Be Safe

Hose assemblies must be inspected prior to each use. Worn out fittings, attachment devices, hose, and accessory items must be replaced. Retaining devices (safety devices) such as clips, cables, or chains must be used. Clamps must be checked regularly to the specified torque found in the Dixon literature. Under no circumstance should any coupling be disconnected while under pressure unless the coupling is specifically designed to do so. Disconnecting couplings under pressure could result in serious injury or death, and destruction to property and equipment.

For all hose assemblies in use:

B*eware* - Hose assemblies when used improperly or in the wrong application can be dangerous. The maximum working pressure shown on the hose is not an indication of the working pressure of the assembly. Based on the hose, fittings, and attachment method used, all assemblies should be permanently marked with the designed working pressure and the intended media. The assembly working pressure should be permanently displayed. Hose assemblies must be used for the intended service only. Never alter manufactured product or substitute component parts.

E*liminate* - Eliminate hazardous conditions by inspecting, maintaining, and testing hose assemblies. Dixon recommends that all hose assemblies be tested in accordance with the hose manufacturer's specifications. The application determines the regularity of the re-testing schedule.

S*ecure* - Secure and inspect hose, fittings, clamping devices, and safety accessories before each use. Never take for granted that the coupling or attachment devices are properly installed.

A*lways* - Always inspect and re-tighten the bolts of any bolt style clamping device to the manufacturer's torque specifications.

F*ittings* - Hose fittings and clamping devices that are worn out or damaged must be removed from service.

E*ducate* - Educate your employees about the proper use, care, and potential hazards of hose assemblies. Take advantage of Dixon's free Hose Assembly Safety Program and the follow up Training Seminar to aid you in setting up your own inspection program. Any questions on applications, use or assembly call 800.355.1991.

S.T.A.M.P.E.D.

When fabricating and specifying hose assemblies ask the following questions:

S*ize*: What is the I.D. (inside diameter) of the hose? What is the O.D. (outside diameter) of both ends of the hose? What is the overall length of the assembly required?

T*emperature*: What is the temperature range of the media (product) that is flowing through the hose assembly? What is the temperature range of the environment that surrounds the outside of the hose assembly?

A*pplication*: How is the hose assembly actually being used? Is it a pressure application? Is it a vacuum (suction) application? Is it a gravity flow application? Are there any special requirements that the hose assembly is expected to perform? Is the hose being used in a horizontal or vertical position? Are there any pulsations or vibrations acting on the hose assembly?

M*edia*: What is the media/material that is flowing through the hose assembly? Being specific is critical. Check for: Abrasive materials, chemical compatibility, etc.

P*ressure*: What is the maximum pressure including surges (or, maximum vacuum) that this hose assembly will be subjected to? Always rate the maximum working pressure of your hose assembly by the lowest rated component in the system.

E*nds*: What couplings have been requested by the user? Are they the proper fittings for the application and hose selected?

D*ixon*: Dixon recommends that, based on the hose, fittings, and attachment method used, all assemblies be *permanently marked with the designed working pressure and intended media.* Do not use other manufacturers' fittings or ferrules with Dixon products due to the differences in dimensions and tolerances We also recommend that all hose assemblies be tested frequently. *Be Safe*: Any questions on application, use, or assembly, call 800.355.1991.

Material Selection

Selecting Materials

This information is intended to help make general comparisons between different available materials.

Material	Features and Benefits
Stainless Steel	A corrosion-resistant material that provides high strength at high temperatures, helps prevent contamination of product being transported, maintains cleanliness, and retains a lustrous appearance. Harder than brass. *Type 304* is a low-carbon chromium-nickel stainless steel. *Type 316* is similar to type 304, but has a high nickel content as well as a molybdenum for stronger resistance to heat and corrosion. Often used for water, oil, gas, and steam in low- to high-pressure applications.
Brass	Has good corrosion resistance and is less expensive than stainless steel. Is softer and easier to thread than stainless steel and forms tight seals. It can be used interchangeably with copper where heavier walls are required. Found in plumbing and heating application. Also good with oil, natural gas, and air. Resists corrosion from salt water as well as fresh water polluted with waste from mineral acids and peaty soils. Use in low- to high-pressures applications.
Steel	Used in noncorrosive environments. This carbon- and iron-based metal is hard and strong. It is an economical alternative to stainless steel and brass in high-pressure applications. For use with water, oil, gas, and steam in low- to high-pressure applications where corrosion is not a problem.

