3.94	125	4.72	BLACK

SGX

HEAVY DUTY PROTECTIVE HOSE GUARD
HIGH DENSITY POLYETHYLENE PROTECTIVE HOSE WRAP

Part Number	Nominal O.D - mm	Nominal I.D - mm	HOSE O.D RANGE - mm
SGX-12	13	9	9 > 12
SGX-16	16.5	12	12 > 17
SGX-20	20	15	16 > 22
SGX-25	24.5	19	22 > 28
SGX-32	30	23	27 > 33
SGX-40	39	30.5	33 > 42
SGX-50	46.5	38	42 > 55
SGX-63	58	47	52 > 65
SGX-75	73	61	65 > 80
SGX-90	84.5	70.5	80 > 150
SGX-110	150	135	150+

SC

LIFEGUARD COLLAR
LIFEGUARD STAINLESS STEEL CRIMP COLLAR

Part Number	Collar O.D (mm)
6SC-4	29.2
10SC-4	41.1
12SC-4	47.5
6SC-4-SS	29.2
8SC-4-SS	35.5
10SC-4-SS	41.1
12SC-4-SS	47.5

LG

LIFEGUARD SLEEVE
LIFEGUARD 5000 PSI BURST SLEEVE

Part Number	Inside flat-mm	Inside round-mm
14LG5K	35	22.3
16LG5K	41.1	26.1
20LG5K	48.5	31.0
26LG5K	63.5	40.4

TEXS

WOVEN NYLON HOSE GUARD
MSHA APPROVED ABRASION RESISTANT
SLEEVING

Part Number	Internal dimension - mm	Internal Dimension - inches	I.D when opened - mm	I.D when opened - inch
TEXS20	31	1.24	20	0.8
TEXS23	36	1.44	23	0.92
TEXS27	42	1.68	27	1.08
TEXS31	49	1.96	31	1.24
TEXS36	54	2.16	36	1.44
TEXS40	63	2.52	40	1.6
TEXS47	74	2.96	47	1.88
TEXS55	86	3.39	55	2.17
TEXS60	94	3.76	60	2.4
TEXS66	104	4.16	66	2.64
TEXS73	115	4.60	73	2.92
TEXS85	136	5.35	85	3.35
TEXS93	149	5.87	93	3.66
TEXS112	179	7.05	112	4.41
TEXS127	205	8.07	127	5.00

HOSE CLAMPS

HC

WORM DRIVE HOSE CLAMP
WORM DRIVE HOSE CLAMP

Part Number	Minimum Final I.D - mm	Minimum Final I.D - inches	Maximum Final I.D - mm	Maximum Final I.D - inches	Band width - mm	Band Width - inches	Hex Head - inches
HC6-16	6	1/4	16	5/8	8	5/16	1/4
HC8-22	8	5/16	22	7/8	8	5/16	1/4
HC16-25	16	21/32	25	31/32	12.7	1/2	21/25
HC20-32	20	25/32	32	1 1/4	12.7	1/2	21/25
HC32-50	32	1 1/4	50	1 31/32	12.7	1/2	21/25
HC40-60	40	1 19/32	60	2 11/32	12.7	1/2	21/25
HC50-70	50	1 31/32	70	2 3/4	12.7	1/2	21/25
HC65-90	65	2 14/25	90	3 1/2	12.7	1/2	21/25
HC80-100	80	3 1/8	100	3 15/16	12.7	1/2	21/25
HC90-110	90	3 9/16	110	4 5/16	12.7	1/2	21/25
HC100-120	100	3 15/16	120	4 23/32	12.7	1/2	21/25
HC110-130	110	4 5/16	130	5 1/8	12.7	1/2	21/25
HC130-155	130	5 3/25	155	6 1/10	12.7	1/2	21/25
HC155-180	155	6 1/10	180	7 8/89	12.7	1/2	21/25
HC180-205	180	7 8/89	205	8 4/57	12.7	1/2	21/25

PHC

P CLAMP

P CLIP CLAMP 6MM MOUNTING HOLE

Part Number	Clamp I.D. Closed mm	Bolt hole mm
PHC-6	6	6
PHC-10	10	6
PHC-13	13	6
PHC-16	16	6
PHC-21	21	6
PHC-22	22	6
PHC-25	25	6
PHC-27	27	6
PHC-29	29	6
PHC-38	38	6
PHC-40	40	6
PHC-44	44	6
PHC-51	51	6
PHC-70	70	6

HPHC

HEAVY DUTY VINYL P CLAMP
H/DUTY VINYL COATED P CLIP CLAMP 10MM
MOUNTING HOLE

Part Number	Clamp I.D. Closed mm	Bolt hole-mm
HPHC-06	6	10
HPHC-10	10	10
HPHC-13	13	10
HPHC-16	16	10
HPHC-19	19	10
HPHC-21	21	10
HPHC-24	24	10
HPHC-25	25	10
HPHC-27	27	10
HPHC-29	29	13
HPHC-32	32	13
HPHC-40	40	13
HPHC-44	44	13
HPHC-51	51	13
HPHC-70	70	13

HSHC

HEAVY DUTY HOSE CLAMP
T-BOLT TYPE HOSE CLAMP

Part Number	Minimum Final I.D -	Minimum Final I.D -	Maximum Final I.D -	Maximum Final I.D -	Bolt Thread	Bolt Head (mm)	Band Width - mm	Band Width - inches

	mm	inches	mm	inches				
HSHC17-19	17	0.67	19.00	0.75	M6	8	19.8	0.31
HSHC20-22	20	0.79	22.00	0.87	M6	8	19.8	0.31
HSHC23-25	23	0.91	25.00	0.98	M6	8	19.8	0.31
HSHC26-28	26	1.02	28.00	1.10	M6	8	19.8	0.31
HSHC29-31	29	1.14	31.00	1.22	M7	10	22	0.39
HSHC32-35	32	1.26	35.00	1.38	M7	10	22	0.39
HSHC36-39	36	1.42	39.00	1.54	M7	10	22	0.39
HSHC40-43	40	1.57	43.00	1.69	M7	10	22	0.39
HSHC42-45	42	1.65	45.00	1.69	M7	10	22	0.39
HSHC44-47	44	1.73	47.00	1.85	M7	10	22	0.39
HSHC48-51	48	1.89	51.00	2.01	M7	10	22	0.39
HSHC52-55	52	2.05	55.00	2.17	M7	10	22	0.39
HSHC56-59	56	2.20	59.00	2.32	M7	10	22	0.39
HSHC60-63	60	2.36	63.00	2.48	M7	10	22	0.39
HSHC64-67	64	2.52	67.00	2.64	M7	10	22	0.39
HSHC68-73	68	2.68	73.00	2.87	M8	13	27.5	0.51
HSHC74-79	74	2.91	79.00	3.11	M8	13	27.5	0.51
HSHC80-85	80	3.15	85.00	3.35	M8	13	27.5	0.51
HSHC86-91	86	3.39	81.00	3.19	M8	13	27.5	0.51
HSHC92-97	92	3.62	97.00	3.82	M8	13	27.5	0.51
HSHC98-103	98	3.86	103.00	4.06	M8	13	27.5	0.51
HSHC104-112	104	4.09	112.00	4.41	M8	13	27.5	0.51
HSHC113-121	113	4.45	121.00	4.76	M8	13	27.5	0.51
HSHC122-130	122	4.80	130.00	5.12	M8	13	27.5	0.51
HSHC131-139	131	5.16	139.00	5.47	M10	15	19.8	0.59
HSHC140-148	140	5.51	148.00	5.83	M10	15	19.8	0.59
HSHC149-161	149	5.87	161.00	6.34	M10	15	19.8	0.59
HSHC162-174	162	6.38	174.00	6.85	M10	15	19.8	0.59
HSHC175-187	175	6.89	187.00	7.36	M10	15	19.8	0.59
HSHC188-200	188	7.40	200.00	7.87	M10	15	19.8	0.59
HSHC201-213	201	7.91	213.00	8.39	M10	15	19.8	0.59
HSHC214-226	214	8.43	226	8.90	M10	16	26	0.59
HSHC227-239	227	8.94	239.00	9.41	M10	15	19.8	0.59
HSHC240-252	240	9.45	252.00	9.92	M10	15	19.8	0.59

