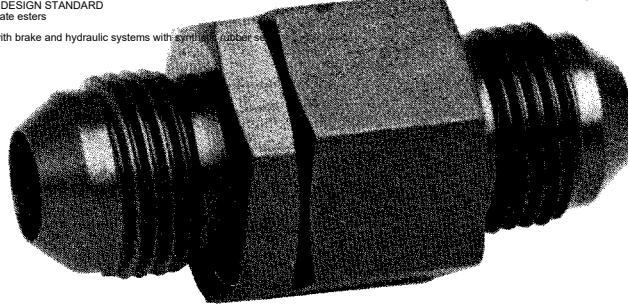




**PREECE INC.**  
**ENGINEERING**  
**BULLETIN**

**STRAIGHT SWIVEL**  
**SERIES 4824**  
**3000 OPERATING PRESSURE**  
**PEB-28**

MIL-DTL-5513D, DETAIL SPECIFICATION, JOINTS, HYDRAULIC SWIVEL  
 MIL-J-5513C, MILITARY SPECIFICATION, JOINTS, HYDRAULIC SWIVEL (16-APR-1976)  
 AS4395, Fitting End, Flared, Tube Connection, Design Standard  
 AS33514 FITTING END, STANDARD DIMENSIONS FOR FLARELESS TUBE CONNECTION AND GASKET SEAL  
 AS4207 FITTING END, EXTERNAL THREAD, BEAM SEAL, DESIGN STANDARD  
 NAS1760, Revision 7, March 31, 2022 - FITTING END, FLARELESS ACORN, STANDARD DIMENSIONS  
 MS24386G, MILITARY STANDARD, FITTING END, BULKHEAD FLARED TUBE CONNECTION PRECISION TYPE, STANDARD DIMENSIONS (16 JAN 1989) SUPERSEDED BY SAE-AS4396J  
 AS4396 FITTING END - BULKHEAD, FLARED TUBE CONNECTION, DESIGN STANDARD  
 Skydrol 500B-4 Fire Resistant Aviation Hydraulic Fluid aviation phosphate esters  
 aircraft hydraulic fluids like Royco, Eastman, Castrol, 5606, 832B2  
 Hydraulic Fluid MIL-H-5606A Mineral oil based hydraulic fluid for use with brake and hydraulic systems with synthetic rubber seals  
 MIL-PRF-83282D red-colored synthetic, fire-resistant hydraulic fluid



STRAIGHT (In Line) SWIVEL

**APPLICATIONS AND ENGINEERING DATA**

Swivel rotates 360° with low torque values at 3000 PSIG. For higher pressure see PEB 27. For 90° and 45° configurations see PEB 30 and 32. Swivels may be ordered with jump size threads. Low pressure thermoplastic swivels are manufactured for coolants, water, and other low pressure applications (200 PSIG). Swivels with misalignment capabilities are also available.

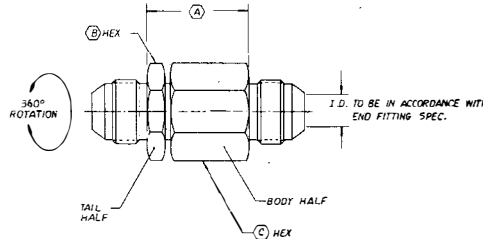
**CONSTRUCTION**

Standard materials are stainless steel and aluminum. Stainless swivel assemblies are electropolished to ordnance specification OD 52533. Aluminum will be anodized to military specification Mil-A-8625 Type II CL 2 (Blue).