Product application is based not only on material selection but on design of product for intended use. Please contact Dixon® for selection of the proper fitting for your application.

Corrosion Resistance of Coupling Material

⚠WARNING

The data on the following pages has been compiled from generally available sources and should not be relied upon without consulting and following the specific recommendations of the manufacturer regarding particular coupling materials. This chart is also available under Interactive Tools at dixonvalve.com.

Ratings

Metal	Non-Metal	Gasket/Seal Material
1 = Excellent 2 = Good 3 = Fair X = Not Recommended - = Contact Dixon®	A = Acceptable X = Not Recommended - = Contact Dixon®	T = PTFE V = FKM E = EPDM, EPR N = Neoprene B = Nitrile Rubber

1. Ratings given are based at **70°F (21°C)**. Chemical compatibility varies greatly with temperature. For applications at temperatures other than **70°F (21°C)**, contact Dixon for recommendations at 800.355.1991.
2. Gasket / seal materials are not necessarily listed in order of preference.
3. Chemical resistance of a material does not necessarily indicate the suitability of a fitting in a given application due to variables such as improper clamp and coupling application, special hose construction, gasket material, etc.

Special caution should be taken when handling hazardous materials.

DIXON
The Right Connection®

Fraction - Decimal Conversion Chart

	Inches	Millimeters
1/64	.015625	.3969
1/32	.03125	.7938
3/64	.046875	1.1906
1/16	.0625	1.5875
5/64	.078125	1.9844
3/32	.09375	2.3813
7/64	.109375	2.7781
1/8	.125	3.1750
9/64	.140625	3.5719
5/32	.15625	3.9688
11/64	.171875	4.3656
3/16	.1875	4.7625
13/64	.203125	5.1594
7/32	.21875	5.5563
15/64	.234375	5.9531
1/4	.250	6.3500
17/64	.265625	6.7469
9/32	.28125	7.1438
19/64	.296875	7.5406
5/16	.3125	7.9375
21/64	.328125	8.3344
11/32	.34375	8.7313
23/64	.359375	9.1282
3/8	.375	9.5250
25/64	.390625	9.9219
13/32	.40625	10.3188
27/64	.421875	10.7157
7/16	.4375	11.1125
29/64	.453125	11.5094
15/32	.46875	11.9063
31/64	.484375	12.3032
1/2	.500	12.7001
33/64	.515625	13.0969
17/32	.53125	13.4938
35/64	.546875	13.8907
9/16	.5625	14.2876
37/64	.578125	14.6844
19/32	.59375	15.0813
39/64	.609375	15.4782
5/8	.625	15.8751
41/64	.640625	16.2719
21/32	.65625	16.6688
43/64	.671875	17.0657
11/16	.6875	17.4626
45/64	.703125	17.8594
23/32	.71875	18.2563
47/64	.734375	18.6532
3/4	.750	19.0501
49/64	.765625	19.4470
25/32	.78125	19.8438
51/64	.796875	20.2407
13/16	.8125	20.6376
53/64	.828125	21.0345
27/32	.84375	21.4313
55/64	.859375	21.8282
7/8	.875	22.2251
57/64	.890625	22.6220
29/32	.90625	23.0188
59/64	.921875	23.4157
15/16	.9375	23.8126
61/64	.953125	24.2095
31/32	.96875	24.6063
63/64	.984375	25.0032
1	1.000	25.4001

V

Measures of Pressure

1 Pound Per Square Inch = 144 Pounds Per Square Foot = 0.068 Atmosphere = 2.042 Inches of Mercury at **62°F** = 27.7 Inches of Water at 62°F = 2.31 Feet of Water at 62°F.

1 Atmosphere = 30 Inches of Mercury at **62°F** = 14.7 Pounds Per Square Inch = 2116.3 Pounds Per Square Foot = 33.95 Feet of Water at **62°F**.