SB

POWERGRIP« SB CLAMP
THERMOPLASTIC HEAT SHRINK CLAMP

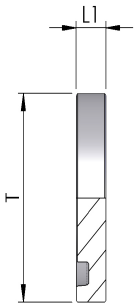
Part Number	Minimum Final I.D - mm	Minimum Final I.D - inches	Maximum Final I.D - mm	Maximum Final I.D - inches
SB15	12.7	0.5	17.46	0.69
SB19	17.46	0.69	20.64	0.81
SB22	20.64	0.81	23.81	0.94
SB25	23.81	0.94	26.99	1.06
SB29	26.99	1.06	30.16	1.19
SB34	33.34	1.31	38.10	1.50
SB41	38.1	1.5	44.45	1.75
SB48	44.45	1.75	50.8	2
SB54	50.8	2	57.15	2.25
SB60	57.15	2.25	63.5	2.5
SB67	63.5	2.5	69.85	2.75
SB73	69.85	2.75	76.2	3

SAE FLANGE ADAPTORS

VP

SAE CODE 61 BLANKING
SAE CODE 61 BLANKING DISC

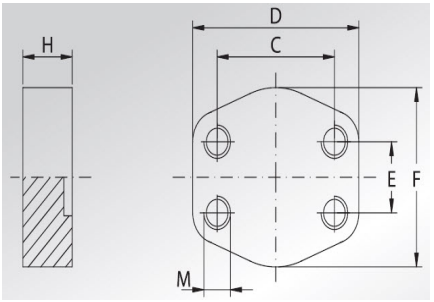
- Recommended for temporary blanking of flange ports and connectors during servicing and repairs.



Part Number	NOMINAL SAE FLANGE SIZE	T	L1
VP-08	1/2	30.2	6.73
VP-12	3/4	38.1	6.73
VP-16	1	44.4	8.00
VP-20	1.1/4	50.8	8.00
VP-24	1.1/2	60.3	8.00
VP-32	2	71.4	9.53

VBC

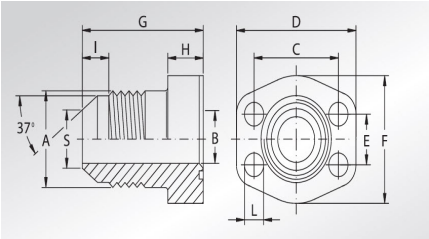
SAE CODE 61 COMPANION BLANKING PLATE



Part Number	NOMINAL SAE FLANGE SIZE	C	D	E	F	H	SUITS METRIC BOLTS
VBC-40	2.1/2	88.9	114	50.8	105	20	M10-1.5 x 35
VBC-48	3	106.4	134	61.9	124	24	M10-1.5 x 35

G-V

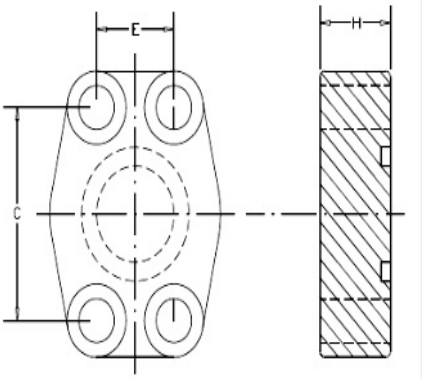
JIC MALE x SAE FLANGE CODE 61
JIC MALE x SAE FLANGE CODE 61 FLANGE



Part Number	JIC Male Thread (A)	Nominal SAE Size Flange	Overall Length (L1)
G-V-1712	1.1/16-12	3/4	70
G-V-1716	1.1/16-12	1	71
G-V-1720	1.1/16-12	1 1/4	71
G-V-2116	1.5/16-12	1	71
G-V-2120	1.5/16-12	1 1/4	71
G-V-2620	1.5/8-12	1 1/4	78
G-V-3024	1.7/8-12	1 1/2	89

VBO

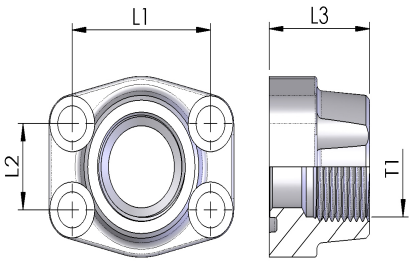
SAE CODE 61 BLANKING PLATE
SAE CODE 61 FLANGE PORT BLANKING PLATE



Part Number	Nominal SAE Size Flange	C	E	H	Suits metric bolts	Suits imperial bolts
VBO-08	1/2	38	17	16	M8x30	5/16x1.1/4
VBO-12	3/4	48	22	18	M10x35	3/8x1.1/4
VBO-16	1	52	26	19	M10x35	3/8x1.1/4
VBO-20	1.1/4	59	30	18	M10x45	7/16x1.1/2
VBO-24	1.1/2	70	36	20	M12x45	1/2x1.1/2
VBO-32	2	78	43	20	M12x45	1/2x1.1/2

F-V

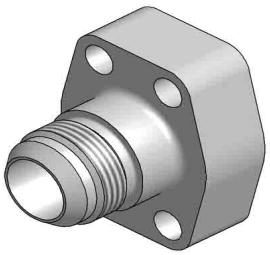
BSP FEMALE X SAE CODE 61
BSP FIXED FEMALE X SAE CODE 61 FLANGE BLOCK



Part Number	T1	Nominal SAE Flange Size	L1 (mm)	L2 (mm)	L3 - mm	Suits metric bolts	Suits imperial bolts
F-V-0808	1/2-14	1/2	38.1	17.48	36	M8x30	5/16x1.1/4
F-V-1212	3/4-14	3/4	47.6	22.23	36	M10x35	3/8x1.1/4
F-V-1616	1-11	1	52.37	26.19	38	M10x35	3/8x1.1/4
F-V-2020	1.1/4-11	1.1/4	58.72	30.18	40	M10x45	7/16x1.1/2
F-V-2424	1.1/2-11	1.1/2	69.85	35.71	45	M12x45	1/2x1.1/2
F-V-3232	2-11	2	77.77	42.88	45	M12x45	1/2x1.1/2

G-VB

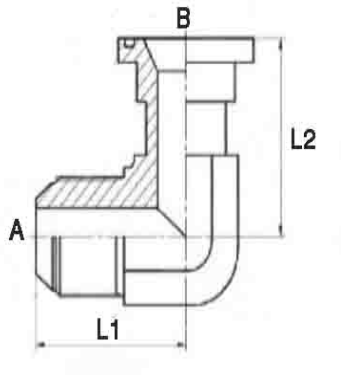
JIC MALE x SAE FLANGE BLOCK CODE 61
JIC MALE x SAE FLANGE BLOCK CODE 61



Part Number	JIC Male Thread (A)	Nominal SAE Size Flange	Overall Length (L1)
G-VB-1712	1.1/16-12	3/4	60
G-VB-2116	1.5/16-12	1	63
G-VB-2620	1.5/8-12	1 1/4	65
G-VB-3024	1.7/8-12	1 1/2	70

