

**General Description**

Series MFB flow control valves are designed for applications where it is necessary to supply flow from a single pump to two separate circuits (Snow plow attachment and a dump body). One of the two circuits will be the primary circuit and receive priority flow from the Series MFB valve. Any excess flow above the priority requirement is available to a second circuit.

**Features**

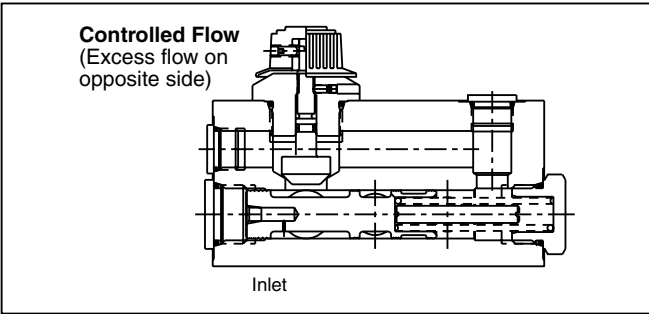
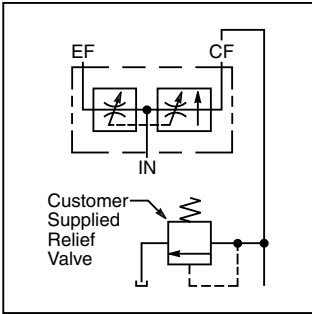
- Hardened parts provide long life.
- In-line mounting.
- When reverse flow is applied from the priority port, the valve acts as a fixed orifice.
- Dial style knob provides an easy adjustable method for setting flow rate.

**Operation**

Series MFB flow controls use a control orifice in a spring-biased, compensated spool to supply a priority flow requirement. Any flow over and above the priority flow will be directed to a bypass port. The priority flow is fully compensated, meaning that as load pressure at the priority port changes, the priority flow will change to meet that requirement.

If the pump supply is less than required for the priority circuit, all flow will go to the priority circuit, and none will be diverted to the excess flow port.

This valve can also be used as a restrictive-type,



pressure compensated flow control by plugging the excess flow port.

Caution: If the priority flow port is totally blocked, the compensator spool shifts completely to block the bypass port thus closing the valve completely. If a fixed displacement pump is being used in this type of application, there must be a relief mounted between the pump and the Series MFB flow control valve.

**Specifications**

<b>Maximum Inlet Flow</b>	MFB-025 – 93.75 LPM (25 GPM) MFB-050 – 187.5 LPM (50 GPM)	<b>Operating Temp. Range (Ambient)</b>	-31.7°C to +121.1°C (-25°F to +250°F) (Fluorocarbon Seals Only)
<b>Maximum Control Flow</b>	MFB-025 – 56.25 LPM (15 GPM) MFB-050 – 56.25 LPM (15 GPM)	<b>Internal Material</b>	Steel
<b>Operating Press.</b>	210 Bar (3000 PSI)	<b>Body Material</b>	Steel (chromate plated)
<b>Flow Accuracy</b>	±10%	<b>Filtration</b>	ISO code 16/13 SAE Class 4 or better
<b>Compensator Bias Spring</b>	6.2 Bar (90 PSI) Differential	<b>Mounting</b>	In-line (no restrictions)

**Ordering Information**

MFB

Mobile Flow Control in Body

—

Nominal Inlet Flow

—

P

Priority Flow

AP

Style

—

K

Knob

—

Porting

Code	Flow
025	56.25 LPM (15 GPM)
050	56.25 LPM (15 GPM)

Code	Description
AP	Adjustable Priority

Code	Style
K	Knob

MFB-025		MFB-050	
Code	Type	Code	Type
06	3/8" NPTF	12	3/4" NPTF
52	SAE – 8	54	SAE – 12
		56	SAE – 16