1 Foot of Water at **62°F** = 62.355 Pounds Per Square Foot = 0.433 Pounds Per Square Inch.

1 Inch of Mercury at **62°F** = 1.132 Feet of Water = 13.58 Inches of Water = 0.491 Pounds Per Square Inch.

Column of Water 12 Inches High, 1 Inch in Diameter = .341 Pounds

If temperature is kept constant, the volume of a given mass of gas is inversely proportional to the pressure which is exerted upon it.

Length Conversion Constants

Millimeters x .039370 = Inches
Meters x 39.370 = Inches
Meters x 3.2808 = Feet
Meters x 1.09361 = Yards
Kilometers x 3,280.8 = Feet
Kilometers x .62137 = Statute Mile
Kilometers x .53959 = Nautical Miles

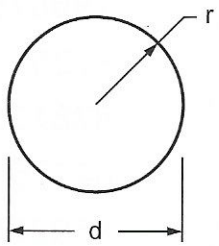
Inches x 25.4001 = Millimeters
Inches x .0254 = Meters
Feet x .30480 = Meters
Yards x .91440 = Meters
Feet x .0003048 = Kilometers
Statute Miles x 1.60935 = Kilometers
Nautical Miles x 1.85325 = Kilometers

Weight Conversion Constants

Grams x .03527 = Ounces (Avd.)
Grams x .033818 = Fluid Ounces (Water)
Kilograms x 35.27 = Ounces (Avd.)
Kilograms x 2.20462 = Pounds (Avd.)

Ounces (Avd.) x 28.35 = Grams
Fluid Ounces (Water) x 29.57 = Grams
Ounces (Avd.) x .02835 = Kilograms
Pounds (Avd.) x .45359 = Kilograms

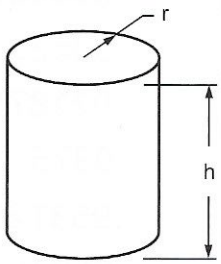
Circumference of a Circle



Circumference = $2\pi r = \pi d = 3.14159\ d$

Area = $\pi r^2 = \pi \frac{d^2}{4} = .78539 d^2$

Right Cylinder



r = radius
h = length

Volume = $\pi r^2 h$

Surface Area = $2\pi r\ (r + h)$

If end planes are parallel but not at 90° to h, the same formulas apply, but a slice at 90° through the cylinder must be used to determine r.

Temperature Conversions

Look up reading in middle column (shaded). If in degrees Centigrade, read Fahrenheit equivalent in right-hand column; if in degrees Fahrenheit, read Centigrade equivalent in left-hand column.

