Hydraulic Hose

Hydraulink®

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.

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.

Hydraulink Hose and Fittings

PRODUCT SELECTION

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 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

PRODUCT SELECTION

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.

Hydraulink Hose and Fittings

THREAD IDENTIFICATION

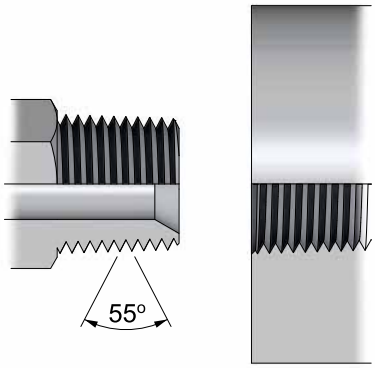
B.S.P.T. - BRITISH STANDARD PIPE TAPER

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*

Hydraulink Hose and Fittings

THREAD IDENTIFICATION

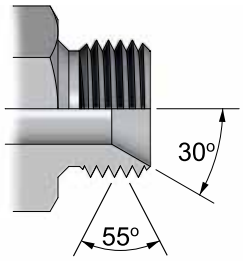
B.S.P.P. - BRITISH STANDARD PIPE PARALLEL

Thread Angle: 55°

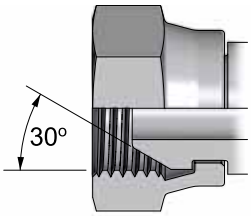
The British Standard Pipe Parallel (BSPP) male is typically coned 30° and will mate with either a BSPP swivel nut female or a BSPP female port.

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).



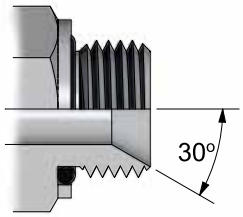
BSPP male



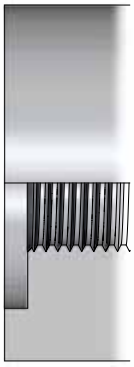
BSPP swivel nut female

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

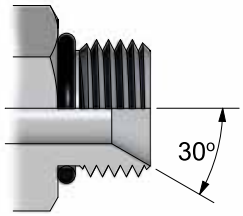
N.B. Torque values are nominal and supplied as a guide only.



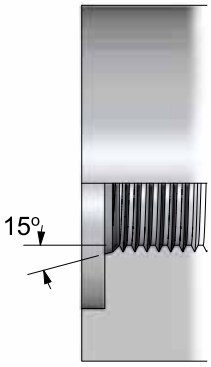
BSPP male with captive o-ring seal



BSPP female port (spot-faced)



BSPP male with o-ring seal



BSPP female port (chamfered)

Hydraulink Hose and Fittings

THREAD IDENTIFICATION

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

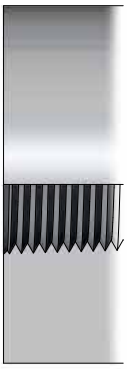
Taper: 1 in 16 by diameter.

Thread Angle: 60°

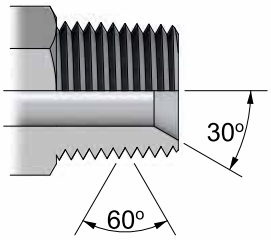
The National Pipe Taper Fuel (NPTF) male is coned 30° and will mate with the NPTF female port (taper), the National Pipe Straight Mechanical (NPSM) female (swivel nut female with 30° sealing cone), or the National Pipe Straight Fuel (NPSF) female port (parallel).

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

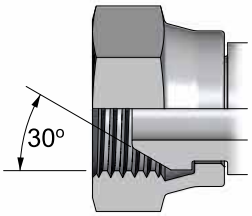
Thread Size & TPI	Male Thread O.D.	Female Thread I.D.	
	NPTF	NPTF	NPSF/SM
1/8-27	10.0	8.6	8.7
1/4-18	13.3	11.2	11.4
3/8-18	16.7	14.7	14.9
1/2-14	20.8	18.2	18.8
3/4-14	26.1	23.5	23.9
1-11.1/2	32.7	29.5	30.2
1.1/4-11.1/2	41.4	38.3	39.1
1.1/2-11.1/2	47.5	44.4	45
2-11.1/2	59.3	56.2	57



NPTF female port (taper)



NPTF male (taper)



NPSM swivel nut female

NPSF female port (parallel)

Hydraulink Hose and Fittings

THREAD IDENTIFICATION

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

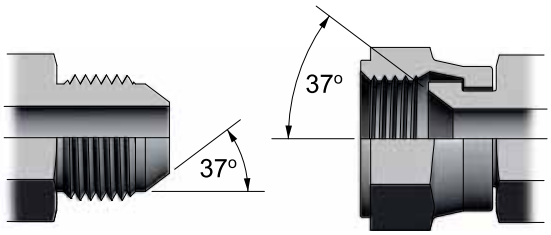
J.I.C. and U.N.“O”-Ring threads are both of the Unified National Form.

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.

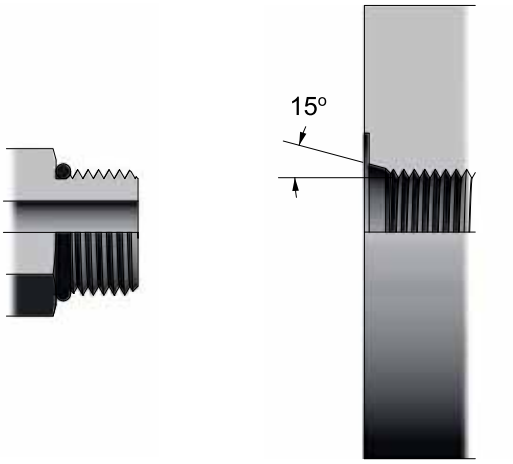
U.N.“O”-Ring refers to the thread type and “O”-Ring for sealing. The female U.N.O port has a chamfer to accept the o-ring.

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**



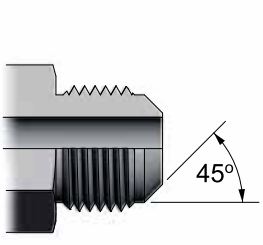
UNO male **UNO female port (chamfered)**

Hydraulink Hose and Fittings

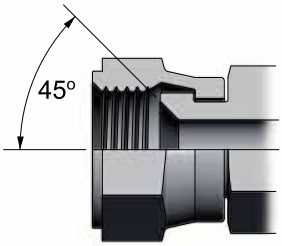
THREAD IDENTIFICATION

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



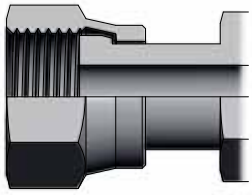
SAE swivel nut female

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.

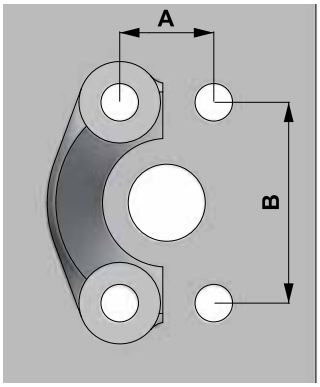
THREAD IDENTIFICATION

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

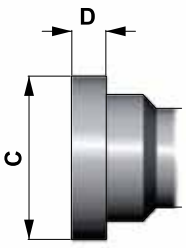
These connections utilise an “O”-Ring for sealing and are widely used for connecting to pump and motor parts as well as end terminations for pipe runs.

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.