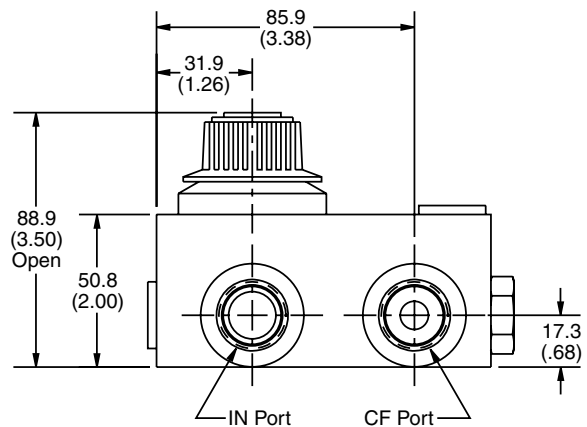
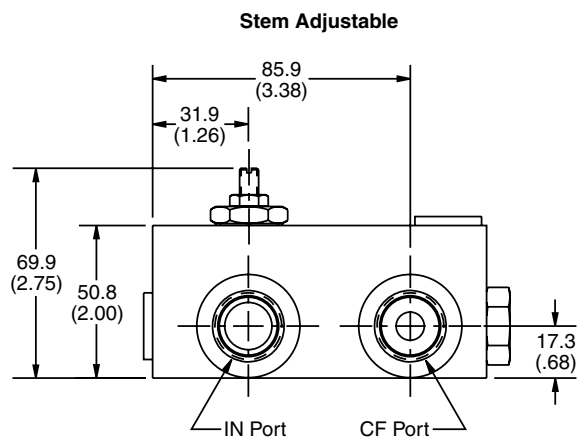
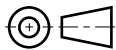
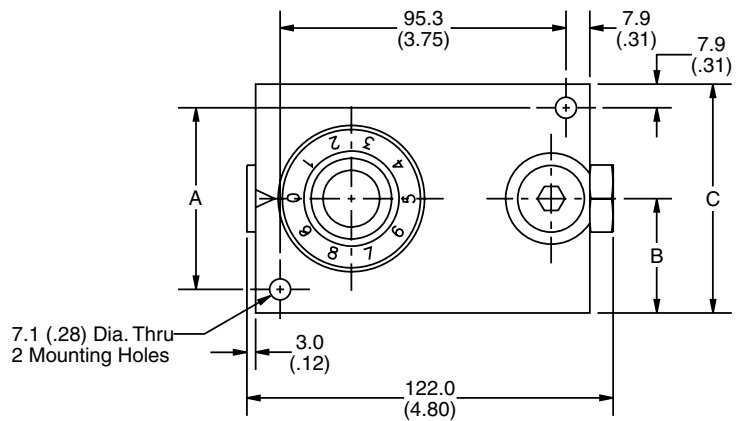
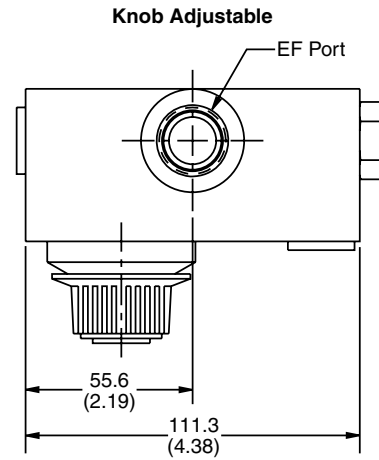
**Weight:**  
**MFB-025, MFB-050**    2.7 kg (6.0 lbs.)

**Dimensions****Series MFB**

Inch equivalents for millimeter dimensions are shown in (\*\*)

	A	B	C
<b>MFB-025</b>	34.9 (1.38)	25.4 (1.00)	50.8 (2.00)
<b>MFB-050</b>	60.5 (2.38)	38.1 (1.50)	76.2 (3.00)

	Code	"EF" Port	"IN" Port	"CF" Port
<b>MFB-025</b>	06	3/8" NPTF	3/8" NPTF	3/8" NPTF
	52	#8 SAE	#8 SAE	#8 SAE
<b>MFB-050</b>	12	3/4" NPTF	3/4" NPTF	3/4" NPTF
	54	#12 SAE	#12 SAE	#12 SAE
	56	#16 SAE	#16 SAE	#12 SAE



## Valve Sizes

The size designation of a valve is determined by the size of the tube or pipe to which it is connected. Tubing and iron pipe are each sized on a different basis. Tube size is the outside diameter of the tube. Pipe size (nominal) is the approximate inside diameter of standard weight iron pipe. A valve is known by the size of its tube or pipe connections.

When all ports of a valve have pipe connections, the valve is designated by the nominal pipe size in inches, thus a valve having all pipe connection ports for 1/2 in. pipe is a size 1/2 valve.

The size of valves having all tube connections, or a combination of tube and pipe connections, is determined and designated by the size of the tube to be

connected to the valve, taking for the size the number of sixteenths of an inch in the outside diameter of the tubing with which the valve is to be used. For example, a valve having one or more tube connection ports for 1/2 in. OD tubing (8/16 in.) would be a size 8 valve. Sizes of any pipe connection ports on the same valve with tube connections are always furnished according to the standards shown in the table below. These combinations have been set up in the industry, are accepted as standard.