G-V-90

JIC MALE x SAE FLANGE CODE 61 90°
90° SAE CODE 61 FLANGE HEAD x JIC 37° MALE

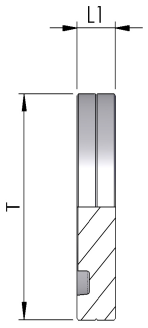


Part Number	JIC Male Thread (A)	Nominal SAE Size Flange	Length 1	Length 2
G-V-90-1712	1.1/16-12	3/4	42.93	54.1
G-V-90-1716	1.1/16-12	1	45.97	60.2
G-V-90-2116	1.5/16-12	1	49.53	60.45
G-V-90-2120	1.5/16-12	1 1/4	52.32	66.55
G-V-90-2620	1.5/8-12	1 1/4	51.56	67.01
G-V-90-3024	1.7/8-12	1 1/2	59.69	79.25

VHP

SAE CODE 62 BLANKING PLATE
SAE CODE 62 BLANKING DISC

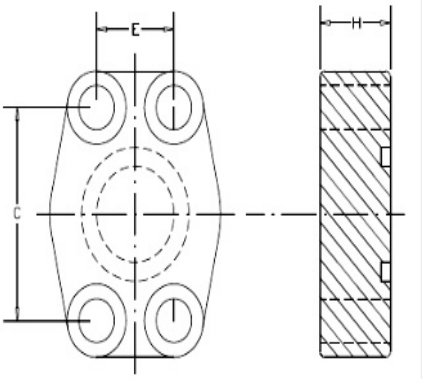
- Recommended for temporary blanking of flange ports and connectors during servicing and repairs.



Part Number	NOMINAL SAE FLANGE SIZE	T	L1
VHP-12	3/4	41.3	8.76
VHP-16	1	47.6	9.53
VHP-20	1.1/4	54.0	10.29
VHP-24	1.1/2	63.5	12.57
VHP-32	2	79.4	12.57

VHBO

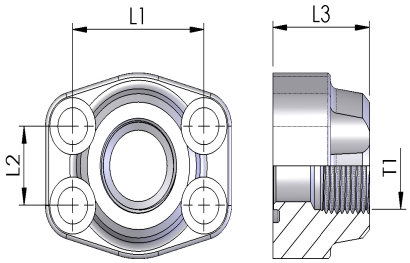
SAE CODE 62 BLANKING PLATE
SAE CODE 62 FLANGE PORT BLANKING PLATE



Part Number	Nominal SAE Size Flange	C	E	H	Suits metric bolts	Suits imperial bolts
VHBO-08	1/2	40	18	16	M8x35	5/16x1.1/4
VHBO-12	3/4	51	24	19	M10x35	3/8x1.1/2
VHBO-16	1	57	28	24	M12x45	7/16x1.3/4
VHBO-20	1.1/4	67	32	27	M14x50	1/2x1.3/4
VHBO-24	1.1/2	79	37	30	M16x55	5/8x2
VHBO-32	2	97	44	30	M20x65	3/4x2.1/2

F-VH

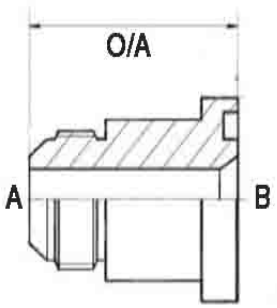
BSP FEMALE X SAE CODE 62
BSP FIXED FEMALE X SAE CODE 62 FLANGE BLOCK



Part Number	T1	Nominal SAE Flange Size	L1 (mm)	L2 (mm)	L3 - mm	Suits metric bolts	Suits imperial bolts
F-VH-0808	1/2-14	1/2	40.49	18.24	36	M8x35	5/16x1.1/4
F-VH-1212	3/4-14	3/4	50.8	23.8	36	M10x35	3/8x1.1/2
F-VH-1616	1-11	1	57.15	27.76	42	M12x45	7/16x1.3/4
F-VH-2020	1.1/4-11	1.1/4	66.68	31.75	45	M14x50	1/2x1.3/4
F-VH-2424	1.1/2-11	1.1/2	79.38	36.5	50	M16x55	5/8x2
F-VH-3232	2-11	2	96.82	44.45	65	M20x65	3/4x2.1/2

G-VH

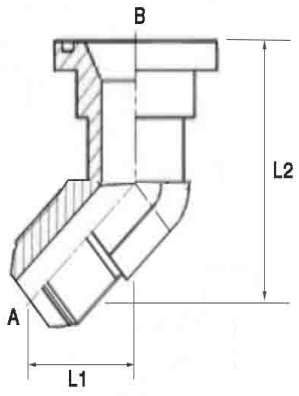
JIC MALE x SAE FLANGE CODE 62
JIC MALE x SAE FLANGE CODE 62 FLANGE



Part Number	JIC Male Thread (A)	Nominal SAE Size Flange	Overall Length (L1)
G-VH-1712	1.1/16-12	3/4	69.85
G-VH-2116	1.5/16-12	1	71.12
G-VH-2620	1.5/8-12	1 1/4	77.72
G-VH-3024	1.7/8-12	1 1/2	89.41

G-VH-45

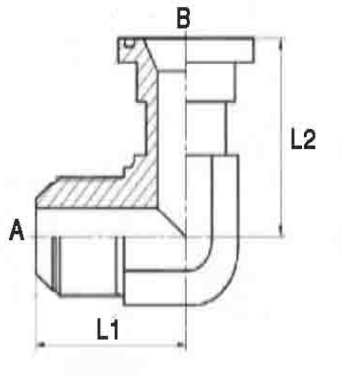
JIC MALE x SAE FLANGE CODE 62 45°
JIC MALE x SAE FLANGE CODE 62 45°



Part Number	JIC Male Thread (A)	Nominal SAE Size Flange	length 1	length 2
G-VH-45-1712	1.1/16-12	3/4	34.04	38.61
G-VH-45-2116	1.5/16-12	1	37.34	46.99
G-VH-45-2620	1.5/8-12	1 1/4	40.39	51.82
G-VH-45-3024	1.7/8-12	1 1/2	45.47	71.63

G-VH-90

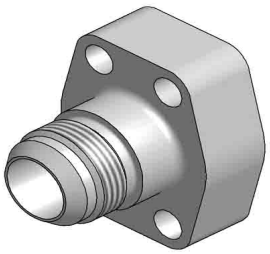
JIC MALE x SAE FLANGE CODE 62 90°
JIC MALE x SAE FLANGE CODE 62 90°



Part Number	JIC Male Thread (A)	Nominal SAE Size Flange	length 1	length 2
G-VH-90-1712	1.1/16-12	3/4	44.7	54.1
G-VH-90-2112	1.5/16-12	3/4	42.16	54.1
G-VH-90-2116	1.5/16-12	1	53.59	60.71
G-VH-90-2120	1.5/16-12	1 1/4	52.32	70.1
G-VH-90-2620	1.5/8-12	1 1/4	52.83	69.85
G-VH-90-3024	1.7/8-12	1 1/2	59.18	80.01

G-VHB

JIC MALE x SAE FLANGE BLOCK CODE 62
JIC MALE x SAE FLANGE BLOCK CODE 62

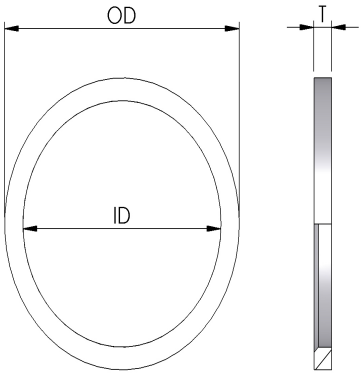


Part Number	JIC Male Thread (A)	Nominal SAE Size Flange	Overall Length (L1)
G-VHB-1712	1.1/16-12	3/4	73
G-VHB-2116	1.5/16-12	1	82
G-VHB-2620	1.5/8-12	1 1/4	92
G-VHB-3024	1.7/8-12	1 1/2	96

