

Seven Easy Steps For Selecting The Proper Hose

An effective way to remember hose selection criteria is to remember the word...

STAMPED

- S** = Size
- T** = Temperature
- A** = Application
- M** = Material to be conveyed
- P** = Pressure
- E** = Ends or couplings
- D** = Delivery (volume and velocity)

1. Hose Size (Dash Numbers)

The inside diameter of the hose must be adequate to keep pressure loss to a minimum and avoid damage to the hose due to heat generation or excessive turbulence. See hose sizing Nomographic Chart on page C63.

To determine the replacement hose size, read the layline printing on the side of the original hose. If the original hose layline is painted over or worn off, the original hose must be cut and the inside diameter measured for size.

NOTE: Before cutting an original hose assembly, measure the overall assembly length and fitting orientation. These measurements will be required to build the replacement assembly.

The hydraulics industry has adopted a measuring system called Dash Numbers to indicate hose and coupling size. The number which precedes the hose or coupling description is the dash size (see following table). This industry standard number denotes hose I.D. in sixteenths of an inch. (The exception to this is the SAE100R5 hoses C5C, C5D, C5E, C5M as well as, C14 and AC134a, where dash sizes denote hose I.D. equal to equivalent tube O.D.) See chart to the right.

Dash No.	Hose I.D. (Inches)			
	All Except C5 Series, C14 and AC134a		C5 Series, C14 and AC134a	
	Inches	Millimeters	Inches	Millimeters
-2	1/8	3.2	--	--
-3	3/16	4.8	--	--
-4	1/4	6.4	3/16	4.8
-5	5/16	7.9	1/4	6.4
-6	3/8	9.5	5/16	7.9
-8	1/2	12.7	13/32	10.3
-10	5/8	15.9	1/2	12.7
-12	3/4	19.0	5/8	15.9
-14	7/8	22.2	--	--
-16	1	25.4	7/8	22.2
-20	1-1/4	31.8	1-1/8	28.6
-24	1-1/2	38.1	1-3/8	34.9
-32	2	50.8	1-13/16	46.0
-36	2-1/4	57.6	--	--
-40	2-1/2	63.5	2-3/8	60.3
-48	3	76.2	--	--
-56	3-1/2	88.9	--	--
-64	4	101.6	--	--
-72	4-1/2	115.2	--	--

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

FLEET

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

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ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

Selecting The Proper Hose — con't.

Hose O.D. can be a critical factor when hose routing clamps are used or hoses are routed through bulkheads. Check individual hose specification tables for O.D.'s.

2. Temperature

When selecting a replacement assembly, two areas of temperature must be considered. These are fluid temperature and ambient temperature. The hose selected must be capable of withstanding the minimum and maximum temperature seen by the system. Care must be taken when routing near hot manifolds and in extreme cases a heat shield may be advisable.

See the Gates Hydraulic Hose Selection Guide on pages C4 and C5; Hose Specification Pages; and/or the Additional Temperature Limits For Gates Hydraulic Hoses Chart on page C8 for temperature ranges and limits for water, water/oil emulsions and water/glycol solutions.

3. Application

Determine where or how the replacement hose or assembly is to be used. Most often only a duplicate of the original hose will have to be made. To fulfill the requirements of the application, additional questions may need to be answered, such as:

- Where will hose be used?
- Fluid and/or Ambient Temperature?
- Hose Construction?
- Equipment Type?
- Fluid Compatibility?
- Thread End Connection Type?
- Working and Surge Pressures?
- Environmental Conditions?
- Permanent or Field Attachable Couplings?
- Suction Application?
- Routing Requirements?
- Thread Type?
- Government and Industry Standards Being Met?
- Unusual Mechanical Loads?
- Minimum Bend Radius?
- Non-Conductive Hose Required?
- Excessive Abrasion?

4. Material to be Conveyed

Some applications require specialized oils or chemicals to be conveyed through the system. Hose selection must assure compatibility of the hose tube, cover, couplings and O-rings with the fluid used. Additional caution must be exercised in hose selection for gaseous applications such as refrigerants and LPG.

NOTE: All block type couplings contain nitrile O-rings which must be compatible with the fluids being used.

5. Pressure

Most important in the hose selection process is knowing system pressure, including pressure spikes. Published working pressures must be equal to or greater than the system pressure. Pressure spikes greater than the published working pressure will shorten hose life and must be taken into consideration. Gates DOES NOT recommend using hoses on applications having pressure spikes greater than published working pressures of the hose.

6. Ends of Couplings

Identify end connections using Gates coupling templates and measuring tools on pages C25 or Coupling Identification section pages C27-C40. Once thread ends have been identified, consult the appropriate section of the catalog for specific part number selection.

7. Delivery (Volume and Velocity)

If the same I.D. of the original hose is used, assume the system is properly sized to efficiently transport fluid. If the system is new or altered, determine the hose I.D. needed to transport required fluid volume flow by using the Nomographic Chart on page C63.

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LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

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ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Hose & Coupling Selection

Agency Specifications and Hose Selection Guide

EQUIPMENT

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ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORT-MENTS

PART NUMBER INDEXES

INDUSTRY AGENCIES

ABS — American Bureau of Shipping
AS — Australia Standard
DIN — Deutsch Industry Norm, German
DNV — Det Norske Veritas for North Sea Floating Vessels
EN — European Norm/Standard
GL — Germanischer Lloyds
IJS — Industrial Jack Specifications
RCCC — Regular Common Carrier Conference for Fleet Truck and Bus
SAE — Society of Automotive Engineers

GOVERNMENT AGENCIES

DOT/FMVSS — U.S. Department of Transportation/
 Federal Motor Vehicle Safety Standard
MSHA — U.S. Mine Safety and Health Administration
USCG — U.S. Coast Guard

Meets These Agency Specifications

Hose Type	ABS	AS	DIN	DNV	EN	GL	IJS	RCCC	SAE	DOT/ FMVSS	MSHA	††USCG	
												Fuel Oil	Power
EFG6K, G6K	X	X	20023 4SH/4SP	X	EN 856 4SH/4SP				100R15		X		X
EFG5K, G5K	X	X	20023 4SH/4SP	X	EN 856 4SH/4SP				100R13		X		X
EFG4K, G4K	X	X	20023 4SP		EN 856 4SP				100R12		X		X
EFG3K, G3K	X		20023 4SP		EN 856 4SP				100R12		X		X
C12M	X	X	20023 4SP	X	EN 856 4SP				100R12		X		X
C12	X		20023 4SP		EN 856 4SP				100R12		X		X
M5K		X				X							
M4K+	X	X				X			100R19		X		X
M4KH	X					X			100R19		X		X
G2XH									100R2 Type AT		X		X
G2AT-HMP									100R2 Type AT		X		X*
M2T®	X	X		X					100R16		X		X
CM2T					EN 853 2CS				100R16		X		
G2		X	20022 2SN	X	EN 853 2SN	X			100R2 Type AT		X		X
G2H		X		X	EN 853 2SN				100R2 Type AT		X	X	X
J2AT							X				X		
M3K	X	X		X	EN 857	X			100R17		X		X
M3K -12, -16	X	X		X	EN 857	X			100R17, 100R9		X	X	X
G1		X	20022 1SN	X	EN 853 1SN	X			100R1 Type AT		X		X
G1H				X	EN 853 1SN				100R1 Type AT		X	X	
MegaTech™									J1402, J1019	106-74 (-4 to -10)			
TR500									J1402	106-74			
NABT									J844				
C5C								RP305(B)	100R5	106-74 Type All (-4 to -10)			
C5E									J1019	106-74 Type AI			
C5D									J1019	106-74 Type All			
C5M	X								J30R2, J1257		X	X	
G3H					EN 854 R3				100R3				
GTH					EN 854 R6				100R6				
GMV	X@	X							100R4†		X		X
L0L											X		
THERMOPLASTIC													
GT8, GT8NC									100R8				
GT7, GT7NC***									100R7				
C14									100R14				
REFRIGERANT													
PolarSeal® AC134a									J51 Type 2, J2064				
POWER STEERING													
PS188									2050				

* Except 1/4"

** Except 3/8" & 1/2"

*** GT7NC meets ANSI A92.2 for vehicle mounted aerial devices (-3 to -8)

@ to be used with a fire sleeve

† Except 1"

Hose & Coupling Selection



Gates Hydraulic Hose Selection Guide

Standard Industry Specification	Description	Construction (Reinforcement)	Use	Stock			
				Tube		Cover	
				Name	Type	Name	Type
SAE 100R15 EN 856 TYPE 4SP/4SH	EF66K	4&6-spiral, wire	Extremely High Pressure, Petrol, Oils, Environmental Fluids	Nitrile	C	Neoprene	A
SAE 100R13 EN 856 TYPE 4SP/4SH	EF65K	4&6-spiral, wire	Extremely High Pressure, Petrol, Oils, Environmental Fluids	Nitrile	C	Neoprene	A
SAE 100R12 EN 856 TYPE 4SP	EF64K	4&6-spiral, wire	Extremely High Pressure, Petrol, Oils, Environmental Fluids	Nitrile	C	Neoprene	A
SAE 100R12 EN 856 TYPE 4SP	EF63K	4-spiral, wire	Extremely High Pressure Petrol, Oils	Nitrile	C	Neoprene	A
SAE 100R15 EN 856 TYPE 4SP/4SH	G6K	4&6-spiral, wire	Extremely High Pressure	Neoprene	A	Neoprene	A
SAE 100R13 EN 856 TYPE R13/4SP/4SH	G5K	4&6-spiral, wire	Extremely High Pressure Petrol, Oils	Neoprene	A	Neoprene	A
SAE 100R12 EN 856 TYPE 4SP	G3K	4-spiral, wire	Extremely High Pressure Petrol, Oils	Neoprene	A	Neoprene	A
SAE 100R12 EN 856 TYPE R12	C12	4-spiral, wire	High Pressure, Petrol, Oils	Neoprene	A	Neoprene	A
SAE 100R2 Type AT EN 853 Type 2SN	G2	2-braid, wire	Petroleum Oils	Nitrile	C	NBR/PVC	C ₂
SAE 100R2 Type AT	MegaTech™ II	2-braid, wire	Petroleum Oils	CPE	J	Blue Textile	---
SAE 100R2 Type AT EN 853 Type 2SN	G2L	2-braid, wire	Petroleum Oils, Low Temperatures	Nitrile	C	Neoprene	A
SAE 100R16	M2T*	2-braid, wire	Tight Bends, High Flexibility	Nitrile	C	NBR/PVC	C ₂
Gates Proprietary	M6K	2-braid, wire	Tight Bends, High Flexibility	Nitrile	C	NBR/PVC	C ₂
Gates Proprietary	M5K	2-braid, wire	Tight Bends, High Flexibility	Nitrile	C	NBR/PVC	C ₂
SAE 100R19	M4K+	2-braid, wire	Tight Bends, High Flexibility	Nitrile	C	NBR/PVC	C ₂
SAE 100R17	M3K	1 & 2-braid, wire	Tight Bends, High Flexibility	Nitrile	C	NBR/PVC	C ₂
SAE 100R17 EN 857 1SC	M3KH	1-braid, wire	High Pressure Oil	Nitrile	C	NBR/PVC	C ₂
SAE 100R2 Type AT EN 853 TYPE 2SN	G2H	2-braid, wire	High Temperature	Nitrile	C	Hypalon+	M
SAE 100R2 Type AT	G2XH	2-braid, wire	Multi-Fluid, High Temperature	CPE	J	CPE	J
SAE 100R2 Type AT	G2AT-HMP	2-braid, wire	Multi-Fluid, High Temperature	CPE	J	Neoprene	A
IJ100	J2AT	2-braid, wire	Industrial Jack Hose	Nitrile	C	NBR/PVC	C ₂
SAE 100R1 Type AT EN 853 Type 1SN	G1	1-braid, wire	Petroleum Oils	Nitrile	C	NBR/PVC	C ₂
SAE 100R1 Type AT EN 853 TYPE 1SN	G1H	1-braid, wire	High Temperature	Nitrile	C	Hypalon+	M
SAE 100R3 EN 854 TYPE R3	G3H	2-braid, textile	Petrol. Oils, Antifreeze, Water, High Temperature	Nitrile	C	Neoprene	A
SAE 100R6 EN 854 TYPE R6	GTH	1-braid, textile	Petrol. Oils, Antifreeze, Water, High Temperature	Nitrile	C	Neoprene	A
SAE 100R4	G4H	2-spiral, textile, helical wire	Return & Suction High Temperature	Nitrile	C	Neoprene	A
SAE 100R4	GMV	2-spiral, textile, helical wire	Return & Suction High Temperature	Nitrile	C	Neoprene	A
SAE 30R2 Type 1 & 2	RLA	1-braid, textile	Return & Low Pressure	Nitrile	C	NBR/PVC	C ₂
	RLC	3-braid, textile	Return & Low Pressure	Nitrile	C	NBR/PVC	C ₂
	LOC	1-braid, textile	Petrol, Oils, Antifreeze, Water & Air	Nitrile	C	Textile	--
	LOL	1-braid, textile	Petrol, Oils, Antifreeze, Water & Air	Nitrile	C	***	A/C ₂
SAE J1402, J1019	MegaTech™	2-braid, wire, textile	Hot Oil, Air Return Line	CPE	J	Textile	--
SAE J1019	MegaTech™ 250	2-braid, wire, textile	Transmission Oil Cooler, Hot Oil, Air Return Line	CPE	J	Textile	--
SAE J1402, DOT FMVSS106-74	TR500	2-braid, wire, textile	Petrol & Syn. Fluids, Air Brakes	Nitrile	C	Textile	---
SAE 100R5, DOT FMVSS106-74, Type All	*C5C	3-braid, T-W-T	Petr. Oil, Air Brake, Power Steering	*Nitrile	C	Textile	---
SAE J1402, DOT FMVSS106-74, Type All	C5D	3-braid, T-W-T	Petrol & Syn. Fluids, Air Brakes	CPE	J	Textile	---
SAE J1527, SAE J1942, ISO 7840	C5M	1-braid, wire	Marine Fuel & Oil	Nitrile	C	NBR/PVC	C ₂
DOTFMVSS106-74, Type All	C5E	3-braid, T-W-T	Air Brake, Power Steering, Lube	Nitrile	C	Textile	---
PTFE							
SAE 100R14	C14	1-braid, stainless steel	High Temperature, Multi Fluid, Nonconductive	PTFE	---	Stainless Steel	---
SAE 100R14	C14CT	1-braid, stainless steel	High Temperature, Multi Fluid, Conductive	PTFE	---	Stainless Steel	---
Thermoplastic							
SAE 100R7	GT7	1-braid, polyester	Petroleum & Synthetic Fluids	Nylon	Z	Urethane	U
SAE 100R7	GT7NC/GT7NCDL	1-braid, polyester	Non-conductive	Nylon	Z	Urethane	U
SAE 100R7	GT7DL	1-braid, polyester	Petroleum & Synthetic Fluids, Dual Line	Nylon	Z	Urethane	U
SAE 100R7	GT7NCDL	1-braid, polyester	Non-conductive, Dual Line	Nylon	Z	Urethane	U
SAE 100R8	GT8	2-braid, Polyester	Petroleum & Synthetic Fluids	Nylon	Z	Urethane	U
SAE 100R8	GT8NC	2-braid, Polyester	Non-conductive	Nylon	Z	Urethane	U
Refrigerant							
SAE J51 Type All Dimensions/ Type D Performance, J2064, Type C, Class II Performance	PolarSeal® AC134a	Nylon barrier, 2-spiral, Polyester	Air Conditioning (R12 and R134a)	Chloroprene	A	EPDM	P
Power Steering, SAE J2050	PS188	2-braid, Nylon	Power Steering Fluids, High Temperature	Hypalon+	M	Neoprene	A
PowerClean™	PowerClean™	1 & 2-braid, wire,	Tight Bends, High Flexibility	Nitrile	C	NBR/PVC	C ₂

* -4 and -5 sizes have a Neoprene tube. ** Nitrile or Neoprene † Registered trademark of DuPont.

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

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PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

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THERMO-PLASTIC HOSE & CPLGS.

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ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Hose & Coupling Selection

Gates Hydraulic Hose Selection Guide

Description	Temp. Range (°F)	Dash Size vs. Rated Working Pressure (psi)															Hose Page	
		-2	-3	-4	-5	-6	-8	-10	-12	-16	-20	-24	-32	-40	-48	-56		-64
EFG6K	-40 +250					6,000	6,000	6,000	6,000	6,000	6,000							D1
EFG5K	-40 +250					5,000	5,000	5,000	5,000	5,000	5,000							D2
EFG4K	-40 +250					4,000	4,000	4,000	4,000	4,000	4,000							D3
EFG3K	-40 +250										3,000							D4
G6K	-40 +250					6,000	6,000	6,000	6,000	6,000	6,000							D1
G5K	-40 +250						5,000	5,000	5,000	5,000	5,000	5,000						D2
G3K	-40 +250										3,000	3,000	3,000					D4
C12	-40 +250										2,500	2,500						D5
G2	-40 +212		6,000	5,800		4,800	4,000	3,625	3,100	2,400	1,825	1,300	1,175					E1
MegaTech™ II																		E1
G2L	-70 +212			5,800		4,800	4,000	3,625	3,100	2,400	1,825	1,300						E2
M2T®	-40 +212			5,000		4,000	3,500	3,000	2,250	2,000								E2
M6K	-40 +212			6,000														E3
M5K	-40 +212			5,000		5,000	5,000											E4
M4K+	-40 +212			4,000		4,000	4,000	4,000	4,000									E4
M3K	-40 +212			3,000	3,000	3,000	3,000	3,000	3,000	3,000								E5
M3KH	-40 +250			3,000		3,000												E5
G2H	-40 +275										1,650	1,300	1,175					E6
G2XH	-40 +300									2,500								E7
G2AT-HMP	-40 +300						4,250	3,500	3,000									E6
J2AT	-40 +120			10,000		10,000												E7
G1	-40 +212		3,625	3,275	3,125	2,600	2,325	1,900	1,525	1,275	925	725	600					E8
G1H	-40 +275			2,750		2,250	2,000	1,500	1,250	1,000	625	725	600					E8
G3H(C3H)	-40 +275			1,250		1,125	1,000		750	565	375							E9
GTH(C6H)	-40 +275		500	400	400	400	400	350	300									E10
G4H	-40 +275								300	212	200							G12
GMV	-40 +275								350	300	250	162	112	68	62	56	56	G12
PLA	-40 +212		250	250	250	250	200	200	200	160								G13
RLC	-40 +275									200	200	200	200	150	150	150		G13
LOC	-40 +212			300		300	300	300	300									G1
LOL	-40 +212		300	300	300	300	300	300	300									G2
TR500	-40 +250			500		500	500	500	500	500								F40
MegaTech™	-40 +300			1000		1000	1000	1000	1000	1000	1000	500	500	500	500			F40
MegaTech™ 250	-40 +212			250		250	250	250	250	250	250							F41
C5C	-40 +212			3,000	3,000	2,250	2,000	1,750	1,500	800	625	500	350	350				F42
C5D	-40 +300*			1,500	1,500	1,500	1,250	1,250	750	400								F43
C5M	-40 +212			500	500	500	500	500	500	500								F43
C5E	-40 +300*			1,500	1,500	1,500	1,250	1,250	750	400	300							F56
C14	***			1,500	1,500	1,500	1,000	800	800	800								H1
C14 (Static)	-62 +72			3,000	3,000	2,500	2,000	1,500	1,200	1,000								H1
C14CT	***					1,500	1,000											H1
C14CT (Static)	+72					2,500	2,000											H1
GT7	-65 +200	2,500	3,000	2,750	2,500	2,250	2,000		1,250	1,000								K1
GT7NC	-65 +200	2,500	3,000	2,750	2,500	2,250	2,000		1,250	1,000								K1
GT7DL	-65 +200			2,750	2,500	2,250	2,000											K2
GT7NCDL	-65 +200			2,750		2,250	2,000											K2
GT8	-65 +200		5,000	5,000		4,000	3,500		2,250	2,000								K3
GT8NC	-65 +200			5,000		4,000	3,500											K3
PolarSeal® AC134a	-22 +257					500	500	500	500									I1
PS188	-40 +300					1,500												J1
PowerClean	-40 +212			3,500	6,000	3,000	4,000	5,000	2,500	4,000								E10

*** Dynamic temperatures -65 +400; Static temperatures +73 +450

• All purpose fleet application service — 40°F to +300°F (-40°C to +149°C), air to +250°F





Hydraulic Hose Competitive Reference Guide

(Showing Gates Hose Type with Corresponding Competitor's Hose Type)

The information provided below is intended as a reference guide only. These hoses are similar but are not identical in all respects. Refer to hose specifications to assure that the suggested hose will handle the required application and for the correct Gates couplings to be used with the hose selected.

GATES	AEROQUIP	DAYCO	DAYCO EASTMAN	GOODYEAR	PARKER HANNIFIN	WEATHER-HEAD
EFG6K	FC606					
G6K		HT6	N4/HT6/N2		792	
EFG5K	FC325					
G5K	FC273	NH/CMH	N5/N6NW	9130/9133	741/761/78C	H470
EFG4K/EFG3K						
G4K/G3K	FC254/GH493		N4/N8	N/CN	761	
C12	FC250A/FC136/FC324	CE/CZ	M6/M7/MZ	9120/9123	77C	H430H439
G2	FC212/2793	BX	J4/J4A/BXX	9025	301/7812	H425
G2L	FC424					
M2T®	FC310/FC410	FX	HR2C/HFS2	9292	431	H245
M6K/M5K						
M4K+						
M3K -4, -6, -8	GH681	AX	HR1C/HFS/N6/D6/R6/PM	9291	481451TC	H300/H145/H114
M3K-10,-12,-16	FC212/2793/1508	BX/QX	J4/L1	9025/9095	451TC	H425
G2H	FC195/FC510		J9			
G2HX/G2AT-HMP	FC195		NJ4		436	
J2AT			HJK			
G1	FC211/2663	MX	E7/MX	9015	421/7811	H104
G1H			E9		421HT	
RFS	FC613					
G3H	2583	H	D1	9030	7720601	H017
G3H			ZD1			
GTH		A	A1/A6	9060	7517	H009
GTH			A1/A2			H409
GMV					811	
G4H			U2/U3/U4/C			
TR500						
MegaTech™ II						
RLA		L1	R1			
RLC						
LOC	1525	L4	C1/TC4	9260	821/831	H100
LOL	2556/2558/2575	L3	B7/B8/HPO/HAW	9240/9250/9265	801/GPH	H101/H201
C5C	1503	D	Y9A/Y9	9050	7158/201/271	H066/H069
C5D	FC350/FC355		G1/GL		3286/266	H448H213
C5M						
LPG			W5			
C5E				9005	213	
C14	2807	TS	T1		919	H243
GT7	FC426/FC370/FC372	R7/R71/R710	HR7/D5A/NR7/HR7H/K4/K5	9070	540N/550H	H436/H446/H435/H445
GT7NC	FC427/FC371/FC373	R70	HR70/D4A/L4/L5/NR7E	9075	510A/518A/558H	
GT8	FC374	R8/R81	HR8/S8	9080	520N/580N	
GT8NC	FC375	R80	HR80/S8E	9085	528N/588N	
PolarSeal® (AC134a)	FC500FC202	3305		4824	P-80/7693	H747H757
Power Steering (PS188)						H324
PowerClean™						H35

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH™ C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Hose & Coupling Selection

Characteristics Of Hose Stock Types

The characteristics shown below are for the normal or usual range of these specific stocks. Stocks can be changed somewhat through different compounding to meet the requirements of specialized applications.

Tube and cover stocks may occasionally be upgraded to take advantage of improved materials and technology.

For detailed information on a specific hose tube or cover stock, check the Chemical Resistance Table starting on Page C53, and also the specific hose page.

Chemical Name	Neoprene (Poly-Chloroprene) Type A	Nitrile (Acrylonitrile and Butadiene) Type C	Nylon Type Z	Hypalon* (Chlorosulfonated Polyethylene) Type M	EPDM (Ethylene Propylene Diene) Type P	CPE (Chlorinated Polyethylene) Type J	PTFE (Poly-tetrafluoro-ethylene) Type T
Flame Resistance	Very Good	Poor	Good	Good	Poor	Good	Good
Petroleum Base Oils	Good	Excellent	Good to Excellent	Good	Poor	Very Good	Excellent
Diesel Fuel	Fair to Good	Good to Excellent	Good to Excellent	Good	Poor	Good	Excellent
Resistance to Gas Permeation	Good	Good	Good To Excellent	Good to Excellent	Fair to Good	Good	Good to Excellent
Weather	Good to Excellent	Poor	Excellent	Very Good	Excellent	Good	Excellent
Ozone	Good to Excellent	Poor for Tube; Good For Cover	Excellent	Very Good	Outstanding	Good	Excellent
Heat	Good	Good	Good	Very Good	Excellent	Excellent	Excellent
Low Temperature	Fair to Good	Poor to Fair	Excellent	Poor	Good to Excellent	Good	Excellent
Water-Oil Emulsions	Excellent	Excellent	Good to Excellent	Good	Poor	Excellent	Excellent
Water/Glycol Emulsions	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Diesters	Poor	Poor	Excellent	Fair	Excellent	Very Good	Excellent
Phosphate Esters	Fair (For Cover)	Poor	Excellent	Fair	Very Good	Very Good	Excellent
Phosphate Ester Base Emulsions	Fair (For Cover)	Poor	Excellent	Fair	Very Good	Very Good	Excellent

*Registered trademark of DuPont.

Cover Abrasion Resistance

These comparisons are based on test results per ISO 6945 abrasion testing. The table shows the expected number of times of extended cover service life as compared to a standard cover.

	Modified Nitrile (Standard cover)	Nylon Sleeve	XtraTuff™	MegaTuff®
Relative Abrasion Resistance	1	15 X Standard Cover	25 X Standard Cover	300 X Standard Cover





Additional Temperature Limits For Gates Hydraulic Hoses

Caution: Water, water/oil emulsions and water/glycol solutions must be kept below the temperatures listed in the table below, relative to line pressures.