Hydraulink Hose and Fittings

THREAD IDENTIFICATION

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

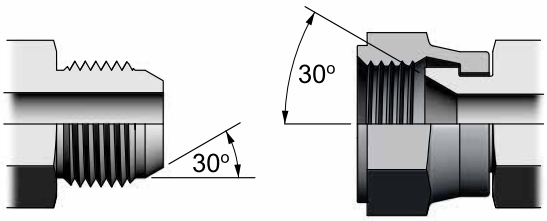
"O"-Ring Flanges:

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

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

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

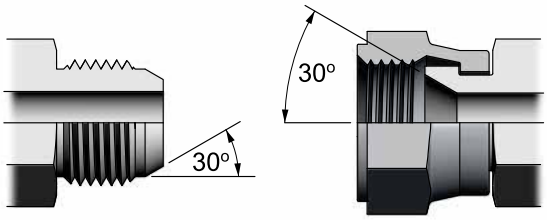
** denotes interchange sizes between JIS and Komatsu.*



Type F JIS male

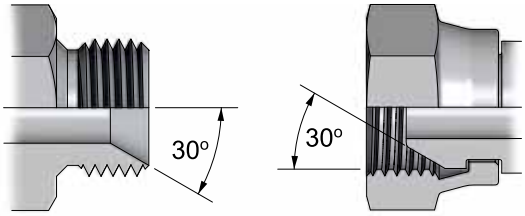
For thread data please refer to BSPP section

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

Hydraulink Hose and Fittings

THREAD IDENTIFICATION

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:

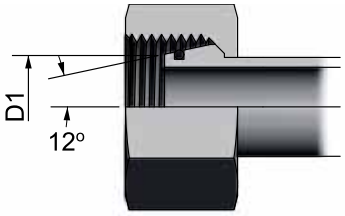
Series LL;	Extra Light, up to 100 bar
Series L;	Light up to 250 bar
Series S;	Heavy up to 640 bar

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.

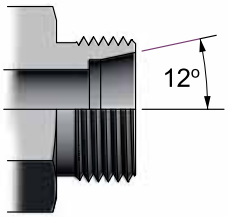
N.B: Rated coupling pressures are subject to the design pressures of the tube or hose being used.

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

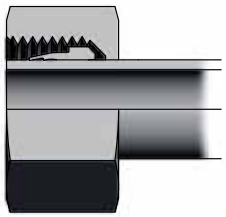
The male form will accept all three female styles shown (right).



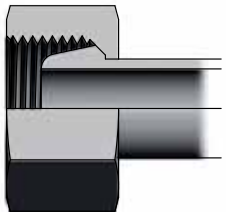
DIN 24° cone female with o-ring



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.*

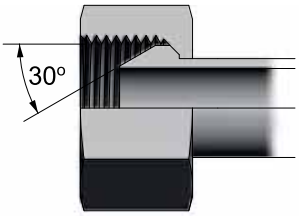
Hydraulink Hose and Fittings

THREAD IDENTIFICATION

D.I.N. METRICS 60° CONE SYSTEM

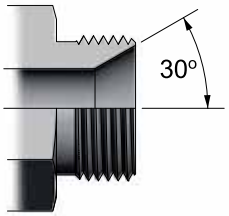
This series utilises a 60° cone seating angle and is used for the connection of hose assemblies and tube. It differs from the 24° series in that the threads are predominately 1.5mm pitch and there is no light or heavy pressure ranges.

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.

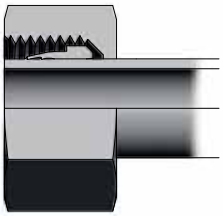


DIN 60° cone female

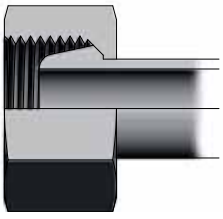
THREAD SPECIFICATIONS		
Thread O.D. & Pitch	Female Thread I.D.	Tube O.D.(mm)
M10-1.0	9.0	5
M12-1.5	10.5	6
M14-1.5	12.5	8
M16-1.5	14.5	10
M18-1.5	16.5	12
M22-1.5	20.5	15
M26-1.5	24.5	18
M30-1.5	28.5	22
M38-1.5	36.5	28
M45-1.5	43.5	35
M52-2.0	56.5	42



DIN 60° cone male



DIN cutiing ring and nut on tube

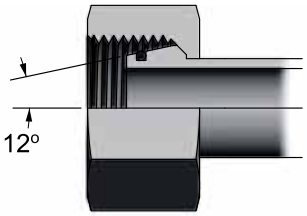


DIN female swivel nut with spherical seat

THREAD IDENTIFICATION

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

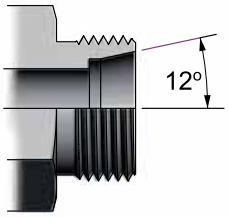
The I.S.O. series of couplings is similar to the D.I.N. light and heavy in function. The male has a 24° included angle sealing cone and a recessed counter bore for locating the tube when used in conjunction with a cutting ring and nut. The male will also accept a swivel nut female with either a cone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



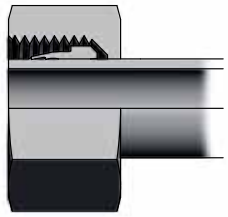
ISO (24° cone) female with o-ring

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

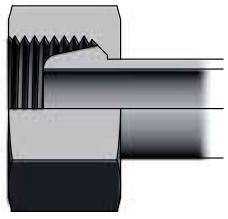
** Interchange with D.I.N. Light*
*** Interchange with D.I.N. Heavy*



ISO (24° cone) male



ISO cutting ring and nut on tube



ISO female swivel nut with spherical seat

Hydraulink Hose and Fittings

THREAD IDENTIFICATION

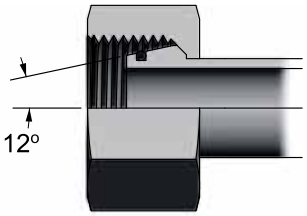
FRENCH METRICS (GAZ & MILLIMETRIQUE SERIES)

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.

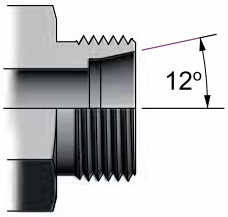
The Gaz and Millimetrique series are identical in all respects except for the O.D. of the tube:

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

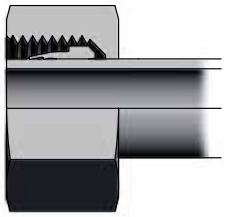


French 24° cone female with o-ring

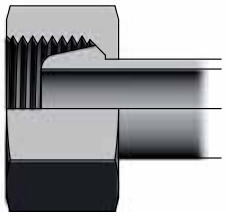
THREAD SPECIFICATIONS LIGHT (L) SERIES			
Thread O.D. & Pitch	Female Thread I.D.	Diameter GAZ	Diameter Millimetrique
M12-1.0	11.0	-	6
M14-1.5	12.5	-	8
M16-1.5	14.5	-	10
M18-1.5	16.5	-	12
M20-1.5	18.5	13.25	14
M22-1.5	20.5	-	15
M24-1.5	22.5	16.75	16
M27-1.5	25.5	-	18
M30-1.5	28.5	21.25	22
M33-1.5	31.5	-	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

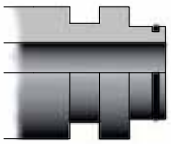
Hydraulink Hose and Fittings

THREAD IDENTIFICATION

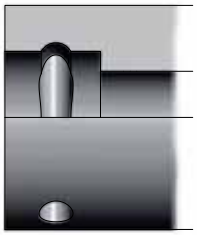
STAPLE-LOK COUPLINGS

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.

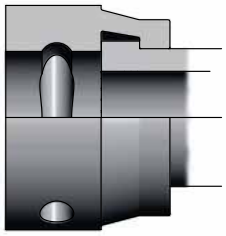


Staple-lok male



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

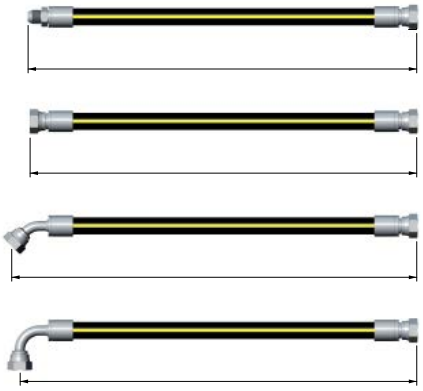
Hydraulink Hose and Fittings

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.