SAE FLANGES

FRS

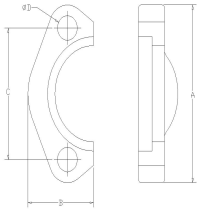
SAE FLANGE SPACER
SAE CODE 62 FLANGE SPACER RING TO ADAPT TO CATERPILLAR XT5 STYLE FLANGE CLAMP



Part Number	Suits SAE Nominal size	Outside Diameter - mm	Inside Diameter - mm	Thickness - mm
FRS-12	3/4	41	33	5.5
FRS-16	1	47.4	39	4.7
FRS-20	1 1/4	53.3	45	4
FRS-24	1 1/2	63.2	52	1.7
FRS-32	2	79.1	68	1.7

W

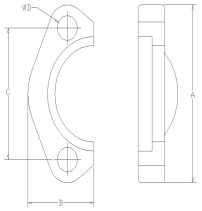
SAE CODE 61 CLAMP
SAE CODE 61 FLANGE CLAMP



Part Number	NOMINAL SAE FLANGE SIZE	Diameter mm (A)	Width mm (B)	Bolt Holes Spacing mm (C)	Hole Size mm (D)
W-08	1/2	54	23	38.1	9
W-12	3/4	65.1	26.1	47.6	11
W-16	1	69.8	29.4	52.4	11
W-20	1 1/4	79.4	36.5	58.7	11
W-24	1 1/2	93.7	41.3	69.8	13.5
W-32	2	101.6	48.4	77.8	13.5
W-40	2 1/2	114	54.1	88.9	13.5
W-48	3	135	65.3	106.3	17

WHP

SAE CODE 62 CLAMP
SAE CODE 62 FLANGE CLAMP



Part Number	NOMINAL SAE FLANGE SIZE	Diameter mm (A)	Width mm (B)	Bolt Hole Spacing mm (C)	Hole Size mm (D)
WHP-08	1/2	56.3	28.1	40.5	9
WHP-12	3/4	71.4	30.2	50.8	11
WHP-16	1	80.9	34.9	57.1	13
WHP-20	1 1/4	95.2	38.9	66.7	15
WHP-24	1 1/2	112.7	47.6	79.4	17
WHP-32	2	133.3	57.1	96.8	21

SAE FLANGE CLAMPS

WHPC

FLANGE CLAMPS TO SUIT CATERPILLAR STYLE FLANGE
CLAMPS TO SUIT CAT STYLE FLANGE COMPLETE WITH O RING/UNC BOLT KIT

Part Number	Nominal Flange size (T)	Dash Size	Flange Diameter (mm)	Bolt Hole Spacing (mm)	Kit Includes
WHPC-12	3/4	12	41	50.8	O-ring-spring washers-bolts
WHPC-16	1	16	48	57.15	O-ring-spring washers-bolts
WHPC-20	1.1/4	20	54	66	O-ring-spring washers-bolts
WHPC-24	1.1/2	24	64	79.5	O-ring-spring washers-bolts
WHPC-32	2	32	79	96.8	O-ring-spring washers-bolts

BK

SAE CODE 61 IMPERIAL BOLT KIT
COMES WITH O-RING CAP SCREWS AND WASHERS

Part Number	Nominal SAE Flange Size	Imperial bolts
BK-08	1/2	5/16x1.1/4
BK-12	3/4	3/8x1.1/4
BK-16	1	3/8x1.1/4
BK-20	1.1/4	7/16x1.1/2
BK-24	1.1/2	1/2x1.1/2
BK-32	2	1/2x1.1/2

BKM

SAE CODE 61 METRIC BOLT KIT
COMES WITH O-RING CAP SCREWS AND WASHERS

Part Number	Nominal SAE Flange Size	Metric bolts
BKM-08	1/2	M8x30
BKM-12	3/4	M10x35
BKM-16	1	M10x35
BKM-20	1.1/4	M10x45
BKM-24	1.1/2	M12x45
BKM-32	2	M12x45

BKH

SAE CODE 62 IMPERIAL BOLT KIT
COMES WITH O-RING CAP SCREWS AND WASHERS

Part Number	Nominal SAE Flange Size	Imperial bolts
BKH-08	1/2	5/16x1.1/4
BKH-12	3/4	3/8x1.1/2
BKH-16	1	7/16x1.3/4
BKH-20	1.1/4	1/2x1.3/4
BKH-24	1.1/2	5/8x2
BKH-32	2	3/4x2.1/2

BKMH

SAE CODE 62 METRIC BOLT KIT
COMES WITH O-RING CAP SCREWS AND WASHERS

Part Number	Nominal SAE Flange Size	Metric bolts
BKMH-08	1/2	M8x35
BKMH-12	3/4	M10x35
BKMH-16	1	M12x45
BKMH-20	1.1/4	M14x50
BKMH-24	1.1/2	M16x55
BKMH-32	2	M20x65

REPLACEMENT SEALS

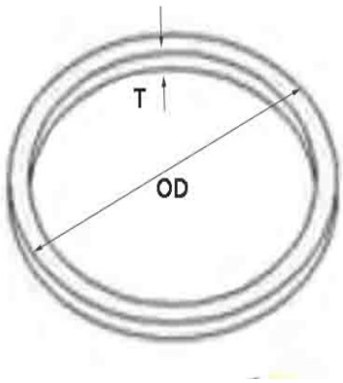
D

BONDED SEAL
SELF CENTERING BONDED (DOWTY) SEAL

Part Number	Internal dimension - mm	Suits thread
D-02	10.4	1/8-28 BSPP
D-04	13.7	1/4-19 BSPP
D-06	17.3	3/8-19 BSPP
D-08	21.5	1/2-14 BSPP
D-12	27.1	3/4-14 BSPP
D-16	33.9	1-11 BSPP
D-20	42.9	1.1/4-11 BSPP
D-24	48.4	1.1/2-11 BSPP
D-32	60.6	2-11 BSPP
D-40	76.1	2 1/2-11
D-M8	8	M8
D-M10	10	M10
D-M12	12	M12
D-M14	14	M14
D-M16	16	M16
D-M18	18	M18
D-M20	20	M20
D-M22	22	M22
D-M24	24	M24
D-M26	26	M26
D-M27	27	M27
D-M30	30	M30
D-M33	33	M33
D-M42	42	M42
D-M48	48	M48

RSB

BSP STUD STEEL RING
BSP STUD O-RING STEEL RETAINING RING



Part Number	Suits BSPP Male thread	Thickness - mm	Ring O.D - mm
RSB-02	1/8-28	1.5	14.9
RSB-04	1/4-19	1.5	20.2
RSB-06	3/8-19	1.6	23.9
RSB-08	1/2-14	1.7	28.7
RSB-12	3/4-14	1.8	35
RSB-16	1-11	2.3	44.4
RSB-20	1.1/4-11	2.3	54.8
RSB-24	1.1/2-11	2.3	56.9

FTS

FLARETITE SEAL
JIC FLARE MALE FLARETITE CLIP ON SEAL

Part Number	Suits JIC Male thread
FTS37-07	7/16-20
FTS37-09	9/16-18
FTS37-12	3/4-16
FTS37-14	7/8-14
FTS37-17	1.1/16-12
FTS37-21	1.5/16-12
FTS37-26	1.5/8-12

