

CHOOSING THE CORRECT FITTINGS

HOSE

FITTINGS

ADAPTERS

EQUIPMENT &
ACCESSORIES

ASSEMBLIES

INSTALLATION &
MAINTENANCE

APPENDIX

Choosing the correct Perma-Crimp™ fitting may be simply identifying the fitting to be replaced by measuring the fitting or in some other way, identifying its size and thread type. Care should be taken in using the correct fitting.

- 1) The correct fitting is chosen to match a replacement fitting and/or chosen on the basis of formal design and sound engineering practice.
- 2) Any questions or concerns involving fitting selection should be addressed with the local Goodyear field representative or the Goodyear Hydraulic Applications Group.
- 3) Selecting the proper hose assembly is covered in Section VI of this catalog. A helpful guide is the “S.T.A.M.P.E.D.” process, which requires the documentation of the following.
 - S** Size—I.D., O.D. and length of the assembly
 - T** Temperature—Temperature of material conveyed and climatic conditions
 - A** Application—Conditions of use including abrasion, flexing and routing
 - M** Material—Type, concentration and composition
 - P** Pressure—Includes surge or impulse pressure
 - E** Ends—Style, type, orientation and attachment methods
 - D** Delivery—Includes testing, quality and packaging requirements

In completing the “S.T.A.M.P.E.D” process, “ENDS” need to be further defined.

Thread Size	Drop Length
Thread Type	Hose Type
Male or Female	Hose Dash Size
Angle of Elbow	Hose Working Pressure

- 4) The Perma-Crimp fitting is available in four styles including Ultra-Crimp™, Uni-Crimp™, Field-Grip™ or Dual-Grip™. Each fitting consists of a stem and a ferrule. The stem fits into the hose I.D. The ferrule attaches the fitting to the hose cover. The stem has two functional ends. The first is the hose end, which is used to attach the fitting to the hose. The hose end must be compatible with the I.D. of the hose. The other end is the thread end, which is used to attach the assembly to another port in the hydraulic system. The thread end will be determined from the fitting being replaced or by measuring the port or threads being attached. See Fitting Identification beginning on page 493 of this catalog for additional information on thread styles.
- 5) Temperature range is important in both hose and fitting selection. Hose temperature ranges are shown on page 83 of this catalog. In general, fittings will be comparable with hose temperature ranges with the exception of o-ring fittings, which are limited to 212 degrees.
- 6) Flange identification requires additional information. Code 61 Flanges, Code 62 Flanges and Caterpillar Flanges are commonly used to connect large sizes of hose and tubing. Code 61 Flanges are commonly used in applications of 3000-5000 psi working pressure, while Code 62 Flanges can be used in applications up to 6000 psi working pressure. Code 62 and Caterpillar Flanges are similar in application but Caterpillar Flanges have a thicker flange head and are frequently found on Caterpillar equipment. Flanges are identified by measuring the port hole diameter, the longest bolt hole spacing and the flange head thickness.
- 7) It is possible to have a fitting rated at a lower working pressure than the hose. Keep working pressure in mind when selecting a fitting. The hose assembly can be rated no greater than the lowest pressure rating of either hose or fitting. Reference working pressure tables can be found on pages 80-81 for hose and page 345 for fittings.

Dimensions in the catalog are listed as approximate and for reference only. Dimensions are subject to change.

FITTING WORKING PRESSURE CHARTS

Maximum Recommended Working Pressure (psi)

Choose fittings carefully considering the working pressure of both hose and fitting. The **maximum** working pressure of the hose assembly is the lesser of the **rated** working pressure of the hose **and** the fitting.

Working pressures shown on the page are not applicable for the Field-Grip™ reattachable fittings (FG-*). Please contact Goodyear Customer Service for the working pressure of the FG fittings.