**MILITARY SPECIFICATIONS**

Mil-J-5513A  
 Mil-E-5272

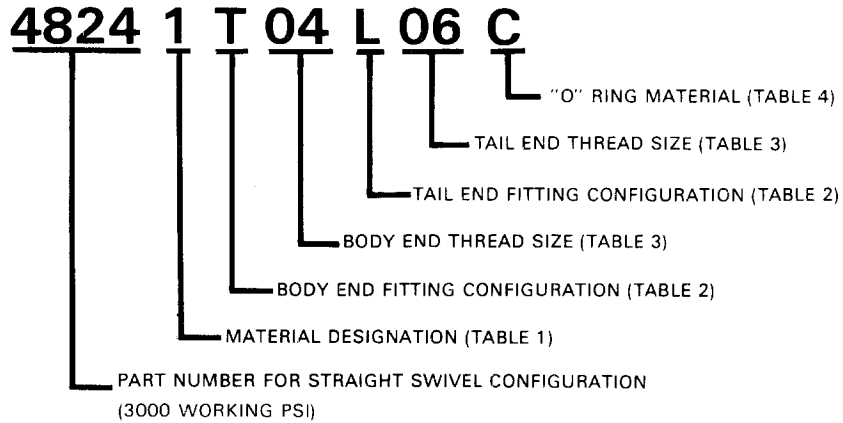
**ENGINEERING DIMENSIONS**



DASH SIZE	A MAX		B HEX		C HEX		TORQUE AT		OPERATING PRESSURE	MINIMUM BURST	WEIGHTS (1)					
	in/mm	in/mm	in/mm	in/mm	3000 psi	207 bar	psi/bar	psi/bar			ALUM.	CRES				
											oz / grams	oz / grams	oz / grams	oz / grams		
-04	.89	22.6	.687	17.4	.687	17.4	3 in/lb	.04 kg/m	3,000	207	13,000	897	.8	23	2.2	62
-06	.94	23.9	.812	20.6	.812	20.6	3 in/lb	.04 kg/m	3,000	207	13,000	897	1.3	37	3.6	102
-08	1.10	27.9	1.000	25.4	1.000	25.4	4 in/lb	.05 kg/m	3,000	207	13,000	897	2.3	65	6.4	181
-10	1.28	33.0	1.375	34.9	1.375	34.9	6 in/lb	.07 kg/m	3,000	207	13,000	897	2.9	82	8.0	227
-12	1.28	33.0	1.375	34.9	1.375	34.9	7 in/lb	.08 kg/m	3,000	207	13,000	897	3.6	102	10.0	283
-16	1.42	36.1	1.625	41.3	1.625	41.3	11 in/lb	.13 kg/m	3,000	207	13,000	897	5.4	153	15.1	428
-20	1.67	42.4	1.875	47.6	1.875	47.6	18 in/lb	.21 kg/m	3,000	207	13,000	897	8.1	230	22.6	641
-24	1.81	46.0	2.125	54.0	2.125	54.0	27 in/lb	.31 kg/m	3,000	207	13,000	897	11.2	317	31.2	885

(1) Weights will vary according to end fitting configuration

# PART NUMBERING SYSTEM (EXAMPLE)



NOTE: SWIVEL MAY BE ORDERED WITH JUMP SIZE THREADS

TABLE 1

FITTING MATERIAL	
Numerical Code	Description
1	CRES 304
2	CRES 316
3	Alum 7075-T6
4	INCONNEL®
5	MONEL®

TABLE 2

FITTING CONFIGURATION		
Letter Code	Military Specification No.	Description
A	MS 33649	Female Port
F	MS 33514	Male - Flareless
G	MS 33515	Male Bulkhead - Flareless
L	MS 33657	Male Bulkhead - 37° Flare
N	AND 10053	Female Pipe Port
P	MS 33677	Male Pipe
T	MS 33656	Male - 37° Flare

TABLE 3

THREAD DASH SIZE (1)	THREAD MIL-SPEC
- 02	5/16 - 24
- 03	3/8 - 24
- 04	7/16 - 20
- 05	1/2 - 20
- 06	9/16 - 18
- 08	3/4 - 16
- 10	7/8 - 14
- 12	1 1/16 - 12
- 16	1 5/16 - 12
- 20	1 5/8 - 12
- 24	1 7/8 - 12
- 32	2 1/2 - 12

TABLE 4

"O" RING MATERIAL CODE		
Letter Code	Description	Oper. Temp.
C	Neoprene AMS3209	-40°F to +225°F
E	Ethylene Propylene NAS 1611	-65°F to +160°F
L	Fluorosilicone Mil-R-25988	-90°F to +400°F
N	Nitrile (Buna-N) Mil-P-25732	-65°F to +275°F
V	Fluorcarbon (Viton)® Mil-R-83248	-20°F to +400°F

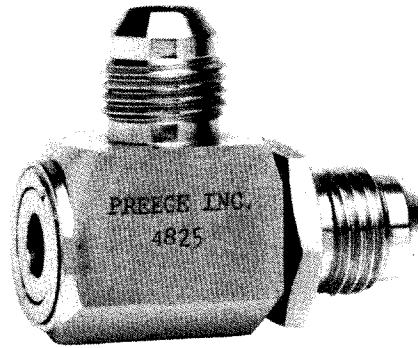
(1) Note thread size on body half designates swivel size

INCONNEL and MONEL are registered trademarks for Huntington Alloys Inc.  
Viton is a registered trademark for E.I. duPont de Nemours Co.



