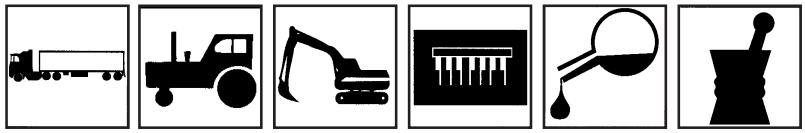
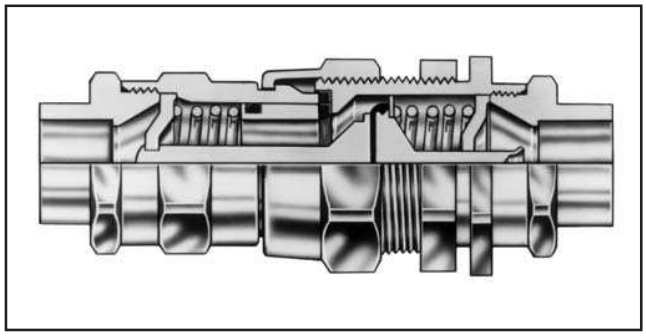
5400 Series/Low Air Inclusion Refrigerant



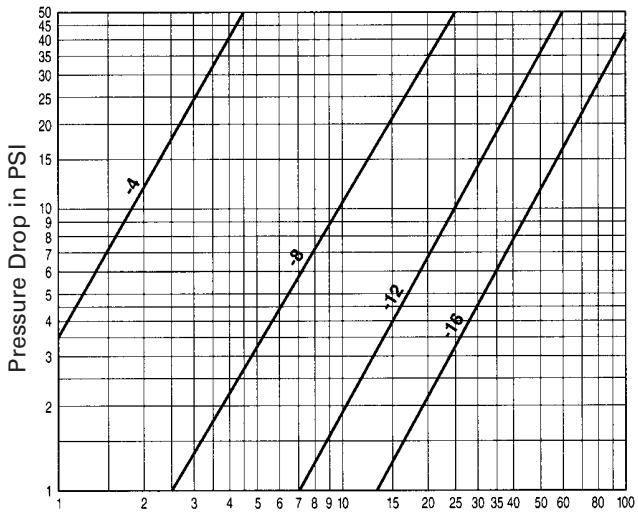


The 5400 Series is designed for air conditioning, refrigerant, gaseous and fluid transfer applications.

- Brazed or threaded end connections for versatility of installation on tubing or hose.
- Tubular valve construction for low fluid loss and air inclusion.
- Thread together design allows connection and disconnection against pressure.
- Lock washer and jam nut standard for optional bulkhead mounting.
- Standard seal material – Neoprene.
- Standard adapter material – Steel or Brass.
- Standard body material – Zinc plated steel.

Flow Data

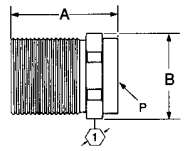
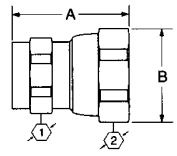
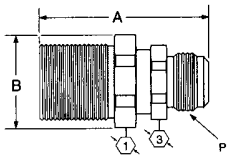
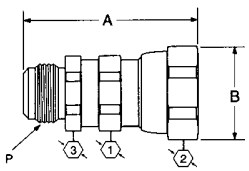
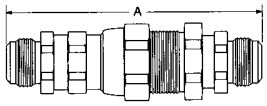
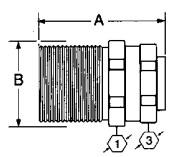
Pressure Drop Versus Flow Graphic



Gallons Per Minute Flow
(Test Fluid MIL-H-5606 Hydraulic Oil At 100° F)

Physical Characteristics

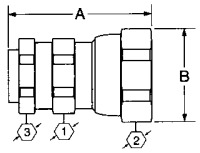
Coupling Dash Size	Maxium Operating Pressure (psi connected)	Minimum Burst Pressure (psi connected)	Maximum Operating Pressure (psi disconnected)		Vacuum (in./Hg.)	Rated Flow (gpm)	Air Inclusion (cc max.)	Fluid Loss (cc max.)
			Male Half	Female Half				
–4	3000	9000	2500	500	28	2	.10	.05
–8	1750	5200	1750	400	28	14	.10	.10
–12	700	2100	800	400	28	35	.30	.10
–16	700	2100	700	300	28	75	.50	.20