IP

CATERPILAR STYLE D-RING SEAL
D-SECTION RING SUIT CATERPILLAR STYLE

Part Number	Suits Caterpillar nominal size	Flange Diameter - mm	Seal Thickness - mm	Seal I.D - mm
1P-3700	1/2	31.8	5	19
1P-3702	3/4	41.3	5	25.4
1P-3703	1	47.6	5	31.9
1P-3704	1.1/4	54	5	38.2
1P-3705	1.1/2	63.5	5	44.7
1P-3709	2	79.4	5	63.9

Y

SAE FLANGE O-RING
SAE CODE 61 & CODE 62 FLANGE NITRILE O-RING

- Y-10 JIS KOMATSU STYLE FLANGE

Part Number	Suits SAE Flange Nominal Size	Seal Thickness - mm	Seal I.D - mm
Y-08	1/2	3.6	18.5
Y-10	5/8*	3.6	21.8
Y-12	3/4	3.6	24.9
Y-16	1	3.6	33
Y-20	1.1/4	3.6	37.6
Y-24	1.1/2	3.6	47.2
Y-32	2	3.6	56.6
Y-40	2.1/2	3.6	69.3
Y-48	3	3.6	85.7

Z

ORFS O-RING
ORFS MALE NITRILE O-RING

Part Number	Suits ORFS Male Thread	Seal Thickness - mm	Seal I.D - mm
Z-09	9/16-18	1.8	8.9
Z-11	11/16-16	1.8	10.2
Z-13	13/16-16	1.8	12.4
Z-16	1-14	1.8	15.6
Z-19	1.3/16-12	1.8	19.8
Z-23	1.7/16-12	1.8	24.4
Z-27	1.11/16-12	1.8	29.9
Z-32	2-12	1.8	37.8

X

UNO STUD O-RING
UNO STUD NITRILE O-RING

Part Number	Suits UNF Male Thread	Seal Thickness - mm	Seal I.D - mm
X-07	7/16-20	1.8	8.9
X-08	1/2-20	1.8	10.5
X-09	9/16-18	2	11.9
X-12	3/4-16	2.2	16.4
X-14	7/8-14	2.5	19.2
X-17	1.1/16-12	3	23.5
X-19	1.3/16-12	3	26.6
X-21	1.5/16-12	3	29.7
X-26	1.5/8-12	3	37.5
X-30	1.7/8-12	3	43.7
X-40	2.1/2-12	3	59.4

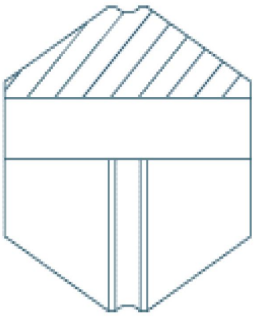
YU

POLYURETHANE U SEALS FOR SAE FLANGES
POLYURETHANE SEAL TO SUIT CODE 61 & 62 SAE FLANGES

Part Number	Suits SAE Flange Nominal Size	External diameter - mm	Seal Thickness - mm (T)	Seal width-mm (S)
YU-12	3/4	31.8	3.4	3.8
YU-16	1	39.6	3.4	3.8
YU-20	1.1/4	44.5	3.4	3.8
YU-24	1.1/2	53.8	3.4	3.8
YU-32	2	63.4	3.4	3.8

JBA

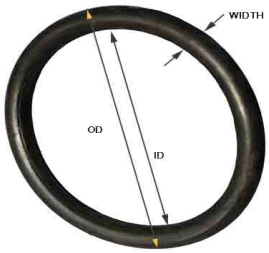
JIS ADAPTOR
JIS SEALING ADAPTOR CONVERT FROM BSPP



Part Number	Description	Size
JBA-04	BSP to JIS 60° double cone con	1/4
JBA-06	BSP to JIS 60° double cone con	3/8
JBA-08	BSP to JIS 60° double cone con	1/2
JBA-12	BSP to JIS 60° double cone con	3/4
JBA-16	BSP to JIS 60° double cone con	1

OSM

O RING
SUIT METRIC HOSETAILS



Part Number	O'ring I.D.	O'ring O.D.	O'ring Width
OSM-6L/6S	4	7	1.5
OSM-8L/8S	6	9	1.5
OSM-10L/10S	7.5	10.5	1.5
OSM-12L/12S	9	12	1.5
OSM-14S	10	14	2
OSM-15L/16S	12	16	2
OSM-18L	15	19	2
OSM-20S	16.3	21.1	2.4
OSM-22L	20	24	2
OSM-25S	20.3	25.1	2.4
OSM-30S	25.3	30.1	2.4
OSM-28L	26	30	2
OSM-35L	32	37	2.5
OSM-38S	33.3	38.1	2.4
OSM-42L	38	43	2.5

OR

O RING FOR BSPP POSITIONAL
O-RING ON BSPP POSITIONAL MALE

Part Number	Description	Size
OR-V02	Seal for BSPP ORING port	1/8
OR-V04	Seal for BSPP ORING port	1/4
OR-V06	Seal for BSPP ORING port	3/8
OR-V08	Seal for BSPP ORING port	1/2
OR-V12	Seal for BSPP ORING port	3/4
OR-V16	Seal for BSPP ORING port	1
OR-V20	Seal for BSPP ORING port	1 1/4
OR-V24	Seal for BSPP ORING port	1 1/2

RKSJ

SWIVEL JOINT REPAIR KIT
VITON SEALS

- Suitable for Hydraulics Inc Swivels only

Part Number	Body type	Material
RKSJ-S6V	Straight	Viton
RKSJ-S8V	Straight	Viton
RKSJ-S16V	Straight	Viton
RKSJ-9S6V	90 degree	Viton
RKSJ-9S8V	90 degree	Viton
RKSJ-9S12V	90 degree	Viton
RKSJ-9S16V	90 degree	Viton

PROJECTILE CLEANING

CT-C

TUBE/HOSE CLEANING PROJECTILES - COUPLING
FOAM PROJECTILES FOR PNEUMATIC CLEANING SYSTEMS

Part Number	Nominal O.D - mm	Hose/Tube min I.D - mm	Hose/Tube min I.D - inches	Hose/Tube max I.D - mm	Hose/Tube max I.D - inches	Standard pack quantity
CT-C07	7	5.26	0.21	6.48	0.26	100
CT-C10	10	7.52	0.30	8.70	0.34	100
CT-C12	12	9.02	0.36	10.43	0.41	100
CT-C16	16	12.03	0.47	13.91	0.55	100
CT-C20	20	15.04	0.59	17.39	0.68	100
CT-C22	22	16.54	0.65	19.13	0.75	100
CT-C33	33	24.81	0.98	28.70	1.13	40
CT-C40	40	30.08	1.18	34.78	1.37	30
CT-C50	50	37.59	1.48	43.48	1.71	20
CT-C60	60	45.11	1.78	52.17	2.05	20

CT-S

TUBE/HOSE CLEANING PROJECTILES - HOSE FOAM PROJECTILES FOR PNEUMATIC CLEANING SYSTEMS

Part Number	Nominal O.D - mm	Hose/Tube min I.D - mm	Hose/Tube min I.D - inches	Hose/Tube max I.D - mm	Hose/Tube max I.D - inches	Standard pack quantity
CT-S07	7	5.26	0.21	6.48	0.26	100
CT-S12	12	9.02	0.36	10.43	0.41	100
CT-S14	14	10.53	0.41	12.17	0.48	100
CT-S16	16	12.03	0.47	13.91	0.55	100
CT-S18	18	13.53	0.53	15.65	0.62	100
CT-S20	20	15.04	0.59	17.39	0.68	100
CT-S22	22	16.54	0.65	19.13	0.75	100
CT-S26	26	19.55	0.77	22.61	0.89	50
CT-S33	33	24.81	0.98	28.70	1.13	40
CT-S40	40	30.08	1.18	34.78	1.37	30
CT-S50	50	37.59	1.48	43.48	1.71	20
CT-S60	60	45.11	1.78	52.17	2.05	20