Maximum Temperature Limits for Water, Water/Oil Emulsions and Water/Glycol Solutions

Hose	Pressure Lines	Return Lines
EFG6K, EFG5K, EFG4K, EFG3K, G6K, G5K, G3K, C12, G2, G2L, MCPB+, G1, M2T [®] , M6K, M5K, M4K+, M3K, RFS, RLA, C5C, C5E, CPS, LOC, LOL	+200° F (+93° C)	+180° F (+82° C)
G2H, G1H, MegaTech™ hose line, G2AT-HMP, G2XH, C5D, G3H, GTH, G4H, GMV, RLC, TR500, PowerClean™, M3KH, M4KH	+225° F (+107° C)	+180° F (+82° C)

Caution: The fluid manufacturer's recommended maximum operating temperature for any given fluid must not be exceeded. If different than the above listed hose temperatures, the lower limit must take precedence. Actual service life at temperatures approaching the recommended limit will depend on the particular application and the fluid being used in the hose. Intermittent (up to 10% of operating time) refers to momentary temperature surges. Detrimental effects increase with increased exposure to elevated temperatures.

Do NOT expose hose to maximum temperature and maximum rated working pressure at the same time.

EQUIPMENT

HOSE/CPLG. SELECTION

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HIGH & MED. PRESS. HOSE

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PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH[®] C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL[®] HOSE & CPLGS.

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THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES





EQUIPMENT
HOSE/CPLG. SELECTION
TECH. DATA
EXT. & VERY HIGH PRESS. HOSE
GS CPLGS.
PCM CPLGS.
PCS CPLGS.
HIGH & MED. PRESS. HOSE
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THERMO-PLASTIC HOSE & CPLGS.
ADAPTERS
QUICK DISCONNECT CPLGS.
ACCESSORIES & ASSORTMENTS
PART NUMBER INDEXES

(R) SELECTION, INSTALLATION AND MAINTENANCE OF HOSE AND HOSE ASSEMBLIES— SAE J1273 OCT96 SAE Recommended Practice

Report of the Fluid Conductors and Connectors Technical Committee, approved September 1979 and reaffirmed May 1986. Completely revised by the SAE Fluid Conductors and Connectors Technical Committee SC2—Hydraulic Hose and Hose Fittings October 1996. Rationale statement available.

1. Scope

Hose (also includes hose assemblies) has a finite life and there are a number of factors which will reduce its life. This SAE recommended practice is intended as a guide to assist system designers and/or users in the selection, installation, and maintenance of hose. The designers and users must make a systematic review of each application and then select, install, and maintain the hose to fulfill the requirements of the application. The following are general guidelines and are not necessarily a complete list.

WARNING—IMPROPER SELECTION, INSTALLATION, OR MAINTENANCE MAY RESULT IN PREMATURE FAILURES, BODILY INJURY, OR PROPERTY DAMAGE.

2. References

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

2.1.1 SAE PUBLICATIONS — Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

J516—Hydraulic Hose Fittings

J517—Hydraulic Hose

3. Selection

The following is a list of factors which must be considered before final hose selection can be made:

3.1 Pressure

After determining the system pressure, hose selection must be made so that the recommended maximum operating pressure is equal to or greater than the system pressure. Surge pressures higher than the maximum operating pressure will shorten hose life and must be taken into account by the hydraulic designer.

3.2 Suction

Hoses used for suction applications must be selected to ensure the hose will withstand the negative pressure of the system.

3.3 Temperature

Care must be taken to ensure that fluid and ambient temperatures, both static and transient, do not exceed the limitations of the hose. Special care must be taken when routing near hot manifolds.

3.4 Fluid Compatibility

Hose selection must assure compatibility of the hose tube, cover, and fittings with the fluid used. Additional caution must be observed in hose selection for gaseous applications.

3.5 Size

Transmission of power by means of pressurized fluid varies with pressure and rate of flow. The size of the components must be adequate to keep pressure losses to a minimum and avoid damage to the hose due to heat generation or excessive turbulence.

3.6 Routing

Attention must be given to optimum routing to minimize inherent problems.

3.7 Environment

Care must be taken to ensure that the hose and fittings are either compatible with or protected from the environment to which they are exposed. Environmental conditions such as ultraviolet light, ozone, salt water, chemicals, and air pollutants can cause degradation and premature failure and, therefore, must be considered.



3.8 Mechanical Loads

External forces can significantly reduce hose life. Mechanical loads which must be considered include excessive flexing, twisting, kinking, tensile or side loads, bend radius, and vibration. Use of swivel type fittings or adapters may be required to ensure no twist is put into the hose. Unusual applications may require special testing prior to hose selection.

3.9 Abrasion

While a hose is designed with a reasonable level of abrasion resistance, care must be taken to protect the hose from excessive abrasion which can result in erosion, snagging, and cutting of the hose cover. Exposure of the reinforcement will significantly accelerate hose failure.

3.10 Proper End Fitting

Care must be taken to ensure proper compatibility exists between the hose and coupling selected based on the manufacturer's recommendations substantiated by testing to industry standards such as SAE J517. End fitting components from one manufacturer are usually not compatible with end fitting components supplied by another manufacturer (i.e., using a hose fitting nipple from one manufacturer with a hose socket from another manufacturer). It is the responsibility of the fabricator to consult the manufacturer's written instruction or the manufacturer directly for proper end fitting componentry.

3.11 Length

When establishing proper hose length, motion absorption, hose length changes due to pressure, as well as hose and machine tolerances must be considered.

3.12 Specifications and Standards

When selecting hose, government, industry, and manufacturers' specifications and recommendations must be reviewed as applicable.

3.13 Hose Cleanliness

Hose components vary in cleanliness levels. Care must be taken to ensure that the assemblies selected have an adequate level of cleanliness for the application.

3.14 Electrical Conductivity

Certain applications require that hose be non-conductive to prevent electrical current flow. Other applications require the hose to be sufficiently conductive to drain off static electricity. Hose and fittings must be chosen with these needs in mind.

4. Installation

After selection of proper hose, the following factors must be considered by the installer.

4.1 Pre-Installation Inspection

Prior to installation, a careful examination of the hose must be performed. All components must be checked for correct style, size, and length. In addition, the hose must be examined for cleanliness, I.D. obstructions, blisters, loose cover, or any other visible defects.

4.2 Follow Manufacturers' Assembly Instructions

Hose assemblies may be fabricated by the manufacturer, an agent for or customer of the manufacturer, or by the user. Fabrication of permanently attached fittings to hydraulic hose requires specialized assembly equipment. Field-attachable fittings (screw style and segment clamp style) can usually be assembled without specialized equipment, although many manufacturers provide equipment to assist in this operation. SAE J517 hose from one manufacturer is usually not compatible with SAE J516 fittings supplied by another manufacturer. It is the responsibility of the fabricator to consult the manufacturer's written assembly instructions or the manufacturers directly before intermixing hose and fittings from two manufacturers. Similarly, assembly equipment from one manufacturer is usually not interchangeable with that of another manufacturer. It is the responsibility of the fabricator to consult the manufacturer's written instructions or the manufacturer directly for proper assembly equipment. Always follow the manufacturer's instructions for proper preparation and fabrication of hose assemblies.

4.3 Minimum Bend Radius

Installation at less than minimum bend radius may significantly reduce hose life. Particular attention must be given to preclude sharp bending at the hose/fitting juncture.

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

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PC CPLGS.

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ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Hose & Coupling Selection

EQUIPMENT

HOSE/CPLG. SELECTION

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ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

4.4 Twist Angle and Orientation

Hose installations must be such that relative motion of machine components produces bending of the hose rather than twisting.

4.5 Securement

In many applications, it may be necessary to restrain, protect, or guide the hose to protect it from damage by unnecessary flexing, pressure surges, and contact with other mechanical components. Care must be taken to ensure such restraints do not introduce additional stress or wear points.

4.6 Proper Connection of Ports

Proper physical installation of the hose requires a correctly installed port connection while ensuring that no twist or torque is put into the hose.

4.7 Avoid External Damage

Proper installation is not complete without ensuring that tensile loads, side loads, kinking, flattening, potential abrasion, thread damage, or damage to sealing surfaces are corrected or eliminated.

4.8 System Check Out

After completing the installation, all air entrapment must be eliminated, and the system pressurized to the maximum system pressure and checked for proper function and freedom from leaks.

NOTE—Avoid potential hazardous areas while testing.

5. Maintenance

Even with proper selection and installation, hose life may be significantly reduced without a continuing maintenance program.

Frequency should be determined by the severity of the application and risk potential. A maintenance program should include the following as a minimum:

5.1 Hose Storage

Hose products in storage can be affected adversely by temperature, humidity, ozone, sunlight, oils, solvents, corrosive liquids and fumes, insects, rodents, and radioactive materials. Storage areas should be relatively cool and dark and free of dust, dirt, dampness, and mildew.

5.2 Visual Inspections

Any of the following conditions requires replacement of the hose:

- Leaks at fitting or in hose. (Leaking fluid is a fire hazard.)
- Damaged, cut, or abraded cover. (Any reinforcement exposed.)
- Kinked, crushed, flattened, or twisted hose.
- Hard, stiff, heat cracked, or charred hose.
- Blistered, soft, degraded, or loose cover.
- Cracked, damaged, or badly corroded fittings.
- Fitting slippage on hose.

5.3 Visual Inspections

The following items must be tightened, repaired, or replaced as required:

- Leaking port conditions.
- Clamps, guards, shields.
- System fluid level, fluid type, and any air entrapment.

5.4 Functional Test

Operate the system at maximum operating pressure and check for possible malfunctions and freedom from leaks.

NOTE—Avoid potential hazardous areas while testing.

5.5 Replacement Intervals

Specific replacement intervals must be considered based on previous service life, government or industry recommendations, or when failures could result in unacceptable down time, damage, or injury risk.



DOT FMVSS 106-74 MOTOR VEHICLE SAFETY STANDARD FOR BRAKE HOSES

Gates has received an increasing number of inquiries about the Department of Transportation (DOT) regulation FMVSS-106 regarding air brake hose. The requirements of the standard were issued by the National Highway Traffic Safety Administration and are published in the Federal Register, 49 Code of Federal Regulations, Part 571. MVSS 106 Brake Hoses.

NOTE: Anyone making brake assemblies must be registered with the Department of Transportation.

What is FMVSS-106?

The standard is written with specifics on labeling, performance tests, tests procedures, and registration. It is not a standard for design specifications for motor vehicle brake hose, brake hose assemblies, or brake hose end fittings. The Standard No. 106 will ensure that each user of brake hose will be supplied only the highest quality of hose. DOT will conduct random performance testing in accordance with the test procedures to ensure that the hoses, couplings, and assemblies meet FMVSS 106.

“The purpose of the standard is to reduce deaths and injuries occurring as a result of brake system failure from pressure or vacuum loss due to hose or hose assembly rupture.” The regulations will apply to all over-the-road vehicles including trailers and motorcycles. Off-the-road vehicles will not be regulated if they are designed to operate on those other than public roads.

Basic Provisions of FMVSS-106.

1. Three types of brake hose are covered (hydraulic, air, and vacuum brake) together with couplings and hose assemblies. At this point, we will only focus on air brake hose and assemblies.
2. Performance level for brake hose is established instead of design specifications.
3. Permanent as well as reusable fittings are permissible with air brake hose. Inside and outside diameters standards for air brake hose intended for use with field attachable couplings have been established. These hoses are identified as Type I and Type II.

Gates' Customer/Assembler with Regard to FMVSS-106.

1. Testing (dimensional & pressure tested) each assembly or per customer's requirements before it is packaged and delivered to their customer.
2. Two of every 100 air brake hose assemblies produced or per customer's requirements are subjected to hydrostatic pressure testing and tensile strength (destructive) testing.

Labeling of Air Brake Hose.

Any customer crimping air brake assemblies must be registered with the National Traffic Safety Administration (NHTSA).

The National Highway Traffic Safety Administration (NHTSA) requires:

1. Product DOT CERTIFICATION. (Gates Corporation responsibility. The Gates Logo is our DOT registration.)
2. Registration of the assembler. (Customer/Distributor responsibility.)*
3. Permanent assembly identification. (Customer/Distributor responsibility.) Refer to Gates frosted air brake hose labels below.

* To begin the registration process, please complete the BRAKE HOSE REGISTRATION application form on the following page. You can mail or fax the completed form to the address and number listed on the form.

Frosted Air Brake Hose Labels

Part Number: 78214

Product Number: 7484-0023

To assist you in complying with the NHTSA requirement for identifying brake hose assemblies, Gates now offers mylar hose labels.

- Self-adhesive
- 1" wide x 3-3/4" long, with a 1-1/2"x1" white area on one end for printed information
- Format suitable for typewriters, computer printers or hand writing
- Accepts 9-10 typed characters per row, 4 or 5 on a row
- Wrap-around label resists damage from elements

Label application procedure:

1. Print appropriate information on label.
2. Wrap tag around hose assembly, printed end first.
3. Cover printed end with clear mylar tail of label.

Comes in 500 labels per pack.



Hose & Coupling Selection

Brake Hose Registration Application

"PLEASE TYPE or PRINT CLEARLY" AND SUBMIT BRAKE HOSE APPLICATION TO: JEANETTE GREENFIELD AT THE FOLLOWING NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA) ADDRESS:

Jeanette Greenfield
Office of Vehicle Safety Compliance
400 Seventh Street, S.W. NSA-32
Washington, DC 20590
Phone (202) 366-5317
Fax (202) 366-1024
www.nhtsa.dot.gov

DATE: _____

BRAKE HOSE MANUFACTURER'S ADDRESS

Plant Name: _____

Post Office Box No.: _____

Street: _____

City: _____

* DESIGNATION SYMBOL (s): _____

State (Province): _____

Country: _____

Zip Code: _____

Plant Contact Person: _____

Phone Number: _____

Fax Number: _____

** (COMPLETE ONLY IF THIS IS A FOREIGN MANUFACTURER) BRAKE HOSE MANUFACTURER'S US AGENT

Agent Name: _____

Post Office Box No.: _____

Street: _____

City: _____

State: _____

Country: _____

Zip Code: _____

Agent Contact Person _____

Agent Fax Number _____

Agent Phone Number: _____

* DESIGNATION SYMBOL(s): May consist of block capital letters, numerals or a symbol.

EQUIPMENT

HOSE/CPLG. SELECTION

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ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

FIELD

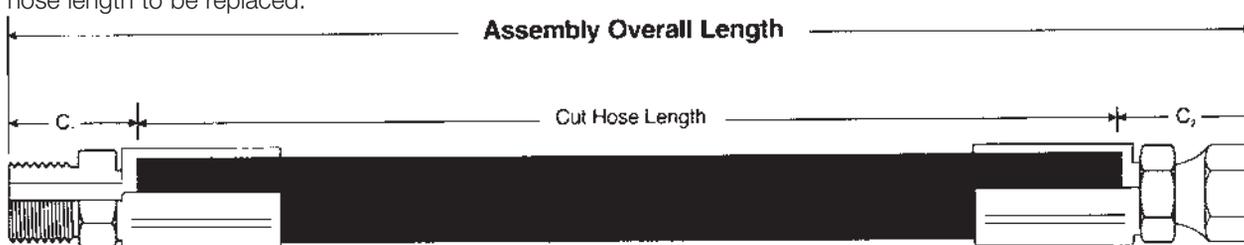


How to Make Hose Assemblies of Specific Lengths

Select the hose and couplings required to make the desired hydraulic assembly. Measure the entire length of the assembly. Then use the formula below to calculate the required hose cut length for the assembly.

Hose Cut Length = Assembly Overall Length Minus C1 Minus C2

Cut-off value "C" is the length of that part of the coupling not directly in contact with or applied to the hose. Therefore, subtract the two "C" values from the total length of the assembly and you will have the approximate hose length to be replaced.



$$\text{Hose Length} = \text{Assembly Overall Length} - (C_1 + C_2)$$

Example: Total assembly overall length = 12.5"

(Assembly consists of 3/8" G1 hose with 1/2" Male Pipe (6G-8MP) and 3/8" Female JIC (6G-6FJX) terminations)

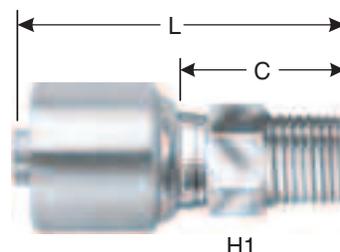
$$\text{Assembly Overall Length} - C_1 - C_2 = \text{Hose Cut Length}$$

$$12.5" - 1.36 - 1.19 = 9.95" \text{ (+/- } 3/16" \text{ tolerance)}$$

Note the "cut-off" measurement "C" for each of the couplings as listed in the specifications tables.

Male Pipe (NPTF - 30° Cone Seat)

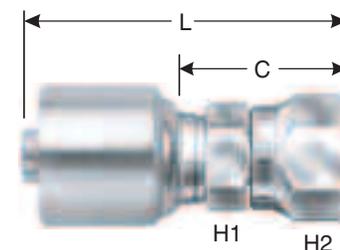
Desc	#			H1 (In.)	L (In.)	C (In.)	
4G-2MP	G25100-0402	7100-10025	1/4	1/8-27	1/2	1.97	0.94
4G-4MP	G25100-0404	7100-10032	1/4	1/4-18	9/16	2.07	1.04
4G-6MP	G25100-0406	7100-10045	1/4	3/8-18	11/16	2.13	1.10
4G-8MP	G25100-0408	7100-10055	1/4	1/2-14	7/8	2.40	1.38
5G-4MP	G25100-0504	7100-00065	5/16	1/4-18	5/8	2.28	1.18
6G-4MP	G25100-0604	7100-10075	3/8	1/4-18	5/8	2.28	1.19
6G-6MP	G25100-0606	7100-10085	3/8	3/8-18	11/16	2.19	1.09
6G-8MP	G25100-0608	7100-10095	3/8	1/2-14	7/8	2.46	1.36
8G-6MP	G25100-0806	7100-00105	1/2	3/8-18	13/16	2.60	1.12



H1

Female JIC 37° Flare Swivel

Desc	#			H1 (In.)	H2 (In.)	L (In.)	C (In.)	
4G-4FJX	G25170-0404	7100-10885	1/4	7/16-20	1/2	9/16	2.10	1.08
4G-5FJX	G25170-0405	7100-10895	1/4	1/2-20	1/2	11/16	2.21	1.19
4G-6FJX	G25170-0406	7100-10905	1/4	9/16-18	9/16	3/4	2.22	1.19
5G-5FJX	G25170-0505	7100-00915	5/16	1/2-20	5/8	11/16	2.23	1.13
5G-6FJX	G25170-0506	7100-00925	5/16	9/16-18	5/8	3/4	2.31	1.21
6G-4FJX	G25170-0604	7100-10925	3/8	7/16-20	5/8	9/16	2.30	1.20
6G-5FJX	G25170-0605	7100-10935	3/8	1/2-20	5/8	11/16	2.23	1.13
6G-6FJX	G25170-0606	7100-10945	3/8	9/16-18	5/8	3/4	2.31	1.19
6G-8FJX	G25170-0608	7100-10955	3/8	3/4-16	11/16	7/8	2.48	1.38



H1

H2

SAE Length Tolerances for Hydraulic Hose Assemblies and Specified Hose Lengths

(Reprinted from National Hose Assemblies Manufacturers Association NHAM-STD-2)

Length

For cut lengths from 0 up to and including 12"
 For cut lengths above 12" up to and including 18"
 For cut lengths above 18" up to and including 36"
 For cut lengths above 36"

Tolerance

± 1/8"
 ± 3/16"
 ± 1/4"
 + 1% of length measured to the nearest 1/8"

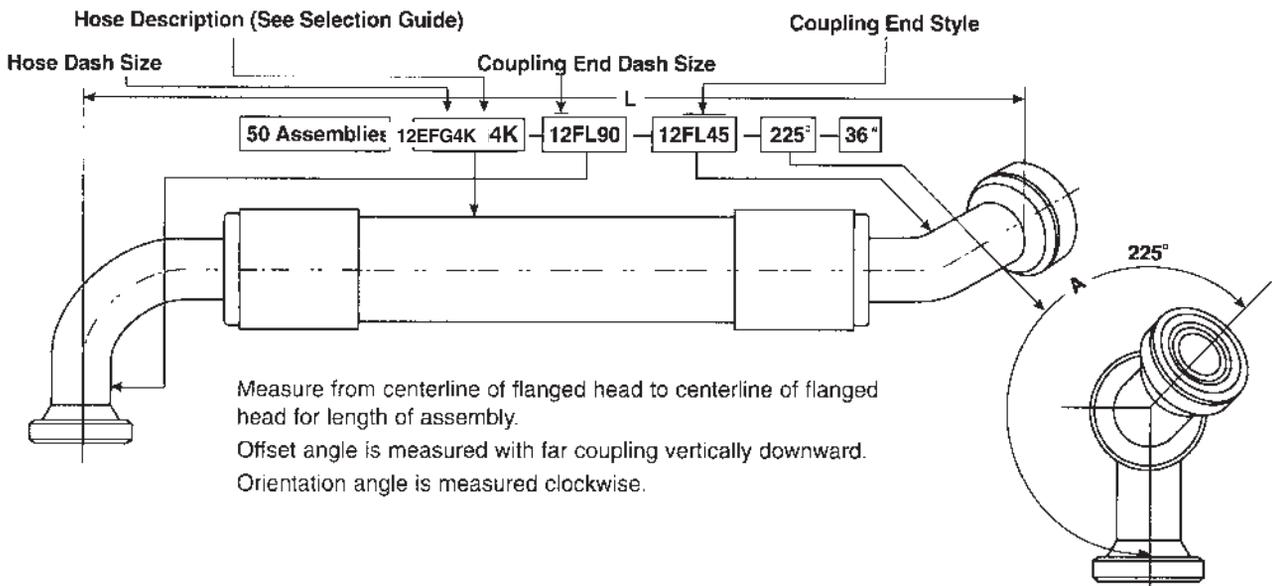
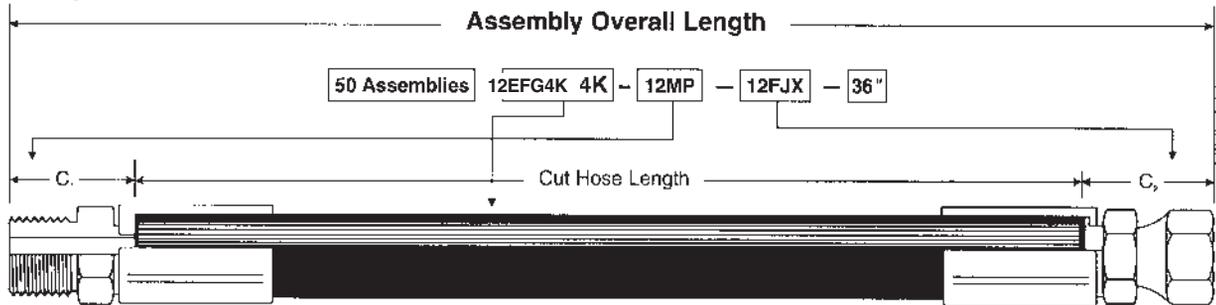


How To Describe Gates Hydraulic Hose Assemblies

When you order hydraulic assemblies, be sure the following information is included as shown in the illustrations below:

1. Quantity of assemblies required.
2. Hose Catalog Description (dash size and type).
3. First coupling dash size and end style.
4. Second coupling dash size and end style.
5. Offset angle or orientation of couplings must be specified if both couplings contain bent tube ends.
6. Assembly overall length.

Example:



Caution:

Rated working pressure of the application should always determine selection of hose. Used up to the recommended **rated working pressure**, the hose will provide normal service life before replacement is required.

When new, the hose described in this catalog will meet or exceed the **minimum burst pressure** listed in the hose specification tables. However—as with any hose in the industry—after the hose has been impulsed for a length of time, **minimum burst pressure** will decrease from the figure shown in the specification tables.

Temperature ranges specified for specific hoses refer to recommended temperature limits of fluids being conveyed or ambient temperatures. Exceeding these limits will cause degradation of material compounds and reduce hose service life.

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

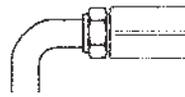
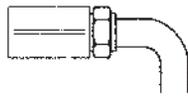
QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



How To Describe Gates Hydraulic Hose Assemblies – con't.



Coupling A Information

Male Female
 Angle ____° Drop: S M L XL
 or Drop Length ____ (mm)
Thread
 JIC (37° Flare) _____
 NPTF _____
 O-Ring Boss _____
 Flat-Face O-Ring (ORFS) _____
 Code 61 _____
 Code 62 _____
 BSPP _____
 DIN (Light/Heavy) _____
 Other _____

Hose Type

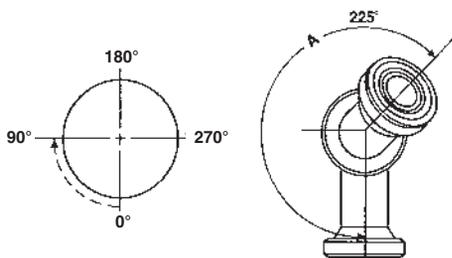
Gates _____ I.D. _____
 or
 SAE 100R _____
Dash Size:
2 3 4 5 6
8 10 12 16 20
24 32 40 48 56
64
Temperature _____°
Working Pressure (psi):
100 101-250
250-499 500-1000
1001-2999 3000-3999
4000-5999 6000
Application
 Return Line Pressure Line
 Intake Line High Pressure Line
 Special Fluid _____

Coupling B Information

Male Female
 Angle ____° Drop: S M L XL
 or Drop Length ____ (mm)
Thread
 JIC (37° Flare) _____
 NPTF _____
 O-Ring Boss _____
 Flat-Face O-Ring (ORFS) _____
 Code 61 _____
 Code 62 _____
 BSPP _____
 DIN (Light/Heavy) _____
 Other _____

Overall Length _____ In. mm

Coupling Orientation: _____°



Measure from centerline of flanged head to centerline of flanged head for length of assembly.

Offset angle is measured with far coupling vertically downward.

Orientation angle is measured clockwise.