In making up the Ordering Part Number for a valve, the size is used as a Dash Number following the valve number. For example, a size 8 valve (tube) would be indicated by -8 in the Part Number, as 488-8. A size 1/2 valve (pipe) would be indicated by -1/2, as 483-1/2.

<b>Standard Port Sizes on Valves with Tube Only or a Combination of Both Tube and Pipe Port Connections</b>			
<b>Tube O.D. Determines Valve Size and Dash No.</b>	<b>Valve Size and Dash No. Pipe</b>	<b>Valve Size and Dash No. Tube</b>	<b>Valve Size and Dash No. SAE#</b>
1/4"	1/8"	4	104, #4 SAE
5/16"	1/8"	5	105, #5 SAE
3/8"	1/4"	6	106, #6 SAE
1/2"	3/8"	8	108, #8 SAE
5/8"	1/2"	10	110, #10 SAE
3/4"	3/4"	12	112, #12 SAE
1"	1"	16	116, #16 SAE
1-1/4"	1-1/4"	20	120, #20 SAE
1-1/2"	1-1/2"	24	124, #24 SAE
2"	2"	32	132, #32 SAE

## Material Codes

Material codes usually apply to the basic body material only, trim material being 300 Series and/or 400 Series stainless steel in most cases. Other materials are available.

**B** Brass, free machining.

**D** Aluminum alloy (MIL-A-8625, Class C, Type II).

**S** Steel, free machining.

**SS** Stainless steel, 303 (QQ-S-763).

**Y** Stainless steel, 316 (QQ-S-763).

**Z** Stainless steel, 347 (QQ-S-763).

			Valve Sizes									
			Tube	4	6	8	10	12	16	20	24	32
Catalog Series			Pipe	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
Needle	Inline	1261	—	.44	.78	.97	2.5	5.2	—	—	—	—
	Subplate type	1263	—	.44	.78	.97	2.5	5.2	—	—	—	—
	Inline	13	.32	.37	—	—	—	—	—	—	—	—
	Vee	V13	.19	.19	—	—	—	—	—	—	—	—
	Meter	M13	.08	.08	—	—	—	—	—	—	—	—
	Angle	140	.20	.37	—	—	—	—	—	—	—	—
	Hi-Press	154	.35	.55	.60	.68	4.5	5.2	—	—	—	—
	Pilot	155	—	—	—	—	5.2	5.3	—	—	—	—
	Soft Seat	156	.34	.49	.83	—	1.5	—	—	—	—	—
Plug	Inline	300 & 700	1.0	2.0	5.0	9.0	16.0	29.0	—	—	—	—
	Angle	300 & 700	.60	1.0	2.7	5.0	8.6	15.0	—	—	—	—
	Cylindrical	742 & 744	—	—	—	—	—	—	30	32	—	—
Flow Control	Free	4111 & 4113	—	1.3	2.1	3.2	4.2	8.1	—	—	—	—
	Controlled	4111 & 4113	—	1.3	2.1	3.2	4.2	8.1	—	—	—	—
	Free	4111C & 4113C	—	1.3	2.1	3.2	4.2	8.1	—	—	—	—
	Controlled	4111C & 4113C	—	.44	.79	.98	2.5	5.3	—	—	—	—
	Reverse Flow	6641 & 6643	—	.56	1.1	2.2	2.7	3.2	—	—	—	—
TF-3	TF-C	—	—	1.35	2.15	3.00	4.46	8.4	—	—	—	—
	TFP-A	—	—	.85	1.48	1.92	2.97	5.41	—	—	—	—
	TFP-N	—	—	.85	1.48	1.92	2.97	5.41	—	—	—	—
Check	Ball	404	.63	1.2	2.2	3.5	6.1	—	—	—	—	—
	Pilot	4121 & 4123	—	1.3	2.1	3.2	4.2	8.1	—	—	—	—
	Mini	416, 417	.38	.99	1.98	2.97	4.45	7.88	—	—	—	—
	10,000 PSI	420	.36	.95	1.3	1.8	5.1	8.0	—	—	—	—
	Hi-Press	440	.60	1.6	2.6	4.1	6.5	11.0	18.0	24.0	48.0	—
	Hi-Press	450	.84	1.6	2.7	4.2	6.5	10.0	18.0	23.0	47.0	—
	Free Flow	480, 490	.75	1.5	4.0	6.0	7.5	13.0	21.0	30.0	55.0	—
	Swing	580, 590	1.5	3.8	7.1	11.8	17.1	35.3	58.8	82.3	153.0	—
	Tel-Trol	4501, 4503	—	1.3	2.1	3.2	4.2	8.1	—	—	—	—
Cylindrical Plug		740	—	—	—	—	—	—	30.0	32.0	—	—
Lo-Torq		8000E	.90	1.5	2.5	2.8	7.5	8.5	23.0	24.0	—	—
	Select Pos.	N8000E	.23	.30	.74	.77	—	—	—	—	—	—
		8100E	.85	1.0	1.1	1.2	3.0	3.2	13.0	13.0	—	—
	P-A or P-B	N8100E	.30	.32	.35	.39	—	—	—	—	—	—
		8200	.95	.95	2.8	3.0	9.5	9.9	—	—	—	—
		8400E	.26	.29	—	—	—	—	—	—	—	—
		8400M&H	.13	.13	—	—	—	—	—	—	—	—
		N8400M&H	.07	.07	—	—	—	—	—	—	—	—
Seal-Tite		8500E	1.5	1.7	2.2	2.4	5.9	6.6	—	—	—	—
		N8500E	.39	.40	1.0	1.0	—	—	—	—	—	—
Commander		8700	1.5	1.7	2.2	2.4	—	—	—	—	—	—
		N8700	.39	.40	1.0	1.0	—	—	—	—	—	—
Lo-Torq 10,000 PSI		8900	—	1.2	1.3	1.4	2.5	2.6	—	—	—	—
Solenoid		960	—	.03	1.9	2.1	4.0	4.5	—	25.0	—	—
Exectrol		21100	.28	.28	—	—	—	—	—	—	—	—
		21200	—	1	1	1	—	—	—	—	—	—
		23100, 23400	—	—	—	2.5	4.3	7.4	7.4	21	21	—
Solenoid Push		21400	—	.28	.28	—	—	—	—	—	—	—
Shut-Off & Dump		21300	—	—	.70	—	.70	—	—	—	—	—



