



**Navy / Marine
Solenoid and Air Operated Valves**

Supporting Fleet Operations for Over 60 Years



INTRODUCTION

This catalog describes ASCO™ solenoid and air operated valves, representative of those manufactured by Emerson to meet U.S. Navy and Coast Guard specifications for marine applications.

Emerson has many years of experience in supplying ASCO valves to meet the exacting standards of the U.S. Navy and Coast Guard. All of the valves listed have been approved for Grade A, Type 1 Hi-Shock requirements per MIL-S-901. The valves described are a sampling of the designs available meeting Navy specifications. For a specification recommendation on a valve to meet your exact needs, please contact Emerson.

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Emerson has years of experience supplying solenoid and air-operated valves to meet the exacting standards of the U.S. Navy and Coast Guard.

2-Way Solenoid Valves

NORMALLY CLOSED - STEAM

General Description

These 2-way packless direct acting valves are suitable for steam flows to 100 lbs. per hour and are available with sil brazed union ends per MIL-F-1183. All are supplied with manual operating devices and meet the Hi-Shock requirements of MIL-S-901. No minimum operating pressure differential is required.



Applications

These valves meet the steam solenoid valve requirements covered in MIL-R-16743, "Refrigerating Plants and Systems, Mechanical; and Refrigerating System Components - Dichlorodifluoromethane R12 - Naval Shipboard," paragraph 3.6.16, the refrigeration plant and systems specification for Naval shipboard use. Valves listed below may be used for many other shipboard applications.

Specifications

- **Operation:** Normally closed (valve closed when de-energized, open when energized).
- **Pipe Sizes:** 3/8" and 1/2" sil brazed union ends per MIL-F-1183.
- **Valve Body:** Forged Brass.
- **Valve Seat:** Stainless Steel (300 Series).
- **Solenoid Construction:** Internal parts in contact with fluid are of 300 Series and 400 Series stainless steel.
- **Solenoid Enclosures:** Navy watertight Hi-Shock(15-foot submersible).
- **Electrical:** Standard 115 volts, AC, 60 Hz.(Consult factory for other voltages).
- **Installation:** AV224593 valve must be mounted with solenoid vertical and upright. AV174565 valves may be mounted in any position without affecting operation.

Pipe Size (ins.)	Orifice (ins.) ①	Flow Max. lbs. Steam/hr ②	Ratings Max. Steam	Catalog Number	Wattage	Rebuild Kit Number
3/8	1/16	5	50	AV174565001	10.5	214683
3/8	5/64	10	50	AV174565002	10.5	214683
3/8	3/32	15	50	AV174565003	10.5	214683
3/8	1/8	22	50	AV174565004	10.5	214683
3/8	5/32	30	50	AV174565005	10.5	214683
3/8	3/16	40	50	AV174565006	10.5	214683
1/2	1/16	5	50	AV174565011	10.5	214683
1/2	5/64	10	50	AV174565012	10.5	214683
1/2	3/32	15	50	AV174565013	10.5	214683
1/2	1/8	22	50	AV174565014	10.5	214683
1/2	5/32	30	50	AV174565015	10.5	214683
1/2	3/16	40	50	AV174565016	10.5	214683
1/2	15/64	60	50	AV224593001	28.2	300322
1/2	5/16	90	50	AV224593002	28.2	300322
1/2	11/32	100	50	AV224593003	28.2	300322

① Valves supplied with sil brazed union ends.

② Steam flow based on 35-psi inlet pressure and a maximum pressure drop through the valve of 10 psi.

2-Way Solenoid Valves

NORMALLY CLOSED – WATER, AIR, GASES, AND LIGHT OIL



General Description

These 2-way packless internal pilot operated valves are available in a wide range of sizes and are available with either sil brazed union ends per MIL-F-1183; flanged ends per MIL-F-20042; Lokring® tailpiece or tubing connections. Many are supplied with manual operating devices and meet the Hi-Shock requirements of MIL-S-901.

Applications

These valves meet the 2-way chilled water valve requirements of MIL-R-16743, “Refrigerating Plants and Systems, Mechanical and Refrigerating System Components - Dichlorodifluoromethane Type 12 -Naval Shipboard,” paragraph 3.6.16, the refrigeration plant and systems specification for Naval shipboard use. Valves listed below may be used for many other shipboard applications.