Fitting Style	JIC 37° Flare Male Non-Swivel	JIC 37° Flare Female Swivel	NPTF Male Swivel	NPTF Male Non-Swivel	NPTF Female Swivel	NPSM Female Swivel	Code 61 Flange	Code 62 Flange	CAT Flange	Straight Thread O-ring Boss Male	O-ring Face Seal Female
Dash Size											
-02											
-04	5000	5000	3000	5000	5000	5000				5000	6000
-05	5000	5000	3000							5000	
-06	4000	4000	3000	4000	4000	4000				5000	6000
-08	4000	4000	3000	4000	4000	4000	5000	6000		4500	6000
-10	4000	4000	2750				5000	6000		4000	6000
-12	4000	4000	2250	4000	2250	2250	5000	6000	6000	4000	6000
-14											
-16	4000	4000	2000	4000	2000	2000	5000	6000	6000	4000	6000
-20	3000	3000		3000	1625	1625	4000	6000	6000	3000	4000
-24	3000	3000		2500			3000	6000	6000		4000
-32	3000	3000		2500			3000	6000	6000		

Fitting Style	SAE 45° Flare Female Swivel	SAE J514 Flareless Tube Fitting	BSPP O-ring Female Swivel	BSPT Male Non Swivel	BSPP Male Non Swivel	DIN 24 Light Female Swivel	DIN 24 Light Male	DIN 24 Heavy Female Swivel	DIN 24 Heavy Male	JIS 30° Flare Female Swivel	JIS 30° Flareless Female Swivel	Komatsu 30° Metric Thread Female Swivel
Dash Size												
-02												
-04	3000	5000	5800	5800	5800	3625	3625			5000	5000	5000
-05		5000				3625	3625	5800	5800			
-06	3000	4000	5800	5800	5800	3625	3625	5800	5800	5000	5000	5000
-08	3000	3500	5000	5000	5000	3625	3625	5800	5800	5000	5000	5000
-10	2750	2750	5000	5000	5000	3625	3625	5800	5800			
-12	2250	2250	4500	4500	4500	2320	2320	5800	5800	4000	4000	4000
-14												
-16	2000	2000	3500	3500	3500	2320	2320	5800	5800	3000	3000	3000
-20	1625	1625	2850	2850	2850	1450	1450	5800	5800	2500	2500	2500
-24	1250		2250	2250	2250	1450	1450	3625	3625	1500	1500	1500
-32	1125		1800	1800	1800	1450	1450	3625	3625	1500	1500	1500

Selection of the proper Goodyear fitting is essential to the proper operation and safe use of the hose assembly and related equipment. Inadequate attention to the selection of the proper fitting for the application can result in failure of the fitting which can cause serious bodily injury or property damage from spraying fluids or flying projectiles.

THREAD REFERENCE CHART

Thread Type	02	03	04	05	06	08	10	12	14	15	16	18	20
JIC 37° Flare (SAE J514)		¾-24	7/16-20	½-20	5/16-18	¾-16	7/8-14	1 1/16-12	1 3/16-12		1 5/16-12		1 7/8-12
SAE 45° J512 Flare			7/16-20	½-20	5/16-18	¾-16	7/8-14	1 1/16-14					
SAE 45° Inverted Flare			7/16-24	½-20	5/16-18	¾-18							
NPTF	¾-27		¾-18		5/8-18	¾-14		¾-14			1-11 ½		1 1/4-11 ½
NPSM			¾-18		5/8-18	¾-14							
SAE J514 Flareless Tube Fittings			7/16-20		5/16-18	¾-16							
O-Ring Face Seal (SAE J1453 ORS/ORFS)			5/16-18		1 1/16-16	1 3/16-16	1-14	1 1/16-12			1 7/16-12		1 1/4-12
O-Ring Boss Straight Thread (SAE J514)			7/16-20	½-20	5/16-18	¾-16	7/8-14	1 1/16-12			1 7/16-12		1 3/8-12
BSPP (British Standard Pipe Parallel)			¾-19		5/8-19	¾-14	7/8-14	¾-14			1-11		1 1/4-11
BSPT (British Standard Pipe Tapered)			¾-19		5/8-19	¾-14		¾-14			1-11		
BSP Flat Seat (British Standard Pipe)					5/8-19	¾-14		¾-14					
JIS 30° (Parallel Pipe Threads)			¾-19		5/8-19	¾-14		¾-14			1-11		1 1/4-11
Code 61 Flange (SAE J518)						1.19		1.5			1.75		2
Code 62 Flange (SAE J518)						1.25		1.63			1.87		2.13
Caterpillar Flange								1.63			1.87		2.13
Komatsu Flange							1.34						
Standpipe						8	10	12		15	16	18	20
DIN 24° Light								12x1.5	14x1.5		16x1.5	18x1.5	
DIN 24° Heavy											16x1.5	18x1.5	20x1.5
DIN 60°									14x1.5		16x1.5	18x1.5	
Japanese Komatsu 30° Flare with Metric Threads									14x1.5			18x1.5	