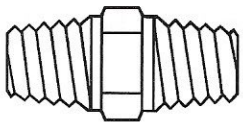
°C	°F / °C	°F
-73	-100	-148
-68	-90	-130
-62	-80	-112
-57	-70	-94
-51	-60	-76
-46	-50	-58
-40	-40	-40
-34	-30	-22
-29	-20	-4
-23	-10	14
-17.8	0	32
-17.2	1	33.8
-16.7	2	35.6
-16.1	3	37.4
-15.6	4	39.2
-15.0	5	41.0
-14.4	6	42.8
-13.9	7	44.6
-13.3	8	46.4
-12.8	9	48.2
-12.2	10	50.0
-11.7	11	51.8
-11.1	12	53.6
-10.6	13	55.4
-10.0	14	57.2
-9.4	15	59.0
-8.9	16	60.8
-8.3	17	62.6
-7.8	18	64.4
-7.2	19	66.2
-6.7	20	68.0
-6.1	21	69.8
-5.6	22	71.6
-5.0	23	73.4
-4.4	24	75.2
-3.9	25	77.0
-3.3	26	78.8
-2.8	27	80.6
-2.2	28	82.4
-1.7	29	84.2
-1.1	30	86.0
-.6	31	87.8
0	32	89.6
.6	33	91.4
1.1	34	93.2
1.7	35	95.0
2.2	36	96.8
2.8	37	98.6
3.3	38	100.4
3.9	39	102.2
4.4	40	104.0
5.0	41	105.8
5.6	42	107.6
6.1	43	109.4
6.7	44	111.2
.72	45	113.0
7.8	46	114.8
8.3	47	116.6
8.9	48	118.4
9.4	49	120.2
10.0	50	122.0
10.6	51	123.8
11.1	52	125.6
11.7	53	127.4
12.2	54	129.2
12.8	55	131.0
13.3	56	132.8
13.9	57	134.6
14.4	58	136.4
15.0	59	138.2
15.6	60	140.0
16.1	61	141.8
16.7	62	143.6
17.2	63	145.4
17.8	64	147.2
18.3	65	149.0
18.9	66	150.8
19.4	67	152.6
20.0	68	154.4
20.6	69	156.2
21.1	70	158.0
21.7	71	159.8
22.2	72	161.6
22.8	73	163.4
23.3	74	165.2
23.9	75	167.0
24.4	76	168.8
25.0	77	170.6
25.6	78	172.4
26.1	79	174.2
26.7	80	176.0
27.2	81	177.8
27.8	82	179.6
28.3	83	181.4
28.9	84	183.2
29.4	85	185.0
30.0	86	186.8
30.6	87	188.6
31.1	88	190.4
31.7	89	192.2
32.2	90	194.0
32.8	91	195.8
33.3	92	197.6
33.9	93	199.4
34.4	94	201.2
35.0	95	203.0
35.6	96	204.8
36.1	97	206.6
36.7	98	208.4
37.2	99	210.2
37.8	100	212.0
43	110	230
49	120	248
54	130	266
60	140	284
66	150	302
71	160	320
77	170	338
82	180	356
88	190	374
93	200	392
99	210	410
100	212	413.6
104	220	428
110	230	446
116	240	464
121	250	482
127	260	500
132	270	518
138	280	536
143	290	554
149	300	572
154	310	590
160	320	608
166	320	626
170	338	640
171	340	644
177	350	662
182	360	680
186	366	691
188	370	698
193	380	716
198	388	730
199	390	734
204	400	752
208	406	763
210	410	770
216	420	788
221	430	806
227	440	824
232	450	842
32.8	91	195.8

Thread Information

Pipe Threads

Pipe threads are either tapered or straight (parallel). The two styles may or may not be compatible. Refer to thread information chart on page 1127.

Tapered threads

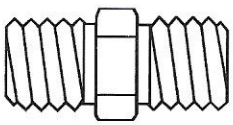


tapered threads

Tapered threads are the most common type of thread available. As the name implies, they have a slight taper. When mated together and tightened, the threads compress and may form a seal. Usually a thread sealant is required. The mating threads both hold the fitting in place and seal the connection. The most widely used pipe threads in North America are NPT (National Pipe Taper). Some confusion may result from the use of NPT, FPT, and MPT in describing threads. Both FPT and MPT are NPT threads, with FPT meaning female threads (internal) and MPT meaning male threads (external).

NPTF (Dryseal) threads are modified NPT threads, which are less likely to leak without a sealant. For a leak-free seal, we recommend using a sealant compound or PTFE tape. You can use NPTF threads with NPT threads, but you'll lose some of the leak-free characteristics.

Straight threads



straight threads

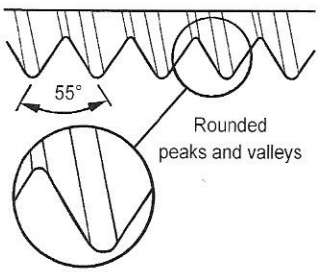
Straight (parallel) threads are used for mechanical joining. They serve one purpose - to hold a fitting in place. As a result, an O-ring (elastomer), hard metal seal or a soft seat seal is required. Straight pipe threads include NPSM (National Pipe Straight Mechanical), and NPSH (National Pipe Straight Hose). Sizing and pitches may differ from the NPT threads

Less common straight threads are GHT (Garden Hose) and NST (fire hose coupling).

NPT vs. BSP (British Standard Pipe)

BSP threads are common in many countries outside the United States. BSP consists of two types of threads - BSPT (British Standard Pipe Taper) and BSPP (British Standard Pipe Parallel).