Hose Guards

	Full Length	Partial Length	From End of Coupling
Wire Spring 	<input type="checkbox"/>	_____	_____
Flat Armor Spring 	<input type="checkbox"/>	_____	_____
Nylon Sleeve 	<input type="checkbox"/>	_____	_____
Plastic Coil Sleaving 	<input type="checkbox"/>	_____	_____

EQUIPMENT
HOSE/CPLG. SELECTION
TECH. DATA
EXT. & VERY HIGH PRESS. HOSE
GS CPLGS.
PCM CPLGS.
PCS CPLGS.
HIGH & MED. PRESS. HOSE
MEGACRIMP® CPLGS.
PC CPLGS.
FIELD ATTACHABLE CPLGS.
AIR BRAKE HOSE & CPLGS.
MEGATECH™ C5 HOSE & CPLGS.
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C14 HOSE & CPLGS.
POLARSEAL® HOSE & CPLGS.
PWR. STG. HOSE & CPLGS.
THERMO-PLASTIC HOSE & CPLGS.
ADAPTERS
QUICK DISCONNECT CPLGS.
ACCESSORIES & ASSORTMENTS
PART NUMBER INDEXES



Hose & Coupling Selection

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

FLEET

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

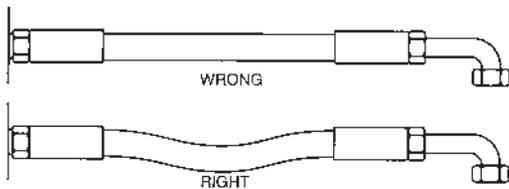
ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

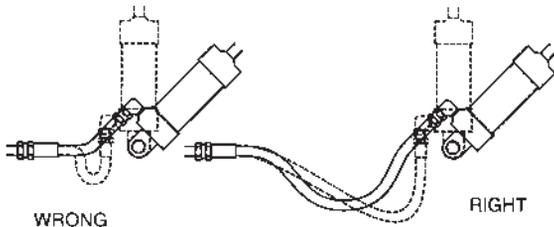
Hose Assembly Routing Tips

Proper hose installation is essential for satisfactory performance. If hose length is excessive, the appearance of the installation will be unsatisfactory and unnecessary cost of equipment will be involved. If hose assemblies are too short to permit adequate flexing and changes in length due to expansion or contraction, hose service life will be reduced.

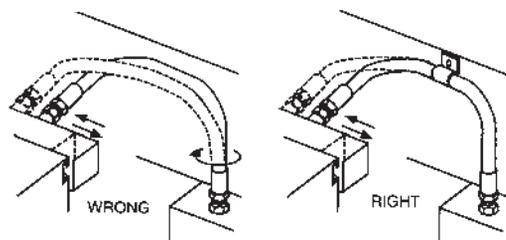
The following diagrams show proper hose installations which provide maximum performance and cost savings. Consider these examples in determining length of a specific assembly.



When hose installation is straight, allow enough slack in hose line to provide for length changes which will occur when pressure is applied.



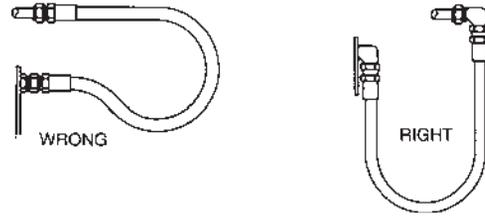
Adequate hose length is necessary to distribute movement on flexing applications and to avoid abrasion.



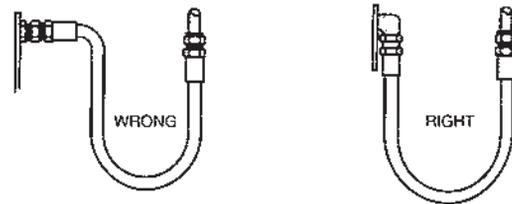
Avoid twisting of hose lines bent in two planes by clamping hose at change of plane.



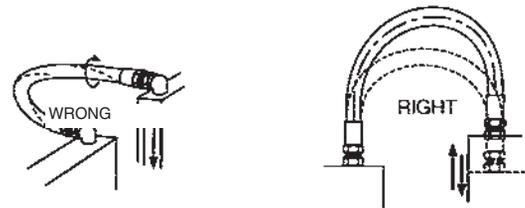
Reduce number of pipe thread joints by using hydraulic adapters instead of pipe fittings.



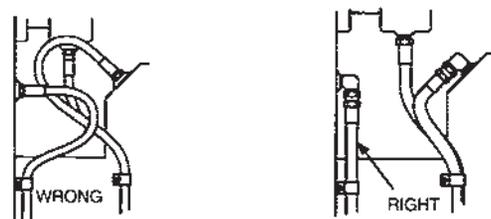
When radius is below the required minimum, use an angle adapter to avoid sharp bends.



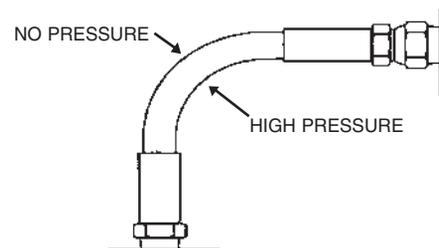
Use proper angle adapters to avoid tight bend in hose.



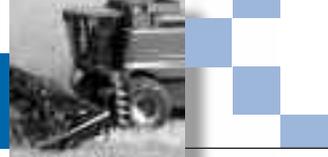
Prevent twisting and distortion by bending hose in same plane as the motion of the port to which hose is connected.



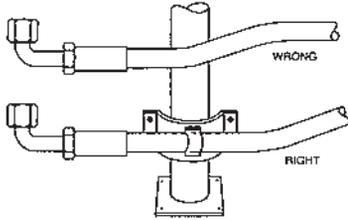
Route hose directly by using 45° and/or 90° adapter and fittings. Avoid excessive hose length to improve appearance.



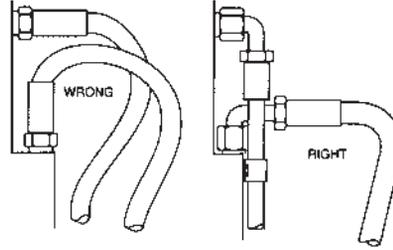
Note: To allow for length changes when hose is pressurized, do not clamp at bends so that curves will absorb changes. Do not clamp high and low pressure lines together.



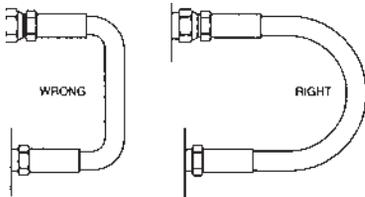
Hose Assembly Routing Tips – con't.



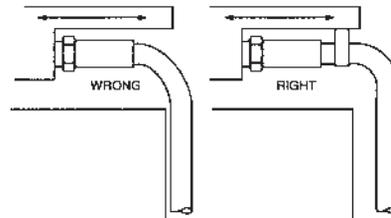
High ambient temperatures shorten hose life, so make sure hose is kept away from hot parts. If this is not possible, insulate hose.



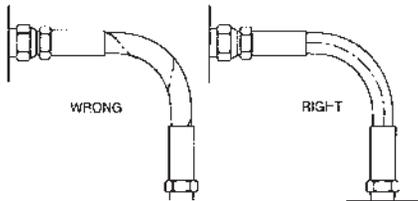
Elbows and adapters should be used to relieve strain on the assembly, and to provide neater installations which will be more accessible for inspection and maintenance.



To avoid hose collapse and flow restriction, keep hose bend radii as large as possible. Refer to hose specification tables for minimum bend radii.



Run hose in the installation so that it avoids rubbing and abrasion. Often, clamps are required to support long hose runs or to keep hose away from moving parts. Use clamps of the correct size. A clamp too large allows hose to move inside the clamp and causes abrasion.



When installing hose, make sure it is not twisted. Pressure applied to a twisted hose can result in hose failure or loosening of connections.

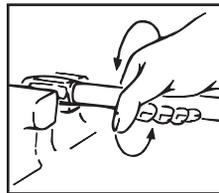
Hydraulic Flareless Assembly Procedure (per SAE J514 6.1.3 & 6.1.4)

1. Bottom the tube in the coupling, and tighten the nut until the ferrule just grips the tube. With a little experience, the technician can determine this point by feel. If the couplings are bench assembled, the gripping action can be determined by rotating the tube by hand as the nut is drawn down. When the tube can no longer be turned by hand, the ferrule has started to grip the tube.
2. After the ferrule grips the tube, tighten the nut one full turn. This may vary slightly with different tubing materials, but for general practice, it is a good rule for the technician to follow.

Assembly of Field Attachable Couplings — Five Easy Steps



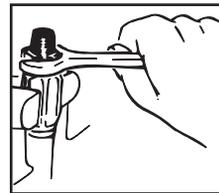
1. Be sure to thoroughly oil hose.



2. Put socket in vise as shown. Turning counter-clockwise, thread hose into socket. Leave a gap of 1/32" to 1/16" between end of hose and inside shoulder of socket.



3. Oil insert thread on nipple thoroughly.



4. With clockwise motion, thread nipple into socket until nipple hex shoulders against ferrule.



5. Inspect assembly internally for cut or bulged tube obstructions and cleanliness.

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH™ C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

FLEET

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LOW PRESS. HOSE & CPLGS.

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POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORT-MENTS

PART NUMBER INDEXES

Coupling Selection

End Configuration Selection

It is important to keep in mind that the hose assembly (coupling and hose) is only one component of the system. In choosing the correct end terminations for the couplings attached to the hose, formal design standards and sound engineering judgement should be used.

In the absence of formal design standards, consider the following factors in choosing the proper end termination:

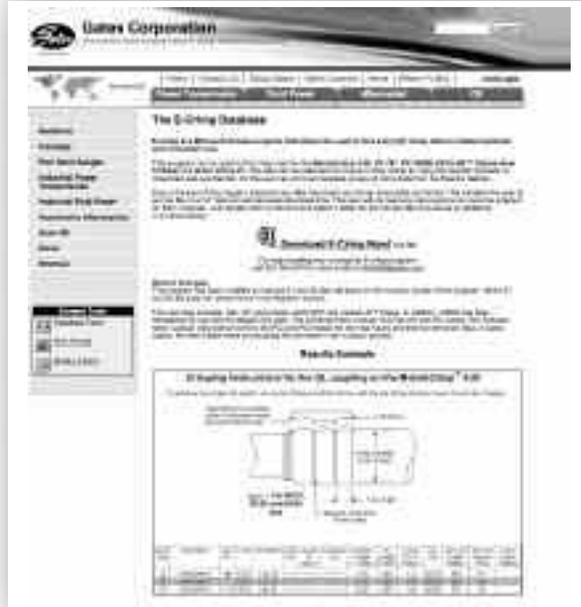
- Pressure
- Impulse frequency, amplitude and wave form
- Vibration
- Corrosion
- Dissimilar metals (galvanic corrosion)
- Maintenance procedures and frequency
- Installation reliability
- Connection's risk in the system
- Exposure to the elements
- Operator's and/or bystander's exposure to the connection
- Installation, operation and service activities and practices that affect safety

If there are any questions as to what end fittings should be used, Gates recommends that you consult your field sales representative or the Gates Hose and Connector Product Application Group for assistance.

Stem and Ferrule Selection

Choosing the proper stem and ferrule depends on the specific hose and termination to be used in the assembly. Check the Gates Crimp Data manual, Literature No. 428-7365 (Auto.)/35019 (Ind.), to ensure proper hose assembly components and crimp specification.

Gates also provides E-crimp, an electronic crimp database that can be downloaded from the Internet. The site is www.gates.com/ecrimp. The user must have Microsoft Access 2000.

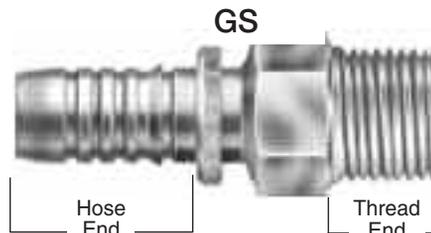


After determining the proper coupling components, refer to Table of Contents–Couplings in this catalog to find the pages of the proper coupling section. The ferrules are at the end of each coupling section.

Stem Selection

Different hoses may require different coupling styles. To make your selection, determine the correct stem to be used. There are two functional ends of the stem to consider:

1. the hose end for hose attachment;
2. the thread end for port attachment.



References to the coupling type(s) recommended for a specific hose are listed on the individual hose data pages; for example, G5K hose specifies GS and PCM couplings.

The thread end of a coupling (or adapter) can be identified by comparing the coupling being replaced or by measuring the port or thread end to which it is to be attached.

See the thread end identification nomenclature listed on the following page.

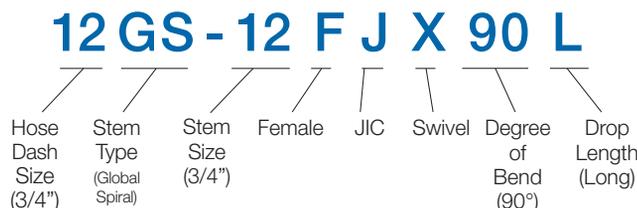


Coupling Selection – con't.

Coupling and Adapter End Style Nomenclature

Gates couplings feature a meaningful description by combining end-style codes shown below that make thread end identification fast and easy. Always refer to Gates Crimp Data Charts when selecting hose and coupling combinations.

In the following example, the Gates description 12GS-12FJX90L identifies a GlobalSpiral™ Female JIC Swivel 90° Bend Long Drop coupling for -12 (3/4") hose size and -12 (3/4") stem size.



Code	Description
A	Adapterless
AB	Air Brake
API	API Unions
B	O-Ring Boss
BBDS	British Bonded Seal
BJ	Banjo
BKHD	Bulkhead
BL	Block
BS	Bite Sleeve
BSPP	British Standard Pipe Parallel
BSPT	British Standard Pipe Tapered
C	Caterpillar Flange Dimension
CC	Clamping Collar
DH	DIN Heavy
DL	DIN Light
F	Female
FABX	Female Air Brake Swivel
FBFFOR	Female British Flat-Face O-Ring
FBO	Female Braze-on Stem
FF	Flat-Face
FFGX	Female French GAZ Swivel (Female Kobelco)
FFN	Female Flareless Nut
FOR	Flat-Face O-Ring
FFS	Female Flareless Sleeve
FG	Female Grease Thread
FKX	Female Komatsu Style Swivel
FL	Code 61 O-Ring Flange
FLC	Caterpillar Style O-Ring Flange (Code 62)
FLH	Code 62 O-Ring Flange Heavy
FLOS	Flange O-Ring Special (Code 62)
FT	Female SAE Tube
HLE	Hose Length Extender
HLEC	Hose Length Extender (Caterpillar)
HM	Hose Mender
I	Inverted Flare

Code	Description
J	JIC (37° Flare)
JIS	Japanese Industrial Standard
K	Komatsu Style (Japanese 30° Seat)
LH	Long Hex
LN	Long Nose
M	Male
MBAX	Male Boss Adapterless Swivel
MBDS	Metric Bonded Seal
MFA	Male Flareless Assembly (Ermeto)
MFG	Male French GAZ
MKB	Metric Kobelco
MM	Metric Male
MN	Metric Nut
MPG	Male Special Grease Fitting
MLSP	Metric Light Stand Pipe
MSP	Metric Stand Pipe
NASP	North American Stand Pipe
OR	O-Ring
P	Pipe Thread (NPTF or NPSM)
PL	Press Lok®
PT	Port
PWX	Pressure Washer Swivel
R	Field Attachable
S	SAE (45° Flare)
SP	Special
TS	Tube Sleeve
TSN	Tube Sleeve Nut
X	Swivel
Z	Parker Triple Thread
22	22-1/2° Drop
30	30° Drop
45	45° Drop
60	60° Drop
67	67-1/2° Drop
90	90° Drop
110	110° Drop
135	135° Drop

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

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PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES





EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

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THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

Coupling Selection – continued

Thread End Dash Sizes, Descriptions and Dimensions

Coupling Dash Size and End Style

Coupling Dash Size is a shorthand method of denoting the size of a particular end fitting. See Thread Chart on page C26.

EXAMPLE: 12MP denotes a 3/4" male pipe thread end fitting. The corresponding thread description for a 3/4" pipe thread is 3/4 -14 NPTF solid male.

EXAMPLE: 12FJX denotes a 3/4" female JIC swivel (37° seat) end fitting. The corresponding thread description for a 3/4" JIC thread is 1-1/16 – 12 JIC 37° flare swivel female.

EXAMPLE: 12FL denotes a 3/4" SAE standard pressure (Code 61) flange fitting. This is the standard fitting description for a 3/4" SAE standard pressure flange.

Termination Drop Lengths

Bent tube couplings carry a suffix designation that specifies the degree of bend and the length of the drop.

For example, a **12FJX90S** is a female JIC swivel with a 90 degree bend. The “S” designates an SAE J516 short drop length. The short and long drops are specified in SAE J516. Flat-face and metric couplings meet ISO-12151-1 drop length specifications. Medium drops are not specified and can vary from manufacturer to manufacturer.

S – Short Drop

M – Medium Drop

L – Long Drop

XL – Extra Long Drop

Special, non-industry standard drop lengths are designated with a numerical suffix instead of the S,M,L code. For example, a **12FJX90-075** designates a 75mm drop.

SAE J516 Drop Length Specifications

JIC 37°, Code 61, Code 62

Hose Size	Short Drop (mm)	Long Drop (mm)
-4	17.3	45.7
-6	21.6	55.4
-8	27.7	61.7
-10	31.2	65.3
-12	46.2	94.7
-16	54.4	110.0

ISO 12151-1 Drop Length Specifications

Flat-Face O-Ring

Hose Size	Short Drop (mm)	Medium Drop (mm)	Long Drop (mm)
-4	20.8	32.0	45.7
-6	22.9	38.0	54.1
-8	29.2	41.0	63.8
-10	32.3	46.0	70.1
-12	47.8	58.0	96.0
-16	56.1	71.0	114.3
-20	63.8	78.0	129.3
-24	68.6	86.0	140.7
-32	88.0	140.0	222.0

Thread End Catalog Descriptions

Gates coupling ends shown on the following pages are accepted as industry standards. See detailed catalog listings for availability of specific hose/coupling combinations, detailed descriptions, thread end configurations such as swivels and bent tubes and special ends.

For Thread End Identification Tools, see Page C25.



Sealing Types for Hydraulic Couplings

When identifying hydraulic couplings, it is important to identify the type of seal made. There are three major types of coupling interfaces used in hydraulics today: Thread Interface, O-Rings and Mated Angle or Mechanical Joint. These three interfaces have developed differently in different parts of the world. In the following pages, country of origin and the coupling styles found in each country are identified. Brief descriptions and dimensional data help identify your particular coupling style.

Identifying couplings is as easy as 1-2-3!

1. Determine Seal Type.

- Thread Interference
- O-Ring
- Mated Angle or Mechanical Joint
- Mated Angle with O-Ring

Thread Interference. A characteristic of this thread is that the male is thinner at the front than it is at the back. As the male is threaded into the female, the edges of the thread distort by flattening out. This distortion creates the seal.

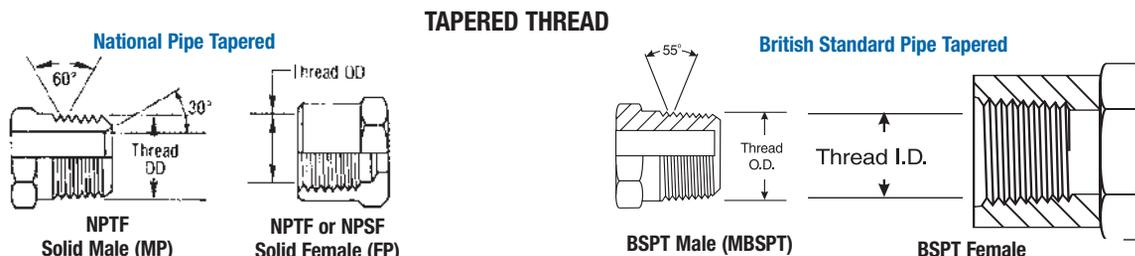
O-Ring. The O-Ring on the male being compressed against the corresponding female makes this seal. This type of seal is excellent for high-pressure applications. The threads pull the fitting against the port, trap the O-Ring and flatten it to form a tight seal.

Mated Angle or Mechanical Joint. Different angles are used to create the seal. The seal takes place where the two angles meet and are wedged into one another. These can be cut with the angle either being Inverted or Standard. Standard seat couplings have the nose angle of the male on the outer surface of the coupling. Inverted seat couplings contain the nose angle of the male on the inside bore of the coupling.

Mated Angle with O-Ring. These couplings are a hybrid, which use both the mated angle and the O-Ring to make the seal.

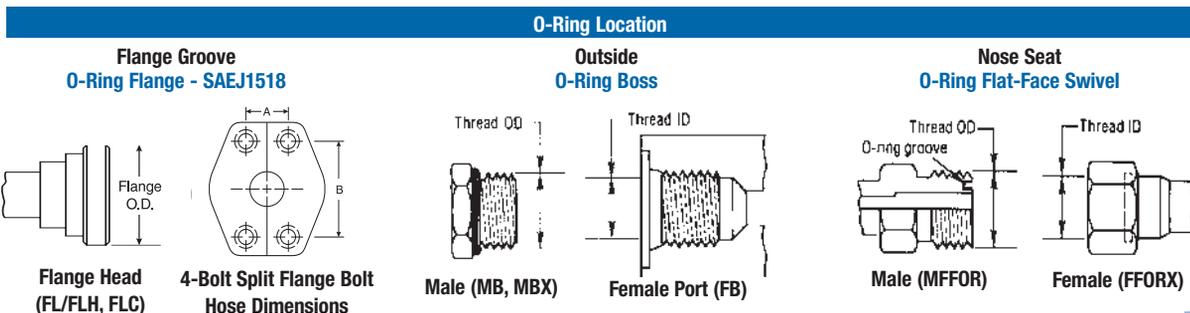
2. Visual Identification.

Thread Interference. These are the easiest because the only factor here is whether the termination is male or female. Couplings that use this seal are:



O-Ring. Two determinations are needed:

- O-Ring location – Flange Groove, Outside, or on the Nose Seat
- Coupling Termination – Male or Female.



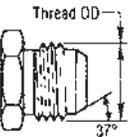
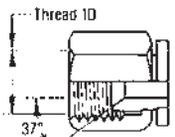
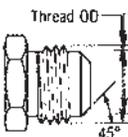
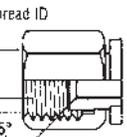
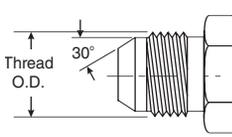
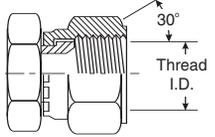
Hose & Coupling Selection

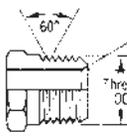
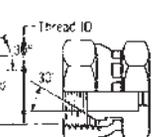
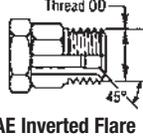
Sealing Types for Hydraulic Couplings – Continued

2. Visual Identification. - Continued

Mated Angle or Mechanical Joint. Determine:

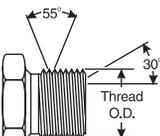
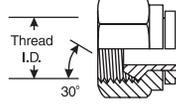
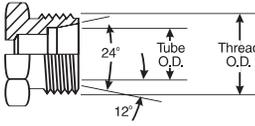
- A. Nose Seat – Standard or Inverted
- B. Seat Angle (See Measuring Seat Angles on following page)
- C. Coupling Termination

Standard Nose Seat					
JIC 37° Flare		SAE 45° Flare		Japanese Industrial Standard & Komatsu	
					
JIC 37° Male (MJ, MJLN)	JIC 37° Flare Swivel Female (FJX)	SAE 45° Flare Male (MS)	SAE 45° Flare Swivel Female (FSX)	Male (MJIS, MK)	Female (FJIS, FXK)
37° Seat Angle		45° Seat Angle		30° Seat Angle	

Inverted Nose Seats					
North American or Metric Stand Pipe & Male Flareless Assembly			National Pipe Straight Mechanical		SAE Inverted Flare
					
Male Fitting Body	Bite Sleeve	Nut	Standpipe Fitting (NASP, MSP, MFA)	NPTF Solid Male (MP)	NPSM Swivel Female (FPX)
24° Seat Angle			30° Seat Angle		45° Seat Angle

Mated Angle with O-Ring. Determine:

- A. O-Ring Location
- B. Nose Seat
- C. Seat Angle (See Measuring Seat Angles on following page)
- D. Coupling Termination

Inside O-Ring Location with Inverted Nose Seat		
British Standard Pipe Parallel		DIN 24° Cone
		
BSP Male (MBSPP)	BSP Female (FBSPORX)	Male 24° Cone, DIN 2353 (MDL/MDH)
30° Cone Seat		Female 24° Cone with O-Ring (FDLORX/FDHORX)

For a wall poster representation of this information, order literature form number 428-7125 (Auto.)/35040 (Ind.).

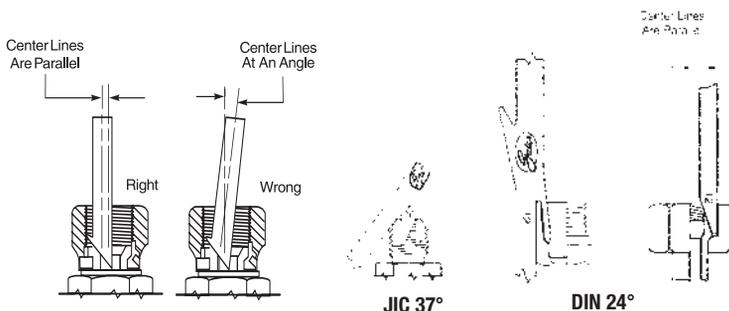
Sealing Types for Hydraulic Couplings – Continued

Measuring Seat Angles

Using the seat gauge, determine the angle of the seat, as illustrated. When the centerline of the seat gauge extends parallel with the projected longitudinal axis of the coupling, then the angles of the gauge and seat match.

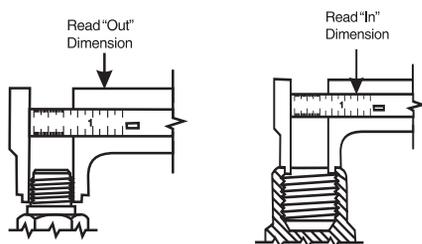
Compare the measurements taken to a coupling shown in the following tables that appear to be similar.

NOTE: Thread binding will occur when different thread configurations are used. DO NOT mix thread configurations.