HOSE

FITTINGS

ADAPTERS

EQUIPMENT & ACCESSORIES

ASSEMBLIES

INSTALLATION & MAINTENANCE

APPENDIX



One Source, One System, One Solution.

www.hydraulics.goodyear.com

Information in this catalog supersedes all previously printed material and is current as of September 2006. Due to continual product improvements, Goodyear reserves the right to alter specs without prior notice. For the most current product information, visit us online. Complete product warranty and terms of sale information can be found on the last pages of this catalog.

THREAD REFERENCE CHART

Thread Type	22	24	26	28	30	32	33	36	40	42	45	52
JIC 37° Flare (SAE J514)		1 7/8-12				2 1/2-12						
SAE 45° J512 Flare												
SAE 45° Inverted Flare												
NPTF		1 1/2-11 1/2				2-11 1/2						
NPSM												
SAE J514 Flareless Tube Fittings												
O-Ring Face Seal (SAE J1453 ORS/ORFS)		2-12										
O-Ring Boss Straight Thread (SAE J514)		1 7/8-12										
BSPB (British Standard Pipe Parallel)		1 1/2-11				2-11						
BSPT (British Standard Pipe Tapered)												
BSP Flat Seat (British Standard Pipe)												
JIS 30° (Parallel Pipe Threads)												
Code 61 Flange (SAE J518)		2.37				2.81			3.31			
Code 62 Flange (SAE J518)		2.5				3.13						
Caterpillar Flange		2.5										
Komatsu Flange												
Standpipe	22			28								
DIN 24° Light	22x1.5		26x1.5		30x2.0			36x2.0			45x2.0	
DIN 24° Heavy	22x1.5	24x1.5			30x2.0			36x2.0		42x2.0		52x2.0
DIN 60°	22x1.5		26x1.5									
Japanese Komatsu 30° Flare with Metric Threads	22x1.5	24x1.5			30x1.5		33x1.5	36x1.5		42x1.5		

HOSE

FITTINGS

ADAPTERS

EQUIPMENT & ACCESSORIES

ASSEMBLIES

INSTALLATION & MAINTENANCE

APPENDIX



One Source, One System, One Solution.

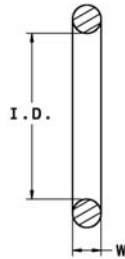
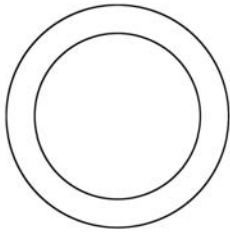
www.hydraulics.goodyear.com

Information in this catalog supersedes all previously printed material and is current as of September 2006. Due to continual product improvements, Goodyear reserves the right to alter specs without prior notice. For the most current product information, visit us online. Complete product warranty and terms of sale information can be found on the last pages of this catalog.

FITTING ACCESSORIES (O-RINGS)



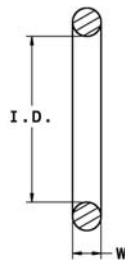
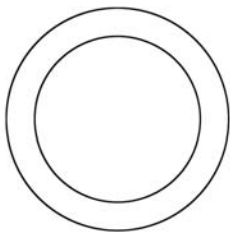
BSPP (BRITISH STANDARD PIPE PARALLEL) O-RINGS



Material: NBR
 Hardness: 90 Shore A
 Temperature Range: -13°F to 257°F

Goodyear Part #	I.D.	Width (W)	Thread Dash Size
OBSPP-04	0.256	0.039	-04
OBSPP-06	0.319	0.063	-06
OBSPP-08	0.476	0.063	-08
OBSPP-10	0.516	0.063	-10
OBSPP-12	0.673	0.063	-12
OBSPP-16	0.870	0.063	-16
OBSPP-20	1.146	0.063	-20
OBSPP-24	1.382	0.063	-24
OBSPP-32	1.890	0.059	-32