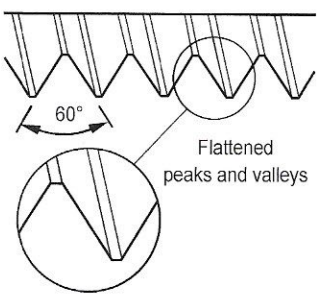
BSPT/BSPP threads



BSPT threads have a slight taper similar to NPT. BSPP threads are straight (parallel) threads and have the same thread angle, shape and threads per inch (pitch) as BSPT threads. *BSPT and BSPP threads should not be substituted for NPT threads.*

NPT and BSPT/BSPP threads have different angles, shape, and (in most cases) threads per inch (pitch). The thread angle is 60° for NPT threads; 55° for BSPT/BSPP threads. NPT threads are flattened at the peaks and valleys, while BSPT/BSPP threads are rounded.

NPT threads



Nominal Pipe Size	Threads per inch	
	NPT	BSPT / BSPP
1/16"	27	---
1/8"	27	28
1/4"	18	19
3/8"	18	19
1/2"	14	14
3/4"	14	14
1"	11-1/2	11
1-1/4"	11-1/2	11
1-1/2"	11-1/2	11
2"	11-1/2	11
2-1/2"	8	11
3"	8	11
3-1/2"	8	11
4"	8	11
5"	8	11
6"	8	11
8"	8	11

Thread Information

Identifying Threads

It is important to identify the threads required before ordering couplings.

Identifying threads can sometimes be the most difficult and frustrating part of coupling selection. However, without the right combination of threads, you may not provide a functional or safe connection.

The diameters, threads per inch (TPI) and thread pitch, etc. are necessary to completely identify a thread. Ring, plug, and GO/NOGO gauges are required to accurately gauge or identify threads. In the field, in the absence of these gauges, thread leaf gauges can be used to identify the threads per inch (TPI) and the thread pitch. On threads you have determined to be straight threads, a caliper can be used to measure the outside diameter of the male (ODM) or the inside diameter of the female (IDF). A caliper can also be used to take measurements of tapered thread diameters. However, these are more difficult to define because of the taper. Fortunately, there are few tapered threads to deal with and these can usually be identified from the nominal ODM and the TPI.

However, identifying the thread may not fully identify what is needed in a mating fitting. The application is the primary *limiting factor on the thread type used.* Dixon® offers products with a wide variety of threads used with hose, pipe, and hydraulics.

When attempting to choose a fitting, it is always advisable to first identify the thread to which it must connect. This may entail checking with a fitting or equipment manufacturer.

The fire hose thread specifications for some local municipal fire equipment and hydrants may vary according to local specifications. These can generally be most easily identified by contacting the local fire department responsible for the hydrant. The most common thread used on fire equipment is National Standard Thread (NST), also known as National Hose thread (NH).

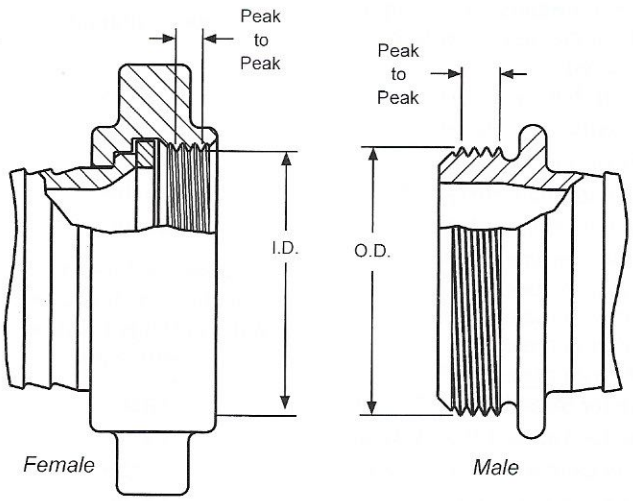
When it is not possible to identify the thread:

1. Determine the number of threads per inch by measuring the distance from peak of thread to peak of thread across the largest number of whole threads. Then divide the number of threads by the measurement (this will provide the TPI).