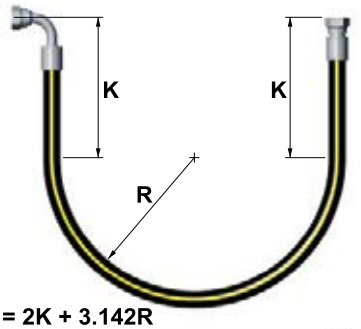
BENT HOSE ASSEMBLY LENGTH

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”.

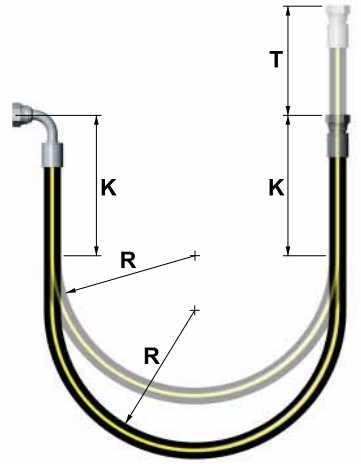
Hose I.D.	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	1.1/4	1.1/2	2
K (mm)	110	130	130	160	180	210	210	260	260	260	310



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

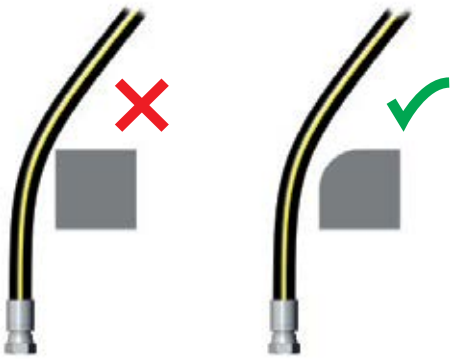
Place hose assembly in line of sight position with coupling furthest away facing upwards. Determine off-set angle by comparing relative position of closest coupling to the far coupling in a clockwise direction.

Hydraulink Hose and Fittings

HOSE INSTALLATION RECOMMENDATIONS

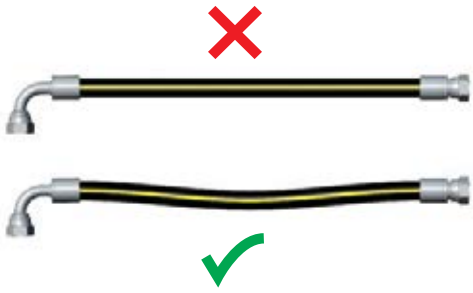
1. Hose Protection
Protect the hose cover from damage such as abrasion, erosion, snagging, and cutting. Where possible, route hose to reduce abrasion from hose rubbing other hose or objects that may abrade it (Fig. 1). Special abrasion-resistant hoses and hose guards are available for additional protection.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

Fig. 1



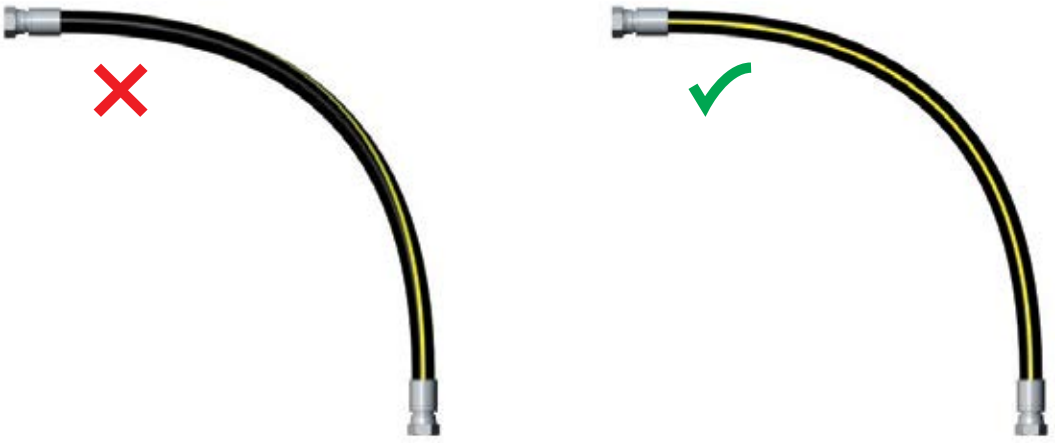
2. Hose And Machine Tolerances
Avoid tension on hose assemblies and adaptors. Design hose to allow for changes in length due to machine motion and tolerances (Fig. 2). Failure to do so may result in seal or assembly failure.

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

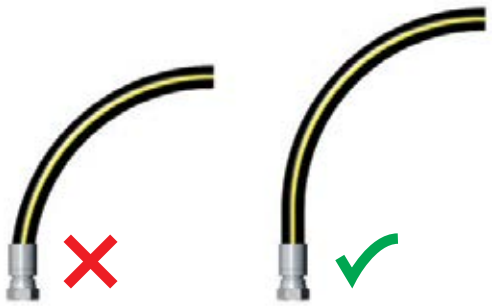


Fig. 4b

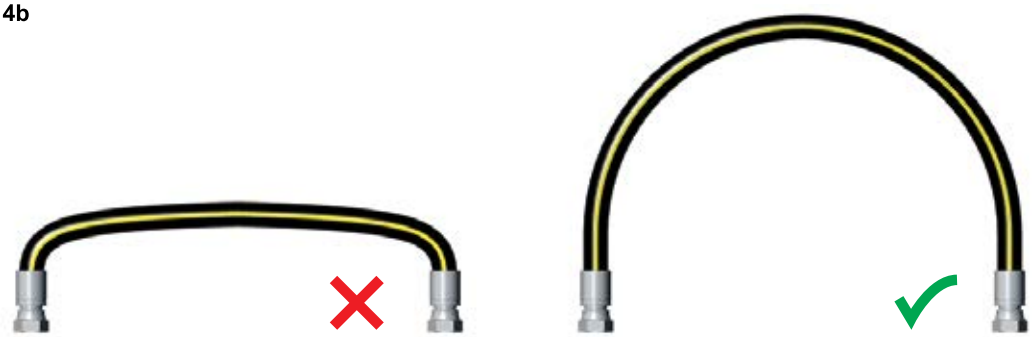


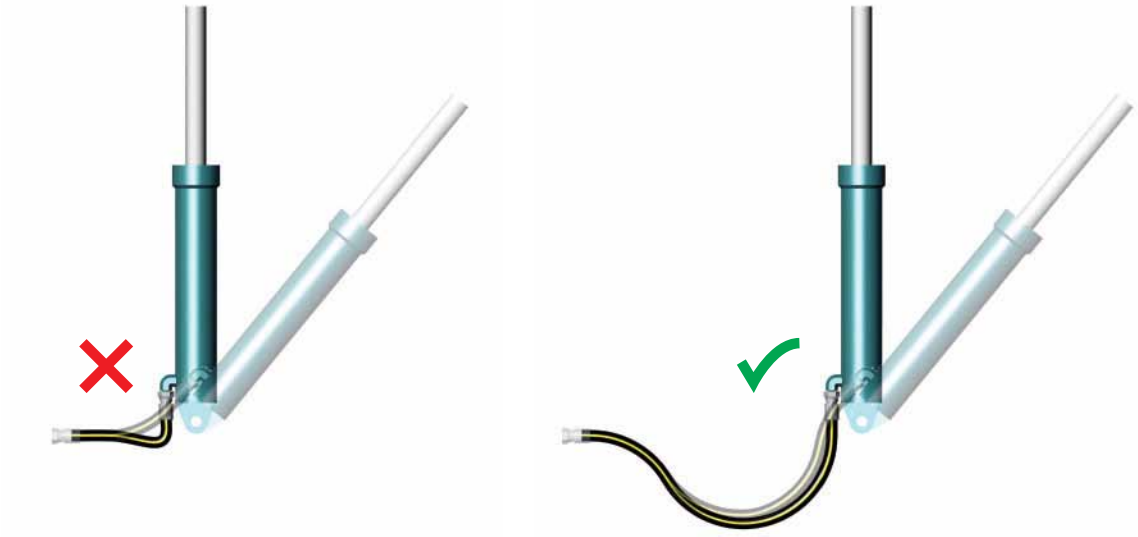
Fig. 4c

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



HIGH PRESSURE HOSE

G2

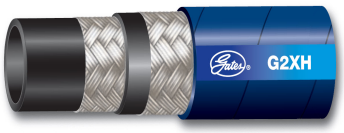
TWO WIRE BRAID HOSE
BRAIDED WIRE REINFORCED HOSE - SAE 100R2
Type AT