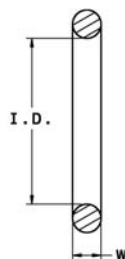
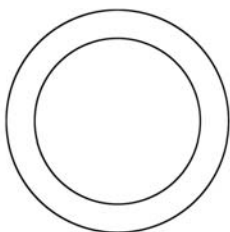
DIN 24 LIGHT O-RINGS



Material: NBR
 Hardness: 90 Shore A
 Temperature Range: -13°F to 257°F

Goodyear Part #	I.D.	Width (W)	Thread Dash Size
ODIN24L-14	0.236	0.059	-14
ODIN24L-16	0.295	0.059	-16
ODIN24L-18	0.354	0.059	-18
ODIN24L-22	0.472	0.079	-22
ODIN24L-26	0.591	0.079	-26
ODIN24L-30	0.787	0.079	-30
ODIN24L-36	1.024	0.079	-36
ODIN24L-45	1.260	0.098	-45
ODIN24L-52	1.496	0.098	-52

DIN 24 HEAVY O-RINGS

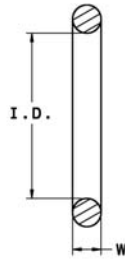
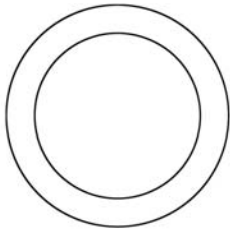


Material: NBR
 Hardness: 90 Shore A
 Temperature Range: -13°F to 257°F

Goodyear Part #	I.D.	Width (W)	Thread Dash Size
ODIN24H-22	0.394	0.079	-22
ODIN24H-30	0.642	0.094	-30
ODIN24H-36	0.799	0.094	-36
ODIN24H-42	0.984	0.098	-42
ODIN24H-52	1.311	0.094	-52

FITTING ACCESSORIES (O-RINGS)

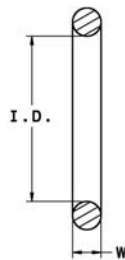
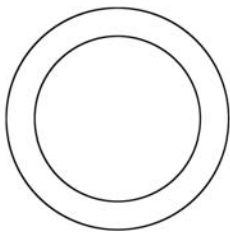
O-RING FACE SEAL (SAE J1453 ORS/ORFS) O-RINGS



Material: NBR
 Hardness: 90 Shore A
 Temperature Range: -13°F to 257°F

Goodyear Part #	I.D.	Width (W)	Thread Dash Size
OORFS-04	0.301	0.07	-04
OORFS-06	0.364	0.07	-06
OORFS-08	0.488	0.07	-08
OORFS-10	0.614	0.07	-10
OORFS-12	0.739	0.07	-12
OORFS-16	0.926	0.07	-16
OORFS-20	1.176	0.07	-20

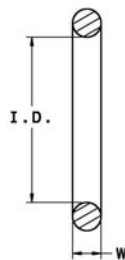
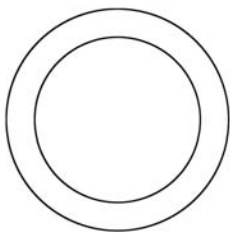
O-RING BOSS STRAIGHT THREAD (SAE J514) O-RINGS



Material: NBR
 Hardness: 90 Shore A
 Temperature Range: -13°F to 257°F

Goodyear Part #	I.D.	Width (W)	Thread Dash Size
ORB-04	0.351	0.072	-04
ORB-05	0.414	0.072	-05
ORB-06	0.468	0.078	-06
ORB-08	0.644	0.087	-08
ORB-10	0.755	0.097	-10
ORB-12	0.924	0.116	-12
ORB-16	1.171	0.116	-16

CODE 61 & 62 FLANGE (SAE J518) O-RINGS & CATERPILLAR® FLANGE O-RINGS



Material: NBR
 Hardness: 90 Shore A
 Temperature Range: -13°F to 257°F

Goodyear Part #	I.D.	Width (W)	Flange Dash Size
O6162-08	0.734	0.139	-08
O6162-12	0.984	0.139	-12
O6162-16	1.296	0.139	-16
O6162-20	1.484	0.139	-20
O6162-24	1.859	0.139	-24
O6162-32	2.234	0.139	-32
O6162-40	2.734	0.139	-40



One Source, One System, One Solution.

www.hydraulics.goodyear.com

Information in this catalog supersedes all previously printed material and is current as of September 2006. Due to continual product improvements, Goodyear reserves the right to alter specs without prior notice. For the most current product information, visit us online. Complete product warranty and terms of sale information can be found on the last pages of this catalog.