The following table and list may be used to interpret Republic standard and semi-standard Part Numbers, and as a guide in selecting elastomer seals for use with various media. Since seal compound selection must also take into account the gland design, pres-

sure, temperature and seal function (dynamic or static), we suggest complete application and media information be sent to us so we can offer a specific recommendation. Sealing materials other than the compounds listed are available.

Code No.	O-Ring No.	Compound Base	Specification No.	Temperature Guide °F		Service
				Minimum	Maximum	
1	SP01	Nitrile	MIL-P-5315	-67°	+200°	Aircraft fuels JP3, JP4, JP5 and reciprocating engine type commercial gasoline and kerosene MS29512 & MS29513.
*2	SP100	Nitrile	Nitrile (Commercial)	-40°	+250°	Mineral oils, hydraulic fluids, pneumatic service, stoddard solvent, ethylene glycol.
27	SP132	Nitrile	MIL-P-25732	-65°	+275°	Petroleum base hydraulic fluid, aircraft, and ordnance MS28775.
28	SP133	Fluorocarbon	Fluorocarbon AMS 7278 Mil-R-83248, Type I, Class I	-20°	+400°	High temperature oils, aromatic service, all pydrauls, battery acid NAS1593, NAS1595.
52	SP160	Ethylene Propylene		-65°	+300°	Skydrol, cellulube, steam, phosphate esters, water, air, dilute acids. Should not come in contact with petroleum products. All sizes color coded yellow. MIL-R-83285 GR80.
*T	SP103	PTFE	AMS3651	-65°	+400°	Compatible with most liquids and gases except some fluorochemicals.

\*Cure date not available.

**NOTE:** PTFE O-rings are not recommended for general applications.

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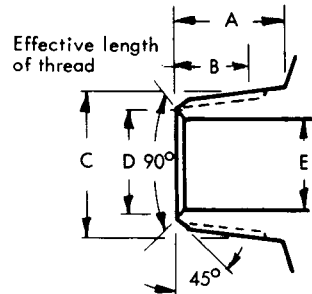
## Technical Information