5400 Series	Coupling Size	Thread Size (P)	Tube O.D. Size	Dimensional Data A	B	①	②	③	Part Number Neoprene	Line Ref.
Male Half No Adapter 	–4			1.08	.83	.75			5400–S2–4	1
	–8			1.37	1.25	1.13			5400–S2–8	2
	–12			1.74	1.83	1.63			5400–S2–12	3
	–16			1.83	2.10	1.88			5400–S2–16	4
										5
										6
										7
										8
Female Half No adapter 	–4			1.13	.83	.63	.75		5400–S5–4	9
	–8			1.63	1.31	1.00	1.19		5400–S5–8	10
	–12			2.15	1.80	1.38	1.63		5400–S5–12	11
	–16			2.37	2.24	1.75	2.00		5400–S5–16	12
										13
										14
										15
										16
Male Half SAE 37° (JIC) 	–4	7/16-20		1.88	.83	.75		.63	5410–S17–4–4*	17
	–4	9/16-18		1.89	.83	.75		.63	5410–S17–6–4*	18
	–8	9/16-18		2.18	1.25	1.13		1.00	5410–S17–6–8*	19
	–8	3/4-16		2.28	1.25	1.13		1.00	5410–S17–8–8*	20
	–12	7/8-14		2.75	1.83	1.63		1.38	5410–S17–10–12*	21
	–12	1 1/16-12		2.86	1.83	1.63		1.38	5410–S17–12–12*	22
	–16	1 5/16-12		2.99	2.10	1.88		1.75	5410–S17–16–16*	23
										24
Female Half SAE 37° (JIC) 	–4	7/16-20		1.93	.83	.63	.75	.63	5410–S14–4–4*	25
	–4	9/16-18		1.94	.83	.63	.75	.63	5410–S14–6–4*	26
	–8	9/16-18		2.43	1.31	1.00	1.19	1.00	5410–S14–6–8*	27
	–8	3/4-16		2.53	1.31	1.00	1.19	1.00	5410–S14–8–8*	28
	–12	7/8-14		3.16	1.80	1.38	1.63	1.38	5410–S14–10–12*	29
	–12	1 1/16-12		3.27	1.80	1.38	1.63	1.38	5410–S14–12–12*	30
	–16	1 5/16-12		3.53	2.24	1.75	2.00	1.75	5410–S14–16–16*	31
										32
Complete Coupling SAE 37° (JIC) 	–4	7/16-20		3.54					5410–4–4*	33
	–4	9/16-18		3.56					5410–6–4*	34
	–8	9/16-18		4.23					5410–6–8*	35
	–8	3/4-16		4.44					5410–8–8*	36
	–12	7/8-14		5.33					5410–10–12*	37
	–12	1 1/16-12		5.54					5410–12–12*	38
	–16	1 5/16-12		5.89					5410–16–16*	39
										40
Male Half Braze Tubing Adapter 	–4		1/4	1.52	.83	.75		.63	5401–S17–4–4*	41
	–4		3/8	1.52	.83	.75		.63	5401–S17–6–4*	42
	–8		3/8	1.75	1.31	1.13		1.00	5401–S17–6–8*	43
	–8		1/2	1.75	1.31	1.13		1.00	5401–S17–8–8*	44
	–12		5/8	2.47	1.80	1.63		1.38	5401–S17–10–12*	45
	–12		3/4	2.47	1.80	1.63		1.38	5401–S17–12–12*	46
	–16		1	2.80	2.24	1.88		1.75	5401–S17–16–16*	47