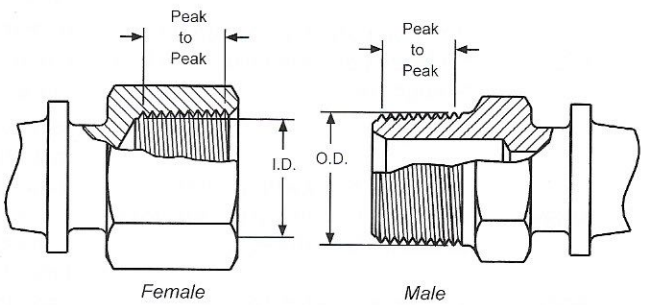
2. Check to see if the thread is straight or tapered.
   a) Straight Threads
      Measure the outside diameter of the male (ODM) or the inside diameter of the female (IDF), from peak of thread to peak of thread.
   b) Tapered Threads
      Measure the outside diameter of the male (ODM) at the large end and the small end, or the inside diameter of the female (IDF) at the large end and the small end, from peak of thread to peak of thread. Then measure the outside diameter (O.D.) of the unthreaded pipe.

Once the application and these two pieces of information have been determined, the thread can generally be determined. When in doubt, call Dixon at 800.355.1991.

Straight Thread



Tapered Thread



Thread Types

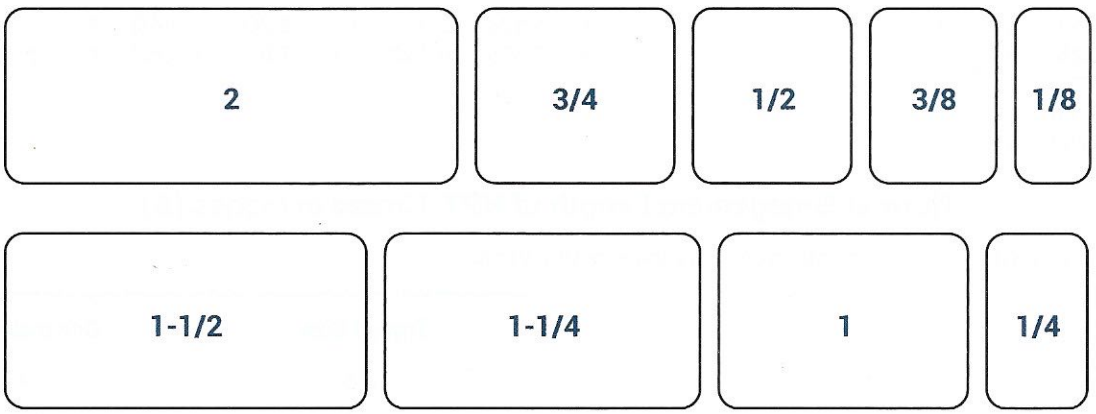
Abbreviation	System Name	Compatibility	Seal Method
BSPP	**B**ritish **S**tandard **P**ipe **P**arallel	male BSPP with female BSPP	washer
		female BSPP with male BSPP	washer
		female BSPP with male BSPT	washer
BSPTr	**B**ritish **S**tandard **P**ipe **T**aper	male BSPTr with female BSPTr	thread
		male BSPTr with female BSPP	washer
		female BSPTr with male BSPTr female BSPTr not compatible with male BSPP	thread
CHT	American Standard Fire Hose Thread (1" National Hose Thread is **C**hemical **H**ose **T**hread, also known as Booster Hose Thread)	1" male NH (NST) with 1" female NH (NST)	washer
		1" female NH (NST) with 1" male NH (NST)	washer
		1" thread is used on both 3/4" hose & 1" hose	not compatible
GHT	**G**arden **H**ose **T**hread	male GHT with female GHT	washer
		female GHT with male GHT	washer
		thread is same for all size hose	not compatible
IPS	**I**ron **P**ipe **S**traight **T**hread	generic name for Straight Pipe Thread see NPSH for compatibility	washer
IPT	**I**ron **P**ipe **T**hread	generic name for All Pipe Thread	more information required
JIC	**J**oint **I**ndustrial **C**ommittee	used with other mating JIC threads	mechanical
NH **or** **NST**	American Standard Fire Hose Coupling Thread (**N**ational **H**ose thread also known as **N**ational **S**tandard **T**hread)	male NH (NST) with female NH (NST)	washer
		female NH (NST) with male NH (NST) thread pitch and diameters of fire threads may vary according to local and municipal regulations not compatible with other systems	washer
NPT	American Standard Taper Pipe Thread (**N**ational **P**ipe **T**apered)	male NPT with female NPT	thread
		male NPT with female NPTF	thread
		male NPT with female NPSM	washer
		male NPT with female NPSH	washer
		female NPT with male NPT	thread
		female NPT with male NPTF female NPT not compatible with male NPSM or male NPSH	thread
NPTF	American Standard Taper Pipe Fuel Dryseal Thread (National Pipe Tapered Dryseal)	male NPTF with female NPTF	thread
		male NPTF with female NPT	thread
		male NPTF with female NPSM	washer
		male NPTF with female NPSH	washer
		female NPTF with male NPTF	thread
		female NPTF with male NPT	thread
		female NPTF with male NPSM or NPSH NPTF with NPTF threads do not require sealant for the initial use, after that, sealant is required	not compatible
NPSH	American Standard Straight Pipe for Hose Couplings (**N**ational **P**ipe **S**traight **H**ose)	male NPSH with female NPSH	washer
		female NPSH with male NPSH	washer
		female NPSH with male NPT	washer
		female NPSH with male NPTF	washer
		female NPSH with male NPSM	washer
NPSM	American Standard Straight Mechanical Joints (**N**ational **P**ipe **S**traight **M**echanical)	male NPSM with female NPSM	Seal can be either mechanical or washer. Mating fittings must be of same type.
		male NPSM with female NPSH	
		female NPSM with male NPSM	
		female NPSM with male NPT	
		female NPSM with male NPTF	
SIPT	**S**traight **I**ron **P**ipe **T**hread	generic name for Straight Pipe Thread	washer
TIPT	**T**apered **I**ron **P**ipe **T**hread	generic name for Tapered Pipe Thread	thread
NYFD	**NYFD** Fire Department	straight thread used in New York City	washer
Chicago	**Chicago** Fire Department	straight thread used in Chicago	washer