**PREECE INC.**  
ENGINEERING  
BULLETIN

90° ELBOW SWIVEL  
SERIES 4825  
8000 OPERATING PRESSURE  
PEB-29



90° ELBOW SWIVEL

APPLICATIONS  
AND ENGINEERING  
DATA

Swivel rotates 360° with low torque values at 8000 PSIG. For lower operating pressure see PEB 30. For straight and 45° configurations see PEB 27 and 31. Swivels may be ordered with jump size threads. Low pressure thermoplastic swivels are manufactured for coolants, water, and other low pressure applications (200 PSIG). Swivels with misalignment capabilities are also available.

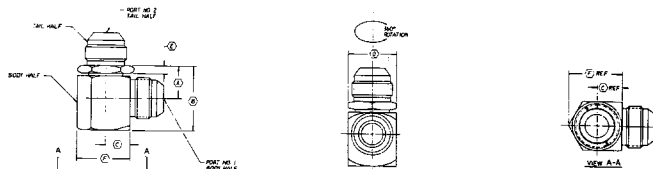
CONSTRUCTION

Standard materials are stainless steel and aluminum. Stainless swivel assemblies are electropolished to ordnance specification OD 52533. Aluminum will be anodized to military specification Mil-A-8625 Type II CL 2 (Blue). Design eliminates external snap rings. Back up rings and dust seals incorporated in this swivel.