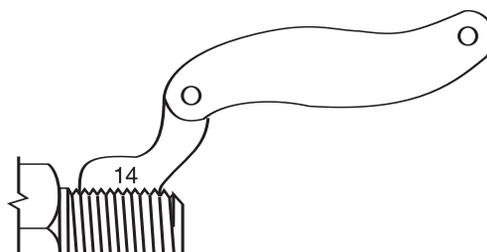


3. Measure Threads.

Because some couplings have very similar characteristics, the only way to determine the correct identification is by measuring the thread and comparing them to the tables listed on the following pages. Follow the procedure below when measuring coupling threads:



With the caliper measure the thread diameter of the largest point. (Outside diameter (O.D.) of male threads—Inside Diameter (I.D.) of female threads.)



Using the thread gauge, determine the number of threads per inch. Comparison of gauge and coupling threads against a lighted background will ensure an accurate reading.

Match the measurements taken above against those in the following tables that appear to be similar to the coupling under consideration.

Gates provides many useful tools on the following page to assist you in identifying the right coupling!

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



EQUIPMENT

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PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

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AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

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POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

Coupling/Thread Identification Tools

Hydraulic Coupling Templates

Automotive Advertising Number: 428-7108

Industrial Advertising Number: 39549

These templates provide a fast and easy way to measure North American threads, International threads, and flange ends, seat angles (37° and 45°) and hose I.D.



Stainless Steel Digital Caliper

Part Number: 78241

Product Number: 7369-1322

Caliper features an easy-to-read LCD screen clearly displaying the crimp diameter digitally. Capable of four-way measurement... inside, outside, depth and step. Constructed of hardened stainless steel and comes in a handy, protective carrying case.



International Thread Identification Kit

Part Number: 86580

Product Number: 7369-0319

A sturdy, attractive carrying case suitable for counter display and field sales calls. Contains male metric & BSP plugs for identifying thread size, pocket thread I.D. kit, and flow chart with step-by-step instructions. For female thread identification, simply couple with the mating male.



Pocket Thread Identification Kit

Part Number: 86583

Product Number: 7369-4318

To properly identify the correct Gates replacement couplings, the measuring tools shown here should be used.

Contents:

- Calipers
- Seat Gauges (English)
- Seat Gauges (Metric)
- Thread Gauges
- Thread I.D. Guide.



Thread Chart

For All Hose I.D.'s Except C5 Series, C14 and AC134a.

DASH SIZE	2	3	4	5	6	7	8	10	12	14	16	20	24	32	40	48
NPTF Pipe Thread	1/8-27	1/4-18	3/8-18	1/2-14	5/8-14	3/4-14	7/8-14	1-11 1/2	1 1/4-11 1/2	1 1/2-11 1/2	1 3/4-11 1/2	2-11 1/2	2 1/2-11 1/2	3-11 1/2	4-11 1/2	5-11 1/2
NPSM Swivel Thread	1/8-27	1/4-18	3/8-18	1/2-14	5/8-14	3/4-14	7/8-14	1-11 1/2	1 1/4-11 1/2	1 1/2-11 1/2	1 3/4-11 1/2	2-11 1/2	2 1/2-11 1/2	3-11 1/2	4-11 1/2	5-11 1/2
JIC 37° Flare Thread	3/8-24	1/2-20	5/8-18	3/4-16	7/8-16	1-14	1 1/8-14	1 1/4-14	1 1/2-14	1 3/4-14	2-14	2 1/4-14	2 1/2-14	3-14	4-14	5-14
SAE 45° Flare Thread	3/8-24	1/2-20	5/8-18	3/4-16	7/8-16	1-14	1 1/8-14	1 1/4-14	1 1/2-14	1 3/4-14	2-14	2 1/4-14	2 1/2-14	3-14	4-14	5-14
SAE O-Ring Thread	3/8-24	1/2-20	5/8-18	3/4-16	7/8-16	1-14	1 1/8-14	1 1/4-14	1 1/2-14	1 3/4-14	2-14	2 1/4-14	2 1/2-14	3-14	4-14	5-14
Flat-Face Thread	3/8-24	1/2-20	5/8-18	3/4-16	7/8-16	1-14	1 1/8-14	1 1/4-14	1 1/2-14	1 3/4-14	2-14	2 1/4-14	2 1/2-14	3-14	4-14	5-14
Inverted Flare Thread	3/8-24	1/2-20	5/8-18	3/4-16	7/8-16	1-14	1 1/8-14	1 1/4-14	1 1/2-14	1 3/4-14	2-14	2 1/4-14	2 1/2-14	3-14	4-14	5-14
Compression Thread	3/8-24	1/2-20	5/8-18	3/4-16	7/8-16	1-14	1 1/8-14	1 1/4-14	1 1/2-14	1 3/4-14	2-14	2 1/4-14	2 1/2-14	3-14	4-14	5-14
Code 61 Flange Head O.D.	1.19	1.335	1.50	1.75	2.00	2.38	2.81	3.31	4.00							
Code 62 Flange Head O.D.	1.25	1.62	1.88	2.12	2.50	3.12										
BSPP Thread	1/8-19	1/4-14	3/8-14	1/2-11	5/8-11	3/4-11	7/8-11	1-11	1 1/4-11	1 1/2-11	1 3/4-11	2-11	2 1/4-11	2 1/2-11	3-11	4-11
BSPT Thread	1/8-19	1/4-14	3/8-14	1/2-11	5/8-11	3/4-11	7/8-11	1-11	1 1/4-11	1 1/2-11	1 3/4-11	2-11	2 1/4-11	2 1/2-11	3-11	4-11
Japanese Pipe Tapered Thread	1/8-19	1/4-14	3/8-14	1/2-11	5/8-11	3/4-11	7/8-11	1-11	1 1/4-11	1 1/2-11	1 3/4-11	2-11	2 1/4-11	2 1/2-11	3-11	4-11
Japanese Flare Thread	1/8-19	1/4-14	3/8-14	1/2-11	5/8-11	3/4-11	7/8-11	1-11	1 1/4-11	1 1/2-11	1 3/4-11	2-11	2 1/4-11	2 1/2-11	3-11	4-11
Copper/Nylon Air Brake Thread	7/16-24	11/32-24	1/2-20	5/8-18	3/4-16	7/8-16	1-14	1 1/8-14	1 1/4-14	1 1/2-14	1 3/4-14	2-14	2 1/4-14	2 1/2-14	3-14	4-14
METRIC (mm)	8	10	12	14	16	18	20	22	24	26	30	33	36	42	45	52
MDL	M10X1.0	M12X1.5	M14X1.5	M16X1.5	M18X1.5	M22X1.5	M26X1.5	M30X2.0	M36X2.0	M42X2.0	M48X2.0	M52X2.0	M58X2.0	M64X2.0	M72X2.0	M80X2.0
MDH	M10X1.0	M12X1.5	M14X1.5	M16X1.5	M18X1.5	M22X1.5	M26X1.5	M30X2.0	M36X2.0	M42X2.0	M48X2.0	M52X2.0	M58X2.0	M64X2.0	M72X2.0	M80X2.0
Komatsu	M10X1.0	M12X1.5	M14X1.5	M16X1.5	M18X1.5	M22X1.5	M26X1.5	M30X2.0	M36X2.0	M42X2.0	M48X2.0	M52X2.0	M58X2.0	M64X2.0	M72X2.0	M80X2.0
French	M20X1.5	M22X1.5	M24X1.5	M26X1.5	M28X1.5	M30X1.5	M33X1.5	M36X1.5	M40X1.5	M45X1.5	M50X1.5	M55X1.5	M60X1.5	M65X1.5	M70X1.5	M75X1.5

See page L85 for male metric adapter threads.**



EQUIPMENT	HOSE/CPLG. SELECTION
TECH. DATA	
EXT. & VERY HIGH PRESS. HOSE	
GS CPLGS.	
PCM CPLGS.	
PCS CPLGS.	
HIGH & MED. PRESS. HOSE	
MEGACRIMP® CPLGS.	
PC CPLGS.	
FIELD ATTACHABLE CPLGS.	
FILET	
AIR BRAKE HOSE & CPLGS.	
MEGATECH® C5 HOSE & CPLGS.	
LOW PRESS. HOSE & CPLGS.	
C14 HOSE & CPLGS.	
POLARSEAL® HOSE & CPLGS.	
PWR. STG. HOSE & CPLGS.	
THERMO-PLASTIC HOSE & CPLGS.	
ADAPTERS	
QUICK DISCONNECT CPLGS.	
ACCESSORIES & ASSORTMENTS	
PART NUMBER INDEXES	

Hose & Coupling Selection

Coupling Identification

There are five coupling systems generally used for hydraulic connections today. They are identified geographically or by country as:

- North American**
- British**
- French**
- German**
- Japanese**

This section lists the origin and coupling style found in each country. Brief descriptions and dimensional data follows each coupling style.

North American Thread Types

Iron Pipe Thread Abbreviations

N National

S Straight Thread

F Fuels

P Pipe

T Tapered Thread

M Mechanical Joint

NPTF

National Pipe Tapered thread for Fuel is a dryseal thread. It is used for both male and female ends.

The NPTF male will mate with the NPTF, NPSF, or NPSM female.

The NPTF male has tapered threads and a 30° inverted seat. The NPTF female has tapered threads and no seat. The seal takes place by deformation of the threads. The NPSM female has straight threads and a 30° inverted seat. The seal takes place on the 30° seat.

The NPTF connector is similar to, but not interchangeable with, the BSPT connector. The thread pitch is different in most sizes. Also, the thread angle is 60° instead of the 55° angle found on BSPT threads.

NPSF

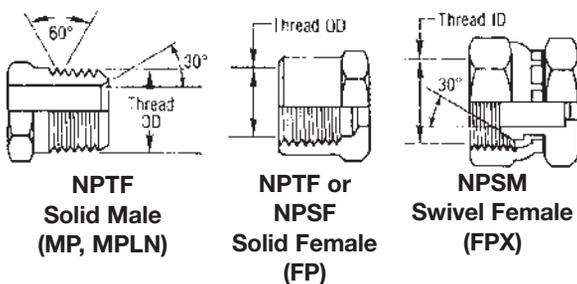
National Pipe Straight thread for Fuels is sometimes used for female ends and properly mates with the NPTF male end. However, the SAE recommends the NPTF thread in preference to the NPSF for female ends.

NPSM

National Pipe Straight thread for Mechanical joint is used on the female swivel nut of iron pipe swivel adapters. The leak-resistant joint is not made by the sealing fit of threads, but by a tapered seat in the coupling end.

Dash Size	Nominal Size (In.)	No. Threads per Inch	Female Thread	Male Thread	Max. Torque Recommendation for Dry NPTF* (Ft.Lbs.)
			I.D. (In.)	O.D. (In.)	
-2	1/8	27	23/64	13/32	20
-4	1/4	18	15/32	35/64	25
-6	3/8	18	19/32	43/64	35
-8	1/2	14	3/4	27/32	45
-12	3/4	14	61/64	1-1/16	55
-16	1	11-1/2	1-13/64	1-5/16	65
-20	1-1/4	11-1/2	1-17/32	1-43/64	80
-24	1-1/2	11-1/2	1-25/32	1-29/32	95
-32	2	11-1/2	2-1/4	2-3/8	120

NPT Pipe Thread



NPTF Solid Male (MP, MPLN)

NPTF or NPSF Solid Female (FP)

NPSM Swivel Female (FPX)

*NOTES:

1. Torque values can vary considerably depending on thread condition. Use only enough torque to achieve adequate sealing.
2. With female straight or parallel pipe threads (NPSM), maximum values are 50% of those listed in the table.
3. If thread sealant is used, maximum values shown should be decreased by 25%.

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES





Coupling Identification

North American Thread Types (con't.)

*JIC (37° Flare)

The Society of Automotive Engineers (SAE) specifies a 37° angle flare or seat be used with high pressure hydraulic tubing. These are commonly called JIC couplings.

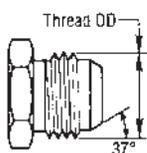
The JIC 37° flare male will mate with a JIC female only.* The JIC male has straight threads and a 37° flare seat. The JIC female has straight threads and a 37° flare seat. The seal is made on the 37° flare seat.

Some sizes have the same threads as the SAE 45° flare. Carefully measure the seat angle to differentiate.

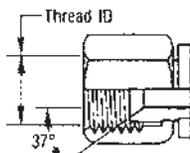
***Note:** Some C5, C5E and Lock-On couplings may have dual machined seats (both 37° and 45° seats).

Dash Size	Nominal Size (In.)	Thread Size	Female Thread	Male Thread	Steel Torque Recommendation (Ft.-Lbs.)	
			I.D. (In.)	O.D. (In.)	Min.	Max.
-2	1/8	5/16 - 24	17/64	5/16	-	-
-3	3/16	3/8 - 24	21/64	3/8	-	-
-4	1/4	7/16 - 20	25/64	7/16	10	11
-5	5/16	1/2 - 20	29/64	1/2	13	15
-6	3/8	9/16 - 18	1/2	9/16	17	19
-8	1/2	3/4 - 16	11/16	3/4	34	38
-10	5/8	7/8 - 14	13/16	7/8	50	56
-12	3/4	1-1/16 - 12	31/32	1-1/16	70	78
-14	7/8	1-3/16 - 12	1-7/64	1-3/16	-	-
-16	1	1-5/16 - 12	1-15/64	1-5/16	94	104
-20	1-1/4	1-5/8 - 12	1-35/64	1-5/8	124	138
-24	1-1/2	1-7/8 - 12	1-51/64	1-7/8	156	173
-32	2	2-1/2 - 12	2-27/64	2-1/2	219	243

JIC 37° Flare



JIC 37° Male (MJ)



JIC 37° Flare Female (FJX)

*SAE (45° Flare)

A term usually applied to fittings having a 45° angle flare or seat. Soft copper tubing is generally used in such applications as it is easily flared to the 45° angle. These are for low-pressure applications—such as for fuel lines and refrigerant lines.

The SAE 45° flare male will mate with an SAE 45° flare female only or a dual seat JIC/SAE 45°.*

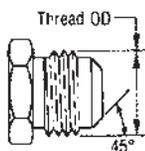
The SAE male has straight threads and a 45° flare seat. The SAE female has straight threads and a 45° flare seat. The seal is made on the 45° flare seat.

Some sizes have the same threads as the SAE 37° flare.

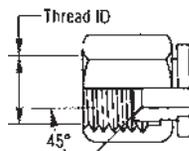
Carefully measure the seat angle to differentiate.

***Note:** Some C5, C5E and Lock-On couplings may have dual machined seats (both 37° and 45° seats).

SAE 45° Flare



SAE 45° Flare Male (MS)



SAE 45° Flare Swivel Female (FSX)

Special Power Steering Thread End

Dash Size	Nominal Size (In.)	Thread Size	Female Thread	Male Thread
			I.D. (In.)	O.D. (In.)
-6	3/8	11/16 - 18	5/8	11/16



EQUIPMENT
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FIELD ATTACHABLE CPLGS.
AIR BRAKE HOSE & CPLGS.
MEGATECH® C5 HOSE & CPLGS.
LOW PRESS. HOSE & CPLGS.
C14 HOSE & CPLGS.
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THERMO-PLASTIC HOSE & CPLGS.
ADAPTERS
QUICK DISCONNECT CPLGS.
ACCESSORIES & ASSORTMENTS
PART NUMBER INDEXES

Coupling Identification

North American Thread Types (con't.)

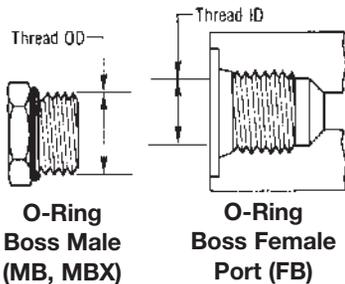
O-Ring Boss

The O-ring boss male will mate with an O-ring boss female only. The female is generally found on ports.

The male has straight threads, a sealing face and an O-ring. The female has straight threads and a sealing face. The seal is made at the O-ring on the male and the sealing face on the female.

Dash Size	Nominal Size (In.)	Thread Size	Female Thread	Male Thread	O-Ring		Steel Torque Recommendations (Ft.Lbs)			
							Below 4,000 psi Working Pressure		Above 4,000 psi Working Pressure	
							Min.	Max.	Min.	Max.
-2	1/8	5/16 - 24	17/64	5/16	0.239	-	-	-	-	-
-3	3/16	3/8 - 24	21/64	3/8	0.301	30R	-	-	8	10
-4	1/4	7/16 - 20	25/64	7/16	0.351	40R	14	16	14	16
-5	5/16	1/2 - 20	29/64	1/2	0.414	50R	-	-	18	20
-6	3/8	9/16 - 18	1/2	9/16	0.468	60R	24	26	24	26
-8	1/2	3/4 - 16	11/16	3/4	0.644	80R	37	44	50	60
-10	5/8	7/8 - 14	13/16	7/8	0.755	100R	50	60	72	80
-12	3/4	1-1/16 - 12	31/32	1-1/16	0.924	120R	75	83	125	135
-14	7/8	1-3/16 - 12	1-7/64	1-3/16	1.048	140R	-	-	160	180
-16	1	1-5/16 - 12	1-15/64	1-5/16	1.171	160R	111	125	200	220
-20	1-1/4	1-5/8 - 12	1-35/64	1-5/8	1.475	200R	133	152	210	280
-24	1-1/2	1-7/8 - 12	1-51/64	1-7/8	1.720	-	156	184	270	360
-32	2	2-1/2 - 12	2-27/64	2-1/2	2.337	-	-	-	-	-

SAE Straight Thread O-Ring Boss



O-Ring Boss Male (MB, MBX)

O-Ring Boss Female Port (FB)

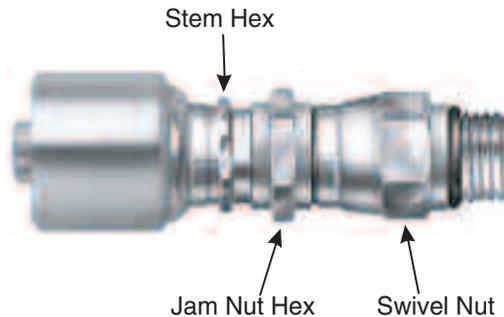
Gates Adapterless—MBAX

The Gates Adapterless coupling is designed for use in OEM assembly line applications. It eliminates the need for an adapter by directly connecting into the port, which reduces the number of possible leak points and reduces installation labor. It allows easy installation and eliminates the troubles of alignment on bent tube assemblies. It eliminates the performance limitations of the traditional male swivel. A jam nut locks the coupling into place.

Assemblies using the Gates Adapterless coupling can be serviced by replacing the assembly with an MB adapter in the port and a standard end termination (for example, an MB-MJ adapter and FJX couplings).

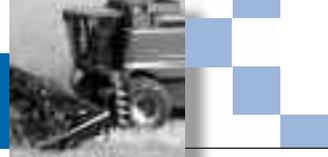
WARNING: The tightening of the jam nut is **absolutely critical** to performance so that the Adapterless coupling does not become a "live swivel". A live swiveling condition can cause wearing of the internal seals and result in leaks.

The Gates Adapterless coupling uses SAE O-Ring Boss threads. See the table above. The installation torque values are the same as SAE O-Ring Boss.



EQUIPMENT
HOSE/CPLG. SELECTION
TECH. DATA
EXT. & VERY HIGH PRESS. HOSE
GS CPLGS.
PCM CPLGS.
PCS CPLGS.
HIGH & MED. PRESS. HOSE
MEGACRIMP® CPLGS.
PC CPLGS.
FIELD ATTACHABLE CPLGS.
AIR BRAKE HOSE & CPLGS.
MEGATECH® C5 HOSE & CPLGS.
LOW PRESS. HOSE & CPLGS.
C14 HOSE & CPLGS.
POLARSEAL® HOSE & CPLGS.
PWR. STG. HOSE & CPLGS.
THERMO-PLASTIC HOSE & CPLGS.
ADAPTERS
QUICK DISCONNECT CPLGS.
ACCESSORIES & ASSORTMENTS
PART NUMBER INDEXES





Coupling Identification

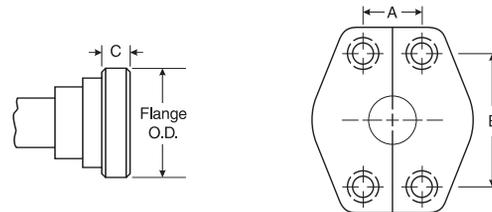
North American Thread Types (con't.)

O-Ring Flange—SAE J518

The SAE Code 61 and Code 62 4-Bolt Split Flange is used worldwide, usually as a connection on pumps and motors. There are three exceptions.

1. The -10 size, which is common outside of North America, is not an SAE standard size (generally found on Komatsu equipment).
2. Caterpillar flanges, which are the same flange O.D. as SAE Code 62, have a thicker flange head ("C" dimension in Table).
3. Poclair flanges, which are completely different from SAE flanges.

SAE Code 61 and Code 62



Flange Head (FL/FLH, FLC)

4-Bolt Split Flange Bolt Hose Dimensions

Dash Size	Nominal Flange Size (In.)	Code 61 (FL)				Code 62 (FLH)				Caterpillar Code 62 (FLC)			
		Flange O.D. (In.)	A (In.)	B (In.)	C (In.)	Flange O.D. (In.)	A (In.)	B (In.)	C (In.)	Flange O.D. (In.)	A (In.)	B (In.)	C (In.)
-8	1/2	1.188	.688	1.500	.265	1.250	.718	1.594	.305	—	—	—	—
-10	5/8	1.345	—	—	.265	—	—	—	—	—	—	—	—
-12	3/4	1.500	.875	1.875	.265	1.625	.937	2.000	.345	1.625	.938	2.000	.560
-16	1	1.750	1.031	2.062	.315	1.875	1.093	2.250	.375	1.875	1.094	2.250	.560
-20	1-1/4	2.000	1.188	2.312	.315	2.125	1.250	2.625	.405	2.125	1.250	2.625	.560
-24	1-1/2	2.375	1.406	2.750	.315	2.500	1.437	3.125	.495	2.500	1.438	3.125	.560
-32	2	2.812	1.688	3.062	.375	3.125	1.750	3.812	.495	3.125	1.750	3.812	.560
-40	2-1/2	3.312	2.000	3.500	.375	—	—	—	—	—	—	—	—
-48	3	4.000	2.438	4.188	.375	—	—	—	—	—	—	—	—
-56	3-1/2	4.500	2.750	4.750	.422	—	—	—	—	—	—	—	—
-64	4	5.000	3.062	5.125	.442	—	—	—	—	—	—	—	—
-80	5	6.000	3.625	6.000	.442	—	—	—	—	—	—	—	—

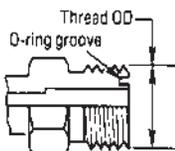
O-Ring Face Seal (ORFS)—SAE J1453

A seal is made when the O-ring in the male contacts the flat face on the female. Couplings are intended for hydraulic systems where elastomeric seals are acceptable to overcome leakage and leak resistance is crucial.

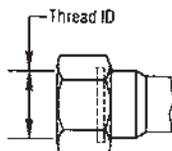
The solid male O-ring face seal fitting will mate with a swivel female O-ring face seal SAE J1453 fitting only.

An O-ring rests in the O-ring groove in the male.

O-Ring Face Seal



Male Flat-Face O-Ring (MFFOR)



Female Flat-Face O-Ring Swivel (FFORX)

Dash Size	Nominal Size (In.)	Thread Size	Female Thread	Male Thread	O-Ring Size
			I.D. (In.)	O.D. (In.)	
-4	1/4	9/16 - 18	1/2	9/16	-011
-6	3/8	11/16 - 16	5/8	11/16	-012
-8	1/2	13/16 - 16	3/4	13/16	-014
-10	5/8	1 - 14	15/16	1	-016
-12	3/4	1-3/16 - 12	1-1/8	1-3/16	-018
-16	1	1-7/16 - 12	1-11/32	1-7/16	-021
-20	1-1/4	1-11/16 - 12	1-19/32	1-11/16	-025
-24	1-1/2	2 - 12	1-29/32	2	-029



EQUIPMENT
HOSE/CPLG. SELECTION
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PCM CPLGS.
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POLARSEAL® HOSE & CPLGS.
PWR. STG. HOSE & CPLGS.
THERMO-PLASTIC HOSE & CPLGS.
ADAPTERS
QUICK DISCONNECT CPLGS.
ACCESSORIES & ASSORTMENTS
PART NUMBER INDEXES

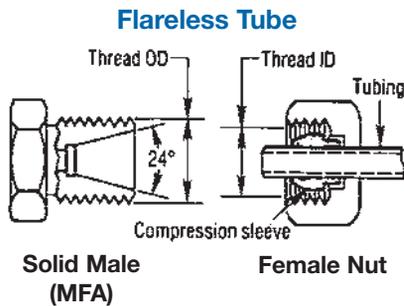
Coupling Identification

North American Thread Types (con't.)

Flareless Tube

The flareless solid male will mate with a female flareless nut and compression sleeve only.

The male has straight threads and a 24° seat. The female has straight threads and has a compression sleeve for a sealing surface. The seal is made between the compression sleeve and the 24° seat on the male, and between the compression sleeve and the tubing on the female.

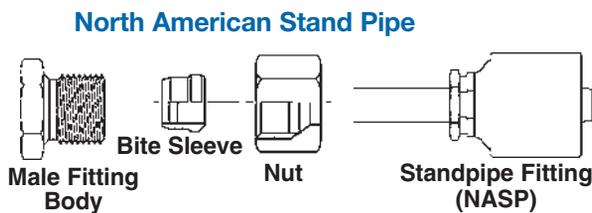


Dash Size	Tube Size (In.)	Nominal Size (In.)	Thread Size	Female Thread	Male Thread
				I.D. (In.)	O.D. (In.)
-2	1/8	5/16	5/16 - 24	17/64	5/16
-3	3/16	3/8	3/8 - 24	21/64	3/8
-4	1/4	7/16	7/16 - 20	25/64	7/16
-5	5/16	1/2	1/2 - 20	29/64	1/2
-6	3/8	9/16	9/16 - 18	1/2	9/16
-8	1/2	3/4	3/4 - 16	11/16	3/4
-10	5/8	7/8	7/8 - 14	13/16	7/8
-12	3/4	1-1/16	1-1/16 - 12	31/32	1-1/16
-14	7/8	1-3/16	1-3/16 - 12	1-7/64	1-3/16
-16	1	1-5/16	1-5/16 - 12	1-15/64	1-5/16
-20	1-1/4	1-5/8	1-5/8 - 12	1-35/64	1-5/8
-24	1-1/2	1-7/8	1-7/8 - 12	1-51/64	1-7/8
-32	2	2-1/2	2-1/2 - 12	2-27/64	2-1/2

North American Stand Pipe (NASP)

A stand pipe assembly is comprised of three components attached to a male fitting. The components are a Stand Pipe Tube, Bite Sleeve and Nut. The Nut is placed over the Stand Pipe, followed by the Bite Sleeve (see illustration below). The Bite Sleeve and Stand Pipe are selected on the basis of tube O.D. required.