Thread Chart for Hydraulic Fittings

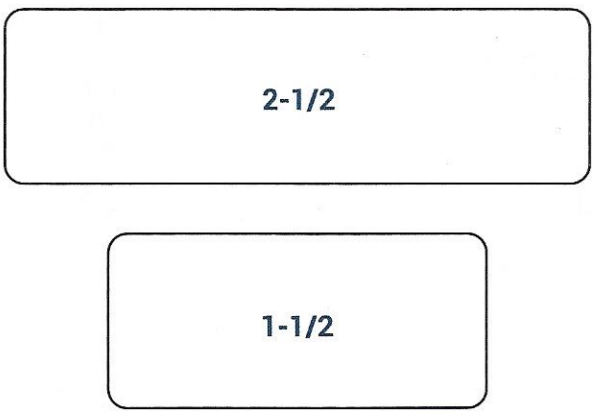
Dash Size	2	4	6	8	10	12	16	20	24	32	40	48
JIC 37 degree Flare Thread	5/16-24	7/16-20	9/16-18	3/4-16	7/8-14	1-1/16-12	1-5/16-12	1-5/8-12	1-7/8-12	2-1/2-12	---	---
SAE O-ring Thread	---	7/16-20	9/16-18	3/4-16	7/8-14	1-1/16-12	1-5/16-12	1-5/8-12	1-7/8-12	2-1/2-12	---	---
NPTF Pipe Thread	1/8-27	1/4-18	3/8-18	1/2-14	---	3/4-14	1-11 1/2	1-1/4-11 1/2	1-1/2-11 1/2	2-11 1/2	---	---
NPSM Swivel Thread	---	1/4-18	3/8-18	1/2-14	---	3/4-14	1-11 1/2	1-1/4-11 1/2	1-1/2-11 1/2	2-11 1/2	---	---
Flat Face Thread	---	9/16-18	11/16-16	13/16-16	1-14	1-3/16-12	1-7/16-12	---	---	---	---	---
Code 61 Flange Head O.D.	---	---	---	1.19	---	1.50	1.75	2.00	2.38	2.81	3.31	4.0
Code 62 Flange Head O.D.	---	---	---	1.25	---	1.62	1.88	2.12	2.50	3.12	---	---
British Thread BSPP/BSPT	---	1/4-19	3/8-19	1/2-14	_	3/4-14	1-11	---	---	---	---	---