MILITARY  
SPECIFICATIONS

Mil-J-5513A  
Mil-E-5272

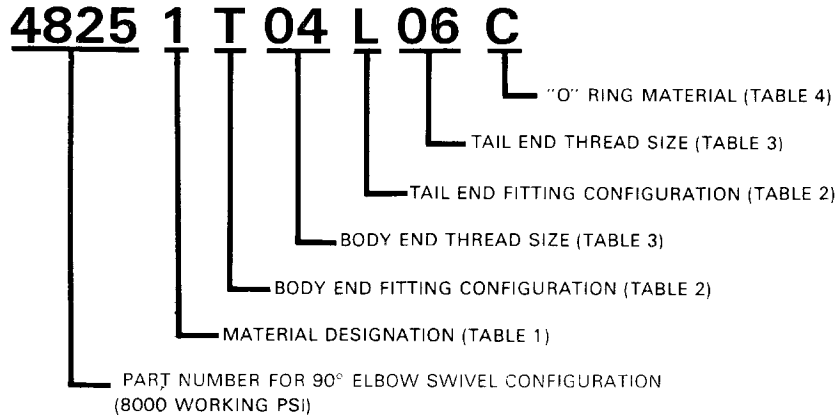
ENGINEERING  
DIMENSIONS



DASH SIZE	A		B		C		D HEX		E		F		TORQUE AT 8000 552		OPERATING PRESSURE		MINIMUM BURST		WEIGHTS(1)	
	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	psi/bar	psi/bar	psi/bar	psi/bar	oz	grams	CRES		
-04	.60	15.2	1.09	27.7	.38	9.7	.56	14.2	.18	4.6	.70	17.8	7 in/lb	.08 kg/m	8000	552	34,000	2344	1.8	51
-06	.66	16.8	1.24	31.5	.44	11.2	.75	19.1	.18	4.6	.87	22.1	8 in/lb	.09 kg/m	8000	552	27,000	1861	3.4	97
-08	.70	17.8	1.34	34.0	.50	12.7	1.00	25.4	.18	4.6	1.08	27.4	10 in/lb	.12 kg/m	8000	552	29,000	2000	6.0	170
-10	.75	19.1	1.47	37.3	.57	14.5	1.13	28.7	.20	5.1	1.22	31.0	15 in/lb	.17 kg/m	8000	552	28,000	1931	8.3	235
-12	.85	21.6	1.68	42.7	.63	16.0	1.25	31.8	.22	5.6	1.35	34.3	17 in/lb	.19 kg/m	8000	552	25,000	1724	11.7	332
-16	1.00	25.4	1.95	49.5	.81	20.6	1.63	41.4	.25	6.4	1.75	44.5	26 in/lb	.30 kg/m	8000	552	22,000	1517	22.8	646
-20	1.11	28.2	2.16	54.9	.94	23.9	1.75	44.5	.25	6.4	1.95	49.5	43 in/lb	.49 kg/m	8000	552	24,000	1655	30.3	859
-24	1.28	32.5	2.56	65.0	1.19	30.2	2.13	54.1	.25	6.4	2.45	62.2	64 in/lb	.74 kg/m	8000	552	21,000	1448	51.5	1460

(1) Weights will vary according to end fitting configuration

# PART NUMBERING SYSTEM (EXAMPLE)



NOTE: SWIVEL MAY BE ORDERED WITH JUMP SIZE THREADS

TABLE 1

FITTING MATERIAL	
Numerical Code	Description
1	CRES 304
2	CRES 316
3	Alum 7075-T6
4	INCONNEL®
5	MONEL®

TABLE 2

FITTING CONFIGURATION		
Letter Code	Military Specification No.	Description
A	MS 33649	Female Port
F	MS 33514	Male - Flareless
G	MS 33515	Male Bulkhead - Flareless
L	MS 33657	Male Bulkhead - 37° Flare
N	AND 10053	Female Pipe Port
P	MS 33677	Male Pipe
T	MS 33656	Male - 37° Flare

TABLE 3

THREAD DASH SIZE (1)	THREAD MIL-SPEC
- 02	5/16 - 24
- 03	3/8 - 24
- 04	7/16 - 20
- 05	1/2 - 20
- 06	9/16 - 18
- 08	3/4 - 16
- 10	7/8 - 14
- 12	1 1/16 - 12
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- 24	1 7/8 - 12
- 32	2 1/2 - 12

TABLE 4

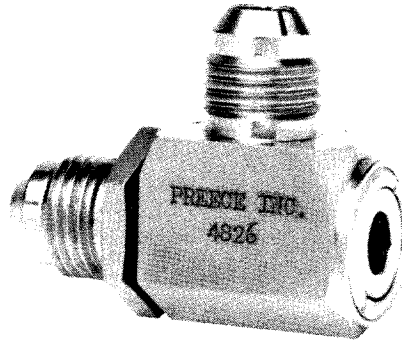
"O" RING MATERIAL CODE		
Letter Code	Description	Oper. Temp.
C	Neoprene AMS3209	-40°F to +225°F
E	Ethylene Propylene NAS 1611	-65°F to +160°F
L	Fluorosilicone Mil-R-25988	-90°F to +400°F
N	Nitrile (Buna-N) Mil-P-25732	-65°F to +275°F
V	Fluorcarbon (Viton)® Mil-R-83248	-20°F to +400°F

(1) Note thread size on body half designates swivel size



**PREECE INC.**  
ENGINEERING  
BULLETIN

90° ELBOW SWIVEL  
SERIES 4826  
3000 OPERATING PRESSURE  
PEB-30



90° ELBOW SWIVEL

**APPLICATIONS  
AND ENGINEERING  
DATA**

Swivel rotates 360° with low torque values at 3000 PSIG. For high operating pressure consult with factory. Swivels may be ordered with jump size threads. Low pressure thermoplastic swivels are manufactured for coolants, water, and other low pressure applications (200 PSIG). Swivels with misalignment capabilities are also available.

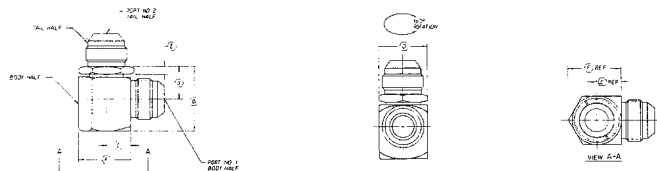
**CONSTRUCTION**

Standard materials are stainless steel and aluminum. Stainless swivel assemblies are electropolished to ordnance specification OD 52533. Aluminum will be anodized to military specification Mil-A-8625 Type II CL 2 (Blue). Design eliminates external snap rings. Back up rings and dust seals incorporated in this swivel.