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High pressure hydraulic applications.
- Internal tube: Nitrile based.
- Reinforcement: Two braids of high tensile steel wire.
- External cover: NBR/PVC based. MSHA approved.
- Temperature range: -40°C to +100°C constant and +121°C intermittent.
- Standards: SAE 100R2AT. SAE 100R2S. EN 853 2SN. ISO 1436.
- Characteristics: G2 hose is compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols and vegetable oils as well as petroleum-based fluids.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
6G2	06	10	3/8	18.8	4800	330	19200	1320	130
20G2	20	31	1.1/4	47.5	1825	125	7300	500	420

G2XH

HIGH TEMP. TWO WIRE BRAID HOSE
BRAIDED WIRE REINFORCED HOSE - SAE 100R2
Type S



- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High temperature, high pressure hydraulic applications
- Internal tube: CPE based.
- Reinforcement: Two braids of high tensile steel wire.
- External cover: CSM based. MSHA approved. Blue.
- Temperature range: -40°C to +150°C.
- Standards: EN 853 2SN. SAE 100R2S - high temperature. ISO 1436.
- Characteristics: G2XH hose is compatible with biodegradable hydraulic fluids like synthetic esters, and vegetable oils as well as petroleum-based fluids.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4G2XH	04	6	1/4	15.0	6000	420	24000	1680	100
6G2XH	06	10	3/8	18.8	5000	350	20000	1400	130
8G2XH	08	12	1/2	21.8	4250	290	17000	1160	180
10G2XH	10	16	5/8	24.9	3625	250	14500	1000	200
12G2XH	12	19	3/4	29.0	3100	215	12400	860	240
16G2XH	16	25	1	37.6	2500	170	10000	680	300

M2T

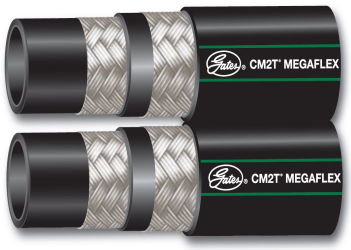
TWO WIRE BRAID SLIMLINE HOSE
BRAIDED WIRE REINFORCED HOSE - SAE 100R16

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High pressure hydraulic applications. Easy to route and to install in tight areas.
- Internal tube: Nitrile based.
- Reinforcement: Two braids of high tensile steel wire.
- External cover: NBR/PVC based. MSHA approved. Dual green stripe layline.
- Temperature range: -40°C to +100°C.
- Standards: Gates proprietary. Exceeds SAE 100R16.
- Characteristics: M2T hose has smaller exterior dimensions and significantly tighter bend radius than specified in SAE 100R16.
- Optional: M2T-MTF: the range of M2T is also available with the Gates special MegaTuff™ cover which offers 300 times the abrasion resistance of the standard cover as per ISO 6945, superior ozone/weathering resistance - please contact Hydraulink for further details and availability.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4M2T	04	6	1/4	13.7	6000	420	24000	1680	50
6M2T	06	10	3/8	17.5	5000	350	20000	1400	65
8M2T	08	12	1/2	20.6	4300	300	7200	1200	90
10M2T	10	16	5/8	24.1	3800	260	15200	1040	100
12M2T	12	19	3/4	27.9	3500	240	14000	960	120
16M2T	16	25	1	35.1	2500	140	10000	560	680

CM2T

TWINLINE TWO WIRE BRAID HOSE
TWINLINE BRAIDED WIRE REINFORCED HOSE - SAE 100R16



- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High pressure and return lines such as boom arm and forklift applications.
- Internal tube: Nitrile based.
- Reinforcement: Two braids of high tensile steel wire.
- External cover: NBR/PVC based. MSHA approved. Dual green stripe layline.
- Temperature range: -40°C to +100°C.
- Standards: Gates proprietary. EN 857 2SC. ISO 1436.
- Characteristics: No need to use clamps as the two lines are vulcanised together to form one single unit. CM2T twin hose is compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols and vegetable oils as well as petroleum-based fluids.
- Gates recommends minimum split length of 250 mm depending on the application. Do not expose hose reinforcement when splitting hoses.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
6CM2T	06	10	3/8	17.7	4800	330	19200	1320	90
8CM2T	08	12	1/2	20.8	4000	275	16000	1100	130

M4K-XTF

TWO WIRE BRAID HOSE
BRAIDED WIRE REINFORCED HOSE - 4000psi

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High pressure hydraulic applications. Easy to route and to install in tight areas.
- Internal tube: Nitrile based.
- Reinforcement: Two braids of high tensile steel wire.
- External cover: NBR/PVC based. MSHA approved.
- Temperature range: -40°C to +100°C constant and +121°C intermittent.
- Standards: SAE 100R19. ISO 11237-1. Meets or exceeds EN 857 2SC performance requirements.
- Characteristics: Alternative to spiral hoses in high pressure lines where flexibility is required. M4K hose is compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols and vegetable oils as well as petroleum-based fluids.
- Special item - please contact Hydraulink for further details and availability.
- -XTF (XtraTuff™) hose lasts up to 25 times longer than standard hose during hose-to-hose and hose-to-metal abrasion tests per ISO 6945.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
6M4K-XTF	06	10	3/8	17.5	4000	280	16000	1120	65
8M4K-XTF	08	12	1/2	20.8	4000	280	16000	1120	90
10M4K-XTF	10	16	5/8	25.0	4000	280	16000	1120	100

M3K

ONE/TWO WIRE BRAID HOSE
BRAIDED WIRE REINFORCED HOSE - SAE 100R17

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High pressure hydraulic applications. Easy to route and to install in tight areas.
- Internal tube: Nitrile based.
- Reinforcement: -4, -5, -6, -8: one braid of high tensile steel wire; -10, -12, -16: two braids of high tensile steel wire.
- External cover: NBR/PVC based. MSHA approved.
- Temperature range: -40°C to +100°C constant and +121°C intermittent.
- Standards: SAE 100R17. ISO 11237-1. Meets or exceeds EN 857 1SC/2SC performance requirements.
- Characteristics: M3K hose is compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols and vegetable oils as well as petroleum-based fluids.
- Optional: M3K-XTF: the range of M3K is also available with the Gates special XtraTuff™ cover which offers 25 times the abrasion resistance of the standard cover as per ISO 6945, superior ozone/weathering resistance - please contact Hydraulink for further details and availability.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4M3K	04	6	1/4	12.2	3000	210	12000	840	50
6M3K	06	10	3/8	16.0	3000	210	12000	840	65
8M3K	08	12	1/2	20.2	3000	210	12000	840	90
10M3K	10	16	5/8	25.2	3000	210	12000	840	100
12M3K	12	19	3/4	29.0	3000	210	12000	840	120
16M3K	16	25	1	37.7	3000	210	12000	840	150

J2AT

TWO WIRE BRAID JACK HOSE
BRAIDED WIRE REINFORCED JACK HOSE

- Due to manufacturing tolerances, the external dimension is an average.
- Static (non-impulse) pressure rating for hydraulic jack applications only.
- Recommended for: Hydraulic jack applications. Meets Material Handling Institute specification IJ 100 for hydraulic hose and assemblies used with jacking systems.
- Internal tube: Nitrile based.
- Reinforcement: Two braids of high tensile steel wire.
- External cover: NBR/PVC based. MSHA approved.
- Temperature range: -40°C to +49°C constant.
- Standards: Gates proprietary.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4J2AT	04	6	1/4	15.0	10000	690	20000	1380	100
6J2AT	06	10	3/8	18.8	10000	690	20000	1380	130