Fittings Size Chart

Male NPT Thread Sizes



Male NST Thread Sizes



Thread Dimensions

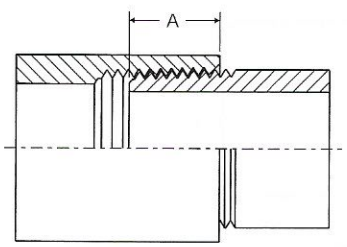
Nominal Dimensions of Standard Threads

- ODM = Outside diameter of the male
- IDF = Inside diameter of the female
- TPI = Threads per inch
- GHT (3/4") -- 1.0625 ODM, 11-1/2 TPI
- Female NPT (tapered pipe) thread is not available on hose swivel nuts

Size	Pipe O.D.	Tapered Threads		Straight Threads											
		NPT	BSPTr	NPSH			NPSM			NST (NH)			BSPP		
		TPI	TPI	TPI	ODM (max)	IDF (min)	TPI	ODM (max)	IDF (min)	TPI	ODM (max)	IDF (min)	TPI	ODM (max)	IDF (min)
1/8"	.405	27.0	28				27.0	0.397	0.358					0.383	0.337
1/4"	.540	18.0	19				18.0	0.526	0.468					0.516	0.450
3/8"	.675	18.0	19				18.0	0.662	0.603					0.656	0.588
1/2"	.840	14.0	14	14.0	0.8248	0.7395	14.0	0.823	0.747					0.825	0.733
3/4"	1.050	14.0	14	14.0	1.0353	0.9500	14.0	1.034	0.958					1.041	0.950
1"	1.315	11.5	11	11.5	1.2951	1.1921	11.5	1.293	1.201	8.0	1.375	1.2246	11	1.309	1.193
1-1/4"	1.660	11.5	11	11.5	1.6399	1.5369	11.5	1.638	1.546				11	1.650	1.534
1-1/2"	1.900	11.5	11	11.5	1.8788	1.7758	11.5	1.877	1.785	9.0	1.990	1.8577	11	1.882	1.766
2"	2.375	11.5	11	11.5	2.3528	2.2498	11.5	2.351	2.259				11	2.347	2.231
2-1/2"	2.875	8.0	11	8.0	2.8434	2.6930	8.0	2.841	2.708	7.5	3.068	2.9104	11	2.960	2.844
3"	3.500	8.0	11				8.0	3.467	3.334	6.0	3.623	3.5306	11	3.460	3.344
4"	4.500	8.0	11				8.0	4.466	4.333	4.0	5.010	4.7111	11	4.450	4.334
4-1/2"										4.0	5.760	5.4611			
5"	5.563	8.0	11				8.0	5.528	5.395	4.0	6.260	5.9602	11	5.450	5.359
6"	6.625	8.0	11				8.0	6.585	6.452	4.0	7.025	6.7252	11	6.450	6.359
8"	8.625	8.0													
10"	10.750	8.0													
12"	12.750	8.0													

Normal Engagement Length of NPT Thread in Inches (A)

- Dimensions given do not allow for variations in tapping or threading.



Thread Size	Dimension A
1/8"	1/4"
1/4"	3/8"
3/8"	3/8"
1/2"	1/2"
3/4"	9/16"
1"	11/16"
1-1/4"	11/16"
1-1/2"	11/16"
2"	3/4"
2-1/2"	15/16"
3"	1"
4"	1-1/8"
5"	1-1/4"
6"	1-5/16"
8"	1-7/16"
10"	1-5/8"
12"	1-3/4"