## Accessories

## O-Ring Code and Media Selection

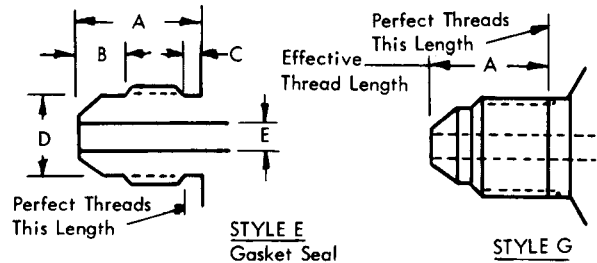
MEDIA	CODE NO.	MEDIA	CODE NO.	MEDIA	CODE NO.
ACETIC ACID	52	FLUOROLUBE	52	MIL-L-17331	27
ACETONE	52	FORMALDEHYDE	52	MIL-H-19457	52
AEROZENE 50	52	FREON, 11	2	MIL-L-21260	52
AIR	52	FREON, 12	7	MIL-H-22251	52
AIR, HIGH TEMP. (TO 300° F.)	1	FREON, 12 & ASTM OIL #22 (50/50 MIXTURE)	7	MIL-L-23699	28
AIR, LUBRICATED	2	FREON, 14	7	MIL-G-25013	28
ALKAZENE	28	FREON, 22	7	MIL-G-25537	27
ALUMINUM NITRATE	2	FREON, 22 & ASTM OIL #2 (50/50 MIXTURE)	7	MIL-F-25558 (RJ-1)	1
ALUMS NH <sub>4</sub> CR K	2	FREON, 114	7	MIL-R-25576 (RP-1)	1
AMINES, MIXED	7	FUEL OIL	2	MIL-F-25656	1
AMMONIA, GAS, COLD	7	FUEL OIL, #6	28	MIL-L-25681	28
AMMONIA, GAS, HOT	7	GASOLINE	2	MIL-G-25760	28
AMMONIA, LIQUID (ANHYDROUS)	7	GELATIN	2	MIL-P-27402	28
AMMONIUM CARBONATE	7	GLUCOSE	2	MIL-H-27601	52
AMMONIUM CHLORIDE	2	GLYCERINE-GLYCEROL	2	MIL-S-81087	52
AMMONIUM HYDROXIDE	52	GLYCOLS	52	MINERAL OILS	2
AMMONIUM NITRATE	2	HALOWAX OIL	28	MINESAFE	2
AMMONIUM NITRITE	2	HEF-2 (HIGH ENERGY FUEL)	28	MOPAR BRAKE FLUID	52
AMMONIUM PHOSPHATE	2	HELIUM	52	NAPHTHA	28
AMMONIUM SULPHATE	2	N-HEPTANE	52	NATURAL GAS	2
AMMONIUM SULPHIDE	2	N-HEXANE	2	NEATSFOOT OIL	2
AMYL ACETATE	52	HYDROLUBE WATER ETHYLENE GLYCOL	2	NITROGEN	2
AMYL ALCOHOL	52	HYDRAULIC OIL (PETROLEUM BASE)	2	OLIVE OIL	2
ANDEROL (DI-ESTER)	28	HYDRAZINE	52	ORONITE	28
ANG-25 (GLYCERAL ESTER)	52	HYDROCARBONS (SATURATED)	2	OS 45	28
ANG-25 (DI-ESTER BASE) (TG749)	28	HYDROGEN GAS	52	OS 70	28
ANILINE	52	HYDROGEN PEROXIDE	28	OXALIC ACID	52
ANILINE OIL	52	HYDROGEN SULPHIDE	52	OXYGEN 200° F.	22
ANIMAL OIL (LARD OIL)	2	IODINE	28	OZONE	52
AROMATIC FUEL 50%	28	ISOPROPYL ALCOHOL	52	PAINT THINNER	28
ASPHALT	28	JP 3 (MIL-J-5624)	1	PEANUT OIL	2
ASTM OIL, NO. 1, 2, 3	2	JP 4 (MIL-J-5624)	1	PENTANE	2
ASTM OIL, NO. 4	28	JP 5 (MIL-J-5624)	1	PETROLEUM OIL	2
ASTM REFERENCE FUEL A, B	2	JP 6 (MIL-J-25656)	1	PHENOL	28
ASTM REFERENCE FUEL C	28	JP X (MIL-F-25604)	1	PINE OIL	2
AUTOMATIC TRANSMISSION FLUID	2	KEROSENE	2	PLATING SOLUTIONS	52
AUTOMATIC BRAKE FLUID	52	LIGHT GREASE	2	PNEUMATIC SERVICE	2
BARDOL B	28	LINDOL HYDRAULIC FLUID	52	POTASSIUM CHLORIDE	2
BEER	7	LINSEED OIL	2	PRESTONE ANTIFREEZE	2
BEET SUGAR LIQUORS	2	LIQUID OXYGEN	2	PRL-HIGH TEMP. HYDR. OIL	28
BENZENE	28	LIQUID PETROLEUM GAS (LPG)	28	PRODUCER GAS	2
BENZINE	2	LUBRICATING OILS, DI-ESTER	28	PROPANE	2
BORON FLUIDS (HEF)	28	LUBRICATING OILS, PETROLEUM BASE	2	PROPYL ALCOHOL	2
BRAKE FLUID (NON-PETROLEUM)	52	LUBRICATING OILS, SAE 10, 20, 30, 40, 50	2	PYRANOL, TRANSFORMER OIL	2
BUNKER OIL	2	MERCURY	2	PYDRAUL, 150	52