* Couplings must be ordered by components as shown on page 55

5400 Series

Female Half
Braze Tubing Adapter



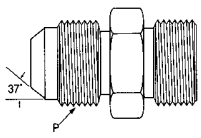
Coupling Size	Thread Size (P)	Tube O.D. Size	Dimensional Data A	B	1	2	3	Part Number Neoprene	Line Ref·
–4		1/4	1.57	.83	.63	.75	.63	5401–S14–4–4*	1
–4		3/8	1.57	.83	.63	.75	.63	5401–S14–6–4*	2
–8		3/8	2.00	1.31	1.00	1.19	1.00	5401–S14–6–8*	3
–8		1/2	2.00	1.31	1.00	1.19	1.00	5401–S14–8–8*	4
–12		5/8	2.88	1.80	1.38	1.63	1.38	5401–S14–10–12*	5
–12		3/4	2.88	1.80	1.38	1.63	1.38	5401–S14–12–12*	6
–16		1	3.34	2.24	1.75	2.00	1.75	5401–S14–16–16*	7
									8

Accessories

Dust Cap Dust Plug

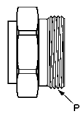
			Dust Cap with Gasket	Dust Plug with Gasket	Line Ref·
					9
–4			5400–S6–4	5400–S8–4	10
–8			5400–S6–8	5400–S8–8	11
–12			5400–S6–12	5400–S8–12	12
–16			5400–S6–16	5400–S8–16	13
					14
					15
					16
					17

Adapter
SAE 37° (JIC)



			O-Ring	Brass	Steel	Line Ref·
						18
–4	7/16-20	1/4	22546–12	202220–4–4B	202220–4–4S	19
–4	9/16-18	3/8	22546–12	202220–6–4B	202220–6–4S	20
–8	9/16-18	3/8	22546–17	202220–6–8B	202220–6–8S	21
–8	3/4-16	1/2	22546–17	202220–8–8B	202220–8–8S	22
–12	7/8-14	5/8	22546–23	202220–10–12B	202220–10–12S	23
–12	1 1/16-12	3/4	22546–23	202220–12–12B	202220–12–12S	24
–16	1 3/16-12	1	22546–28	202220–16–16B	202220–16–16S	25

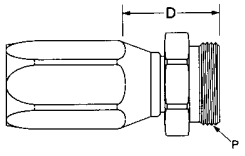
Adapter–Braze



O-Ring Required

					Line Ref·
–4	1/2-20	1/4	22546–12	202208–4–4B	26
–8	7/8-20	1/2	22546–17	202208–4–8B	27
–4	1/2-20	3/8	22546–12	202208–6–4B	28
–8	7/8-20	3/8	22546–17	202208–6–8B	29
–8	7/8-20	1/2	22546–17	202208–8–8B	30
–8	7/8-20	5/8	22546–17	202208–10–8B	31
–12	1 1/4-18	5/8	22546–23	202208–10–12B	32
–12	1 1/4-18	3/4	22546–23	202208–12–12B	33
–16	1 1/4-18	7/8	22546–23	202208–14–12B	34
–16	1 19/32-20	7/8	22546–28	202208–14–16B	35
–16	1 19/32-20	1	22546–28	202208–16–16B	36
–16	1 19/32-20	1 1/8	22546–28	202208–18–16B	37
–16	1 19/32-20	1 1/4	22546–28	202208–22–16B	38

Hose Fitting
SAE 100R5†



O-Ring Required

		Hose Size	D			Line Ref·
						39
–4	1/2-20	–4	.92	22546–12	487–4–4S	40
–4	1/2-20	–6	.96	22546–12	487–4–6S	41
–8	7/8-20	–6	.96	22546–17	487–8–6S	42
–8	7/8-20	–8	1.06	22546–17	487–8–8S	43
–12	1 1/4-18	–10	1.07	22546–23	487–12–10S	44
–16	1 19/32-20	–16	1.01	22546–28	487–16–16S	45