MEDIUM PRESSURE HOSE

G1

ONE WIRE BRAID HOSE
BRAIDED WIRE REINFORCED HOSE - SAE 100R1
Type AT

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Medium pressure hydraulic applications.
- Internal tube: Nitrile based.
- Reinforcement: One braid of high tensile steel wire.
- External cover: NBR/PVC based. MSHA approved.
- Temperature range: -40°C to +100°C constant and +121°C intermittent.
- Standards: SAE 100R1AT. SAE 100R1S. EN 853 1SN. ISO 1436.
- Characteristics: G1 hose is compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols and vegetable oils as well as petroleum-based fluids.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
3G1	03	5	3/16	11.9	3625	250	14500	1000	100
4G1	04	6	1/4	13.5	3275	225	13100	900	100
6G1	06	10	3/8	17.5	2600	180	10400	720	130
8G1	08	12	1/2	20.8	2325	160	9300	640	180
10G1	10	16	5/8	23.9	1900	130	7600	520	200
12G1	12	19	3/4	27.9	1525	105	6100	420	240
16G1	16	25	1	35.8	1275	90	5100	360	300
20G1	20	31	1.1/4	43.4	925	63	3700	252	420

G1H

HIGH TEMP. ONE WIRE BRAID HOSE
BRAIDED WIRE REINFORCED HOSE - SAE 100R1
Type AT

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High temperature, medium pressure hydraulic applications.
- Internal tube: Nitrile based.
- Reinforcement: One braid of high tensile steel wire.
- External cover: CSM based. MSHA approved.
- Temperature range: -40°C to +135°C constant and +150°C intermittent.
- Standards: SAE 100R1AT. SAE 100R1S. EN 853 1SN. ISO 1436.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4G1H	4	6	3/8	13.5	2750	190	11000	758	102
6G1H	6	10	5/8	17.5	2250	155	9000	620	127
8G1H	8	12	3/4	20.3	2000	138	8000	552	178
10G1H	10	16	5/8	23.9	1500	104	6000	414	200
12G1H	12	19	3/4	27.9	1250	86	5000	345	240
16G1H	16	25	1	35.8	1000	69	4000	276	300
20G1H	20	31	1.1/4	43.4	925	63	3700	252	420
24G1H	24	38	1.1/2	49.8	725	50	2900	200	500

ACR

HIGH TEMP. OIL/AIR RETURN BRAIDED WIRE REINFORCED HOSE - FABRIC COVER

- Due to manufacturing tolerances, the external dimension is an average.
- For -24 and 32 sizes please see alternative ACP series.
- Recommended for: Pressurised hot oil return lines and air compressor lines, power steering, tilt cab cylinders, engine and transmission coolant and filtration lines.
- Internal tube: CPE based.
- Reinforcement: One braid of high tensile steel wire.
- External cover: Oil resistant textile braid, impregnated with synthetic rubber. MSHA approved.
- Temperature range: -40°C to +150°C. Phosphate ester fluids: -40°C to +100°C.
- Air: -40°C to +121°C.
- Vacuum range: To 30In.Hg (760mm.Hg)
- Standards: Gates proprietary. Meets the requirements of SAE J1019 performance specifications for use in high temperature transmission oil systems and high temperature lubrication oil systems using petroleum based oils.
- Characteristics: Very good resistance to weathering and ozone. ACR hose is compatible with a variety of fluids such as hydraulic oil, phosphate esters.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4ACR1000	04	6	1/4	13.2	1000	70	4000	280	50
6ACR1000	06	10	3/8	17.0	1000	70	4000	280	65
8ACR1000	08	12	1/2	20.2	1000	70	4000	280	90
10ACR1000	10	16	5/8	24.0	1000	70	4000	280	100
12ACR1000	12	19	3/4	29.2	1000	70	4000	280	120
16ACR1000	16	25	1	33.0	1000	70	4000	280	150
20ACR1000	20	31	1.1/4	41.7	1000	70	4000	280	210
24ACR500	24	38	1.1/2	49.5	500	35	2000	140	380
32ACR500	32	51	2	63.0	500	35	2000	140	460
40ACR500	40	63	2.1/2	75.4	500	35	2000	140	560
48ACR500	48	76	3	88.9	500	35	2000	140	610

LOW PRESSURE HOSE

LOL

PUSH-LOCK FIBRE BRAID HOSE
BRAIDED FIBRE REINFORCED HOSE

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Petroleum-based hydraulic oils, antifreeze solutions, water, hot lubricating oils and air. Suitable for low-pressure cleaning and pneumatic systems, return lines and low pressure lines. Push-Lock hose and couplings are not recommended for pressure surge applications or critical applications.
- Internal tube: Nitrile based.
- Reinforcement: One fibre braid.
- External cover: Oil and abrasion resistant synthetic rubber (blended nitrile). MSHA approved.
- Temperature range: -40°C to +100°C constant and +121°C intermittent.
- Standards: Gates proprietary.
- Characteristics: Available in 6 colours for easy colour coding. Easy to assemble.
- Suffix A = black, B = blue, C = grey, G = green, R = red, Y = yellow. Please note some size/colour combinations are not held in inventory and are subject to minimum order requirements.

Part Number	Colour	Internal Size	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
3LOLA	Black	03	3/16	10.4	300	21	1200	84	75
4LOLA	Black	04	1/4	11.9	300	21	1200	84	75
4LOLB	Blue	04	1/4	11.9	300	21	1200	84	75
4LOLY	Yellow	04	1/4	11.9	300	21	1200	84	75
5LOLA	Black	05	5/16	14.0	300	21	1200	84	75
6LOLA	Black	06	3/8	15.9	300	21	1200	84	75
6LOLB	Blue	06	3/8	15.9	300	21	1200	84	75
6LOLC	Grey	06	3/8	15.9	300	21	1200	84	75
6LOLG	Green	06	3/8	15.9	300	21	1200	84	75
6LOLR	Red	06	3/8	15.9	300	21	1200	84	75
6LOLY	Yellow	06	3/8	15.9	300	21	1200	84	75
8LOLA	Black	08	1/2	19.6	300	21	1200	84	130
8LOLB	Blue	08	1/2	19.6	300	21	1200	84	130
10LOLA	Black	10	5/8	23.9	300	21	1200	84	150
10LOLB	Blue	10	5/8	23.9	300	21	1200	84	150
12LOLA	Black	12	3/4	26.9	300	21	1200	84	180
12LOLB	Blue	12	3/4	26.9	300	21	1200	84	180

GTH

PUSH-LOCK FIBRE BRAID HOSE
BRAIDED FIBRE REINFORCED HOSE - SAE 100R6

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Hydraulic oil lines, heavy-duty transmission oil cooler lines and glycol anti-freeze solutions. Push-Lock hose and couplings are not recommended for pressure surge applications or critical applications.
- Internal tube: Nitrile based.
- Reinforcement: One fibre braid.
- External cover: Neoprene based.
- Temperature range: -40°C to +135°C constant and +149°C intermittent.
- Vacuum range: -3, -4, -5, -6: 28In.Hg (710mm.Hg). -8: 18In.Hg (450mm.Hg). -10, -12: 15In.Hg (380mm.Hg). -16: 10In.Hg (250mm.Hg)
- Standards: Gates proprietary. Meets or exceeds requirements of SAE 100R6.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4GTH	04	6	1/4	12.7	400	30	1600	120	65
5GTH	05	8	5/16	14.2	400	30	1600	120	75
6GTH	06	10	3/8	16.0	400	30	1600	120	75
8GTH	08	12	1/2	19.8	400	30	1600	120	100
10GTH	10	16	5/8	23.1	350	25	1400	100	130
12GTH	12	19	3/4	26.9	300	20	1200	80	150