CT-A

TUBE/HOSE CLEANING PROJECTILES - ABRASIVE FOAM PROJECTILES FOR PNEUMATIC CLEANING SYSTEMS

Part Number	Nominal O.D - mm	Hose/Tube min I.D - mm	Hose/Tube min I.D - inches	Hose/Tube max I.D - mm	Hose/Tube max I.D - inches	Standard pack quantity
CT-A07	7	5.26	0.21	6.48	0.26	100
CT-A10	10	7.52	0.30	8.70	0.34	100
CT-A12	12	9.02	0.36	10.43	0.41	100
CT-A14	14	10.53	0.41	12.17	0.48	100
CT-A18	18	13.53	0.53	15.65	0.62	100
CT-A22	22	16.54	0.65	19.13	0.75	100
CT-A26	26	19.55	0.77	22.61	0.89	50
CT-A33	33	24.81	0.98	28.70	1.13	40
CT-A40	40	30.08	1.18	34.78	1.37	30
CT-A50	50	37.59	1.48	43.48	1.71	20
CT-A60	60	45.11	1.78	52.17	2.05	20

PCK-MULTI

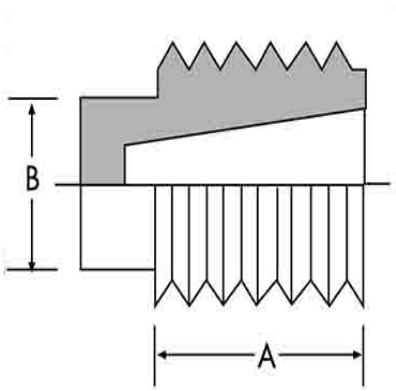
PROJECTILE CLEANING KIT
PROJECTILE LAUNCHER AND NOZZLES IN CASE

Part Number	Height (case closed)	Width - mm	Depth - mm	Weight
PCK-MULTI	150	470	350	5kg

THREAD PROTECTION

P-B

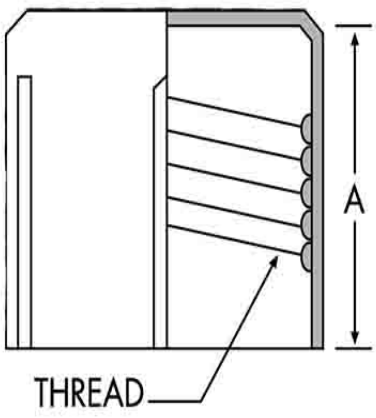
MALE BSP PLUG (PLASTIC)
PLASTIC SCREWED PROTECTIVE BSP PLUG



Part Number	BSPP Male Thread (A)	Thread - L1	Overall L2 - mm	Diameter CH1 - mm
P-B02	1/8-28	11.1	17.1	7.1
P-B04	1/4-19	11.9	17.9	7.9
P-B06	3/8-19	14.3	20.3	11.1
P-B08	1/2-14	13.5	19.5	12.7
P-B12	3/4-14	16.7	22.7	17.5
P-B16	1-11	19.8	25.8	22.2

P-C

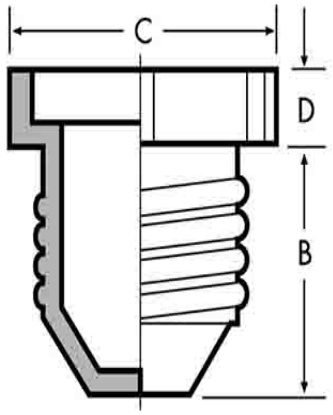
FEMALE BSP CAP (PLASTIC)
PLASTIC SCREWED PROTECTIVE BSP CAP



Part Number	BSPP Female Thread (A)	Overall L1 - mm
P-C02	1/8-28	10
P-C04	1/4-19	10.5
P-C06	3/8-19	15.5
P-C08	1/2-14	21.2
P-C12	3/4-14	22
P-C16	1-11	26

P-G

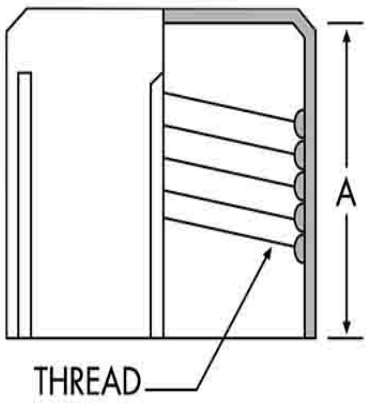
MALE JIC PLUG (PLASTIC)
PLASTIC SCREWED PROTECTIVE JIC PLUG



Part Number	JIC Male thread (A)	Thread - L1	Head - L2	Diameter CH1 - mm
P-G07	7/16-20	13.5	4.83	15.75
P-G09	9/16-18	12.7	6.35	20.57
P-G12	3/4-16	19.05	6.35	23.88
P-G14	7/8-14	22.1	6.35	26.93
P-G17	1.1/16-12	22.61	6.35	31.75
P-G21	1.5/16-12	23.6	6.35	38.1

P-J

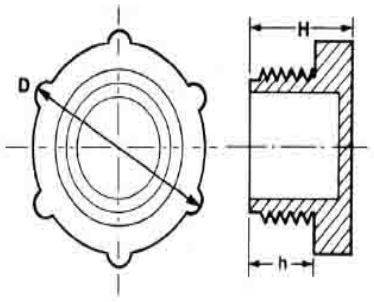
FEMALE JIC CAP (PLASTIC)
PLASTIC SCREWED PROTECTIVE JIC CAP



Part Number	JIC Female thread (A)	Overall L1 - mm
P-J07	7/16-20	11.94
P-J09	9/16-18	13.46
P-J12	3/4-16	14.48
P-J14	7/8-14	17.27
P-J17	1.1/16-12	19.05
P-J21	1.5/16-12	21.34

P-R

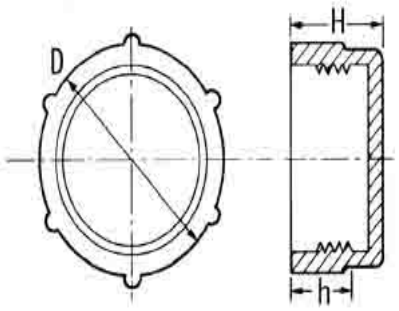
MALE ORFS PLUG (PLASTIC)
PLASTIC SCREWED PROTECTIVE ORFS PLUG



Part Number	UNF Male Thread (A)	Thread - L1	Head - L2	Diameter CH1 - mm
P-R09	9/16-18	12.2	6.35	17.3
P-R11	11/16-16	11.2	6.35	22.1
P-R13	13/16-16	12.7	6.35	23.9
P-R16	1-14	15	6.35	29.5
P-R19	1.3/16-12	16	6.35	33.8
P-R23	1.7/16-12	19	6.35	41.4

P-T

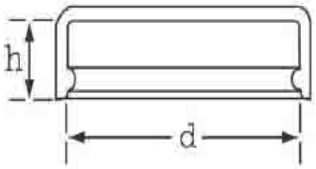
ORFS FEMALE CAP (PLASTIC)
PLASTIC SCREWED PROTECTIVE ORFS CAP



Part Number	UNF Female Thread (A)	Thread - L1	Head - L2	Diameter CH1 - mm
P-T09	9/16-18	9.5	13.7	16.5
P-T11	11/16-16	11	15	20
P-T13	13/16-16	9.3	15.3	23.3
P-T16	1-14	12	17.2	27.6
P-T19	1.3/16-12	13	19.1	32.7
P-T23	1.7/16-12	15.2	21.7	38.9