BUTANE	2	METHANE	2	PYDRAUL, 135, A200, 312, AC, F-9, 625	28
BUTANOL (BUTYL-ALCOHOL)	2	METHANOL	2	PYROGARD 42, 43, 53, 55	52
BUTYL ALCOHOL	2	METHYL ALCOHOL	2	PYROGARD C, D	28
BUTYL CELLOSOLVE ADIPATE	52	METHYL CHLORIDE	28	RAPESEED OIL	52
BUTYLENE	28	METHYL ETHYL KETONE (MEK)	52	SAL AMMONIAC	52
BUTYL STEARATE	28	MIL-L-2104	27	SANTO SAFE 300	28
CALCIUM CHLORIDE	2	MIL-S-3136, TYPE I, TYPE II, TYPE III FUEL	1	SEWAGE	2
CALCIUM HYDROXIDE	2	MIL-S-3136, TYPE IV OIL, LOW SWELL	2	SILICONE GREASES	52
CALCIUM HYPOCHLORIDE	52	MIL-S-3136, TYPE V OIL, MEDIUM SWELL	2	SILICONE OILS	52
CALCIUM NITRATE	2	MIL-S-3136, TYPE VI OIL, HIGH SWELL	2	SKYDROL 500, 7000	52
CANE SUGAR LIQUORS	2	MIL-L-3150	27	SODA ASH	2
CARBONIC ACID	52	MIL-O-3503	27	SODIUM CHLORIDE	2
CARBON DISULPHIDE	28	MIL-G-3545	27	SODIUM NITRATE	52
CARBON TETRACHLORIDE	28	MIL-C-4339	27	SOUR NATURAL GAS	7
CASTOR OIL	2	MIL-L-4343	27	SOUR CRUDE OIL	7
CELLOSOLVE	52	MIL-J-5161	1	SOYBEAN OIL	2
CELLULUBE A60, 90, 100, 150, 220, 300, 500	52	MIL-F-5568	52	SR-6 FUEL	28
CELLUTHERM 2505A	28	MIL-G-5572	1	SR-10 FUEL	2
CHLORINATED SALT BRINE	28	MIL-H-5608 (HFA)	27	STEAM, BELOW 350° F.	52
CHLORINATED SOLVENTS	28	MIL-H-5606 (J43)	27	STODDARD SOLVENT	2
CHLORINE	28	MIL-J-5624, JP-3, JP-4, JP-5	1	SULPHUR	7
CHLOROFORM	28	MIL-O-6081	27	TANNIC ACID	2
CHROME PLATING SOLUTIONS	28	MIL-L-6082	27	TAR, BITUMINOUS	28
CITRIC ACID	7	MIL-H-6083	27	TETRAETHYL LEAD	28
COCONUT OIL	2	MIL-L-6085	28	TOLUENE	28
COD LIVER OIL	2	MIL-A-6091	52	TRANSFORMER OIL	2
COKE OVEN GAS	28	MIL-L-6387	28	TRANSMISSION FLUID TYPE A	2
COOLANOL (MONSANTO)	28	MIL-F-7024	1	TRICHLOROETHYLENE	28
COPPER SULPHATE	2	MIL-H-7083	52	TURBINE OIL	2
CORN OIL	2	MIL-G-7118	27	TURPENTINE	2
COTTONSEED OIL	2	MIL-G-7187	27	UNSYMMETRICAL DIMETHYL HYDRAZINE (UDMH)	52
CREOSOTE	2	MLO-7277 HYDR	28	VARNISH	28
CREOSOLS	2	MLO-7557	28	VEGETABLE OIL	2
CRUDE OIL	28	MIL-G-7711	27	VINEGAR	7
CUTTING OIL	2	MIL-L-7808	28	WAGNER 21B BRAKE FLUID	52
DELCO BRAKE FLUID	52	MIL-L-7870	27	WATER	2
DENATURED ALCOHOL	2	MIL-C-8188	28	WHITE PINE OIL	28
DETERGENT, WATER SOLUTION	52	MLO-8200 HYDR	28	WHITE OIL	2
DEVELOPING FLUIDS (PHOTO)	2	MIL-H-8446 (MLO-8515)	28	WOOD ALCOHOL	2
DIESEL OIL	2	MLO-8515	28	WOOD OIL	2
DI-ESTER SYNTHETIC LUBRICANTS	2	MIL-L-9000	27	XYLENE	28
DOWTHERM, A, E	28	MIL-L-9236	28	ZINC CHLORIDE	2
DOWTHERM, 209	2	MIL-E-9500	52	ZINC SULPHATE	2
DOW GUARD	2	MIL-G-10924	27		
DRY CLEANING FLUIDS	28	MIL-H-13910	52		
ETHANE	2	MIL-L-15016	27		
ETHANOL	2	MIL-L-15017	27		
ETHYL ALCOHOL	2	MIL-G-15793	27		
ETHYLENE CHLORIDE	28	MIL-F-16884	27		
ETHYLENE GLYCOL	52	MIL-F-17111	27		
ETHYLENE OXIDE	52				
FATTY ACIDS	28				