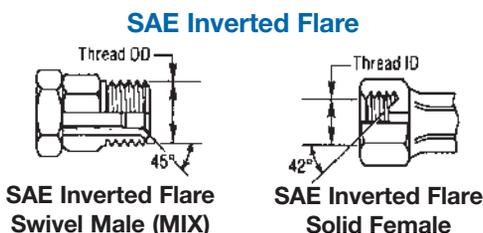
Dash Size	Tube O.D. (In.)	Tube Length (In.)
-4	0.25	0.88
-6	0.38	0.88
-8	0.50	1.00
-12	0.75	1.16
-16	1.00	1.12



SAE Inverted Flare

The SAE 45° inverted flare male will mate with an SAE 42° inverted flare female only.

The male has straight threads and a 45° inverted flare. The female has straight threads and a 42° inverted flare. The seal is made on the 45° flare seat on the male and the 42° flare seat on the female.



Dash Size	Nominal Size (In.)	Thread Size	Female Thread	Male Thread
			I.D. (In.)	O.D. (In.)
-2	1/8	5/16 - 28	9/32	5/16
-3	3/16	3/8 - 24	21/64	3/8
-4	1/4	7/16 - 24	25/64	7/16
-5	5/16	1/2 - 20	29/64	1/2
-6	3/8	5/8 - 18	37/64	5/8
-7	7/16	11/16 - 18	5/8	11/16
-8	1/2	3/4 - 18	45/64	3/4
-10	5/8	7/8 - 18	13/16	7/8
-12	3/4	1-1/16 - 16	1	1-1/16

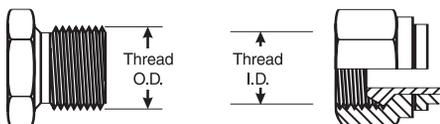


Coupling Identification

Air Brake Fittings

Female air brake swivels are designed to work exclusively with a male air brake adapter. Federal law requires only this combination to be used on air brake lines from the valve to the air brake diaphragm chamber.

The male has straight threads and an inverted seat. The female has straight threads and a corresponding inverted flare. The seal is made on the flare seats of both the male and female.

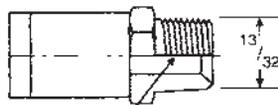


Male Air Brake Female Air Brake Swivel

Dash Size	Thread Size	Female Thread I.D. (In.)	Male Thread O.D. (In.)
-6	3/4 - 20	23/32	3/4
-8	7/8 - 20	27/32	7/8

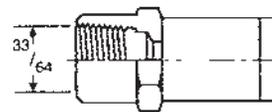
Grease Fittings

Special Male Grease Fitting



1/8-27 Pipe Thread

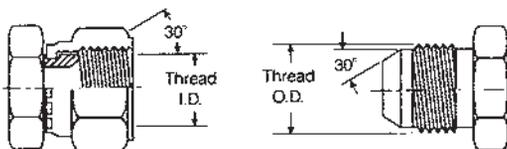
Special Female Grease Fitting



1/2-27 Tapered Thread

Parker Triple Thread Flare Fittings

Parker Triple Thread Flare Fittings



Swivel Female (FZX)

Solid Male (MZ)

Dash Size	Nominal Size (In.)	Thread Size	Female Thread	Male Thread
			I.D. (In.)	O.D. (In.)
-16	1-5/16	1-5/16 - 14	1-1/4	1-5/16

Press-Lok® Connectors

Press-Lok style connectors are found on mining equipment worldwide.

The seal is made when the O-ring on the male contacts the inside surface of the female. The two connectors are held together with a staple.

Press-Lok Connectors



Male Press-Lok Connectors

Female Press-Lok Connectors

Dash Size	Nominal Size (In.)	Female I.D. (In.)	Male O.D. (In.)
-4	1/4	.39	.40
-6	3/8	.55	.56
-8	1/2	.70	.71
-12	3/4	.94	.95
-16	1	1.22	1.23
-20	1-1/4	1.49	1.50

For more information and specifications on these couplings, please see the Gates Mining Products Catalog #99993 or visit www.gates.com.

EQUIPMENT

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THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Coupling Identification

Foreign Thread Types

Identifying Foreign Couplings

If you can identify the country of origin of the equipment you are working with, it is easy to identify the coupling style. Simply find the appropriate country in the following pages and locate the particular coupling in the table that follows.

British

It is a common misconception that all foreign threads are metric. This is not always the case. There are two common thread forms: Metric and Whitworth (BSP). The country of origin and the proper nomenclature for each is listed below.

British Standard Pipe Parallel

Popular couplings have British Standard Pipe (BSP) threads, also known as Whitworth threads. These can be parallel threads (BSPP) with a 30° inverted flare or tapered threads (BSPT), with a 30° inverted flare. Port connections are usually made with BSPP threads and a soft metal cutting ring for sealing.

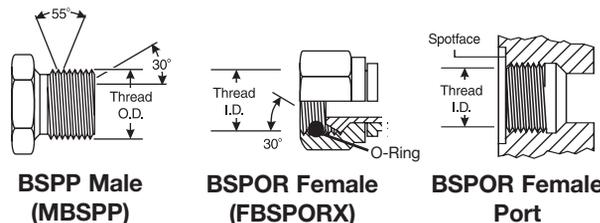
The BSPP (parallel) male will mate with a BSPOR (parallel) female or a female port.

The BSPP male has straight threads and a 30° seat. The BSPOR female has straight threads, a 30° seat, and O-ring. The female port has straight threads and a spotface. The seal on the port is made with an O-ring or soft metal washer on the male.

The BSPP (parallel) connector is similar to, but not interchangeable with, the NPSM connector. The thread pitch is different in most sizes, and the thread angle is 55° instead of the 60° angle found on NPSM threads.

Dash Size	Nominal Size (In.)	Thread Size	Female Parallel Thread	Male Parallel Thread	Torque Recommendation (Ft. Lbs.)	
			I.D. (In.)	O.D. (In.)	Min.	Max.
-2	1/8	1/8 - 28	11/32	3/8	7	9
-4	1/4	1/4 - 19	15/32	17/32	11	18
-6	3/8	3/8 - 19	19/32	21/32	19	28
-8	1/2	1/2 - 14	3/4	13/16	30	36
-10	5/8	5/8 - 14	13/16	29/32	37	44
-12	3/4	3/4 - 14	31/32	1-1/32	50	60
-16	1	1 - 11	1-7/32	1-11/32	79	95
-20	1-1/4	1-1/4 - 11	1-17/32	1-21/32	127	152
-24	1-1/2	1-1/2 - 11	1-25/32	1-7/8	167	190
-32	2	2 - 11	2-7/32	2-11/32	262	314

British Standard Pipe Parallel (BSPOR)



British Standard Pipe Tapered

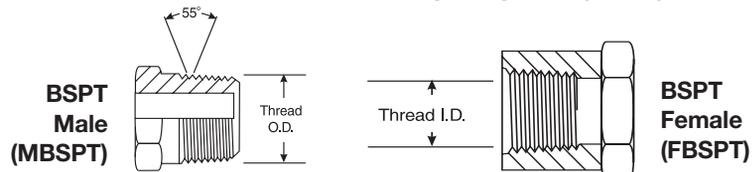
The BSPT (tapered) male will mate with a BSPT (tapered) female, or a BSPOR (parallel) female.

The BSPT male has tapered threads. When mating with either the BSPT (tapered) female or the BSPOR (parallel) female port, the seal is made on the threads.

The BSPT connector is similar to, but not interchangeable with, the NPTF connector. The thread pitch is different in most cases, and the thread angle is 55° instead of the 60° angle found on NPTF threads.

Dash Size	Nominal Size (In.)	Thread Size	Female Parallel Thread	Male Parallel Thread	Torque Recommendation (Ft. Lbs.)	
			I.D. (In.)	O.D. (In.)	Min.	Max.
-2	1/8	1/8 - 28	11/32	3/8	7	9
-4	1/4	1/4 - 19	15/32	17/32	11	18
-6	3/8	3/8 - 19	19/32	21/32	19	28
-8	1/2	1/2 - 14	3/4	13/16	30	36
-10	5/8	5/8 - 14	13/16	29/32	37	44
-12	3/4	3/4 - 14	31/32	1-1/32	50	60
-16	1	1 - 11	1-7/32	1-11/32	79	95
-20	1-1/4	1-1/4 - 11	1-17/32	1-21/32	127	152
-24	1-1/2	1-1/2 - 11	1-25/32	1-7/8	167	190
-32	2	2 - 11	2-7/32	2-11/32	262	314

British Standard Pipe Tapered (BSPT)





Coupling Identification

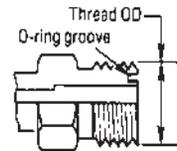
Foreign Thread Types – British (con't.)

British Flat-Face Seal

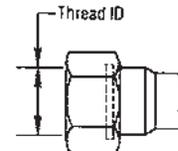
A seal is made when the O-ring in the male contacts the flat face on the female. These couplings are intended for hydraulic systems where elastomeric seals are acceptable to overcome leakage and leak resistance is crucial.

The solid male British O-ring face seal fitting will mate with a swivel female British O-ring face seal fitting only. An O-ring rests in the O-ring groove in the male.

Dash Size	Nominal Size (In.)	Thread Size	Female Parallel Thread	Male Parallel Thread	Torque Recommendation (Ft. Lbs.)	
			I.D. (In.)	O.D. (In.)	Min.	Max.
-6	3/8	3/8-19	19/32	21/32	18	20
-8	1/2	1/2-14	3/4	13/16	32	40
-12	3/4	3/4-14	31/32	1 1/32	65	80



Male British Flat-Face (MBFF)



Female British Flat-Face (FBFF)

French

Popular couplings are French GAZ. These have a 24° seat and metric threads. These are similar to German DIN couplings, but the threads are different in some sizes. Although both are metric threads, the French use fine threads in all sizes and German DIN couplings use coarse threads in larger sizes. Most port connections are flange connections. French flanges are different than SAE—they have a lip that protrudes from the flange face. These are called Poclairn-style flanges.

GAZ 24°

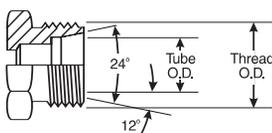
The French Metric (GAZ) male will mate with the female 24° cone or the female tube fitting.

The male has a 24° seat and straight metric threads. The female has a 24° seat or a tubing sleeve and straight metric threads and is interchangeable with female Kobelco.

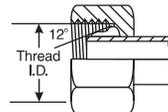
When measuring the flare angle with the seat angle gauge, use the 12° gauge. (The seat angle gauge measures the angle from the connector centerline.)

Metric Thread Size	Female Thread I.D. (mm)	Male Thread O.D. (mm)	Tube O.D. (mm)
M20x1.5	18.5	20.0	13.25
M24x1.5	22.5	24.0	16.75
M30x1.5	28.5	30.0	21.25
M36x1.5	34.5	36.0	26.75
M45x1.5	43.5	45.0	33.50
M52x1.5	50.5	52.0	42.25

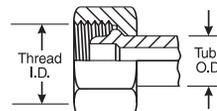
French Metric (GAZ)



Male 24° Cone



Female 24° Cone



Female Tube Fitting



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PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

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ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

Coupling Identification

Foreign Thread Types – French (con't.)

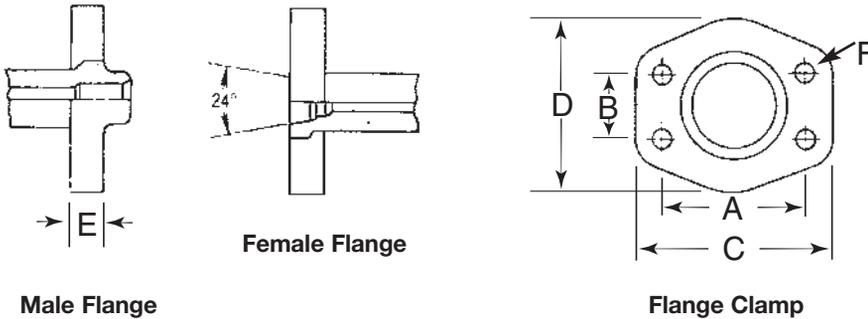
GAZ Poclairn 24° Flange

The Poclairn (French GAZ) 24° high pressure flange is usually found on Poclairn equipment.

The male flange will mate with a female flange or a port. The seal is made on the 24° seat.

Nominal Size (In.)	A (In.)	B (In.)	C (In.)	D (In.)	E (In.)	F (In.)
1/2	1.57	.72	2.20	1.89	.55	.35
5/8	1.57	.72	2.20	1.89	.55	.35
3/4	2.00	.94	2.75	2.38	.71	.43

Poclairn (French GAZ)



German DIN (Deutsche Industrial Norme)

Popular couplings are German DIN (Deutsche Industrial Norme). A coupling referred to as “metric” usually means a DIN coupling.

DIN 24° Cone

The DIN 24° cone male will mate with any of the females shown.

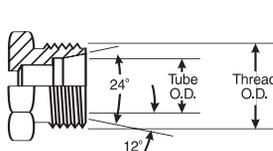
The male has a 24° seat, straight metric threads, and a recessed counterbore which matches the tube O.D. of the coupling used with it. The mating female is a 24° cone with O-ring, a metric tube fitting or a universal 24° and 60° cone.

There is a light and heavy series DIN coupling. Proper identification is made by measuring both the thread size and the tube O.D. (The heavy series has a smaller tube O.D. but a thicker wall section than the light.)

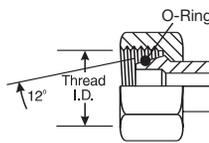
When measuring the flare angle with the seat angle gauge, use the 12° gauge. (The seat angle gauge measures the angle from the connector centerline.)

Metric Thread Size	Female Thread	Male Thread	Tube O.D.		Torque Recommendation (Ft. Lbs.)	
			I.D. (mm)	O.D. (mm)	Light Series (mm)	Heavy Series (mm)
M12x1.5	10.5	12.0	6	—	7	15
M14x1.5	12.5	14.0	8	—	15	26
M16x1.5	14.5	16.0	10	8	18	30
M18x1.5	16.5	18.0	12	10	22	33
M20x1.5	18.5	20.0	14	12	26	37
M22x1.5	20.5	22.0	15	14	30	52
M24x1.5	22.5	24.0	—	16	30	52
M26x1.5	24.5	26.0	18	—	44	74
M30x2.0	28.0	30.0	22	20	59	89
M36x2.0	34.0	36.0	28	25	74	111
M42x2.0	40.0	42.0	—	30	74	162
M45x2.0	43.0	45.0	35	—	133	184
M52x2.0	50.0	52.0	42	38	148	221

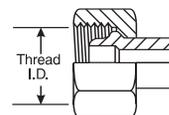
DIN 24° Male and Mating Females



Male 24° Cone, DIN 2353 (MDL/MDH)



Female 24° Cone with O-Ring (FDLORX/FDHORX)



Female Universal 24° and 60° Cone (FDLX/FDHX)



Coupling Identification

Foreign Thread Types – German DIN (con't.)

DIN 60° Cone

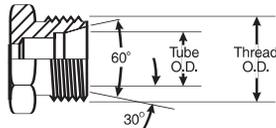
The DIN 60° cone male will mate with the female universal 24° or 60° cone connector only.

The male has a 60° seat and straight metric threads. The female has a 24° and 60° universal seat and straight metric threads.

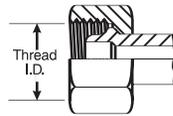
When measuring the flare angle with the seat angle gauge, use the 30° gauge. (The seat angle gauge measures the angle from the connector centerline.)

Metric Thread Size	Female Thread	Male Thread	Tube O.D. (mm)	Torque Recommendation (Ft. Lbs.)	
	I.D. (mm)	O.D. (mm)		Min.	Max.
M14x1.5	12.5	14.0	8	15	26
M16x1.5	14.5	16.0	10	18	30
M18x1.5	16.5	18.0	12	22	33
M22x1.5	20.5	22.0	15	30	52
M26x1.5	24.5	26.0	18	44	74
M30x1.5	28.5	30.0	22	59	59
M38x1.5	36.5	38.0	28	74	111
M45x1.5	43.5	45.0	35	133	184
M52x2.0	50.5	52.0	42	148	221

DIN 60° Male and Mating Female



Male
60° Cone, DIN 6711



Female
Universal 24° and 60° Cone



- EQUIPMENT
- HOSE/CPLG. SELECTION
- TECH. DATA
- EXT. & VERY HIGH PRESS. HOSE
- GS CPLGS.
- PCM CPLGS.
- PCS CPLGS.
- HIGH & MED. PRESS. HOSE
- MEGACRIMP® CPLGS.
- PC CPLGS.
- FIELD ATTACHABLE CPLGS.
- AIR BRAKE HOSE & CPLGS.
- MEGATECH® C5 HOSE & CPLGS.
- LOW PRESS. HOSE & CPLGS.
- C14 HOSE & CPLGS.
- POLARSEAL® HOSE & CPLGS.
- PWR. STG. HOSE & CPLGS.
- THERMO-PLASTIC HOSE & CPLGS.
- ADAPTERS
- QUICK DISCONNECT CPLGS.
- ACCESSORIES & ASSORTMENTS
- PART NUMBER INDEXES

Coupling Identification

Foreign Thread Types – German DIN (con't.)

DIN 3852 Couplings Type A & B (Parallel Threads)

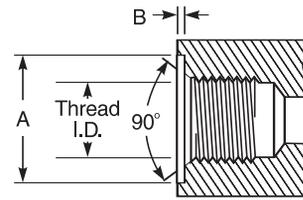
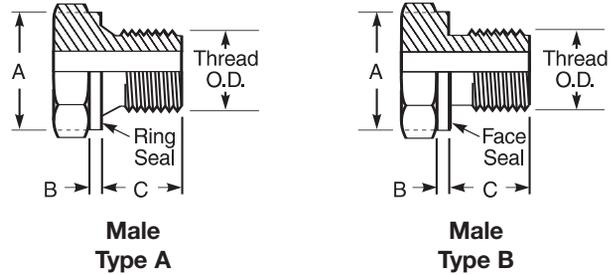
The male DIN 3852 Type A & B couplings will mate with the female DIN coupling shown below. Gates offers this thread as an adapter.

The male and female type A & B couplings have straight threads. The seal occurs when the ring seal (Type A) or the face seal (Type B) mates with the face of the female port.

There are two series of DIN 3852 Type A & B couplings, the light (L) and the heavy (S) series.

Note: Commonly used threads on male metric adapters.

DIN 3852 Couplings Type A & B (Parallel Threads)



Series	Tube O.D. (mm)	Metric Thread Parallel								Whitworth Thread Parallel							
		Thread Size	Female			Male			Thread Size	Female (BSPOR)			Male (BSPP)				
			Thread I.D. (mm)	A (mm)	B (mm)	Thread O.D. (mm)	A (mm)	B (mm)		C (mm)	Thread I.D. (In.)	A (mm)	B (mm)	Thread O.D. (In.)	A (mm)	B (mm)	C (mm)
L Light	6	10x1.0	8.5	15	1.0	10	14	1.5	8	1/8-28	11/32	15	1.0	3/8	14	1.5	8
	8	12x1.5	10.5	18	1.5	12	17	2.0	12	1/4-19	15/32	19	1.5	1/2	17	2.0	12
	10	14x1.5	12.5	20	1.5	14	19	2.0	12	1/4-19	15/32	19	1.5	1/2	19	2.0	12
	12	16x1.5	14.5	22	1.5	16	21	2.5	12	3/8-19	19/32	23	2.0	21/32	21	2.5	12
	15	18x1.5	16.5	24	2.0	18	23	2.5	12	1/2-14	3/4	27	2.5	13/16	23	2.5	12
	18	22x1.5	20.5	28	2.5	22	27	3.0	14	1/2-14	3/4	27	2.5	13/16	27	3.0	14
	22	26x1.5	24.5	32	2.5	26	31	3.0	16	3/4-14	31/32	33	2.5	1-1/32	31	3.0	16
	28	33x2.0	31.5	40	2.5	33	39	3.0	18	1-11	1-7/32	40	2.5	1-5/16	39	3.0	18
S Heavy	35	42x2.0	40.5	50	2.5	42	49	3.0	20	1-1/4-11	1-17/32	50	2.5	1-21/32	49	3.0	20
	42	48x2.0	46.5	56	2.5	48	55	3.0	22	1-1/2-11	1-25/32	56	2.5	1-7/8	55	3.0	22
	6	12x1.5	10.5	18	1.5	12	17	2.0	12	1/4-19	15/32	19	1.5	1/2	17	2.0	12
	8	14x1.5	12.5	20	1.5	14	19	2.0	12	1/4-19	15/32	19	1.5	1/2	19	2.0	12
	10	16x1.5	14.5	22	1.5	16	21	2.5	12	3/8-19	19/32	23	2.0	21/32	21	2.5	12
	12	18x1.5	16.5	24	2.0	18	23	2.5	12	3/8-19	19/32	23	2.0	21/32	23	2.5	12
	14	20x1.5	18.5	26	2.0	20	25	3.0	14	1/2-14	3/4	27	2.5	13/16	25	3.0	14
	16	22x1.5	20.5	28	2.5	22	27	3.0	14	1/2-14	3/4	27	2.5	13/16	27	3.0	14
	20	27x2.0	25.5	33	2.5	27	32	3.0	16	3/4-14	31/32	33	2.5	1-1/32	32	3.0	16
	25	33x2.0	31.5	40	2.5	33	39	3.0	18	1-11	1-7/32	40	2.5	1-5/16	39	3.0	18
ADAPTERS	30	42x2.0	40.5	50	2.5	42	49	3.0	20	1-1/4-11	1-17/32	50	2.5	1-21/32	49	3.0	20
	38	48x2.0	46.5	56	2.5	48	55	3.0	22	1-1/2-11	1-25/32	56	2.5	1-7/8	55	3.0	22

Coupling Identification

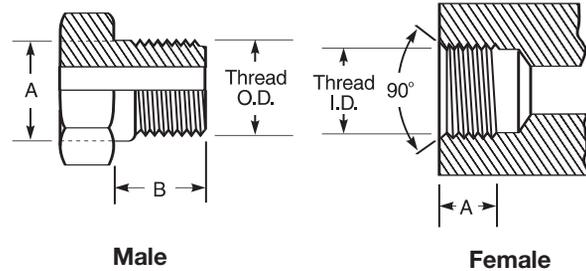
Foreign Thread Types – German DIN (con't.)

DIN 3852 Type C Metric and Whitworth Tapered (BSPT) Thread Connectors

The DIN 3852 Type C couplings are available with either metric or Whitworth British thread. The male will mate only with the female as shown.

The male and female couplings have tapered threads. The seal takes place on the threads. There are three series of DIN 3852 Type C Couplings: extra light (LL), light (L) and heavy (S).

DIN 3852 Type C Metric and Whitworth Tapered Thread Connectors

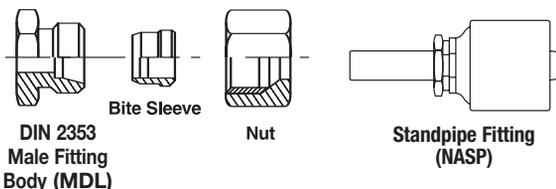


Series	Tube O.D. (mm)	Metric Tapered Threads						Whitworth Tapered Threads					
		Thread Size	Female		Male		Thread Size	Female		Male			
			Thread I.D. (mm)	A (mm)	Thread O.D. (mm)	A (mm)		B (mm)	Thread I.D. (In.)	A (mm)	Thread O.D. (In.)	A (mm)	B (mm)
LL Extra Light	4	8x1.0	6.5	5.5	8	8.40	8	1/8-28	11/32	5.5	1/8	.392	8
	5	8x1.0	6.5	5.5	8	8.40	8	1/8-28	11/32	5.5	1/8	.392	8
	6	10x1.0	8.5	5.5	10	10.40	8	1/8-28	11/32	5.5	1/8	.392	8
	8	10x1.0	8.5	5.5	10	10.40	8	1/8-28	11/32	5.5	1/8	.392	8
L Light	6	10x1.0	8.5	5.5	10	10.40	8	1/8-28	11/32	5.5	1/8	.392	8
	8	12x1.5	10.5	8.5	12	12.53	12	1/4-19	15/32	8.5	1/4	.532	12
	10	14x1.5	12.5	8.5	14	14.53	12	1/4-19	15/32	8.5	1/4	.532	12
	12	16x1.5	14.5	8.5	16	16.53	12	3/8-19	19/32	8.5	3/8	.670	12
	15	18x1.5	16.5	8.5	18	18.53	12	1/2-14	3/4	8.5	1/2	.839	14
S Heavy	18	22x1.5	20.5	10.5	22	22.65	14	1/2-14	3/4	10.5	1/2	.839	14
	6	12x1.5	10.5	8.5	12	12.53	12	1/4-19	15/32	8.5	1/4	.532	12
	8	14x1.5	12.5	8.5	14	14.53	12	1/4-19	15/32	8.5	1/4	.532	12
	10	16x1.5	14.5	8.5	16	16.53	12	3/8-19	19/32	8.5	3/8	.670	12
	12	18x1.5	16.5	8.5	18	18.53	12	3/8-19	19/32	8.5	3/8	.670	12
	14	20x1.5	18.5	10.5	20	20.65	14	1/2-14	3/4	10.5	1/2	.839	14
	16	22x1.5	20.5	10.5	22	22.65	14	1/2-14	3/4	10.5	1/2	.839	14

Metric Stand Pipe Assembly

A metric stand pipe assembly is comprised of three components attached to a male fitting. The components are: a Stand Pipe tube, Bite Sleeve and Metric Nut. The nut is placed over the Stand Pipe, followed by the Bite Sleeve (see illustration below). For DIN light assemblies, a DIN light metric nut is used. For DIN heavy assemblies, a DIN heavy metric nut is used. The Bite Sleeve and Stand Pipe are selected on the basis of tube O.D.