P-V

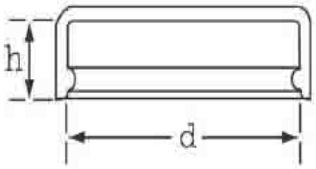
SAE FLANGE CAP (PLASTIC)
PLASTIC PROTECTIVE CAP TO SUIT SAE CODE 61



Part Number	Nominal SAE Flange Size	Internal diameter - mm	Internal depth - mm
P-V12	3/4	37	9
P-V16	1	44	10
P-V20	1.1/4	50	10
P-V24	1.1/2	60	10
P-V32	2	71	15

P-VH

SAE FLANGE CAP (PLASTIC)
PLASTIC PROTECTIVE CAP TO SUIT SAE CODE 62



Part Number	Nominal SAE Flange Size	Internal diameter - mm	Internal depth - mm
P-VH12	3/4	41.3	8.7
P-VH16	1	47.6	9.5
P-VH20	1.1/4	54	10.3
P-VH24	1.1/2	63.5	12.6
P-VH32	2	79.4	12.6

CABLE TIES

CT

CABLE TIE STD DUTY
BLACK STANDARD DUTY UV RESISTANT CABLE TIE

Part Number	Length-mm	Width-mm
CT200L	200	4.6
CT300L	300	4.8
CT430L	430	4.8

CT-H

CABLE TIE H/DUTY
BLACK HEAVY DUTY UV RESISTANT CABLE TIE

Part Number	Length-mm	Width-mm
CT300H	300	7.6
CT550H	550	8
CT800H	810	9

SPILL KITS

TSS

SPILL KITS
HYDRAULIC / GENERAL PURPOSE SPILL KIT

Part Number	Description	Height - mm	Width - mm	Depth - mm	Weight - kg
TSS120HDL	120L SPILL KIT	950	550	650	30
TSS32HDL	32L SPILL KIT	500	500	200	6

OA

SPILL KIT COMPONENTS
ORGANIC ABSORBENT

- ORGANIC ABSORBENT 50LTR

Part Number	Description
OA15L	ORGANIC ABSORBANT 15L
OA25OB	ORGANIC ABSORBANT 2.5L
OA50L	ORGANIC ABSORBANT 50L

SPARES

ACCESSORIES

DUST PAN AND BRUSH

Part Number	Description
X-BAT	WASTE BAGS & TIES 10PK
X-BIN240OR	MOBILE BIN 240L
X-CAP	WEATHER RESIST CAP
X-LIS	INSTRUCTION SHEET 21x30cm
X-ORG	PVC GLOVES LARGE
X-SCOOP	DUSTPAN & BRUSH

SUNDRIES

THREAD TAPE

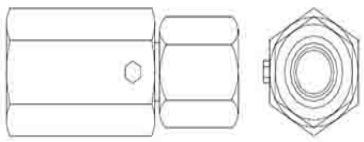
THREAD TAPE
ROLL OF THREAD TAPE

Part Number	Description
THREAD TAPE	12mm / 10mtr Standard Tape

INLINE SWIVELS

SJS-ACAC

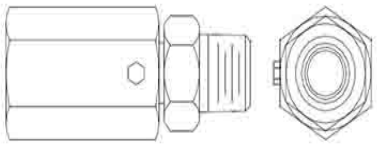
INLINE NPT F/F SWIVEL JOINT
INLINE FEMALE NPT x FEMALE NPT SWIVEL JOINT



Part Number	Body thread	Stem thread	Replacement Seal kit
SJS-ACAC0606V/H	3/8	3/8	RKSJ-S6V
SJS-ACAC0808V/H	1/2	1/2	RKSJ-S8V
SJS-ACAC1212V/H	3/4	3/4	RKSJ-S8V
SJS-ACAC1616V/H	1	1	RKSJ-S16V

SJS-ACL

INLINE NPT F/M SWIVEL JOINT
INLINE FEMALE NPT x MALE NPT SWIVEL JOINT



Part Number	Body thread	Stem thread	Replacement Seal kit
SJS-ACL0404V/H	1/4	1/4	RKSJ-S6V
SJS-ACL0606V/H	3/8	3/8	RKSJ-S6V
SJS-ACL0808V/H	1/2	1/2	RKSJ-S8V
SJS-ACL1212V/H	3/4	3/4	RKSJ-S8V
SJS-ACL1616V/H	1	1	RKSJ-S16V

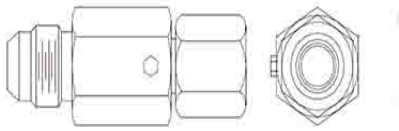
SJS-FB

INLINE BSPP x BSPP SWIVEL JOINT
INLINE BSPP MALE x FEMALE BSPP SWIVEL JOINT

Part Number	Body thread	Stem thread
SJS-FB0404/I	1/4	1/4
SJS-FB0606/I	3/8	3/8
SJS-FB0808/I	1/2	1/2
SJS-FB1212/I	3/4	3/4
SJS-FB1616/I	1	1

SJS-GAC

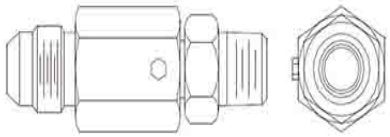
INLINE JIC x NPT SWIVEL JOINT
INLINE JIC MALE x NPT FEMALE SWIVEL JOINT



Part Number	Body thread	Stem thread	Replacement Seal kit
SJS-GAC0904V/H	9/16	1/4	RKSJ-S6V
SJS-GAC1206V/H	3/4	3/8	RKSJ-S6V
SJS-GAC1408V/H	7/8	1/2	RKSJ-S8V
SJS-GAC1712V/H	1.1/16	3/4	RKSJ-S8V
SJS-GAC2116V/H	1.5/16	1	RKSJ-S16V

SJS-GL

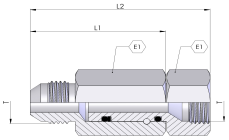
INLINE JIC x NPT SWIVEL JOINT
JIC MALE x NPT MALE SWIVEL JOINT



Part Number	Body thread	Stem thread	Replacement Seal kit
SJS-GL0904V/H	9/16	1/4	RKSJ-S6V
SJS-GL0906V/H	9/16	3/8	RKSJ-S6V
SJS-GL1206V/H	3/4	3/8	RKSJ-S6V
SJS-GL1408V/H	7/8	1/2	RKSJ-S8V
SJS-GL1712V/H	1.1/16	3/4	RKSJ-S8V
SJS-GL2116V/H	1.5/16	1	RKSJ-S16V

SJS-GF

INLINE JIC MALE X JIC FEMALE
JIC MALE X JIC FIXED FEMALE STRAIGHT SWIVEL

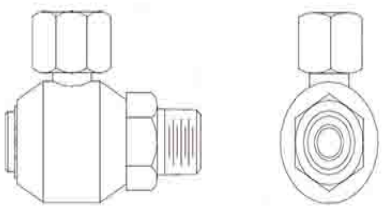


Part Number	Body thread	Stem thread	Seal kit
SJS-GJF0909V/H	9/16	9/16	RKSJ-9S6V
SJS-GJF1212V/H	3/4	3/4	RKSJ-9S6V
SJS-GJF1414V/H	7/8	7/8	RKSJ-9S8V
SJS-GJF1717V/H	1-1/16	1-1/16	RKSJ-9S12V
SJS-GJF2121V/H	1-5/16	1-5/16	RKSJ-9S16V