**NPT — External Pipe Threads  
 MS33677 (AND10077)**



Nominal Pipe Size	Threads Per Inch	A	B Ref.	C Min.	D Min. Dia.	E Dia.
1/8	27	.391	.2639	.405	.240	.188
1/4	18	.594	.4018	.540	.334	.281
3/8	18	.609	.4078	.675	.459	.406
1/2	14	.781	.5337	.840	.615	.531
3/4	14	.797	.5457	1.050	.802	.719
1	11-1/2	.984	.6828	1.315	1.021	.938
1-1/4	11-1/2	1.016	.7068	1.660	1.334	1.250
1-1/2	11-1/2	1.031	.7235	1.900	1.584	1.500
2	11-1/2	1.062	.7565	2.375	2.021	1.938

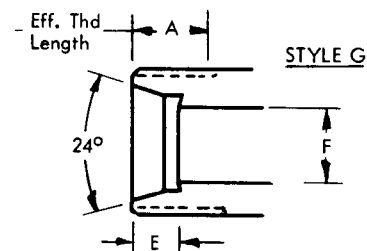
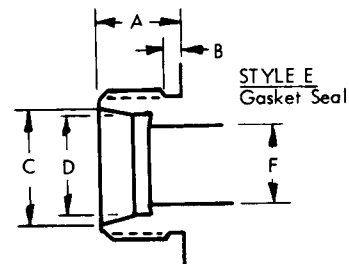
**FLD — Flared Tube Connection  
 MS33656 (AND10056) SAE 37°**



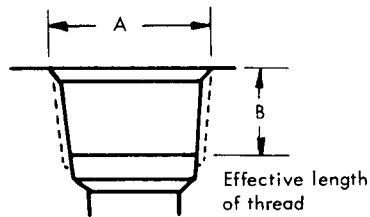
Tube Size	Tube O.D.	Thread	A	B	C	D Dia.	E Dia.
4	1/4	7/16-20UNF-3A	.550	.193	.075	.359	.172
6	3/8	9/16-18UNF-3A	.556	.198	.083	.476	.297
8	1/2	3/4-16UNF-3A	.657	.253	.094	.654	.391
10	5/8	7/8-14UNF-3A	.758	.266	.107	.767	.484
12	3/4	1-1/16-12UN-3A	.864	.315	.125	.938	.609
16	1	1-5/16-12UN-3A	.911	.315	.125	1.188	.844
20	1-1/4	1-5/8-12UN-3A	.958	.367	.125	1.501	1.078
24	1-1/2	1-7/8-12UN-3A	1.083	.378	.125	1.750	1.312
28	1-3/4	2-1/4-12UN-3A	1.208	.451	.125	2.125	1.547
32	2	2-1/2-12UN-3A	1.333	.461	.125	2.375	1.781

**FLS — Flareless Tube Connection  
 MS33514**

Tube Size	Tube O.D.	Thread	A	B	C Ref.	D	E	F
4	1/4	7/16-20UNF-3A	.453	.075	.319	.261	.234	.187
6	3/8	9/16-18UNF-3A	.469	.083	.441	.386	.250	.297
8	1/2	3/4-16UNF-3A	.562	.094	.601	.514	.305	.422
10	5/8	7/8-14UNF-3A	.625	.107	.727	.641	.350	.500
12	3/4	1-1/16-12UN-3A	.688	.125	.852	.766	.350	.656
16	1	1-5/16-12UN-3A	.688	.125	1.102	1.016	.415	.875
20	1-1/4	1-5/8-12UN-3A	.688	.125	1.355	1.270	.415	1.093
24	1-1/2	1-7/8-12UN-3A	.688	.125	1.604	1.520	.485	1.344
32	2	2-1/2-12UN-3A	.688	.125	2.108	2.022	.485	1.813