†*Additional dash styles available.*

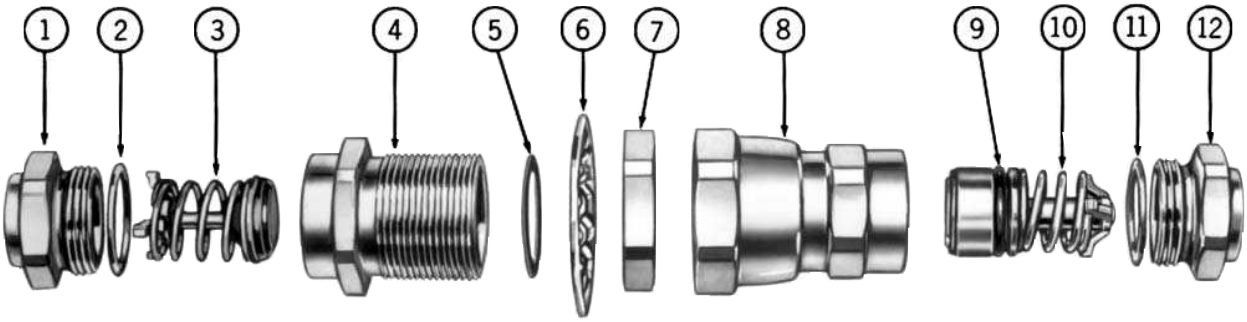
* Couplings must be ordered by components as shown on page 55

For Assemblies, Order by Components as Shown by Base Number and dash (-) size below

					202208-Brass		202220-Steel			
Assembly	**5400-S2**		**5400-S5**		**Braze-On**		**37° SAE**		**22546**	
Part Number	**Female Half**	**Quantity**	**Male Half**	**Quantity**	**Adapter**	**Quantity**	**Adapter**	**Quantity**	**O-ring**	**Quantity**
5401-S14-10-12			-12	1	-10 -12B	1			-23	1
5401-S14-10-8			-8	1	-10 -8B				-17	1
5401-S14-12-12			-12	1	-12 -12B	1			-23	1
5401-S14-16-16			-16	1	-16 -16B	1			-28	1
5401-S14-4-4			-4	1	-4 -4B	1			-12	1
5401-S14-6-4			-4	1	-6 -4B	1			-12	1
5401-S14-6-8			-8	1	-6 -8B	1			-17	1
5401-S14-8-8			-8	1	-8 -8B	1			-17	1
5401-S17-10-12	-12	1			-10 -12B	1			-23	1
5401-S17-10-8	-8	1			-10 -8B	1			-17	1
5401-S17-12-12	-12	1			-12 -12	1			-23	1
5401-S17-14-16	-16	1			-16 -16	1			-28	1
5401-S17-4-4	-4	1			-4 -4B	1			-17	1
5401-S17-6-4	-4	1			-6 -4B	1			-12	1
5401-S17-6-8	-8	1			-6 -8B	1			-17	1
5401-S17-8-8	-8	1			-8 -8B	1			-17	1
5410-12-12	-12	1	-12	1			-12 -12S	2	-23	2
5410-16-16	-16	1	-16	1			-16 -16S	2	-28	2
5410-4-4	-4	1	-4	1			-4 -4S	2	-12	2
5410-6-8	-8	1	-8	1			-6 -8S	2	-17	2
5410-8-8	-8	1	-8	1			-8 -8S	2	-17	2
5410-S14-10-12			-12	1			-10 -12S	1	-23	1
5410-S14-12-12			-12	1			-12 -12S	1	-23	1
5410-S14-16-16			-16	1			-16 -16S	1	-28	1
5410-S14-4-4			-4	1			-4 -4S	1	-12	1
5410-S14-6-4			-4	1			-6 -4S	1	-12	1
5410-S14-6-8			-8	1			-6 -8S	1	-17	1
5410-S14-8-8			-8	1			-8 -8S	1	-17	1
5410-S17-10-12	-12	1					-10 -12S	1	-23	1
5410-S17-12-12	-12	1					-12 -12S	1	-23	1
5410-S17-16-16	-16	1					-16 -16S	1	-28	1
5410-S17-4-4	-4	1					-4 -4S	1	-12	1
5410-S17-6-4	-4	1					-6 -4S	1	-12	1
5410-S17-6-8	-8	1					-6 -8S	1	-17	1
5410-S17-8-8	-8	1					-8 -8S	1	-17	1

Example, if a 5401-S14-10-12 is required, order as components,
(1) 5400-S5-12, (1) 202208-10-12B Adapter and (1) 22546-23 O-Ring