90 DEGREE SWIVELS

SJ90-ADL

NPSM x NPT MALE 90° SWIVEL JOINT
NPT SWIVEL NUT FEMALE x NPT MALE 90° SWIVEL JOINT



Part Number	Body thread	Stem thread	Replacement Seal kit
SJ90-ADL0404V/H	1/4	1/4	RKSJ-9S6V
SJ90-ADL0606V/H	3/8	3/8	RKSJ-9S6V
SJ90-ADL0808V/H	1/2	1/2	RKSJ-9S8V
SJ90-ADL1212V/H	3/4	3/4	RKSJ-9S12V
SJ90-ADL1616V/H	1	1	RKSJ-9S16V

SJ90-EA

BSPT x BSPT 90° SWIVEL JOINT
BSPT FEMALE x BSPT MALE 90° SWIVEL JOINT

Part Number	Body thread	Stem thread
SJ90-EA0404/F	1/4	1/4
SJ90-EA0606/F	3/8	3/8
SJ90-EA0808/F	1/2	1/2
SJ90-EA1212/F	3/4	3/4
SJ90-EA1616/F	1	1

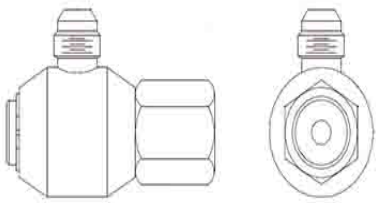
SJ90-FB

BSPT x BSPT 90° SWIVEL JOINT
BSPP MALE x FEMALE FIXED BSPP 90° SWIVEL JOINT

Part Number	Body thread	Stem thread
SJ90-FB0404/I	1/4	1/4
SJ90-FB0606/I	3/8	3/8
SJ90-FB0808/I	1/2	1/2
SJ90-FB1212/I	3/4	3/4
SJ90-FB1616/I	1	1

SJ90-GAC

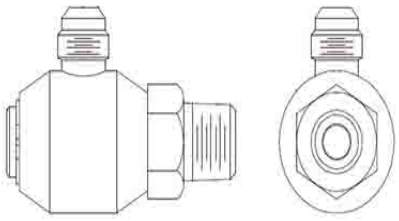
JIC x NPT 90° SWIVEL JOINT
JIC MALE x NPT FEMALE 90° SWIVEL JOINT



Part Number	Body thread	Stem thread	Replacement Seal kit
SJ90-GAC0904V/H	9/16	1/4	RKSJ-9S6V
SJ90-GAC0906V/H	9/16	3/8	RKSJ-9S6V
SJ90-GAC1206V/H	3/4	3/8	RKSJ-9S6V
SJ90-GAC1208V/H	3/4	1/2	RKSJ-9S8V
SJ90-GAC1408V/H	7/8	1/2	RKSJ-9S8V
SJ90-GAC1712V/H	1.1/16	3/4	RKSJ-9S12V
SJ90-GAC2116V/H	1.5/16	1	RKSJ-9S16V

SJ90-GL

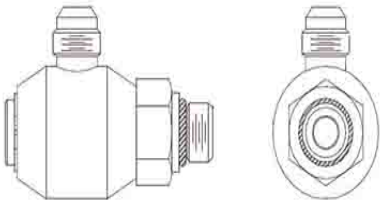
JIC x NPT 90° SWIVEL JOINT
JIC MALE x NPT MALE 90° SWIVEL JOINT



Part Number	Body thread	Stem thread	Replacement Seal kit
SJ90-GL0904V/H	9/16	1/4	RKSJ-9S6V
SJ90-GL0906V/H	9/16	3/8	RKSJ-9S6V
SJ90-GL1206V/H	3/4	3/8	RKSJ-9S6V
SJ90-GL1408V/H	7/8	1/2	RKSJ-9S8V
SJ90-GL1712V/H	1.1/16	3/4	RKSJ-9S12V
SJ90-GL2116V/H	1.5/16	1	RKSJ-9S16V

SJ90-GN

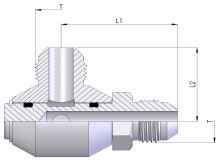
JIC x UNO 90° SWIVEL JOINT
JIC MALE x UNO MALE 90° SWIVEL JOINT



Part Number	Body thread	Stem thread	Replacement Seal kit
SJ90-GN0909V/H	9/16	9/16	RKSJ-9S6V
SJ90-GN0912V/H	9/16	3/4	RKSJ-9S6V
SJ90-GN1212V/H	3/4	3/4	RKSJ-9S6V
SJ90-GN1414V/H	7/8	7/8	RKSJ-9S8V
SJ90-GN1717V/H	1.1/16	1 1/16	RKSJ-9S12V
SJ90-GN2121V/H	1.5/16	1 5/16	RKSJ-9S16V

SJ90-GG

JIC MALE X JIC MALE
JIC 37° FLARE MALE X JIC 37° FLARE MALE 90°
ELBOW SWIVEL



Part Number	Body thread	Stem thread	Seal kit
SJ90-GG0909V/H	9/16	9/16	RKSJ-9S6V
SJ90-GG1212V/H	3/4	3/4	RKSJ-9S6V
SJ90-GG1414V/H	7/8	7/8	RKSJ-9S8V
SJ90-GG1717V/H	1-1/16	1-1/16	RKSJ-9S12V
SJ90-GG2121V/H	1-5/16	1-5/16	RKSJ-9S16V

LUBRICANTS

HYDRAULIC

HYDRAULIC OIL
HYDRAULIC OIL PREMIUM GRADE

Part Number	Size ltr	TYPE
OIL ISO 46 5LT	5	PREMIUM HYDRAULIC OIL
OIL ISO 46 20LT	20	PREMIUM HYDRAULIC OIL
OIL ISO 46 200LT	200	PREMIUM HYDRAULIC OIL
OIL ISO 68 5LT	5	PREMIUM HYDRAULIC OIL
OIL ISO 68 10LT	10	PREMIUM HYDRAULIC OIL
OIL ISO 68 20LT	20	PREMIUM HYDRAULIC OIL
OIL ISO 68 200LT	200	PREMIUM HYDRAULIC OIL

ATF

AUTOMATIC TRANSMISSION FLUID

Part Number	Size ltr	TYPE
OIL ATF 5LT	5	TRANSMISSION OIL ATF DX3

BRAKE CLEAN

HYDRAULINK BRAKE & INDUSTRIAL PARTS CLEANER
600ML

- Applications: Hydraulink Brake and Industrial Parts Cleaner quickly removes grease and oil. Components can often be cleaned without having to disassemble them. Hydraulink Brake and Industrial Parts Cleaner is non-corrosive, non-staining and evaporates quickly leaving no residue. Hydraulink Brake and Industrial Parts Cleaner can be used on brakes, industrial machinery, tools and workshop equipment.

Part Number	Size (Litre)
BRAKE CLEAN	0.6

PRESSURE WASH ACCESSORIES

PCK

KARCHER ADAPTOR
KARCHER PRESSURE WASH ADAPTOR

Part Number	Metric Female Thread (T)	Metric Male Thread (T)	BSPP Male Thread (A)	BSPP Female Thread (A)	Max Press - Bar	Max Pressure - Psi	Max Temp - Degree C
AKM-2204		M22-1.5	1/4-19		250	3600	160
PCKF-A-M2206	M22-1.5		3/8-19		250	3600	160
PCKF-E-M2206	M22-1.5			3/8-19	250	3600	160
PCKJ-M22		M22-1.5			280	4050	160
PCKM-A-M2206		M22-1.5	3/8-19		250	3600	160
PCKM-E-M2206		M22-1.5		3/8-19	250	3600	160

PCSW

INLINE SWIVEL
INLINE SWIVEL 3/8 M/F S/STEEL

Part Number	BSPP Male Thread (A)	BSPP Female Thread (A)	Max Press - Bar	Max Pressure - Psi	Max Temp - Degree C
PCSW-EA06B	3/8	3/8	250	3600	160
PCSW-EA06S	3/8	3/8	350	5100	160