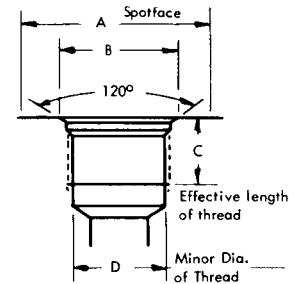


**NPT — Internal Pipe Threads  
AND10053**



Nominal Pipe Size	Threads Per Inch	A Max. Dia.	B
1/8	27	13/32	9/32
1/4	18	9/16	7/16
3/8	18	11/16	7/16
1/2	14	7/8	9/16
3/4	14	1-1/16	37/64
1	11-1/2	1-5/16	23/32
1-1/4	11-1/2	1-43/64	47/64
1-1/2	11-1/2	1-29/32	3/4
2	11-1/2	2-3/8	25/32

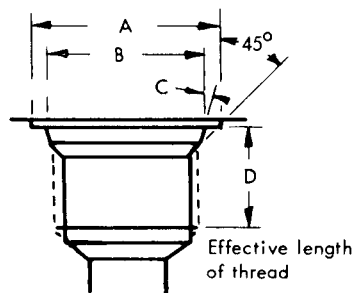
**IST — Internal Straight Threads  
(Gasket Seal) MS33650 (AND10050)**



\*Compatible with SAE.

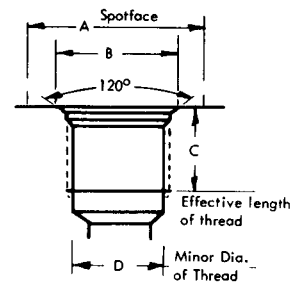
Tube Size	Tube O.D.	Thread MIL-S-7742	A Min. Dia.	B Dia.	C Min.	D Min. Dia.
4	1/4	7/16-20UNF-3B	.828	.562	7/16	.383
6	3/8	9/16-18UNF-3B	.969	.688	15/32	.502
8	1/2	3/4-16UNF-3B	1.188	.875	9/16	.682
10	5/8	7/8-14UNF-3B	1.344	1.000	5/8	.797
12	3/4	1-1/16-12UN-3B	1.625	1.234	11/16	.972
16	1	1-5/16-12UN-3B	1.910	1.487	11/16	1.222
20	1-1/4	1-5/8-12N-3B	2.270	1.800	11/16	1.534
24	1-1/2	1-7/8-12N-3B	2.560	2.050	3/4	1.784
28	1-3/4	2-1/4-12UN-3B	3.010	2.425	13/16	2.159
32	2	2-1/2-12UN-3B	3.480	2.675	15/16	2.409

**S.A.E. Straight Threads (Gasket Seal)  
MS16142 SAE**



Tube Size	Tube O.D.	Thread	A Min. Dia.	B Min. Dia.	C	D Min.
4	1/4	7/16-20UNF-2B	.664	.563	12°	.454
6	3/8	9/16-18UNF-2B	.809	.688	12°	.500
8	1/2	3/4-16UNF-2B	1.025	.875	15°	.562
10	5/8	7/8-14UNF-2B	1.170	1.000	15°	.656
12	3/4	1-1/16-12UN-2B	1.458	1.250	15°	.750
16	1	1-5/16-12UN-2B	1.746	1.500	15°	.750
20	1-1/4	1-5/8-12UN-2B	2.180	1.875	15°	.750
24	1-1/2	1-7/8-12UN-2B	2.446	2.125	15°	.750
32	2	2-1/2-12UN-2B	3.192	2.750	15°	.750

**IST — Internal Straight Threads  
(Gasket Seal) MS33649**



Tube Size	Tube O.D.	Thread MIL-S-8879	A Min. Dia.	B Dia.	C Min.	D Min. Dia.
4	1/4	7/16-20UNJF-3B	.828	.562	37/64	.389
6	3/8	9/16-18UNJF-3B	.969	.688	39/64	.508
8	1/2	3/4-16UNJF-3B	1.188	.875	23/32	.689
10	5/8	7/8-14UNJF-3B	1.344	1.000	13/16	.805
12	3/4	1-1/16-12UNJ-3B	1.625	1.234	7/8	.981
16	1	1-3/8-12UNJ-3B	1.910	1.487	7/8	1.231
20	1-1/4	1-5/8-12UNJ-3B	2.270	1.800	7/8	1.543
24	1-1/2	1-7/8-12UNJ-3B	2.560	2.050	7/8	1.794
32	2	2-1/2-12UNJ-3B	3.480	2.675	29/32	2.419