

High Pressure Fluid Swivel Connectors



WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

Description

NOTE: The figures in this document are for general reference only.

High-pressure fluid swivel connectors can be used in a variety of different combinations, and with other high-pressure fittings or adapters. They are not pressure-balanced and therefore move more freely when the system is open and the application device is in use.

Depending on your requirements for coupling size and fitting type, you may purchase these modular swivels separately and assemble them according to your application needs. The types of connectors, sizes, and part numbers are listed in this document.

Specifications

Maximum fluid temperature: 450 °F (232 °C)
Maximum pressure: 4000 psi (276 bar)

Swivel Combination Selection

Table 1 shows the standard measurements for JIC tube fittings. Use this information to select swivel connectors from the tables in this document.

Table 1 JIC Tube Fittings

Dash Numbers (JIC-)	Tube OD (in.)	Straight Thread
5	5/16	1/2-20
6	3/8	9/16-18
8	1/2	3/4-16
10	5/8	7/8-14
12	3/4	1 1/16-12
20	1 1/4	1 5/8-12

Small Swivels

- See Figure 1 and refer to Table 2. Choose one elbow swivel (1) as the basis for your assembly.
- Add one straight swivel (2) to the elbow to create a two-plane assembly or add an elbow swivel (3) and a straight swivel (2) to create a three-plane assembly.

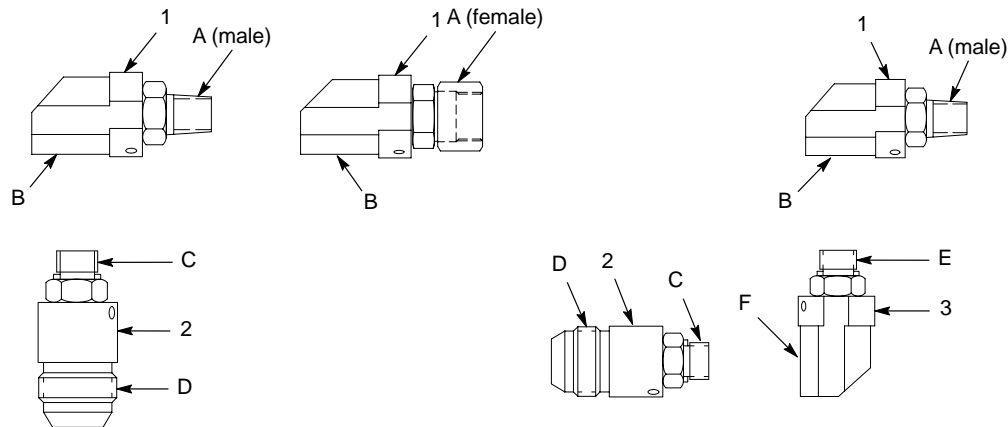


Figure 1 Small Swivels—Typical Combinations

Table 2 Small Swivel Connectors

Item	Part	Swivel End	Swivel End	Note
		A	B	
1	139105	1/4 in. NPT (male)	SAE-6 (female)	
	139112	3/8 in. NPT (male)		
	139098	3/8 in. NPSM (female)		A
	139091	SAE-6 (male)		
		C	D	
2	139092	SAE-6 (male)	JIC-5 (male)	B
	139093		JIC-6 (male)	B
	139094		JIC-8 (male)	B
	139095		JIC-10 (male)	B
	139096		JIC-12 (male)	B
	139097		JIC-20 (male)	B
		E	F	
3	139091	SAE-6 (male)	SAE-6 (female)	
NOTE A: Use this swivel with the standard Pro-Flo trim set outlet or other compatible adapter.				
B: These straight swivels can also be used alone as single swivels.				

Straight Swivels

See Figure 2 and Table 3 for straight swivel connectors.

NOTE: These swivels cannot be combined with any other swivels.

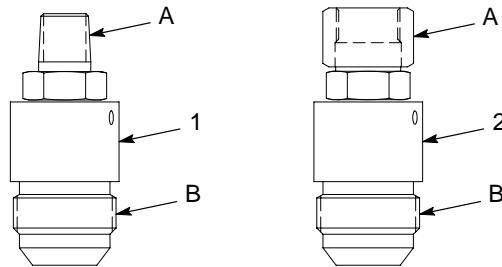


Figure 2 Small Swivels—Typical Combinations

Table 3 Straight Swivels

Item	Part	Swivel End A	Swivel End B	Note
1	139106	1/4 in. NPT (male)	JIC-5 (male)	
	139107		JIC-6 (male)	
	139108		JIC-8 (male)	
	139109		JIC-10 (male)	
	139110		JIC-12 (male)	
	139111		JIC-20 (male)	
1	139113	3/8 in. NPT (male)	JIC-5 (male)	A
	139114		JIC-6 (male)	A
	139115		JIC-8 (male)	A
	139116		JIC-10 (male)	A
	139117		JIC-12 (male)	A
	139118		JIC-20 (male)	A
2	139099	3/8 in. NPSM (female)	JIC-5 (male)	
	139100		JIC-6 (male)	
	139101		JIC-8 (male)	
	139102		JIC-10 (male)	
	139103		JIC-12 (male)	
	139104		JIC-20 (male)	
NOTE A: Use item 1 (Figure 2) for reference. This swivel looks identical to item 1 but varies in size.				