Metric Standpipe Assembly



Metric Stand Pipe DIN Tube O.D. (mm)	Bite Sleeve DIN Tube O.D. (mm)	Metric Nut Thread	
		Light	Heavy
6	6	M12x1.5	—
8	8	M14x1.5	M16x1.5
10	10	M16x1.5	M18x1.5
12	12	M18x1.5	M20x1.5
15	15	M22x1.5	—
16	16	—	M24x1.5
18	18	M26x1.5	—
20	20	—	M30x2.0
22	22	M30x2.0	—
25	25	—	M36x2.0
28	28	M36x2.0	—
30	30	—	M42x2.0
35	35	M45x2.0	—
38	38	—	M52x2.0
42	42	M52x2.0	—



EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

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PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

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FIELD ATTACHABLE CPLGS.

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MEGATECH® C5 HOSE & CPLGS.

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POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

Coupling Identification

Foreign Thread Types (con't.)

Japanese

There are two popular types of coupling styles in Japan, Japanese Industrial Standard and Komatsu. These couplings look similar to Male JIC and Female JIC Swivel couplings. However there are two major differences: The threads are BSP and the seat angle is only 30° instead of 37° for JIC.

1. **Japanese Industrial Standard.** Most Japanese equipment uses this type of coupling with a 30° seat and British Standard Pipe Parallel threads. **They are not interchangeable with British couplings, since the flare is not inverted.**
2. **Komatsu.** All Komatsu equipment uses couplings with a 30° seat and metric fine threads. All flanges are Code 61 or Code 62, except -10 which utilizes a special Komatsu-style flange that does not conform to SAE standard sizing.

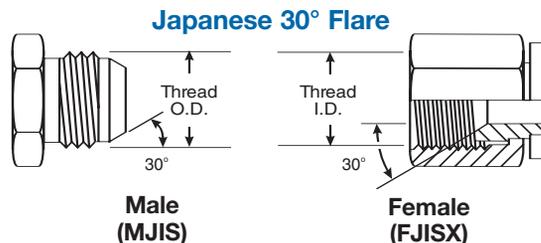
Japanese 30° Flare Parallel Threads

The Japanese 30° flare male connector will mate with a Japanese 30° flare female only.

The male and female have straight threads and a 30° seat. The seal is made on the 30° seat.

The threads on the Japanese 30° flare connector conform to JIS B 0202, which are the same as the BSPOR threads. Both the British and Japanese connectors have a 30° seat, but they are not interchangeable because the British seat is inverted.

Dash Size	Nominal Size (In.)	Thread Size	Female Thread I.D. (In.)	Male Thread O.D. (In.)
-2	1/8	1/8 - 28	11/32	3/8
-4	1/4	1/4 - 19	7/16	17/32
-6	3/8	3/8 - 19	19/32	21/32
-8	1/2	1/2 - 14	3/4	13/16
-10	5/8	5/8 - 14	13/16	29/32
-12	3/4	3/4 - 14	15/16	1-1/32
-16	1	1 - 11	1-13/16	1-15/16
-20	1-1/4	1-1/4 - 11	1-17/32	1-21/32
-24	1-1/2	1-1/2 - 11	1-25/32	1-7/8
-32	2	2 - 11	2-7/32	2-11/32



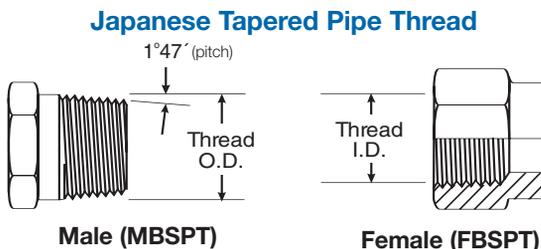
Japanese Tapered Pipe Thread

The Japanese tapered pipe thread connector is identical to and fully interchangeable with the BSPT (tapered) connector. **The Japanese connector does not have a 30° flare and will not mate with the BSPOR female.**

The threads conform to JIS B 0203, which are the same as BSPT threads.

The seal on the Japanese tapered pipe thread connector is made on the threads.

Dash Size	Nominal Size (In.)	Thread Size	Female Parallel Thread I.D. (In.)	Male Parallel Thread O.D. (In.)
-2	1/8	1/8 - 28	11/32	3/8
-4	1/4	1/4 - 19	7/16	17/32
-6	3/8	3/8 - 19	19/32	21/32
-8	1/2	1/2 - 14	3/4	13/16
-12	3/4	3/4 - 14	15/16	1-1/32
-16	1	1 - 11	1-13/16	1-15/16
-20	1-1/4	1-1/4 - 11	1-17/32	1-21/32
-24	1-1/2	1-1/2 - 11	1-25/32	1-7/8
-32	2	2 - 11	2-7/32	2-11/32
-32	2	2 - 11	2-7/32	2-11/32





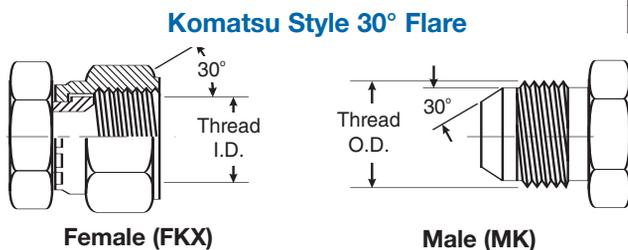
Coupling Identification

Foreign Thread Types – Japanese (con't.)

Komatsu Style 30° Flare Parallel Threads

The Komatsu style 30° flare parallel thread connector is identical to the Japanese 30° flare parallel thread connector except for the threads. The Komatsu style connector uses metric fine threads which conform to JIS B 0207. Gates identifies these as Komatsu-style by marking the hex nuts with two small notches.

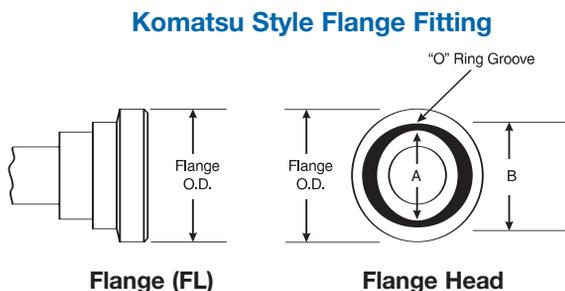
The Komatsu style connector seals on the 30° flare.



Dash Size	Nominal Size		Thread Size	Female Thread I.D. (mm)	Male Thread (O.D.) (mm)
	(In.)	(mm)			
-6	3/8	9.5	M18x1.5	16.5	18
-8	1/2	13	M22x1.5	20.5	22
-10	5/8	16	M24x1.5	22.5	24
-12	3/4	19	M30x1.5	28.5	30
-16	1	25	M33x1.5	31.5	33
-20	1-1/4	32	M36x1.5	34.5	36
-24	1-1/2	38	M42x1.5	40.5	42

Komatsu Style Flange Fitting

The Komatsu style flange fitting is nearly identical to and fully interchangeable with the SAE Code 61 flange fitting. In all sizes the O-ring dimensions are different. When replacing a Komatsu style flange with an SAE style flange, an SAE style O-ring must always be used.

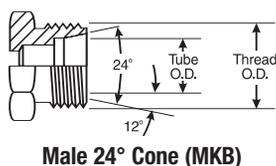


Dash Size	Nominal Size		Flange O.D. (In.)	A (In.)	B (In.)
	(In.)	(mm)			
-8	1/2	12.7	1.188	.728	.984
-10*	5/8	15.9	1.345	.728	1.102
-12	3/4	19.1	1.500	.846	1.220
-16	1	25.4	1.750	1.122	1.496
-20	1-1/4	31.8	2.000	1.358	1.732
-24	1-1/2	38.1	2.375	1.750	2.125
-32	2	50.8	2.812	2.225	2.559

*(-10 is a non-SAE size flange)

Metric Kobelco Metric Bite Sleeve

These are similar to the German DIN 24° Cone, but the DIN style uses coarser threads. Therefore, the Kobelco and German DIN are not interchangeable for female Kobelco (see French GAZ 24° swivel).



Dash Size	Metric Thread Size	Female Thread I.D. (mm)	Male Thread O.D. (mm)
-22	M30X1.5	28	30
-28	M36X1.5	34	36
-35	M45X1.5	43	45



EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

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C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

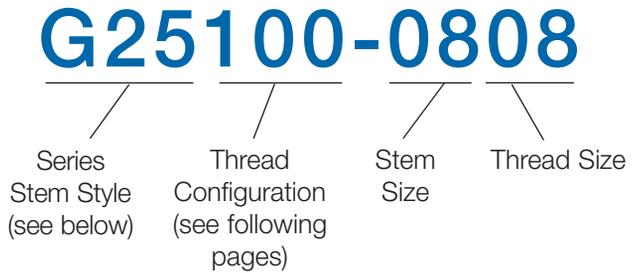


EQUIPMENT
HOSE/CPLG. SELECTION
TECH. DATA
EXT. & VERY HIGH PRESS. HOSE
GS CPLGS.
PCM CPLGS.
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LOW PRESS. HOSE & CPLGS.
C14 HOSE & CPLGS.
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PWR. STG. HOSE & CPLGS.
THERMO-PLASTIC HOSE & CPLGS.
ADAPTERS
QUICK DISCONNECT CPLGS.
ACCESSORIES & ASSORTMENTS
PART NUMBER INDEXES

Gates Global Part Numbering System

Gates couplings feature a meaningful part number that makes coupling identification fast and easy. Always refer to Gates Crimp Data Charts when selecting hose and coupling combinations.

In the following example, the Global Part Number G25100-0808 identifies a MegaCrimp® Male Pipe (MP) coupling with -8 (1/2") stem size and -8 (1/2") thread size.



Series Stem Styles:

- G20**—GlobalSpiral™
- G21**—GlobalSpiral One-Piece Couplings for MobileCrimp® Crimpers
- G25**—MegaCrimp®
- G27**—Field Attachable “Type T” for G1 Hose
- G28**—Field Attachable “Type T” for G2 Hose
- G34**—Field Attachable for C5, C5D, C5M
- G35**—Field Attachable for C5E
- G36**—Brass Push-on for Lock-on Hose
- G40**—Couplings for C14 Hose
- G43**—GL Couplings
- G45**—PolarSeal™ Couplings
- G50**—Power Steering
- G51**—PCTS Thermoplastic

Other Non-Stem Series Styles:

- G30**—Copper Tubing
- G31**—SureLock™ Fittings for Nylon Air Brake Tubing
- G32**—Compression Fittings
- G33**—Air Brake Fittings for Rubber Hose
- G37**—Single Bead Brass Couplings
- G38**—Barbed Stem
- G42**—GLP Coupling
- G49**—Automotive Adapters
- G52**—Clamping Collars
- G55**—Copper Tubing Industrial
- G56**—SureLok™ Industrial
- G57**—Mini Barb
- G58**—Compression PVC
- G60**—SAE to SAE Adapters
- G62**—British to SAE Adapters
- G63**—Metric Conversion Adapters
- G64**—International to International Adapters
- G65**—Japanese Conversion Adapters
- G80**—Hose Bend Restrictors
- G81**—Hose Guards
- G82 & 83**—Springs Guards
- G94 & 95**—Quick Disconnects





Gates Global Part Numbering System Thread Configurations for Stem Styles

These three-digit numbers identify the various coupling thread configurations

100 — MP	Male Pipe (NPTF - 30° Cone Seat)	177 —FJX60	Female JIC 37° Flare Swivel - 60° Bent Tube
101 — MPLN	Male Pipe Long Nose	178 —FJX60L	Female JIC 37° Flare Swivel - 60° Bent Tube Long Drop
102 —MPAPI	Male Pipe for API Unions	179 —FJX90S	Female JIC 37° Flare Swivel - 90° Bent Tube Short Drop
103 —MPLH	Male Pipe Long Hex	180 —FJX90M	Female JIC 37° Flare Swivel - 90° Bent Tube
105 —MPX	Male Pipe Swivel (NPTF - Without 30° Cone Seat)	181 —FJX90L	Female JIC 37° Flare Swivel - 90° Bent Tube Long Drop
106 —MPX90	Male Pipe Swivel - 90° Block (NPTF - Without 30° Cone Seat)	182 —FJX90XL	Female JIC 37° Flare Swivel - 90° Bent Tube Extra Long Drop
107 —MPX90L	Male Pipe Swivel - 90° Block Long (NPTF - Without 30° Cone Seat)	183 —FJX90-000	Female JIC 37° Flare Swivel - 90° Bent Tube Non-ISO Drop (mm)
110 —FP	Female Pipe (NPTF - Without 30° Cone Seat)	185 —FJXP	Female JIC 37° Flare Swivel Under Pressure
111 —FPX	Female Pipe Swivel (NPSM - 30° Cone Seat)	187 —FJX90BLK	Female JIC 37° Flare Swivel - 90° Block
112 —FPXT	Female Pipe Swivel Tapered Threads (NPTF)	195 —MS	Male SAE 45° Flare
120 —MB	Male O-Ring Boss	196 —MS45	Male SAE 45° Flare - 45° Bent Tube
121 —MBX	Male O-Ring Boss Swivel	197 —MS90	Male SAE 45° Flare - 90° Bent Tube
122 —MBX45	Male O-Ring Boss Swivel - 45° Block	199 —MS90BLK	Male SAE 45° Flare - 90° Block
123 —MBX90	Male O-Ring Boss Swivel - 90° Block	200 —FSX	Female SAE 45° Flare Swivel
124 —MBX90L	Male O-Ring Boss Swivel - 90° Block Long	201 —FSXLT	Female SAE 45° Flare Swivel Long Tube
130 —MBAX	Male O-Ring Boss Adapterless Swivel	202 —FSX45	Female SAE 45° Flare Swivel - 45° Bent Tube
133 —MBAX45	Male O-Ring Boss Adapterless Swivel - 45° Bent Tube	203 —FSX45L	Female SAE 45° Flare Swivel - 45° Bent Tube Long Drop
134 —MBAX90M	Male O-Ring Boss Adapterless Swivel - 90° Bent Tube Medium Drop	204 —FSX90S	Female SAE 45° Flare Swivel - 90° Bent Tube Short Drop
135 —MBAX90S	Male O-Ring Boss Adapterless Swivel - 90° Bent Tube Short Drop	205 —FSX90	Female SAE 45° Flare Swivel - 90° Bent Tube
136 —MBAX90L	Male O-Ring Boss Adapterless Swivel - 90° Bent Tube Long Drop	206 —FSX90L	Female SAE 45° Flare Swivel - 90° Bent Tube Long Drop
140 —FMX	Female MegaSeal® Swivel	207 —FSX90XL	Female SAE 45° Flare Swivel - 90° Bent Tube Extra Long Drop
141 —FMXL	Female MegaSeal Swivel Long	210 —FJSX	Dual Seat Female JIC 37°/SAE 45° Flare Swivel
142 —FMX30	Female MegaSeal Swivel - 30° Bent Tube	211 —FJSX45	Dual Seat Female JIC 37°/SAE 45° Flare Swivel - 45° Bent Tube
143 —FMX30L	Female MegaSeal Swivel - 30° Bent Tube Long Drop	212 —FJSX90	Dual Seat Female JIC 37°/SAE 45° Flare Swivel - 90° Bent Tube
144 —FMX45S	Female MegaSeal Swivel - 45° Bent Tube Short Drop	213 —FJSX90L	Dual Seat Female JIC 37°/SAE 45° Flare Swivel - 90° Bent Tube Long Drop
145 —FMX45	Female MegaSeal Swivel - 45° Bent Tube	225 —MFFOR	Male Flat-Face O-Ring
146 —FMX45L	Female MegaSeal Swivel - 45° Bent Tube Long Drop	226 —MFFORBKHDLN	Male Flat-Face O-Ring Bulkhead Long Nose
147 —FMX60	Female MegaSeal Swivel - 60° Bent Tube	229 —FFORXS	Female Flat-Face O-Ring Swivel Short
148 —FMX60L	Female MegaSeal Swivel - 60° Bent Tube Long Drop	230 —FFORX	Female Flat-Face O-Ring Swivel
149 —FMX90S	Female MegaSeal Swivel - 90° Bent Tube Short Drop	231 —FFORXL	Female Flat-Face O-Ring Swivel Long
150 —FMX90	Female MegaSeal Swivel - 90° Bent Tube	234 —FFORX45S	Female Flat-Face Swivel - 45° Bent Tube Short Drop
151 —FMX90L	Female MegaSeal Swivel - 90° Bent Tube Long Drop	235 —FFORX45	Female Flat-Face Swivel - 45° Bent Tube
152 —FMX90XL	Female MegaSeal Swivel - 90° Bent Tube Extra Long Drop	239 —FFORX90S	Female Flat-Face Swivel - 90° Bent Tube Short Drop
165 —MJ	Male JIC 37° Flare	240 —FFORX90M	Female Flat-Face Swivel - 90° Bent Tube
166 —MJL	Male JIC 37° Flare Long	241 —FFORX90L	Female Flat-Face Swivel - 90° Bent Tube Long Drop
167 —MJ90BLK	Male JIC 37° Flare - 90° Block	242 —FFORX90XL	Female Flat-Face Swivel - 90° Bent Tube Extra Long Drop
170 —FJX	Female JIC 37° Flare Swivel	248 —FFORX135	Female Flat-Face Swivel - 135° Bent Tube
171 —FJXL	Female JIC 37° Flare Swivel Long	300 —FL	Code 61 O-Ring Flange
172 —FJX30	Female JIC 37° Flare Swivel - 30° Bent Tube	301 —FLL	Code 61 O-Ring Flange Long
173 —FJX30L	Female JIC 37° Flare Swivel - 30° Bent Tube Long Drop	302 —FL22	Code 61 O-Ring Flange - 22-1/2° Bent Tube
174 —FJX45S	Female JIC 37° Flare Swivel - 45° Bent Tube Short Drop	304 —FL30	Code 61 O-Ring Flange - 30° Bent Tube
175 —FJX45	Female JIC 37° Flare Swivel - 45° Bent Tube		
176 —FJX45L	Female JIC 37° Flare Swivel - 45° Bent Tube Long Drop		

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

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MEGATECH® C5 HOSE & CPLGS.

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PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Hose & Coupling Selection

Gates Global Part Numbering System

Thread Configurations – continued

EQUIPMENT
HOSE/CPLG. SELECTION
TECH. DATA
EXT. & VERY HIGH PRESS. HOSE
GS CPLGS.
PCM CPLGS.
PCS CPLGS.
HIGH & MED. PRESS. HOSE
MEGACRIMP® CPLGS.
PC CPLGS.
FIELD ATTACHABLE CPLGS.
AIR BRAKE HOSE & CPLGS.
MEGATECH® C5 HOSE & CPLGS.
LOW PRESS. HOSE & CPLGS.
C14 HOSE & CPLGS.
POLARSEAL® HOSE & CPLGS.
PWR. STG. HOSE & CPLGS.
THERMO-PLASTIC HOSE & CPLGS.
ADAPTERS
QUICK DISCONNECT CPLGS.
ACCESSORIES & ASSORTMENTS
PART NUMBER INDEXES

305 —FL30L	Code 61 O-Ring Flange - 30° Bent Tube Long Drop	416 —FLC90L	Caterpillar Style O-Ring Flange (Code 62) - 90° Bent Tube Long Drop
306 —FL45S	Code 61 O-Ring Flange - 45° Bent Tube Short Drop	450 —TBFL	Two Bolt Flange (Code 61)
307 —FL45	Code 61 O-Ring Flange - 45° Bent Tube	452 —TBFL45	Two Bolt Flange (Code 61) - 45° Bent Tube
309 —FL60	Code 61 O-Ring Flange - 60° Bent Tube	454 —TBFL90	Two Bolt Flange (Code 61) - 90° Bent Tube
310 —FL60L	Code 61 O-Ring Flange - 60° Bent Tube Long Drop	460 —ABC	Air Brake Compression
311 —FL67	Code 61 O-Ring Flange - 67-1/2° Bent Tube	461 —STA	Straight Tube Assembly
312 —FL67L	Code 61 O-Ring Flange - 67-1/2° Bent Tube Long Drop	470 —FPFL	French Poclain Flange
313 —FL90XS	Code 61 O-Ring Flange - 90° Bent Tube Extra Short Drop	500 —MIX	SAE Male Inverted Swivel
314 —FL90S	Code 61 O-Ring Flange - 90° Bent Tube Short Drop	501 —MIXL	SAE Male Inverted Swivel Long
315 —FL90	Code 61 O-Ring Flange - 90° Bent Tube	502 —MIX45	SAE Male Inverted Swivel - 45° Bent Tube
316 —FL90L	Code 61 O-Ring Flange - 90° Bent Tube Long Drop	504 —MIX90	SAE Male Inverted Swivel - 90° Bent Tube
317 —FL90XL	Code 61 O-Ring Flange - 90° Bent Tube Extra Long Drop	506 —MIX120	SAE Male Inverted Swivel - 120° Bent Tube
318 —FL90XXL	Code 61 O-Ring Flange - 90° Bent Tube Extra Extra Long Drop	508 —FI	Female Inverted
323 —FL100	Code 61 O-Ring Flange - 100° Bent Tube	510 —MFA	SAE Male Flareless Assembly
325 —FL110	Code 61 O-Ring Flange - 110° Bent Tube	511 —MFA90	SAE Male Flareless - 90° Bent Tube
327 —FL120	Code 61 O-Ring Flange - 120° Bent Tube	520 —SP	Stand Pipe
329 —FL125	Code 61 O-Ring Flange - 125° Bent Tube	521 —SPL	Stand Pipe Long
331 —FL135	Code 61 O-Ring Flange - 135° Bent Tube	522 —SP45	Stand Pipe - 45° Bent Tube
342 —RFL905	Reuseable Flange - 90° Special	524 —SP90	Stand Pipe - 90° Bent Tube
350 —FLH	Code 62 O-Ring Flange Heavy	527 —FBO	Female Braze-On Stems
351 —FLHL	Code 62 O-Ring Flange Heavy Long	530 —PL	Male Press-Loc Stems
352 —FLH22	Code 62 O-Ring Flange Heavy - 22-1/2° Bent Tube	531 —PL45	Male Press-Loc Stems - 45° Bent Tube
354 —FLH30	Code 62 O-Ring Flange Heavy - 30° Bent Tube	532 —PL90	Male Press-Loc Stems - 90° Bent Tube
357 —FLH45	Code 62 O-Ring Flange Heavy - 45° Bent Tube	535 —HLE	Hose Length Extender
358 —FLH45L	Code 62 O-Ring Flange Heavy - 45° Bent Tube Long Drop	536 —HLE45	Hose Length Extender - 45° Bent Tube
359 —FLH60	Code 62 O-Ring Flange Heavy - 60° Bent Tube	537 —HLE 90	Hose Length Extender - 90° Bent Tube
361 —FLH67	Code 62 O-Ring Flange Heavy - 67-1/2° Bent Tube	538 —HLESG	Hose Length Extender - Sight Glass
364 —FLH90S	Code 62 O-Ring Flange Heavy - 90° Bent Tube Short Drop	539 —HLET	Hose Length Extender - Tee
365 —FLH90	Code 62 O-Ring Flange Heavy - 90° Bent Tube	540 —FABX	Female Air Brake Swivel
366 —FLH90L	Code 62 O-Ring Flange Heavy - 90° Bent Tube Long Drop	541 —HLE180	Hose Length Extender - 180° Bent Tube
367 —FLH90XL	Code 62 O-Ring Flange Heavy - 90° Bent Tube Extra Long Drop	543 —TBFLX	Two Bolt Flange Swivel
370 —FLFF	Flange Without O-Ring Groove (Code 62)	560 —MPG	Male Special Grease Fitting
400 —FLC	Caterpillar Style O-Ring Flange (Code 62)	561 —FG	Female Special Grease Fitting
401 —FLCL	Caterpillar Style O-Ring Flange (Code 62) Long	562 —FZX	Parker Triple Thread Female Swivel
402 —FLC22	Caterpillar Style O-Ring Flange (Code 62) - 22-1/2° Bent Tube	563 —PWX	Pressure Washer Swivel (Karcher)
404 —FLC30	Caterpillar Style O-Ring Flange (Code 62) - 30° Bent Tube	564 —BJF	Banjo (Ford Tractor)
407 —FLC45	Caterpillar Style O-Ring Flange (Code 62) - 45° Bent Tube	570 —MST	Male SAE 45° Flare - Straight Tube
409 —FLC60	Caterpillar Style O-Ring Flange (Code 62) - 60° Bent Tube	571 —MST45	Male SAE 45° Flare - 45° Bent Tube
411 —FLC67	Caterpillar Style O-Ring Flange (Code 62) - 67-1/2° Bent Tube	572 —MST90	Male SAE 45° Flare - 90° Bent Tube
415 —FLC90	Caterpillar Style O-Ring Flange (Code 62) - 90° Bent Tube	579 —FTON134SP45	Female SAE Tube O-Ring Nut Swivel w/R134a Service Port - 45° Bent Tube
		580 —MTON134SP	Male SAE Tube O-Ring Nut w/R134a Service Port
		581 —MTON134SP45	Male SAE Tube O-Ring Nut w/R134a Service Port - 45° Bent Tube
		582 —MTON134SP90	Male SAE Tube O-Ring Nut w/R134a Service Port - 90° Bent Tube
		583 —MTON	Male SAE Tube O-Ring Nut
		584 —MTON45	Male SAE Tube O-Ring Nut - 45° Bent Tube
		585 —MTON90	Male SAE Tube O-Ring Nut - 90° Bent Tube
		586 —FTONR12SP	Female SAE Tube O-Ring Nut Swivel w/R12 Service Port