FLEET APPLICATION HOSE

C5C

ONE WIRE NOMINAL BORE HOSE
BRAIDED WIRE REINFORCED HOSE - SAE 100R5

- -Size is based on nominal bore of corresponding tube size.
- Due to manufacturing tolerances, external dimension is an average.
- Recommended for: Medium pressure hydraulic petroleum-based oil lines in impulse applications, lube oil, air and water in applicat

Part Number	Internal Size	Internal Diameter - mm	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4C5C	04	5	3/16	13.2	3000	210	12000	840	75
5C5C	05	6	1/4	14.7	3000	210	12000	840	85
6C5C	06	8	5/16	17.0	2250	155	9000	620	100
8C5C	08	10	13/32	19.6	2000	140	8000	560	115
10C5C	10	12	1/2	23.4	1750	120	7000	480	140
12C5C	12	16	5/8	27.4	1500	105	6000	420	165
16C5C	16	22	7/8	31.2	800	55	3200	220	190
20C5C	20	28	1.1/8	38.1	625	45	2500	180	230
24C5C	24	35	1.3/8	44.5	500	35	2000	140	270
32C5C	32	46	1.13/16	56.4	350	24	1400	96	340
40C5C	40	60	2.3/8	73.2	350	24	1400	96	600

C5D

ONE WIRE NOMINAL BORE HOSE
MULTI-FLUID BRAIDED WIRE REINFORCED HOSE

- -Size is based on nominal bore of corresponding tube size.
- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Petroleum-base or phosphate ester fluids; diesel fuels and filtration lines, transmission coolant lines, ho

Part Number	Internal Size	Internal Diameter - mm	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4C5D	04	5	3/16	13.2	1500	105	6000	420	25
5C5D	05	6	1/4	14.7	1500	105	6000	420	40
6C5D	06	8	5/16	17.0	1500	105	6000	420	45
8C5D	08	10	13/32	19.6	1250	85	5000	340	50
10C5D	10	12	1/2	23.4	1250	85	5000	340	50

C5M

ONE WIRE NOMINAL BORE HOSE
MARINE FUEL BRAIDED WIRE REINFORCED HOSE

- -Size is based on nominal bore of corresponding tube size.
- Due to manufacturing tolerances, the external dimension is an average.
- Reference SAE J1942/-1 for USCG-approved working pressures.
- Recommended for: On-shore/off-shore and marine diesel fuel and

Part Number	Internal Size	Internal Diameter - mm	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
5C5M	05	6	1/4	14.7	500	35	2000	140	25
6C5M	06	8	5/16	17.0	500	35	2000	140	32
8C5M	08	10	13/32	19.6	500	35	2000	140	45
10C5M	10	12	1/2	23.4	500	35	2000	140	60
12C5M	12	16	5/8	27.4	500	35	2000	140	70
16C5M	16	22	7/8	31.2	500	35	2000	140	90

P1T

ONE WIRE BRAID PILOT HOSE
BRAIDED WIRE REINFORCED HOSE FOR PILOT CONTROL

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Pilot control hydraulic applications. Easy to route and to install in tight areas.
- Internal tube: Nitrile based.
- Reinforcement: One braid of high tensile steel wire.
- External cover: Neoprene based.
- Temperature range: -40°C to +100°C constant and +120°C intermittent.
- Standards: Gates proprietary.
- Characteristics: P1T hose features superior flexibility providing a very tight bend radius as well as resistance to expansion, kinking and abrasion.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4P1T	04	6	1/4	11.0	1750	120	7000	480	25

PS188

POWER STEERING HOSE
BRAIDED FIBRE HOSE FOR POWER STEERING

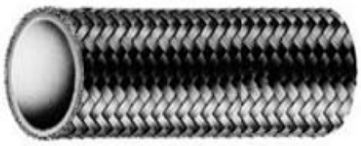
- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Power steering pressure lines.
- Internal tube: CSM based.
- Reinforcement: Two high strength nylon braids that resist high temperatures and allow for expansion for system noise dampening.
- External cover: CSM based.
- Temperature range: -40°C to +150°C. Standards: Gates proprietary. Designed to meet requirements of SAE J2050 specifications.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
6PS188	06	10	3/8	18.0	1500	105	6000	420	85

PTFE HOSE

R14

STAINLESS BRAIDED PTFE HOSE
PTFE HOSE WITH STAINLESS STEEL BRAIDED COVER



- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Air compressor discharge, hot oil fluids, hot and greasy environments.
- Internal tube: Non-conductive white, smooth bore Teflon®/PTFE.
- Reinforcement.
- External cover: AISI 304/S15 or BS970-1 1996 quality hard drawn tensile stainless steel wire.
- Temperature range: -54°C to +204°C. Characteristics: The PTFE hose tube is virtually inert to all chemicals and solvents. It is resistant to fuming Sulphuric and Nitric Acids, Amines, Antioxidants and Methanol. It is only known to react with elemental alkali metals (molten or in solution), Fluorine and Chlorine Trifluoride.
- NOTE: A damaging electrostatic charge can build up inside the hose when electrically resistive fluids are being transmitted at very high flow rates (particularly if the hose assemblies are lengthy).

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
R14-03	03	5	3/16	7.9	4000	275	12000	825	50
R14-04	04	6	1/4	9.35	3250	224	9750	672	76
R14-05	05	8	5/16	11.3	3160	218	9500	655	102
R14-06	06	10	3/8	12.65	2660	183	8000	552	127
R14-08	08	12	1/2	16.55	2330	161	7000	483	152
R14-10	10	16	5/8	19.75	1660	114	5000	345	178
R14-12	12	19	3/4	22.96	1500	103	4500	310	203
R14-16	16	25	1	27.8	1000	69	3495	241	310

THERMOPLASTIC HOSE

R8X

FIBRE BRAID THERMOPLASTIC HOSE
BRAIDED FIBRE REINFORCED SLIMLINE HOSE - SAE 100R8

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High pressure hydraulic applications requiring increased resistance to abrasion.
- Internal tube: Polyester elastomer.
- Reinforcement: One or two braids of aramid fiber.
- External cover: Abrasion resisant polyurethane, black, pinpricked, white ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Standards: Meets or exceeds SAE 100R8.
- Characteristics: R8X is a compact high pressure hose for use with petroleum, synthetic or water based hydraulic fluids. Suitable for general fluid power transmission like earthmoving, agricultural machinery and forklift trucks. Also suitable for many industrial gases (check for compatiblity).

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
3R8X	03	5	3/16	8.9	5000	350	20000	1400	30
4R8X	04	6	1/4	11.5	5000	350	20000	1400	50
6R8X	06	10	3/8	15.5	4000	280	16000	1120	60
8R8X	08	12	1/2	19.9	3500	245	14000	980	80
12R8X	12	19	3/4	26.9	2300	165	9200	660	150
16R8X	16	25	1	34.2	2000	140	8000	560	200

R8XNC

FIBRE BRAID THERMOPLASTIC HOSE
NON-CONDUCTIVE FIBRE REINFORCED HOSE - SAE 100R8

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High pressure hydraulic applications requiring increased resistance to abrasion and electrical non-conductivity.
- Internal tube: Polyester elastomer.
- Reinforcement: One or two braids of aramid fiber.
- External cover: Abrasion resisant polyurethane, orange, non-pinpricked, black ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Standards: Meets or exceeds SAE 100R8.
- Characteristics: R8XNC is a compact high pressure hose for use with petroleum, synthetic or water based hydraulic fluids in applications requiring high electrical insulation or non-conductivity; e.g. High voltage equipment, Safety and rescue equipment, Aerial platforms, Cranes.
- Special item - please contact Hydraulink for further details and availability.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4R8XNC	04	6	1/4	11.5	5000	350	20000	1400	50
6R8XNC	06	10	3/8	15.5	4000	280	16000	1120	60
8R8XNC	08	12	1/2	19.9	3500	245	14000	980	80