SPLIT FLANGES

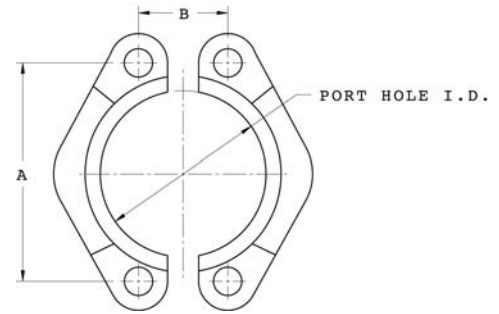
CODE 61 AND CODE 62 (SAE J518)

Flanges are commonly used to connect large sizes of hose and tubing. An O-ring in the flange head seals on a smooth face, female port. The male flange head and female port are held in place with two clamp halves and four bolts. Flanges conform to SAE J518 standard and are identified as Code 61 or the “standard series” and Code 62 or “high pressure series”. The two flanges are not interchangeable as Code 61 is used in applications of up to 5000 psi working pressure. Code 62 is designed for 6000 psi working pressure. Code 61 and Code 62 are dimensionally different. Specifics on Code 61 and Code 62 flanges are found in the following charts.

Determine Flange Size

Method 1: Measure the port hole inside diameter. (I.D.)

Method 2: Measure the “A” dimension on the flange, which is the longest bolt hold spacing from center-to-center.



Assembly Procedure

- 1) Clean all mating surfaces
- 2) Replace O-Ring. Lubricate before installation.
- 3) Partially tighten each bolt in rotation until all are fully tightened to the recommended torque value listed in the Appendix.

SPLIT FLANGE CLAMPS FOR CODE 61 (SAE J518)

Part Number	Port Hole I.D.	A	B	Max Working Pressure	Recommended Grade 8 Bolts	Part Number
2 Required	(in)	(in)	(in)	psi	4 Required	Set of 4 Bolts & Lockwashers
FL61SC-08	1/2	1.500	0.685	5000	5/16 - 18 x 1 1/4	FLSCBW5-20
FL61SC-12	3/4	1.874	0.874	5000	3/8 - 16 x 1 1/4	FLSCBW6-20
FL61SC-16	1	2.063	1.031	5000	3/8 - 16 x 1 1/4	FLSCBW6-20
FL61SC-20	1 1/4	2.311	1.189	4000	7/16 - 14 x 1 1/2	FLSCBW7-24
FL61SC-24	1 1/2	2.752	1.409	3000	1/2 - 13 x 1 1/2	FLSCBW8-24
FL61SC-32	2	3.063	1.685	3000	1/2 - 13 x 1 3/4	FLSCBW8-28
FL61SC-40	2 1/2	3.504	2.008	2500	1/2 - 13 x 1 3/4	FLSCBW8-28

One O-Ring required for each flange head assembly. See Fitting Accessories for O-Ring replacement part.

SPLIT FLANGE CLAMPS FOR CODE 62 (SAE J518)

Part Number	Port Hole I.D.	A	B	Max Working Pressure	Recommended Grade 8 Bolts	Part Number
2 Required	(in)	(in)	(in)	psi	4 Required	Set of 4 Bolts & Lockwashers
FL62SC-08	1/2	1.594	0.717	6000	5/16 - 18 x 1 1/4	FLSCBW5-20
FL62SC-12	3/4	2.000	0.937	6000	3/8 - 16 x 1 1/2	FLSCBW6-24
FL62SC-16	1	2.252	1.094	6000	7/16 - 14 x 1 3/4	FLSCBW7-28
FL62SC-20	1 1/4	2.626	1.252	6000	1/2 - 13 x 1 3/4	FLSCBW8-28
FL62SC-24	1 1/2	3.126	1.441	6000	5/8 - 11 x 2 1/4	FLSCBW10-36
FL62SC-32	2	3.811	1.748	6000	3/4 - 10 x 2 3/4	FLSCBW12-44

One O-Ring required for each flange head assembly. See Fitting Accessories for O-Ring replacement part.