**MILITARY  
SPECIFICATIONS**

Mil-J-5513A  
Mil-E-5272

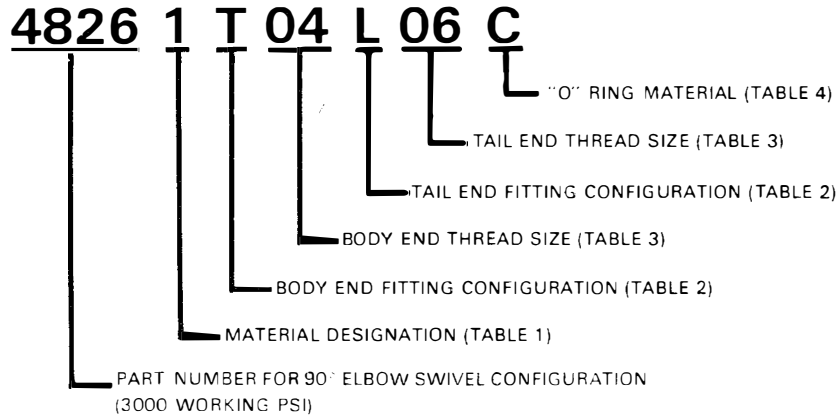
**ENGINEERING  
DIMENSIONS**



DASH SIZE	A		B		C		D HEX		E		F		TORQUE AT 3000 207		OPERATING PRESSURE		MINIMUM BURST		WEIGHTS(1)			
	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	psi/bar	psi/bar	psi/bar	psi/bar	ALUM. oz /grams	CRES oz / grams	oz /grams	oz / grams		
-04	.60	15.2	1.09	27.7	.38	9.7	.56	14.2	.18	4.6	.70	17.8	3 in/lb	.04 kg/m	3000	207	13,000	1897	.5	14	1.4	40
-06	.66	16.8	1.24	31.5	.44	11.2	.75	19.1	.18	4.6	.87	22.1	3 in/lb	.04 kg/m	3000	207	13,000	1897	1.1	31	2.9	82
-08	.70	17.8	1.34	34.0	.50	12.7	1.00	25.4	.18	4.6	1.08	27.4	4 in/lb	.05 kg/m	3000	207	13,000	1897	2.0	57	5.6	159
-10	.75	19.1	1.47	37.3	.57	14.5	1.13	28.7	.20	5.1	1.22	31.0	6 in/lb	.07 kg/m	3000	207	13,000	1897	2.8	79	7.7	218
-12	.85	21.6	1.68	42.7	.63	16.0	1.25	31.8	.22	5.6	1.35	34.3	7 in/lb	.08 kg/m	3000	207	13,000	1897	4.0	113	11.1	315
-16	1.00	25.4	1.95	49.5	.81	20.6	1.63	41.4	.25	6.4	1.75	44.5	10 in/lb	.12 kg/m	3000	207	13,000	1897	7.7	218	21.5	609
-20	1.11	28.2	2.16	54.9	.94	23.9	1.75	44.5	.25	6.4	1.95	49.5	16 in/lb	.19 kg/m	3000	207	13,000	1897	9.8	278	27.3	774
-24	1.28	32.5	2.56	65.0	1.19	30.2	2.13	54.1	.25	6.4	2.45	62.2	24 in/lb	.28 kg/m	3000	207	13,000	1897	17.4	493	48.6	1378

(1) Weights will vary according to end fitting configuration

# PART NUMBERING SYSTEM (EXAMPLE)



NOTE: SWIVEL MAY BE ORDERED WITH JUMP SIZE THREADS

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L	Fluorosilicone Mil-R-25988	-90°F to +400°F
N	Nitrile (Buna-N) Mil-P-25732	-65°F to +275°F
V	Fluorcarbon (Viton)® Mil-R-83248	-20°F to +400°F

(1) Note thread size on body half designates swivel size

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