R8XT

TWINLINE THERMOPLASTIC HOSE
BRAIDED FIBRE REINFORCED SLIMLINE HOSE - SAE 100R8

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: High pressure hydraulic applications requiring increased resistance to abrasion.
- Internal tube: Polyester elastomer.
- Reinforcement: One or two braids of aramid fiber.
- External cover: Abrasion resisant polyurethane, black, pinpricked, white ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Standards: Meets or exceeds SAE 100R8.
- Characteristics: R8X is a compact high pressure hose for use with petroleum, synthetic or water based hydraulic fluids. Suitable for general fluid power transmission like earthmoving, agricultural machinery and forklift trucks. Also suitable for many industrial gases (check for compatiblity).
- Please note customised multi-line combinations of different hose types or diameters can also be produced to customer requirements.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
3R8XT	03	5	3/16	8.9	5000	350	20000	1400	30
4R8XT	04	6	1/4	11.5	5000	350	20000	1400	50
6R8XT	06	10	3/8	15.5	4000	280	16000	1120	60
8R8XT	08	12	1/2	19.9	3500	245	14000	980	80

R18NEO

FIBRE BRAID THERMOPLASTIC HOSE
LOW TEMP. FIBRE REINFORCED HOSE - SAE 100R18

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Medium pressure hydraulic applications exposed to low temperatures, or cyclic and quick temperature changes, such as cool-stores. Ideal for forklift applications
- Internal tube: Polyester elastomer.
- Reinforcement: Two braids of synthetic fiber.
- External cover: Special polyurethane cover, black, non-pinpricked, white ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Standards: Meets or exceeds SAE 10018.
- Characteristics: R18 is a medium pressure hose suitable for petroleum or synthetic based hydraulic fluids in hydraulic systems of forklifts. Optimum bonding characteristics and special cover also make it an ideal for equipment operating in cold environments, while maintaining a high level of flexibility.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4R18NEO	04	6	1/4	11.8	3000	210	12000	840	35
5R18NEO	05	8	5/16	14.3	3000	210	12000	840	45
6R18NEO	06	10	3/8	16.5	3000	210	12000	840	45
8R18NEO	08	12	1/2	21.2	3000	210	12000	840	70
10R18NEO	10	16	5/8	26.1	3000	210	12000	840	100

R18TNEO

TWINLINE THERMOPLASTIC HOSE
BRAIDED FIBRE REINFORCED HOSE - SAE 100R18

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Medium pressure hydraulic applications exposed to low temperatures, or cyclic and quick temperature changes, such as cool-stores. Ideal for forklift applications
- Internal tube: Polyester elastomer.
- Reinforcement: Two braids of synthetic fiber.
- External cover: Special polyurethane cover, black, non-pinpricked, white ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Standards: Meets or exceeds SAE 10018.
- Characteristics: R18 is a medium pressure hose suitable for petroleum or synthetic based hydraulic fluids in hydraulic systems of forklifts. Optimum bonding characteristics and special cover also make it an ideal for equipment operating in cold environments, while maintaining a high level of flexibility.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4R18TNEO	04	6	1/4	11.8	3000	210	12000	840	35
6R18TNEO	06	10	3/8	16.5	3000	210	12000	840	45

R7

FIBRE BRAID THERMOPLASTIC HOSE
BRAIDED FIBRE REINFORCED HOSE - SAE 100R7

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Medium pressure hydraulic applications requiring increased resistance to abrasion.
- Internal tube: Polyester elastomer.
- Reinforcement: One or two braids of synthetic fiber. External cover: Abrasion resistant polyurethane, black, pinpricked, white ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Standards: Meets or exceeds SAE 100R7.
- Characteristics: R7 is a medium pressure hose for use with petroleum, synthetic or water based hydraulic fluids. Suitable for general fluid power transmission like earthmoving, agricultural machinery and forklift trucks. Also suitable for many industrial gases (check for compatibility).
- Not suitable for use on forklift mast application below ambient temperatures.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
3R7	03	5	3/16	9.6	3000	210	12000	840	25
4R7	04	6	1/4	12.2	3000	210	12000	840	35
5R7	05	8	5/16	14.3	2700	190	10800	760	45
6R7	06	10	3/8	16.0	2300	160	9200	640	55
8R7	08	12	1/2	20.3	2000	140	8000	560	75
12R7	12	19	3/4	27.1	1300	90	5200	360	140

R7NC

FIBRE BRAID THERMOPLASTIC HOSE
NON-CONDUCTIVE FIBRE REINFORCED HOSE - SAE 100R7

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Medium pressure hydraulic applications requiring increased resistance to abrasion and electrical non-conductivity.
- Internal tube: Polyester elastomer.
- Reinforcement: One or two braids of synthetic fiber. External cover: Abrasion resistant polyurethane, orange, non pinpricked, black ink-jet branding branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Standards: Meets or exceeds SAE 100R7.
- Characteristics: R7NC is a medium pressure hose for use with petroleum, synthetic or water based hydraulic fluids in applications requiring high electrical insulation or non-conductivity; e.g. High voltage equipment, safety and rescue equipment, Aerial platforms, Cranes.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
3R7NC	03	5	3/16	9.6	3000	210	12000	840	25
4R7NC	04	6	1/4	12.2	3000	210	12000	840	35
5R7NC	05	8	5/16	14.3	2700	190	10800	760	45
6R7NC	06	10	3/8	16.0	2300	160	9200	640	55
8R7NC	08	12	1/2	20.3	2000	140	8000	560	75
12R7NC	12	19	3/4	27.1	1300	90	5200	360	140

R7T

TWINLINE THERMOPLASTIC HOSE
BRAIDED FIBRE REINFORCED HOSE - SAE 100R7

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Medium pressure hydraulic applications requiring increased resistance to abrasion.
- Internal tube: Polyester elastomer.
- Reinforcement: One or two braids of synthetic fiber.
- External cover: Abrasion resisant polyurethane, black, pinpricked, white ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Standards: Meets or exceeds SAE 100R7.
- Characteristics: R7 is a medium pressure hose for use with petroleum, synthetic or water based hydraulic fluids. Suitable for general fluid power transmission like earthmoving, agricultural machinery and forklift trucks. Also suitable for many industrial gases (check for compatiblity).
- Please note customised multi-line combinations of different hose types or diameters can also be produced to customer requirements.
- Not suitable for use on forklift mast application below ambient temperatures.

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4R7T	04	6	1/4	12.2	3000	210	12000	840	35
6R7T	06	10	3/8	16.0	2300	160	9200	640	55

PAINTSPRAY HOSE

PS1B

ONE WIRE BRAID THERMOPLASTIC
BRAIDED WIRE REINFORCED HOSE FOR
PAINT/SOLVENTS

- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Airless paint spray systems or applications requiring high chemical resistance to solvents and aggressive fluids.
- Internal tube: Polyamide PA6.
- Reinforcement: One braid of high tensile steel wire.
- External cover: Polyurethane, blue, non-pinpricked, black ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Characteristics: PS1B is a high pressure hose with blue cover, particularly designed for paint spray and solvent applications with increased resistance to abrasion, mechanical strength and providing electrical conductivity. Due to low dissipation rate of tube, the hose is also suitable for many industrial gases (check for compatibility).