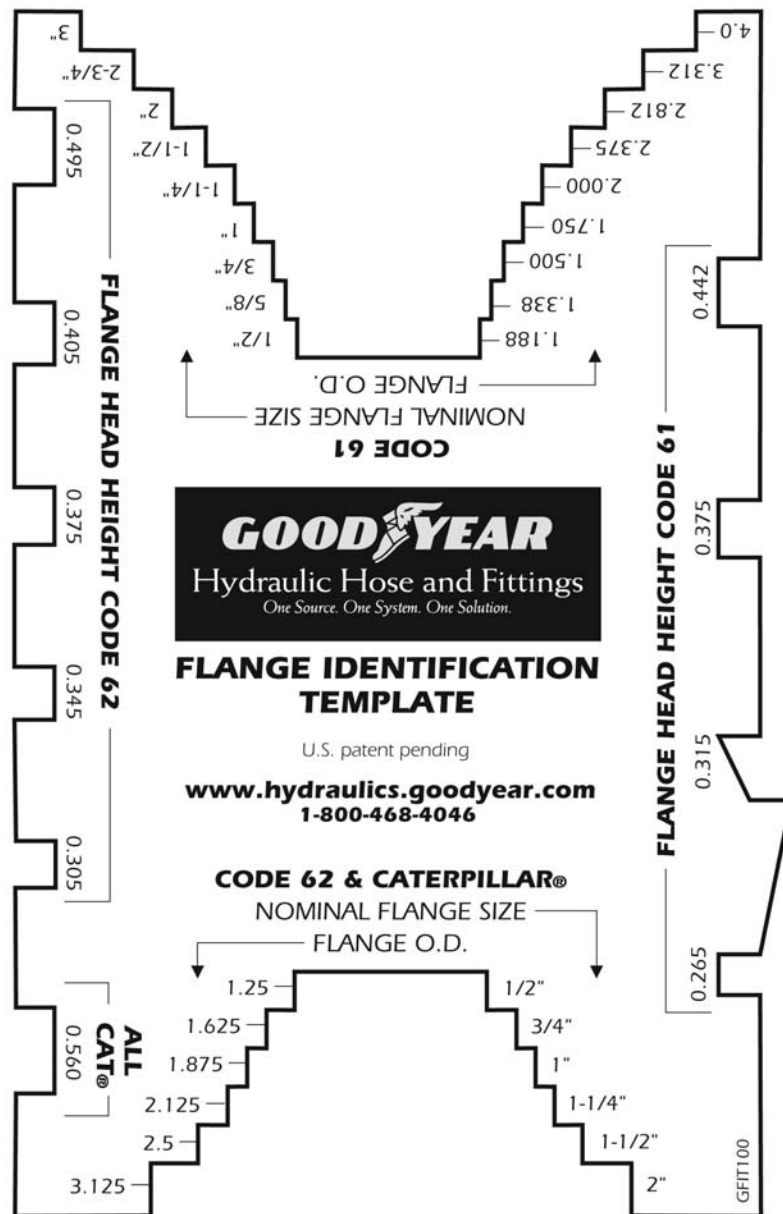
One Source, One System, One Solution.

www.hydraulics.goodyear.com

Information in this catalog supersedes all previously printed material and is current as of September 2006. Due to continual product improvements, Goodyear reserves the right to alter specs without prior notice. For the most current product information, visit us online. Complete product warranty and terms of sale information can be found on the last pages of this catalog.

CODE 61/CODE 62/CAT FLANGE IDENTIFICATION TEMPLATE

Ideal for counter and field identification of SAE flanges.