Gates Global Part Numbering System Thread Configurations – continued

587 — FTONR12SP90	Female SAE Tube O-Ring Nut Swivel w/R12 Service Port- 90° Bent Tube	725 — FDHORX45	Female DIN Heavy Series O-Ring Swivel 24° Cone - 45° Bent Tube
588 — FTON134SP	Female SAE Tube O-Ring Nut Swivel w/R134a Service Port	730 — FDHORX90	Female DIN Heavy Series O-Ring Swivel 24° Cone - 90° Bent Tube
589 — FTON134SP90	Female SAE Tube O-Ring Nut Swivel - 90° Bent Tube w/R134a Service Port	735 — MKB	Metric Kobelco
590 — FTON	Female SAE Tube O-Ring Nut Swivel	750 — MSP	Metric Stand Pipe
591 — FTON45	Female SAE Tube O-Ring Nut Swivel - 45° Bent Tube	751 — MSP45	Metric Stand Pipe - 45° Bent Tube
592 — FTON90	Female SAE Tube O-Ring Nut Swivel - 90° Bent Tube	752 — MSP90	Metric Stand Pipe - 90° Bent Tube
593 — FTOMN	Female SAE Tube O-Ring Metric Nut Swivel	795 — MBSPT	Male British Standard Pipe Tapered / Japanese Tapered Thread
594 — FTOMN45	Female SAE Tube O-Ring Metric Nut Swivel - 45° Bent Tube	800 — FBSPT	Female British Standard Pipe Tapered / Japanese Tapered Thread
595 — FTOMN90	Female SAE Tube O-Ring Metric Nut Swivel - 90° Bent Tube	810 — MBSP	Male British Standard Pipe Parallel
596 — FTON90BL	Female SAE Tube O-Ring Nut Swivel - 90° Block	811 — MBSPPLN	Male British Standard Pipe Parallel Long Nose
597 — MIO	Male Inverted O-Ring	830 — FBSPORX	Female British Standard Parallel Pipe O-Ring Swivel
598 — MIO45	Male Inverted O-Ring - 45° Bent Tube	831 — FBSPORX45	Female British Standard Parallel Pipe O-Ring Swivel - 45° Bent Tube
599 — MIO90	Male Inverted O-Ring - 90° Bent Tube	832 — FBSPORX90	Female British Standard Parallel Pipe O-Ring Swivel - 90° Bent Tube
600 — MIOBKHD	Male Inverted O-Ring Bulkhead	845 — FBSPORX90BL	Female British Standard Parallel Pipe O-Ring Swivel - 90° Block
601 — MIOBKHD45	Male Inverted O-Ring Bulkhead - 45° Bent Tube	847 — FBX90BLK	Female British Standard Pipe Parallel - 90° Block
602 — MIOBKHD90	Male Inverted O-Ring Bulkhead - 90° Bent Tube	850 — BSPBJ	BSPBJ Banjo
604 — FTDON	Female Tube Dual O-Ring Nut Swivel	855 — FBFFX	Female British Flat-Face Swivel
605 — FTDON45	Female Tube Dual O-Ring Nut Swivel - 45° Bent Tube	904 — MK	Male Komatsu
606 — FTDON90	Female Tube Dual O-Ring Nut Swivel - 90° Bent Tube	910 — FKX	Female Komatsu Style Japanese Metric Swivel
607 — FTDOMN	Female Tube Dual O-Ring Metric Nut Swivel	911 — FKX45	Female Komatsu Style Japanese Metric Swivel - 45° Bent Tube
608 — FTDOMN45	Female Tube Dual O-Ring Metric Nut Swivel - 45° Bent Tube	913 — FKX90	Female Komatsu Style Japanese Metric Swivel - 90° Bent Tube
609 — FTDOMN90	Female Tube Dual O-Ring Metric Nut Swivel - 90° Bent Tube	930 — FJISX	Female Japanese Industrial Standard Swivel
610 — FTON180	Female Tube O-Ring Nut Swivel 180°	935 — MMFA	Male Metric Flareless Assembly
611 — MIO134SP	Male Inverted O-Ring w/R134a Service Port	947 — FSLTORSP	Female (Ford) Spring Lock "T" O-Ring Splicer
612 — MIO134SP45	Male Inverted O-Ring Bulkhead w/R134a Service Port - 45° Bent Tube	948 — FSLSP	Female (Ford) Spring Lock Liquid Line Splicer
613 — MIO134SP90	Male Inverted O-Ring w/R134a Service Port - 90° Bent Tube	949 — MSL45	Male (Ford) Spring Lock - 45° Bent Tube
614 — TORSP	Universal T-Splacers English Threads	950 — MSL	Male (Ford) Spring Lock
615 — MDL	Male DIN Light Series 24° Inverted Cone	951 — MSL90	Male (Ford) Spring Lock - 90° Bent Tube
645 — FDLORX	Female DIN Light Series O-Ring Swivel 24° Cone	952 — FSL	Female (Ford) Spring Lock
650 — FDLORX45	Female DIN Light Series O-Ring Swivel 24° Cone - 45° Bent Tube	953 — FSL90	Female (Ford) Spring Lock - 90° Bent Tube
655 — FDLORX90	Female DIN Light Series O-Ring Swivel 24° Cone - 90° Bent Tube	954 — R12SP	Hose Splicer w/R12 7/16-20 Thread Service Port
670 — FDFFX	Female DIN Flat-Face Swivel	955 — FSL45	Female (Ford) Spring Lock - 45° Bent Tube
675 — MFG	Male French GAZ	956 — R134SP	Hose Splicer w/R134A Service Port
680 — FFGX	Female French GAZ Swivel	957 — R134SPRL	Female Rotalok w/R134a Service Port - 90° Block
685 — FFGX45	Female French GAZ Swivel - 45° Bent Tube	958 — CFTON90	Compressor Female Tube O-Ring Nut - 90° Bent Tube
690 — FFGX90	Female French GAZ Swivel - 90° Bent Tube	959 — CFTON90BL	Compressor Female Tube O-Ring Nut - 90° Block
715 — MDH	Male DIN Heavy Series 24° Inverted Cone	960 — CFTON134SP90BL	Compressor Female Tube O-Ring Nut w/R134A Service Port - 90° Block
720 — FDHORX	Female DIN Heavy Series O-Ring Swivel 24° Cone	961 — CBSR12SP90	Compressor Pad Block - Single With Switch or Service Port
		962 — CBSRR12SP90	Compressor Pad Block - Single Reversed With Switch or Service Port

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

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MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Hose & Coupling Selection

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

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POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

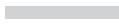
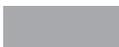
ACCESSORIES & ASSORT-MENTS

PART NUMBER INDEXES

Gates Global Part Numbering System Air Brake

In the following example, the Global Part Number G31100-0808 identifies a SureLok™ Male Pipe (MP) coupling with -8 (1/2") tube size and -8 (1/2") thread size.

G 31 100 - 08 08



Thread Size (1/2")

Stem Size (1/2")

Thread Configuration (see below)

Series Stem Style (see below)

Series Stem Styles:

- G31** — SureLok™ Fittings (Description = AB)
- G32** — Compression Fittings (Description = ABC)
- G33** — Air Brake Fittings for Rubber Hose (Description = ABR)

Thread Configurations

These three-digit numbers identify the various coupling thread configurations

021 — MP-ATDV	Air Tank Drain Valve	302 — AB-AB-BKHDL	Air Brake Bulkhead – Long
027 — MP-CV	One Way Check Valve	350 — AB-MFA-BKHD	Air Brake to Male Flareless Assembly Bulkhead
030 — MAB-MP	Air Brake Adapter	360 — AB-FP-BKHD	Air Brake to Female Pipe Bulkhead
031 — GH	Glad Hand	377 — AB-GH-BKHD	Air Brake to Glad Hand Bulkhead
032 — GHS	Gladhand Seal	400 — AB-AB	Air Brake Union
040 — TSI-AB	Tube Sleeve Insert	404 — AB-AB90	Air Brake Union - 90°
050 — TS-AB	Tube Sleeve	450 — AB-AB-AB	Air Brake Union - Tee
060 — TSN-AB	Tube Sleeve Nut	451 — AB-AB-AB	Air Brake Union - Tee Jump UP
061 — SGN-ABR	Spring Guard Nut	452 — AB-AB-AB	Air Brake Union - Tee Jump DOWN
100 — AB-MP	Air Brake to Male Pipe (NPTF - 30° Cone Seat)	453 — AB-AB-AB	Air Brake Union - Tee with Bracket
102 — AB-MP45	Air Brake to Male Pipe - 45°	601 — AB-MP-TV	Air Brake to Male Pipe Truck Valve - 90°
104 — AB-MP90	Air Brake to Male Pipe - 90°	602 — MP-ABC-TV	Male Pipe to Air Brake Truck Valve - 90°
105 — AB-MP-Port90	Air Brake to Male Pipe - 90° with Port	610 — MP-MS90-TV	Male Pipe to Male SAE 45° Flare Truck Valve - 90°
110 — ABRSG-MP	Air Brake to Male Pipe with Spring Guard	612 — MS-MP90-TV	Male SAE 45° Flare to Male Pipe Truck Valve - 90°
111 — ABRI-MP	Air Brake to Male Pipe without Nut	620 — SB-MP90-TV	Single Bead Male Pipe Truck Valve - 90°
112 — SGABR	Air Brake Spring Guard	622 — SB-MP90-TVP	Single Bead Male Pipe Truck Valve with Pin Handle - 90°
122 — AB-MPX45	Air Brake to Male Pipe Swivel - 45°	630 — FP-MP90-TV	Female Pipe to Male Pipe Truck Valve - 90°
124 — AB-MPX90	Air Brake to Male Pipe Swivel - 90°	650 — MP-FP-FP3WTV	3-Way Truck Valve
130 — MP-AB-AB	Male Pipe to Air Brake - Tee	655 — FP-FP-FP4WTV	4-Way Truck Valve – Short Handle
131 — MP-AB-AB	Male Pipe to Air Brake - Tee Jump UP	656 — FP-FP-FP4WTV-L	4-Way Truck Valve – Long Handle
132 — MP-AB-AB	Male Pipe to Air Brake - Tee Jump DOWN	701 — MFA-MFASC	Male Flareless Assembly to Male Flareless Assembly Shut-Off Cock
134 — AB-AB-MP	Air Brake to Male Pipe - Tee	705 — MFA-MPSC	Male Flareless Assembly to Male Pipe Shut-Off Cock
135 — AB-AB-MP	Air Brake to Male Pipe - Tee Jump UP	710 — MP-FPSC	Male Pipe to Female Pipe Shut-Off Cock
136 — AB-AB-MP	Air Brake to Male Pipe - Tee Jump DOWN	715 — FP-FPSC	Female Pipe to Female Pipe Shut-Off Cock
138 — AB-AB-MP45	Air Brake to Male Pipe - Tee - 45°	720 — MS-MPSC	Male SAE 45° Flare to Male Pipe Shut-Off Cock
140 — MPX-AB-AB	Male Pipe Swivel to Air Brake - Tee	730 — MS-MSSC	Male SAE 45° Flare to Male SAE 45° Flare Shut-Off Cock
142 — AB-AB-MPX	Air Brake to Male Pipe Swivel - Tee	801 — MP-ADC	Male Pipe Air Drain Cock
150 — AB-FP	Air Brake to Female Pipe	805 — FP-MPADC	Female Pipe to Male Pipe Air Drain Cock
151 — ABR-FP	Air Brake to Female Pipe with Adapter	832 — MP-ADCBN	Male Pipe Air Drain Cock – Bibb Nose
154 — AB-FP90	Air Brake to Female Pipe - 90°	850 — ATNKV	Air Tank Valve
160 — AB-AB-FP	Air Brake to Female Pipe - Tee	970 — AB-MAN	6-Port Manifold
167 — MP-AB-FP	Male Pipe to Air Brake to Female Pipe - Tee		
300 — AB-AB-BKHD	Air Brake Bulkhead		
301 — AB-AB-BKHDS	Air Brake Bulkhead – Short		



Gates Global Part Numbering System Adapters

In the following example, the Global Part Number G60110-0808 identifies a Male Pipe NPTF (MP) to Male Pipe NPTF (MP) adapter with -8 (1/2") pipe thread and -8 (1/2") pipe thread size. **Meets SAE100R2 working pressures except where noted.**

Series Stem Styles:

G60—SAE to SAE **G62**—British to SAE **G63**—Metric to SAE **G64**—International to International **G65**—Japanese Conversion

G 60



Series Stem Style

1 1 0 - 0 8



Thread Configuration
(see below)



Stem Size

(Measured in 1/16" – 8/16 = 1/2")

0 8

Thread Size

(Measured in 1/16" – 8/16 = 1/2")

Thread Configurations

These three-digit numbers identify the various coupling thread configurations

SAE to SAE

60050 —FFN	Female Flareless Nut
60051 —FFS	Female Flareless Sleeve
60102 —MP-PLUG	Male Pipe NPTF Plug
60110 —MP-MP	Male Pipe NPTF to Male Pipe NPTF
60115 —MP-MP90	Male Pipe NPTF to Male Pipe NPTF - 90°
60130 —MP-FPS	Male Pipe NPTF to Female Pipe NPTF Reducer Bushing - Short
60132 —MP-FPL	Male Pipe NPTF to Female Pipe NPTF Increasing Bushing - Long
60136 —MP-FP90	Male Pipe NPTF to Female Pipe NPTF - 90°
60140 —MP-FPX	Male Pipe NPTF to Female Pipe Swivel NPSM
60142 —MP-FPX45	Male Pipe NPTF to Female Pipe Swivel NPSM - 45°
60144 —MP-FPX90	Male Pipe NPTF to Female Pipe Swivel NPSM - 90°
60152 —FP-FP	Female Pipe NPTF to Female Pipe NPTF
60156 —FP-FP90	Female Pipe NPTF to Female Pipe NPTF - 90°
60160 —FP-FPX	Female Pipe NPTF to Female Pipe Swivel NPSM
60162 —FP-FPX45	Female Pipe NPTF to Female Pipe Swivel NPSM - 45°
60164 —FP-FPX90	Female Pipe NPTF to Female Pipe Swivel NPSM - 90°
60181 —FP-FP-FP	Female Pipe NPTF - Tee
60183 —FP-FP-MP	Female Pipe NPTF on Run to Male Pipe NPTF - Tee
60184 —FPX-FPX-FPX	Female Pipe Swivel NPSM - Tee
60186 —FPX-FPX-MP	Female Pipe Swivel NPSM on Run to Male Pipe NPTF - Tee

60248 —OR	O-Rings for Straight Thread Boss Fittings
60250 —MB-PLUG	Male O-Ring Boss Plug
60275 —MB-FP	Male O-Ring Boss to Female Pipe NPTF
60285 —MB-FPX	Male O-Ring Boss to Female Pipe Swivel NPTF
60287 —MB-FPX45	Male O-Ring Boss to Female Pipe Swivel NPTF - 45°
60289 —MB-FPX90	Male O-Ring Boss to Female Pipe Swivel NPTF - 90°
60291 —FB-MP	Female O-Ring Boss to Male Pipe NPTF
60301 —MB-MJ	Male O-Ring Boss to Male JIC 37° Flare
60308 —MB-MJ45	Male O-Ring Boss to Male JIC 37° Flare - 45°
60312 —MB-MJ90	Male O-Ring Boss to Male JIC 37° Flare - 90°
60350 —MJ-MJ-MB	Male JIC 37° Flare on Run to Male O-Ring Boss - Tee
60352 —MB-MJ-MJ	Male O-Ring Boss to Male JIC 37° Flare to Male JIC 37° Flare - Tee

60394 —TS	Tube Sleeve
60395 —TSN	Tube Sleeve Nut
60399 —LN	Locknuts for Bulkhead Fittings
60401 —FJ-CAP	Female JIC 37° Flare Cap
60402 —MJ-PLUG	Male JIC 37° Flare Plug
60405 —MJ-FBO	Male JIC 37° Flare to Female Braze-On

60410 —MJ-MJ	Male JIC 37° Flare to Male JIC 37° Flare
60420 —MJ-FJ	Male JIC 37° Flare to Female JIC 37° Flare
60422 —MJ-FJX	Male JIC 37° Flare to Female JIC 37° Flare Swivel
60424 —MJ-FJX45	Male JIC 37° Flare to Female JIC 37° Flare - 45°
60445 —MJ-BKHD	Male JIC 37° Flare to Male JIC 37° Flare Bulkhead
60446 —MJ-BKHD45	Male JIC 37° Flare to Male JIC 37° Flare Bulkhead - 45°
60447 —MJ-BKHD90	Male JIC 37° Flare to Male JIC 37° Flare Bulkhead - 90°
60469 —MJ-MJ-MJ	Male JIC 37° Flare - Tee
60470 —MJ-MJ-FJX	Male JIC 37° Flare on Run to Female JIC 37° Flare Swivel - Tee

60471 —MJ-MJ-MJBKHD	Male JIC 37° Flare on Run to Male JIC 37° Flare Bulkhead - Tee
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60472 —MJ-MJBKHD-MJ	Male JIC 37° Flare to Male JIC 37° Flare Bulkhead to Male JIC 37° Flare - Tee
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60473 —MJ-FJX-MJ	Male JIC 37° Flare to Female JIC 37° Flare Swivel to Male JIC 37° Flare - Tee
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60490 —MJ-MP	Male JIC 37° Flare to Male Pipe NPTF
60497 —MJ-MP45	Male JIC 37° Flare to Male Pipe NPTF - 45°
60499 —MJ-MP90	Male JIC 37° Flare to Male Pipe NPTF - 90°
60510 —MJ-FP	Male JIC 37° Flare to Female Pipe NPTF
60514 —MJ-FP90	Male JIC 37° Flare to Female Pipe NPTF - 90°
60520 —FJX-MP	Female JIC 37° Flare Swivel to Male Pipe NPTF
60524 —FJX-MP90	Female JIC 37° Flare Swivel to Male Pipe NPTF - 90°
60530 —FJX-FP	Female JIC 37° Flare Swivel to Female Pipe NPTF
60541 —MJBKHD-MP	Male JIC 37° Flare Bulkhead to Male Pipe NPTF
60551 —MJ-MJ-MP	Male JIC 37° Flare on Run to Male Pipe NPTF - Tee
60650 —MS-MP	Male SAE 45° Flare to Male Pipe NPTF - Brass
60654 —MS-MP90	Male SAE 45° Flare to Male Pipe NPTF - Brass - 90°
60660 —MS-FP	Male SAE 45° Flare to Female Pipe NPTF - Brass
60664 —MS-FP90	Male SAE 45° Flare to Female Pipe NPTF - Brass - 90°
60698 —ORFF	O-Rings for Flat Face Fittings
60701 —FF-CAP	Female Flat-Face O-Ring Cap
60702 —MFFOR-PLUG	Male Flat-Face O-Ring Plug
60724 —MFFOR-MFFOR90	Male Flat-Face O-Ring to Female Flat-Face Swivel-90°

60770 —MFFOR-MP	Male Flat-Face O-Ring on Run to Female Flat-Face Swivel - Tee
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60800 —MFFOR-MB	Male Flat-Face O-Ring to Male Pipe NPTF
60801 —MFFOR-MBL	Male Flat-Face O-Ring to Male O-Ring Boss
60805 —MFFOR-MB45	Male Flat-Face O-Ring to Male O-Ring Boss - 45°
60810 —MFFOR-MB90	Male Flat-Face O-Ring to Male O-Ring Boss - 90°

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Hose & Coupling Selection

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH®/C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

Gates Global Part Numbering System — Adapters (Continued)

Thread Configurations (Continued)

60820 — MFFOR-MFFOR-MB	Male Flat-Face O-Ring on Run to Male O-Ring Boss – Tee
60821 — MFFOR-MB-MFFOR	Male Flat-Face O-Ring to Male O-Ring Boss to Male Flat-Face O-Ring – Tee
60880 — FFORX-MJ	Female Flat-Face O-Ring Swivel to Male JIC 37° Flare
60897 — FL-CAP	Code 61 O-Ring Flange Cap
60898 — FLOR	O-Rings for Code 61, Code 62 and Caterpillar-Style Flange Fittings
60899 — CFHS	Flange Half Set (Code 61 – SAE J518)
60900 — FL-MJ	Code 61 O-Ring Flange to Male JIC 37° Flare
60901 — FL4K-MJ / FL5K-MJ	Code 61 O-Ring Flange to Male JIC 37° Flare High Pressure
60905 — FL-MJ45	Code 61 O-Ring Flange to Male JIC 37° Flare–45°
60906 — FL4K-MJ45 / FL5K-MJ45	Code 61 O-Ring Flange to Male JIC 37° Flare High Pressure – 45°
60910 — FL-MJ90	Code 61 O-Ring Flange to Male JIC 37° Flare–90°
60911 — FL4K-MJ90 / FL5K-MJ90	Code 61 O-Ring Flange to Male JIC 37° Flare High Pressure – 90°
60915 — FL4K-MFFOR / FL5K-MFFOR	Code 61 O-Ring Flange to Male Flat-Face O-Ring High Pressure
60920 — FL4K-MFFOR45 / FL5K-MFFOR45	Code 61 O-Ring Flange to Male Flat-Face O-Ring High Pressure– 45°
60925 — FL4K-MFFOR90 / FL5K-MFFOR90	Code 61 O-Ring Flange to Male Flat-Face O-Ring High Pressure– 90°
60927 — FLH-CAP	Code 62 O-Ring Flange Cap
60929 — FHHS	Flange Half Set (Code 62 – SAE J518)
60930 — FLH6K-MJ	Code 62 O-Ring Flange Heavy to Male JIC 37° Flare (6,000 PSI)
60935 — FLH6K-MJ45	Code 62 O-Ring Flange Heavy to Male JIC 37° Flare – 45° (6,000 PSI)
60940 — FLH6K-MJ90	Code 62 O-Ring Flange Heavy to Male JIC 37° Flare - 90° (6,000 PSI)
60945 — FLH6K-MFFOR / FLH6K-MFFOR	Code 62 O-Ring Flange Heavy to Male Flat-Face O-Ring (6,000 PSI)
60950 — FLH4K-MFFOR45 / FLH6K-MFFOR45	Code 62 O-Ring Flange Heavy to Male Flat-Face O-Ring - 45° (6,000 PSI)
60955 — FLH4K-MFFOR90 / FLH6K-MFFOR90	Code 62 O-Ring Flange Heavy to Male Flat-Face O-Ring - 90° (6,000 PSI)
60959 — CATFHS	Caterpillar-Style Flange Halve Sets

British Conversion to SAE

62150 — MBSPT-MJ	Male British Standard Pipe Tapered Thread to Male JIC 37° Flare
62153 — MBSPT-MJ45	Male British Standard Pipe Tapered Thread to Male JIC 37° Flare – 45°
62155 — MBSPT-MJ90	Male British Standard Pipe Tapered Thread to Male JIC 37° Flare – 90°
62200 — MBSPP-MP	Male British Standard Pipe Parallel to Male Pipe NPTF
62220 — MBSPP-FP	Male British Standard Pipe Parallel to Female Pipe NPTF
62300 — MBSPP-MJ	Male British Standard Pipe Parallel to Male JIC 37° Flare
62305 — MBSPP-MJ45	Male British Standard Pipe Parallel to Male JIC 37° Flare – 45°
62310 — MBSPP-MJ90	Male British Standard Pipe Parallel to Male JIC 37° Flare – 90°
62320 — MBSPP-FJX	Male British Standard Pipe Parallel to Female JIC 37° Flare Swivel
62450 — MBSPPOR-MJ	Male British Standard Pipe Parallel with O-Ring to Male JIC 37° Flare
62460 — MBSPPOR-MJ90	Male British Standard Pipe Parallel with O-Ring to Male JIC 37° Flare – 90°
62470 — MBSPPOR-MFFOR	Male British Standard Pipe Parallel with O-Ring to Male Flat-Face O-Ring

62473 — MBSPPOR-MFFOR45	Male British Standard Pipe Parallel with O-Ring to Male Flat-Face O-Ring – 45°
62475 — MBSPPOR-MFFOR90	Male British Standard Pipe Parallel with O-Ring to Male Flat-Face O-Ring – 90°
62500 — FBSPP-MP	Female British Standard Pipe Parallel to Male Pipe NPTF
62520 — FBSPP-FP	Female British Standard Pipe Parallel to Female Pipe NPTF
62550 — FBSPP-MJ	Female British Standard Pipe Parallel to Male JIC 37° Flare
62605 — FBSPPX-MP90	Female British Standard Pipe Parallel Swivel to Male Pipe NPTF – 90°
62650 — FBSPPX-MJ	Female British Standard Pipe Parallel Swivel to Male JIC 37° Flare
62660 — FBSPPX-FJX	Female British Standard Pipe Parallel Swivel to Female JIC 37° Flare Swivel
62750 — FBSPPX-MJ	Female British Standard Pipe Parallel Swivel to Male JIC 37° Flare
62801 — FBFFOR-MJ	Female British Flat-Face O-Ring to Male JIC 37° Flare

Metric Conversion

63099 — MM-PLUG	Male Metric O-Ring Plug
63120 — MM-FP	Male Metric with O-Ring to Female Pipe NPTF
63150 — MM-MJ	Male Metric with O-Ring to Male JIC 37° Flare
63160 — MM-MJ90	Male Metric with O-Ring to Male JIC 37° Flare–90°
63350 — MDL-MJ	Male DIN 24° Cone – Light Series to Male JIC 37° Flare
63450 — FDLX-MJ	Female DIN 24° Cone Swivel – Light Series to Male JIC 37° Flare
63650 — MDH-MJ	Male DIN 24° Cone – Heavy Series to Male JIC 37° Flare
63750 — FDHX-MJ	Female DIN 24° Cone Swivel – Heavy Series to Male JIC 37° Flare
63980 — MKB-PLUG	Male Kobelco Plug
63990 — MKB-MJ	Male Kobelco to Male JIC 37° Flare

International to International

64075 — BBDS	British Bonded Seal
64094 — MBSPOR-PLUG	Male British Standard Pipe Parallel with O-Ring Plug
64095 — ORFBSP	O-Rings for British Standard Parallel Pipe (BSP Couplings)
64097 — FBSPP-CAP	Female British Standard Pipe Parallel Cap
64098 — MBSPT-PLUG	Male British Standard Pipe Tapered Plug
64099 — MBSPP-PLUG	Male British Standard Pipe Parallel Plug
64350 — MBSPP-FBSPPX	Male British Standard Pipe Parallel to Female British Standard Pipe Parallel Swivel
64775 — MBDS	Metric Bonded Seal
64780 — ORDINL	O-Rings for DIN Light Series (MegaCrimp® and GlobalSpiral™ Couplings)
64781 — ORDINH	O-Rings for DIN Heavy Series (MegaCrimp® and GlobalSpiral™ Couplings)
64782 — ORDIN	O-Rings for DIN Heavy Series (PC, PCM & PCS Couplings)
64787 — BS	Metric Bite Sleeve
64788 — MNL	Metric Bite Nut – Light
64789 — MNH	Metric Bite Nut – Heavy
64790 — MM-PLUG	Male Metric Plug
64792 — MDL-PLUG	Male DIN 24° Cone – Light Series Plug
64793 — FDL-CAP	Female DIN 24° Cone – Light Series Cap
64794 — MDH-PLUG	Male DIN 24° Cone – Heavy Series Plug
64795 — FDH-CAP	Female DIN 24° Cone – Heavy Series Cap

Japanese Conversion

65097 — FJIS-CAP	Female Japanese Industrial Standard Cap
65099 — MJIS-PLUG	Male Japanese Industrial Standard Plug
65100 — FJIS-MJ	Female Japanese Industrial Standard to Male 37° Flare
65597 — FK-CAP	Female Komatsu Cap
65599 — MK-PLUG	Male Komatsu Plug
65600 — FK-MJ	Female Komatsu to Male JIC 37° Flare
65700 — MK-MK	Male Komatsu to Male Komatsu
65750 — MK-MJ	Male Komatsu to Male JIC 37° Flare
65800 — MK-FK90	Male Komatsu to Female Komatsu – 90°
65950 — MK-FK-MK	Male Komatsu to Female Komatsu to Male Komatsu – Tee



Gates Global Part Numbering System Quick Disconnect Couplers

Gates Quick Disconnect couplers feature a meaningful part number that makes coupling identification fast and easy. Always refer to Gates Cross Reference Charts when selecting a quick disconnect coupler for a competitive interchange.