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
4PS1B	04	6	1/4	11.6	4400	310	12000	840	40
6PS1B	06	10	3/8	15.5	3200	225	12800	900	65

PS2B

TWO WIRE BRAID THERMOPLASTIC BRAIDED WIRE REINFORCED HOSE FOR PAINT/SOLVENTS

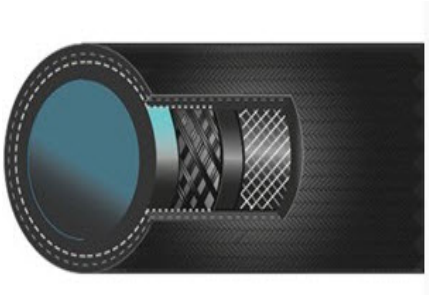
- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Airless paint spray systems or applications requiring high chemical resistance to solvents and aggressive fluids.
- Internal tube: Polyamide PA6.
- Reinforcement: Two braids of high tensile steel wire.
- External cover: Polyurethane, blue, non-pinpricked, black ink-jet branding.
- Temperature range: -40 °C to +100 °C, limited to +70 °C for air and water-based fluids.
- Characteristics: PS2B is a high pressure hose with blue cover, particularly designed for paint spray and solvent applications with increased resistance to abrasion, mechanical strength and providing electrical conductivity. Due to low dissipation rate of tube, the hose is also suitable for many industrial gases (check for compatibility).

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
8PS2B	08	12	1/2	20.2	4300	300	17200	1200	85

LPG HOSE

LPG

LPG SERVICE HOSE
WIRE AND FIBRE REINFORCED HOSE FOR LPG

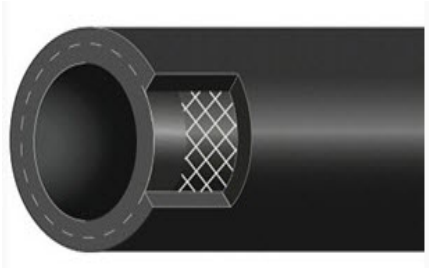


- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: LPG service line for mobile plant, particularly forklift trucks.
- Internal tube: Synthetic rubber, LP Gas, oil and low temp resistant.
- Reinforcement: One textile and one stainless wire braid.
- External cover: Textile braid.
- Standards: Meets AS/NZ 1869 Class D, AGA Certificate no. AGA5318

Part Number	Internal Size	Internal Diameter - mm	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
5LPG	05	8	5/16	17.1	350	24	1400	96	

MVAP

LPG VAPORISER HOSE
UNREINFORCED VAPORISER HOSE FOR LPG



- Due to manufacturing tolerances, the external dimension is an average.
- the 18mm ID will clamp down to suit 5/8, or stretch over 3/4.
- Recommended for: High temperature gas transportation hose up to +125C.
- Internal tube: Synthetic rubber, LP Gas resistant.
- Reinforcement: n/a
- External cover: Textile braid.

Part Number	Internal Size	Internal Diameter - mm	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
18MVAP	10-12	18	5/8-3/4	25.4	110	8	440	32	

EXTREMELY HIGH PRESSURE HOSE

EFG6K

FOUR/SIX SPIRAL WIRE HOSE
SPIRAL WIRE REINFORCED HOSE - SAE 100R15

- Due to manufacturing tolerances, external dimension is an average.
- Recommended for: Extremely high pressure and high impulse hydraulic applications.
- Internal tube: -6, -8, -10, -12, -16, -20: Nitrile based; -24: Neoprene based.
- Reinforcement: Four (six for -20, -24) alternating layers of spiralled, high tensile steel wire.
- External cover: Neoprene based, MSHA approved.
- Temperature range: -40°C to +121°C
- Standards: SAE 100R15. Meets or exceeds performance requirements of EN 856 4SP (-8) and EN 856 4SH (-12, -16)
- Characteristics: Extremely flexible. Compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols and vegetable oils and petroleum-based fluids in sizes -06 to -20 (not -24)

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
6EFG6K	06	10	3/8	20.5	6000	420	24000	1680	65
8EFG6K	08	12	1/2	24.0	6000	420	24000	1680	90
10EFG6K	10	16	5/8	27.6	6000	420	24000	1680	100
12EFG6K	12	19	3/4	31.4	6000	420	24000	1680	120
16EFG6K	16	25	1	38.7	6000	420	24000	1680	150
20EFG6K	20	31	1.1/4	50.0	6000	420	24000	1680	210
24EFG6K	24	38	1.1/2	57.4	6000	420	24000	1680	250
32EFG6K	32	50	2	71.1	6000	420	24000	1680	635

EFG5K

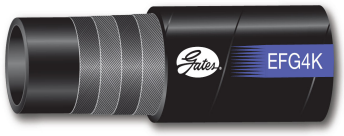
FOUR/SIX SPIRAL WIRE HOSE
SPIRAL WIRE REINFORCED HOSE - SAE 100R13

- Due to manufacturing tolerances, external dimension is an average.
- Recommended for: Extremely high pressure and high impulse hydraulic applications.
- Internal tube: -6 to -20
- Nitrile based: -24, -32: Neoprene based.
- Reinforcement: Four (six for -20, to -32) alternating layers of spiralled, high tensile steel wire.
- External cover: Neoprene based, MSHA approved.
- Temperature range: -40°C to +121°C
- Standards: EN 856 R13. SAE 100R13. Meets or exceeds performance requirements of EN 856 4SP (-10, -12) and EN 856 4SH (-20).
- Characteristics: Extremely flexible. Compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols, vegetable oils and petroleum-based fluids in sizes -06 to -20 (not -24 or -32)

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
8EFG5K	08	12	1/2	24.0	5000	350	20000	1400	90
12EFG5K	12	19	3/4	31.4	5000	350	24000	1400	120
16EFG5K	16	25	1	38.7	5000	350	24000	1400	150
20EFG5K	20	31	1.1/4	50	5000	350	24000	1400	210
24EFG5K	24	38	1.1/2	57.4	5000	350	24000	1400	250
32EFG5K	32	51	2	71	5000	350	24000	1400	635

EFG4K

FOUR SPIRAL WIRE HOSE
SPIRAL WIRE REINFORCED HOSE - SAE 100R12

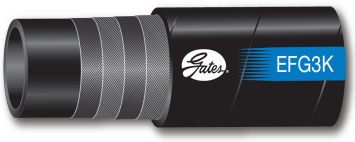


- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Extremely high pressure and high impulse hydraulic applications.
- Internal tube: Nitrile based.
- Reinforcement: Four alternating layers of spiralled, high tensile steel wire.
- External cover: Neoprene based, MSHA approved.
- Temperature range: -40°C to +121°C
- Standards: Gates proprietary. EN 856 R12. SAE 100R12. Meets or exceeds performance requirements of EN 856 4SP (-16, -20).
- Characteristics: Extremely flexible. Compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols and vegetable oils as well as petroleum-based fluids in sizes -06 to -20 (not -24)

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
6EFG4K	06	10	3/8	20.5	4000	280	16000	1120	65
8EFG4K	08	12	1/2	24.0	4000	280	16000	1120	90
10EFG4K	10	16	5/8	27.6	4000	280	16000	1120	100
12EFG4K	12	19	3/4	30.7	4000	280	16000	1120	120
16EFG4K	16	25	1	38.0	4000	280	16000	1120	150
20EFG4K	20	31	1.1/4	47.0	4000	280	16000	1120	210

EFG3K

FOUR SPIRAL WIRE HOSE
SPIRAL WIRE REINFORCED HOSE - SAE 100R12



- Due to manufacturing tolerances, the external dimension is an average.
- Recommended for: Extremely high pressure and high impulse hydraulic applications.
- Internal tube: Nitrile based.
- Reinforcement: Four alternating layers of spiralled, high tensile steel wire.
- External cover: Neoprene based, MSHA approved.
- Temperature range: -40°C to +121°C
- Standards: Gates proprietary. EN 856 R12. SAE 100R12. Meets or exceeds performance requirements of EN 856 4SP (-16, -20).
- Characteristics: Extremely flexible. Compatible with biodegradable hydraulic fluids like synthetic esters, polyglycols and vegetable oils as well as petroleum-based fluids in sizes -06 to -20 (not -24)

Part Number	Internal Size	Internal DN	Internal Diameter - inches	External Diameter - mm	Working Pressure - psi	Working pressure - bar	Min burst pressure - psi	Min burst pressure - bar	Min bend radius - mm
24EFG3K	24	38	1.1/2	53.5	3000	210	12000	840	500
32EFG3K	32	51	2	66.8	3000	210	12000	840	630