Assembly Instructions/Component Part Numbers



Typical Male Coupling Half (S2) **Typical Female Coupling Half (S5)**

Assembly Instructions

Steps:

1. After tubing or hose has been connected to adapters ① and ⑫, install O-Rings ② and ⑪† on adapters. Be sure O-Rings are not twisted.
2. Oil O-Rings ② and ⑪ liberally with system fluid to prevent them from scuffing and tearing when coupling body is threaded on adapter.
3. S2 Half—Lubricate poppet face with system fluid. Insert poppet valve assembly ③ into body ④. Tighten body ④ on adapter ①. After body and adapter make metal-to-metal contact, tighten by rotating body ④ $1/8$" with respect to adapter ① or torque per table value.
   S5 Half—Oil O-Ring ⑨† liberally with system fluid. Insert valve and sleeve assembly ⑩ into body ⑧. Tighten body ⑧ on adapter ⑫. After body and adapter make metal-to-metal contact, tighten by rotating body ⑧ $1/8$" with respect to adapter ⑫ or torque per table value.
4. Coupling Connection—Lubricate gasket seal ⑤ on 5400-S2 half with system fluid. Thread union nut ⑧ on 5400-S2 half. Tighten union nut to torque values shown in Table. Be sure S2 and S5 bodies do not rotate during connection.

Bulkhead Mounting—S2 Half

Install lock washer ⑥ on S2 half. Insert S2 half through bulkhead, and tighten jam nut ⑦ so that lock washer teeth are fully compressed.

NOTE: Lock washer ⑥ must be between hex of S2 half and bulkhead.

Maximum Bulkhead Thickness

Coupling Size	Lock Washer Installed	Lock Washer Not Used
–4	.206	.256
–8	.136	.203
–12	.232	.292
–16	.101	.161

Torque Values

Recommended torque values in ft. lbs., are listed below.

Dash Size	Adapter to Body		S2 Half to S5 Half
	Braze Type or Aluminum	Non-braze Type Steel or Brass	
–4	6–8	12–15	10–12
–8	15–20	35–45	35–37
–12	35–40	45–55	45–47
–16	50–60	55–65	65–67

†***IMPORTANT****: Generous lubrication is required for all gaskets and O-Rings. Use refrigeration oil only when used in refrigerant system.*

Component Part Numbers

Item No.	Dash Size→	–4	–8	–12	–16	Line Ref.
	O.D. Tube Size→	$1/4$"–$3/8$"	$1/4$"–$5/8$"	$5/8$"–$7/8$"	$7/8$"–$1\,3/8$"	
	Typical Male Half					**1**
1	Tubing Adapter	202208–*–4	202208–*–8	202208–*–12	202208–*–16	**2**
2	O-Ring	22546–12	22546–17	22546–23	22546–28	**3**
3	Poppet Valve Assembly	5400–S20–4	5400–S20–8	5400–S20–12	5400–S20–16	**4**
4	Body	5400–17–4	5400–17–8	5400–17–12	5400–17–16	**5**
5	Gasket Seal	22008–4	22008–8	22008–12	22008–16	**6**
6	Lock Washer	5400–54–4S	5400–54–8S	5400–54–12S	5400–54–16S	**7**
7	Jam Nut	5400–53–4S	5400–53–8S	5400–53–12S	5400–53–16S	**8**
	Typical Female Half					**9**
8	Union Nut and Body Assembly	5400–S16–4	5400–S16–8	5400–S16–12	5400–S16–16	**10**
9	O-Ring	22546–10	22546–112	22546–116	22546–214	**11**
10	Valve and Sleeve Assembly	5400–S19–4	5400–S19–8	5400–S19–12	5400–S19–16	**12**
11	O-Ring	22546–12	22546–17	22546–23	22546–28	**13**
12	Tubing Adapter	202208–*–4	202208–*–8	202208–*–12	202208–*–16	**14**

**Specify O.D. Tubing size of adapter required in 16th of an inch. Example: –4 coupling with $3/8$" O.D. tubing is $6/16$ or –6. Part number is then 202208–6–4.*