Large Swivels

- See Figure 3 and Table 4. Choose one elbow swivel (1) as the basis for your assembly.
- Add one straight swivel (2) to the elbow to create a two-plane assembly or add an elbow swivel (3) and a straight swivel (2) to create a three-plane assembly.

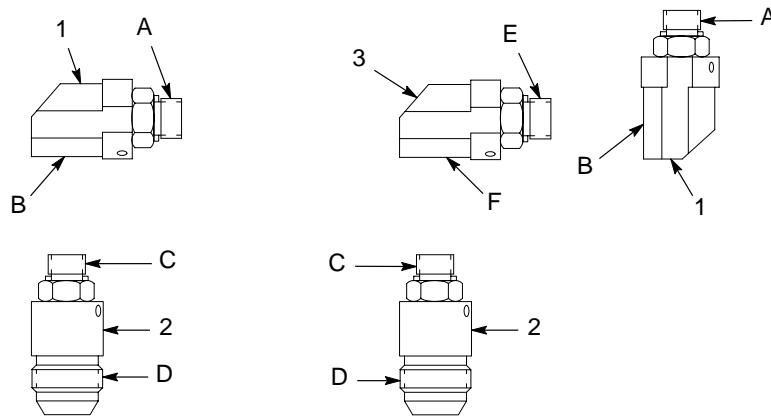


Figure 3 Large Swivels—Typical Combinations

Table 4 Large Swivels

Item	Part	Swivel End	Swivel End	Note
		A	B	
1	153795	SAE-10 (male)	SAE-12 (female)	
	153794	SAE-12 (male)	SAE-12 (female)	
		C	D	
2	153796	SAE-12 (male)	JIC-10 (male)	A
	153799	SAE-12 (male)	JIC-20 (male)	A
	153800	SAE-12 (male)	JIC-16 (male)	A
	155469	SAE-12 (male)	JIC-24 (male)	A
	175589	SAE-10 (male)	JIC-10 (male)	A, B
	163496	SAE-10 (male)	JIC-16 (male)	A, B
		E	F	
3	153794	SAE-12 (male)	SAE-12 (female)	
NOTE A: These straight swivels can be used as single swivels. B: This large straight swivel can only be used as a single swivel and cannot be used to configure two- and three-plane assemblies. Use item 2 (Figure 3) for reference only — this swivel cannot be joined with an elbow.				

Swivel Assembly

To prepare and assemble the two- and three-plane swivel assemblies, perform the following procedures based on swivel size.

Small Swivels



WARNING: Once assembled, these swivels must not be disassembled. Failure to follow this instruction could result in leakage, swivel damage, component damage, or personal injury.

The callouts in this procedure refer to the assembly items listed in Table 5. Use the following procedures to assemble small swivels.

1. Verify the swivel configuration and that the connectors are compatible before assembling them. Use the proper size O-rings (1) for the SAE-6 connectors.
2. Apply cleaner or primer (2) to the threads of the parts to be fitted.
3. Apply threadlocking adhesive (3) to the threads of the parts to be fitted.
4. Install the parts by hand and tighten until the O-ring begins to be compressed.
5. Tighten the swivel connectors lightly with a wrench.
6. Allow the thread sealant to dry for 90 minutes before using the swivel assembly.

Table 5 Assembly Items

Item	Part	Description
1	945082	O-ring, Viton, black, $\frac{3}{8}$ tube (SAE-6)
1	945025	O-ring, Viton, $\frac{5}{8}$ tube (SAE-10)
1	945039	O-ring, Viton, $\frac{3}{4}$ tube (SAE-12)
2	900455	Primer, thread adhesive
3	900470	Adhesive, threadlocking

Large Swivels



WARNING: You must use a swivel lock key to install large SAE swivel connectors. Without the lock key, the connection could loosen and leak, creating a hazard to personnel in the area.

Use the following procedures to assemble large swivels. You may disassemble the large swivel assemblies if you re-install the swivel lock key as detailed in these procedures.

1. Make sure that your swivel configuration is correct and that the connectors are compatible before assembling them. Use the proper size O-ring for the SAE-10 and SAE-12 connectors. Refer to Table 5 for O-ring ordering information.
2. See Figure 4. Remove the cap screw and swivel lock key (1) from the elbow swivel.
3. Assemble the parts by hand and tighten the SAE connection until the O-ring compresses slightly.
4. Tighten the SAE connection with a wrench. Do not overtighten.

NOTE: Locate the two tapped holes (4) on the elbow swivel, near the SAE connection. Use only one hole to secure the swivel lock key (1) to the elbow swivel.

5. Position the swivel lock key so the cutout (2) rests against the SAE hex (5).
6. Move the swivel lock key (1) so the slot (3) aligns with one of the two tapped holes (4) in the elbow swivel. Install and tighten the cap screw in this hole.
7. Repeat steps 1-6, as needed, when assembling three-plane swivels to attach each additional swivel lock key.

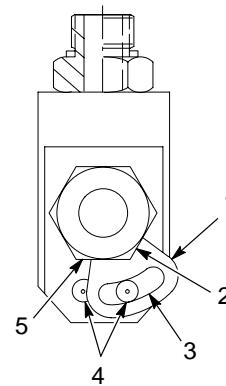


Figure 4 Swivel Lock Key

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