Part Number: GFIT100

Weight: 1.4 oz

Dimensions: 4 7/8" wide x 7 7/8" high

Notes:

- 1) Reverse side of template shows dimensional chart for Code 61/Code 62/Cat flanges.
- 2) Above not to scale
- 3) As a connection on pumps and motors, the SAE Code 61 and Code 62 4-bolt flanges are used world wide with three exceptions.
 - a. Although a common size outside of North America, the -10 size is not an SAE standard size
 - b. Although Caterpillar flanges have the same O.D. as SAE Code 62, they have a thicker flange head.
 - c. Porcelain flanges are completely different from SAE flanges.

THREAD IDENTIFICATION KIT

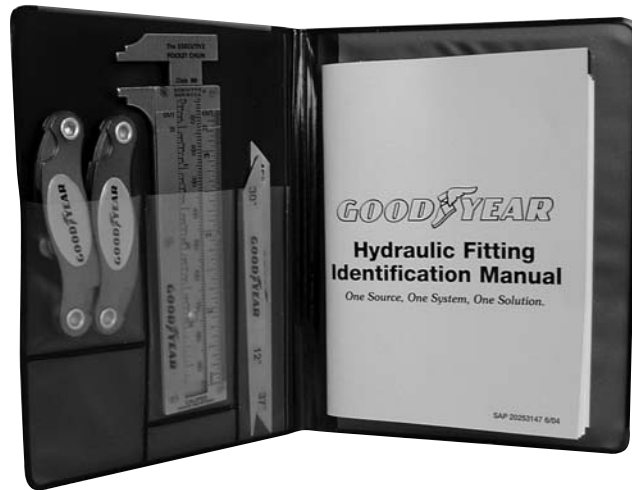
There are many types of North American threads, as well as British, German, French and Japanese threads. With all the thread types and styles available, it is important to properly identify a fitting so that an assembly can be connected correctly within the hydraulic system. This kit and the tools inside will help you identify a broad selection of different thread types.

The Thread Identification Kit includes:

- Fitting Identification Manual
- North American (NA) Thread Pitch Gauge
- International (INT) Thread Pitch Gauge
- Seat Angle Gauges 12°, 30°, 37°, 45°
- I.D./O.D. 3.5" Calipers

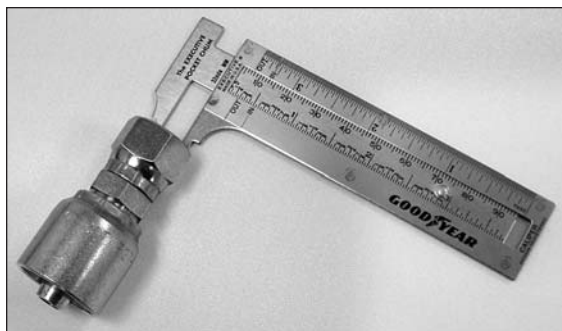
Part Number: Fitting I.D. Pocket Guide

Dimensions: 4 1/2" W x 5 1/2" H

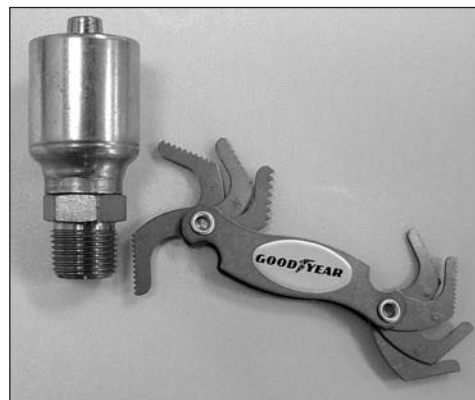


Steps to Identify a Fitting

- 1) Select country of origin for the fitting. Use part number if available to determine thread type.
- 2) Identify the fitting visually using the illustrations in the proper section of the Goodyear Hydraulic Hose and Fittings Catalog or the Hydraulic Fitting Identification Manual included with the identification kit.
- 3) Measure the inside diameter or the outside diameter of the fitting threads using the I.D./O.D. Calipers.



- 4) Measure thread pitch using the North American or International Thread Pitch Gauge. The gauge will determine number of threads per inch or the distance between threads of a metric connection.



- 5) Measure the angle of the fittings sealing surface using the Seat Angle Gauge.



- 6) Compare measurements above to the tables in the fitting catalog or identification manual to complete the identification of the fitting.