Body Style Identification

- 0 Assembly
- 1 Male Tip (Nipple)
- 2 Female Coupler
- 3 Repair Kit
- 5 O-Ring
- 6 Backup Ring
- 8 Dust Plug
- 9 Dust Cap

Thread Style

- 0 Not Applicable
- 1 Female Pipe
- 2 Female O-Ring Boss
- 3 Bulkhead Mounts
- 4 Female British Parallel Pipe

Miscellaneous

- D Double-Acting Sleeve
- P Connect-Under-Pressure Option

Coupling Series Identification

G940 Series - Agricultural Standard —Ball Valve

- MQBA Male Quick Disconnect Ball Agricultural
- FQBA(DA) Female Quick Disconnect Ball Agricultural (Double Acting Sleeve)

G941 Series - Agricultural Standard —Poppet Valve

- MQPA Male Quick Poppet Agricultural
- FQPA Female Quick Poppet Agricultural

G942 Series - John Deere Old Style

- MQBAJD Male Quick Ball Agricultural John Deere
- FQBAJD Female Quick Ball Agricultural John Deere

G943 Series - International Harvester Old Style

- MQBAIHC Male Quick Ball Agricultural International Harvester

G944 Series - J.I. Case Old Style

- MQBAJIC Male Quick Ball Agricultural J.I. Case

G945 Series - Industrial ISO 7241-1 —Series B

- MQPI Male Quick Poppet Industrial
- FQPI Female Quick Poppet Industrial

G949 Series - Flush Face, HTMA

- MQFF Male Quick Flush Face
- CPMQFF Male Quick Disconnect Flush Face (Connect-Under-Pressure)
- FQFF Female Quick Flush Face
- CPFQFF Female Quick Disconnect Flush Face (Connect-Under-Pressure)

G950 Series - High Pressure Flush Face

- MQFFH Male Quick Flush Face (High Pressure)
- FQFFH Female Quick Flush Face (High Pressure)

G951 Series - Wing Nut

- MQW Male Quick Wing
- FQW Female Quick Wing

G952 Series - High Pressure Wing Nut

- MQWH Male Quick Wing (High Pressure)
- FQWH Female Quick Wing (High Pressure)

G953 Series - Very High Pressure Flush Face

- MQFFVH Male Quick Flush Face (Very High Pressure)
- FQFFVH Female Quick Flush Face (Very High Pressure)

G956 Series - Industrial ISO 7241-1 —Series A

- MQP Male Quick Poppet
- FQP Female Quick Poppet

G959 Series - Agricultural Adapters

- MJD John Deere Old Style
- MISO ISO Style
- MIHC International Harvester Style

Miscellaneous

- DA Double Acting Sleeve
- ISO Industrial Standards Organization
- DP Dust Plug
- DC Dust Cap
- DSO Double Shut Off
- FP Female Pipe
- FB Female O-Ring Boss
- QDAOR G940 Series O-Ring for Female Coupler
- QDIBR G945 Series Backup Ring for Female Coupler
- QDIOR G945 Series O-Ring for Female Coupler
- QDOR G956 Series O-Ring for Female Coupler
- QDBR G956 Series Backup Ring for Female Coupler

EQUIPMENT

HOSE/CPLG.
SELECTION

TECH. DATA

EXT. &
VERY HIGH
PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED.
PRESS. HOSEMEGACRIMP®
CPLGS.

PC CPLGS.

FIELD
ATTACHABLE
CPLGS.AIR BRAKE
HOSE &
CPLGS.MEGATECH™
C5
HOSE &
CPLGS.LOW PRESS.
HOSE &
CPLGS.C14 HOSE
& CPLGS.POLARSEAL®
HOSE &
CPLGS.PWR. STG.
HOSE &
CPLGS.THERMO-
PLASTIC
HOSE &
CPLGS.

ADAPTERS

QUICK
DISCONNECT
CPLGS.ACCESSORIES
& ASSORT-
MENTSPART NUMBER
INDEXES

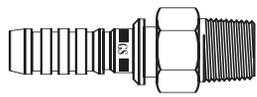
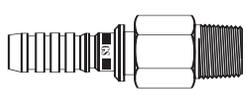
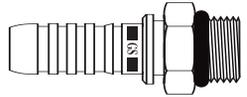
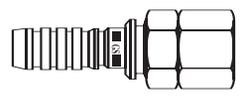
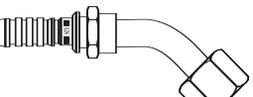
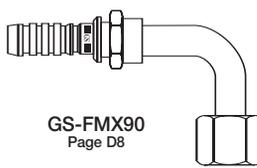
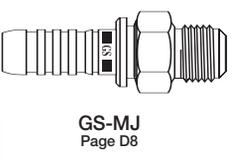
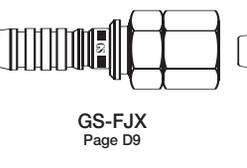
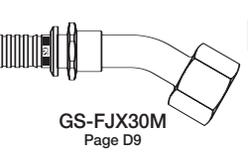
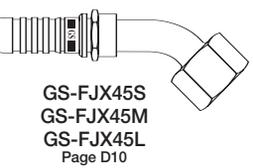
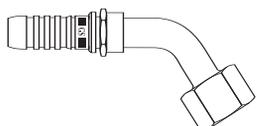
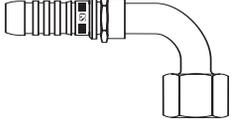
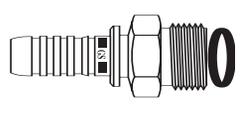
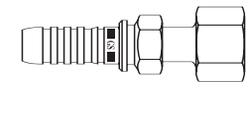
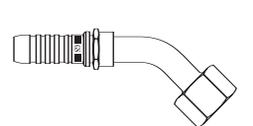
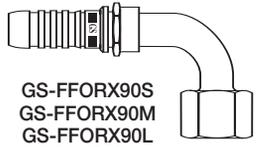
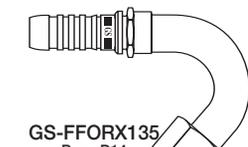
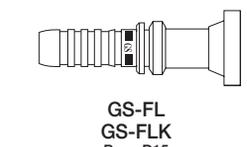
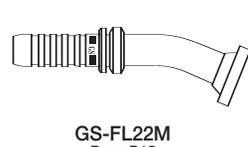
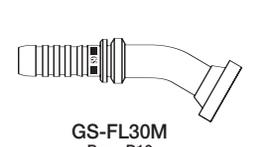
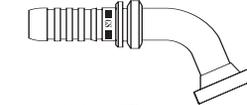
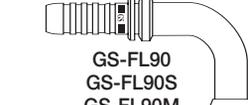
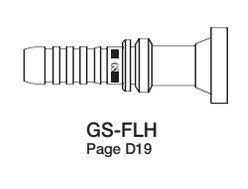
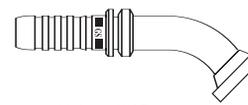
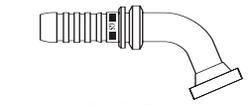
Hose & Coupling Selection

Coupling/Thread Configurations

GlobalSpiral™ (GS) Couplings

for EFG6K, G6K, EFG5K, G5K, EFG4K, G4K, EFG3K, and G3K Hose

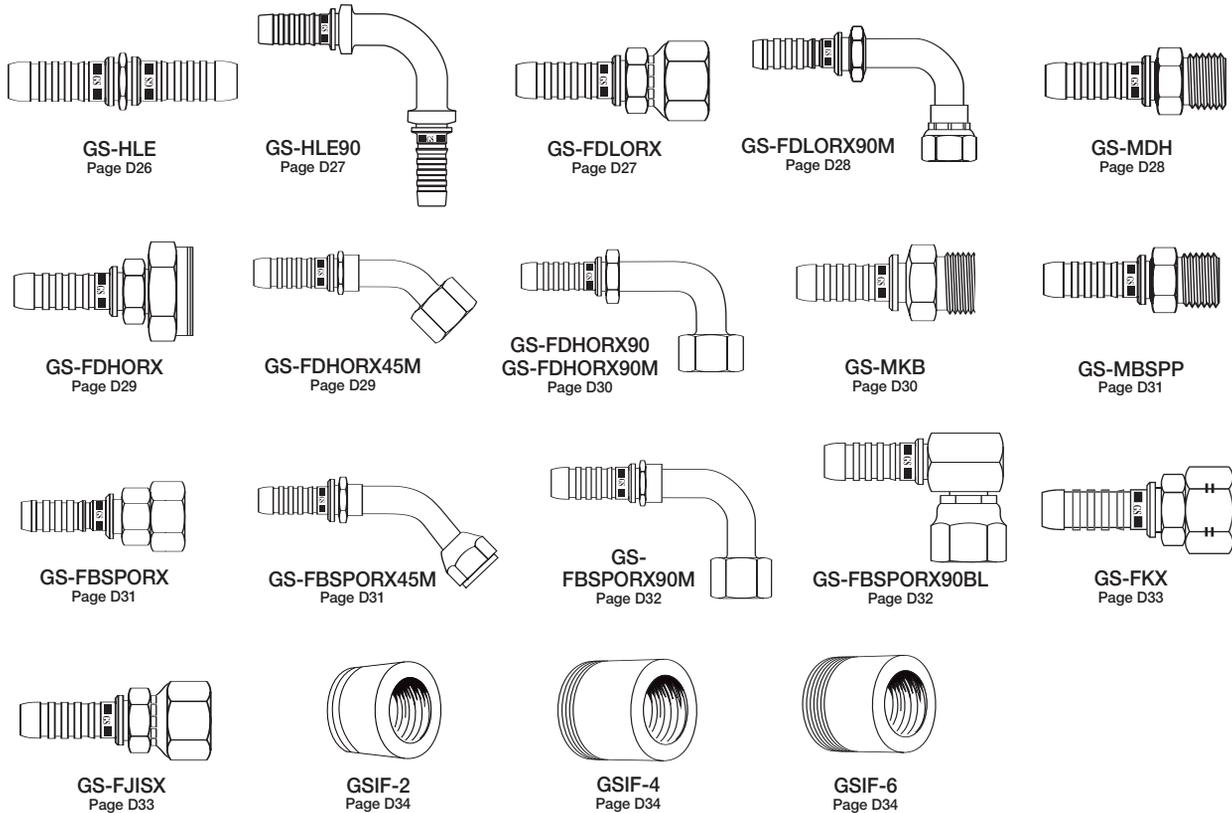
EQUIPMENT
HOSE/CPLG. SELECTION
TECH. DATA
EXT. & VERY HIGH PRESS. HOSE
GS CPLGS.
PCM CPLGS.
PCS CPLGS.
HIGH & MED. PRESS. HOSE
MEGACRIMP® CPLGS.
PC CPLGS.
FIELD ATTACHABLE CPLGS.
AIR BRAKE HOSE & CPLGS.
MEGATECH® C5 HOSE & CPLGS.
LOW PRESS. HOSE & CPLGS.
C14 HOSE & CPLGS.
POLARSEAL® HOSE & CPLGS.
PWR. STG. HOSE & CPLGS.
THERMO-PLASTIC HOSE & CPLGS.
ADAPTERS
QUICK DISCONNECT CPLGS.
ACCESSORIES & ASSORTMENTS
PART NUMBER INDEXES

				
GS-MP Page D6	GS-MPLH Page D6	GS-MB Page D7	GS-FMX Page D7	GS-FMX45 Page D7
				
GS-FMX90 Page D8	GS-MJ Page D8	GS-FJX Page D9	GS-FJX30M Page D9	GS-FJX45S GS-FJX45M GS-FJX45L Page D10
				
GS-FJX60 Page D10	GS-FJX90S GS-FJX90M Page D11	GS-FJX90L GSFJX90XL Page D11	GS-MFFOR Page D12	GS-FFORX Page D12
				
GS-FFORX90S GS-FFORX90M GS-FFORX90L Page D14	GS-FFORX135 Page D14	GS-FL GS-FLK Page D15	GS-FL22M Page D15	GS-FL30M Page D16
				
GS-FL45S GS-FL45M GS-FLK45 Page D16	GS-FL60M Page D17	GS-FL67M Page D17	GS-FL90 GS-FL90S GS-FL90M GS-FLK90 Page D18	GS-FL110 Page D19
				
GS-FL135 Page D19	GS-FLH Page D19	GS-FLH22M Page D20	GS-FLH30M Page D20	GS-FLH45M Page D21
				
GS-FLH60M Page D21	GS-FLH67M Page D22	GS-FLH90 GS-FLH90S GS-FLH90M Page D22	GS-FLC Page D23	GS-FLC22 Page D23
				
GS-FLC30 Page D24	GS-FLC45 Page D24	GS-FLC60 Page D25	GS-FLC67 Page D25	GS-FLC90 Page D26

Coupling/Thread Configurations

GlobalSpiral™ (GS) Couplings

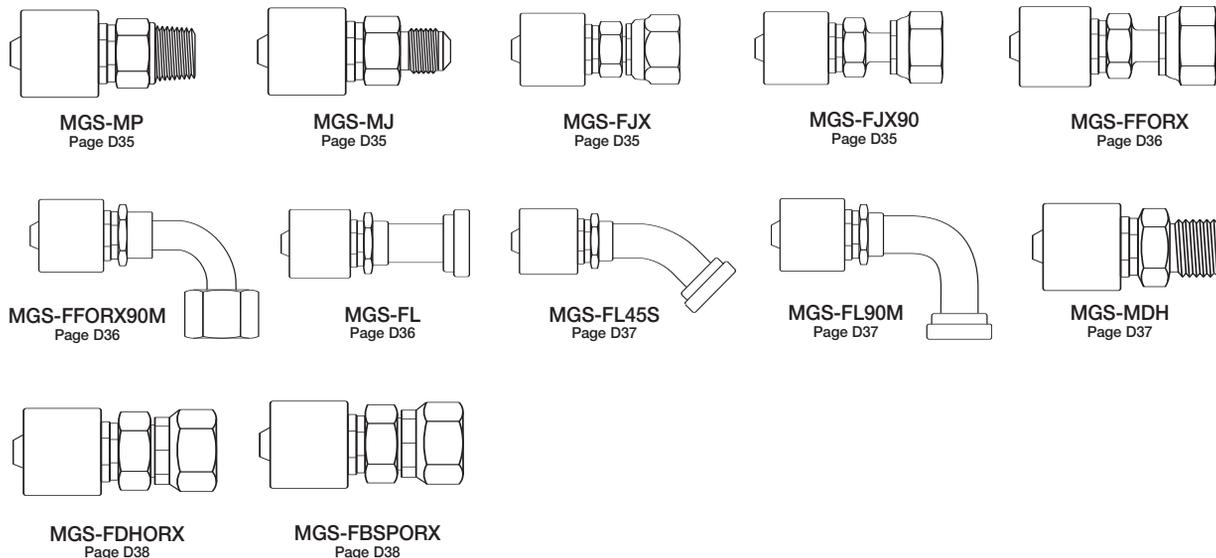
for EFG6K, G6K, EFG5K, G5K, EFG4K, G4K, EFG3K and G3K Hose (Continued)



GlobalSpiral™ (GS) Couplings –

One-Piece Couplings for Use with MobileCrimp® Crimpers

for EFG6K, G6K, EFG5K, G5K, EFG4K, G4K, EFG3K and G3K Hose



EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES



Hose & Coupling Selection

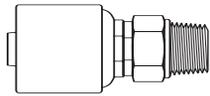
EQUIPMENT

HOSE/CPLG.
SELECTION

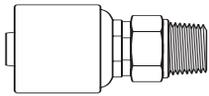
TECH. DATA

EXT. &
VERY HIGH
PRESS. HOSE

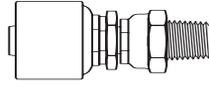
MegaCrimp® Couplings for High and Medium Pressure Hoses



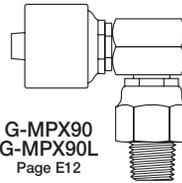
G-MP
Page E11



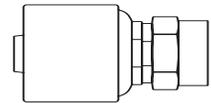
G-MPLN
Page E11



G-MPX
Page E12



G-MPX90
G-MPX90L
Page E12



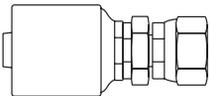
G-FP
Page E13

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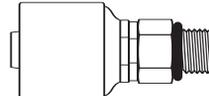
PCM CPLGS.

PCS CPLGS.

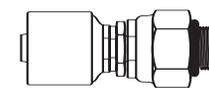
HIGH & MED.
PRESS. HOSE



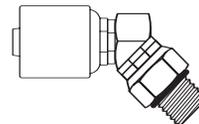
G-FPX
Page E13



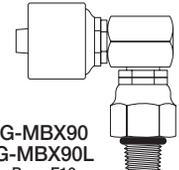
G-MB
Page E14



G-MBX
Page E15



G-MBX45
Page E15



G-MBX90
G-MBX90L
Page E16

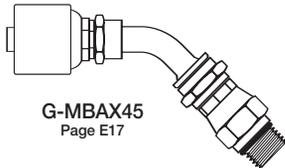
MEGACRIMP®
CPLGS.

PC CPLGS.

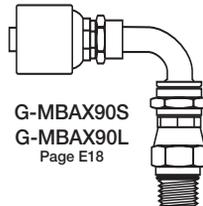
FIELD
ATTACHABLE
CPLGS.



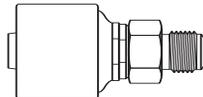
G-MBAX
Page E17



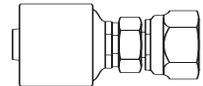
G-MBAX45
Page E17



G-MBAX90S
G-MBAX90L
Page E18



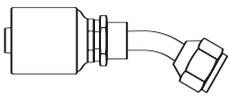
G-MJ
Page E19



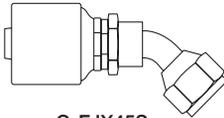
G-FJX
Page E20

AIR BRAKE
HOSE &
CPLGS.

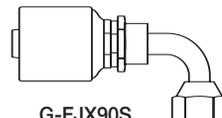
MEGATECH®
C5
HOSE &
CPLGS.



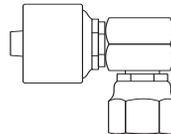
G-FJX30
Page E21



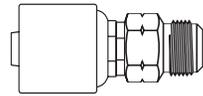
G-FJX45S
G-FJX45
Page E21



G-FJX90S
G-FJX90M
G-FJX90L
Page E22



G-FJX90BL
Page E23

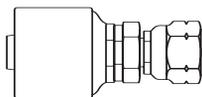


G-MS
Page E23

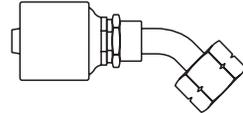
LOW PRESS.
HOSE &
CPLGS.

C14 HOSE
& CPLGS.

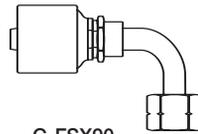
POLARSEAL®
HOSE &
CPLGS.



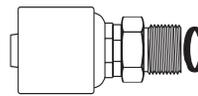
G-FSX
Page E23



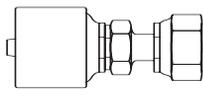
G-FSX45
Page E24



G-FSX90
Page E24



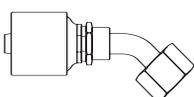
G-MFFOR
Page E25



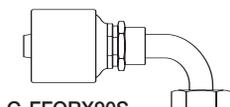
G-FFORX
Page E26

PWR. STG.
HOSE &
CPLGS.

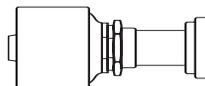
THERMO-
PLASTIC
HOSE &
CPLGS.



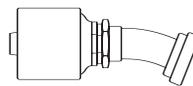
G-FFORX45
Page E27



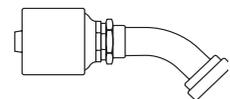
G-FFORX90S
G-FFORX90M
G-FFORX90L
Page E28



G-FL
G-FLK
Page E29



G-FL22
Page E29

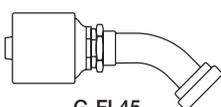


G-FL30
Page E29

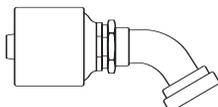
ADAPTERS

QUICK
DISCONNECT
CPLGS.

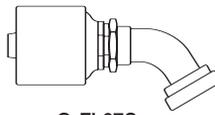
ACCESSORIES
& ASSORT-
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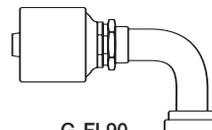
G-FL45
G-FLK45
Page E30



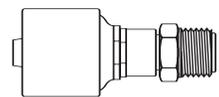
G-FL60
Page E30



G-FL67S
G-FL67M
Page E30



G-FL90
G-FLK90
Page E31



G-MIX
Page E31

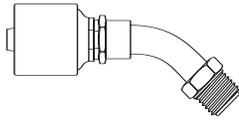
PART NUMBER
INDEXES



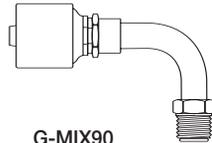
Coupling/Thread Configurations

MegaCrimp® Couplings

for High and Medium Pressure Hoses (Continued)



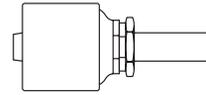
G-MIX45
Page E32



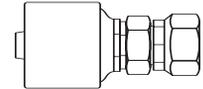
G-MIX90
Page E32



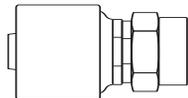
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Page E33



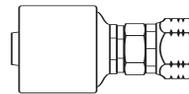
G-NASP
Page E34



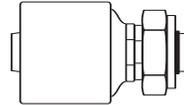
G-FABX
Page E34



G-FG
Page E34



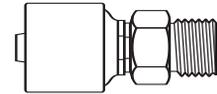
G-FZX
Page E35



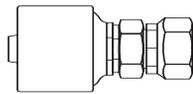
G-PWX
Page E35



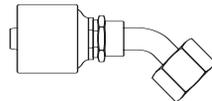
G-BJ
Page E35



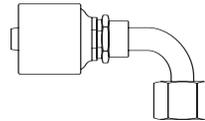
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Page E36



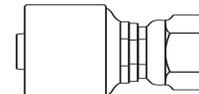
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Page E36



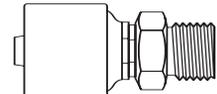
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Page E37



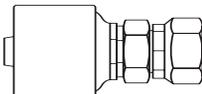
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Page E37



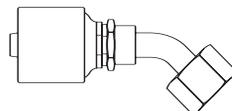
G-FFGX
Page E38



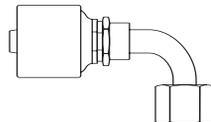
G-MDH
Page E38



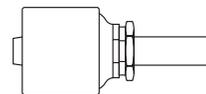
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Page E39



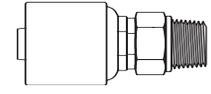
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Page E39



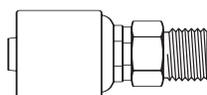
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Page E40



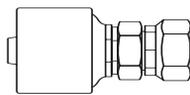
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Page E40



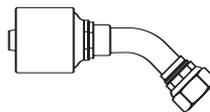
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Page E41



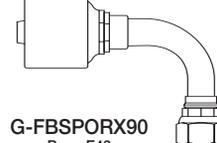
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Page E42



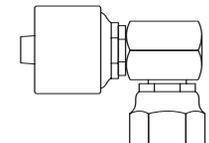
G-FBSPORX
Page E42



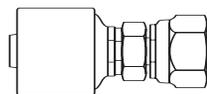
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Page E43



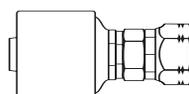
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Page E43



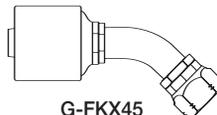
G-FBSPORX90BL
Page E44



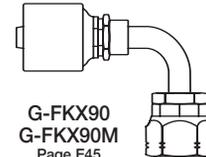
G-FBFFX
Page E44



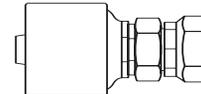
G-FKX
Page E44



G-FKX45
G-FKX45M
Page E45



G-FKX90
G-FKX90M
Page E45



G-FJ1SX
Page E46

EQUIPMENT

HOSE/CPLG. SELECTION

TECH. DATA

EXT. & VERY HIGH PRESS. HOSE

GS CPLGS.

PCM CPLGS.

PCS CPLGS.

HIGH & MED. PRESS. HOSE

MEGACRIMP® CPLGS.

PC CPLGS.

FIELD ATTACHABLE CPLGS.

AIR BRAKE HOSE & CPLGS.

MEGATECH® C5 HOSE & CPLGS.

LOW PRESS. HOSE & CPLGS.

C14 HOSE & CPLGS.

POLARSEAL® HOSE & CPLGS.

PWR. STG. HOSE & CPLGS.

THERMO-PLASTIC HOSE & CPLGS.

ADAPTERS

QUICK DISCONNECT CPLGS.

ACCESSORIES & ASSORTMENTS

PART NUMBER INDEXES