Specifications

- **Operation:** Normally closed (valve closed when de-energized, open when energized).
- **Pipe Sizes:** 1/2” to 2” sil brazed union ends per MIL-F-1183. 3/4” to 2” flanged ends per MIL-F-20042. Lokring; tubing connections per MS16142.
- **Valve Body:** Forged brass or bronze.
- **Valve Seat:** Resilient (Buna “N”).
- **Solenoid Construction:** Internal parts in contact with fluid are of 300 Series stainless steel and 400 Series stainless steel.
- **Solenoid Enclosures:** Navy watertight Hi-Shock (15-foot submersible).
- **Electrical:** Standard 115 volts, AC, 60 Hz. and 28VDC. (Consult factory for other voltages).
- **Installation:** AV204217-001 valve must be mounted with solenoid vertical and upright. All other valves on this page may be mounted in any position without affecting operation.

Pipe Size (ins.)	Orifice (ins.)	Cv Flow	Pressure psi.		Catalog Number	Wattage	Rebuild Kit Number
			Min.	Max.			
2-WAY Normally Closed VALVES WITH SIL BRAZED UNION ENDS (AC)							
1/2	3/4	6	0	150	AV5078747	10.5	325853
3/4	3/4	6	0	150	AV5078748	10.5	325853
1	1	13	0	125	AV224543001	15.4	300301
1	1	13	5	150	AV507875010	10.5	325856
1 1/4	1 1/8	15	5	150	AV507875011	10.5	325856
1 1/2	1 1/4	22.5	5	150	AV507875012	10.5	325857
2	1 3/4	43	5	150	AV510133001	10.5	325860
2-WAY Normally Closed VALVES LOKRING TAILPIECE (AC)							
1/2	3/4	6	0	150	AV507874016	10.5	325853
3/4	3/4	6	0	150	AV507874017	10.5	325853
1	1	13	5	150	AV507875019	10.5	325856
1 1/4	1 1/8	15	5	150	AV507875020	10.5	325856
1 1/2	1 1/4	22.5	5	150	AV507875021	10.5	325857
2	1 3/4	43	5	150	AV510133004	10.5	325860
2-WAY Normally Closed VALVES WITH FLANGED ENDS (AC)							
1 1/4	1 1/4	20	5	150	AV172731002	10.5	308927
1 1/2	1 3/8	24.5	5	150	AV172731003	10.5	308927
2	2	48	0	150	AV204217001	65	300284
2-WAY Normally Closed VALVES SIL BRAZED UNIONS ST. ST. TAILPIECE (AC)							
1/2	3/4	6	0	150	AV279729007	10.5	322386
3/4	3/4	6	0	150	AV279729008	10.5	322387
1	1	13	5	150	AV279730010	10.5	322388
1 1/2	1 1/4	22.5	5	150	AV279730012	10.5	322389
2	1 3/4	43	5	150	AV279731001	10.5	322390
2-WAY Normally Closed VALVES STRAIGHT THREAD-O-RING BOSS MS-16142 (AC)							
Tube Size							
1/2	5/8	4	0	150	AV272159001	16.7	306916
3/4	3/4	5	0	150	AV272160001	16.7	306930
1 1/2	1 1/4	22.5	5	150	AV260415001	10.5	312838
2-WAY Normally Closed VALVES WITH SIL BRAZED UNION ENDS (DC)							
1/2	3/4	6	0	150	AV186185003	11.2	314078
3/4	3/4	6	0	150	AV186185004	11.2	314077

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2-Way Solenoid Valves

NORMALLY OPEN - WATER AND AIR

General Description

These 2-way direct acting normally open, fully automatic solenoid operated valves have soft seating to provide tight shut-off. These packless valves meet the Hi-Shock requirements of MIL-S-901.



Applications

Primarily used on Navy air compressors. Meet chilled water systems requirements of MIL-F-1103.

Specifications

- **Operation:** Normally open (valve open when de-energized, closed when energized).
- **Pipe Sizes:** Refer to chart.
- **Valve Body:** Brass.
- **Valve Seat:** Brass (integral with body). Buna "N" Diaphragm.
- **Solenoid Enclosures:** Navy watertight Hi-Shock (15-foot submersible).
- **Fluid and Service:** Water and air.
- **Electrical:** Standard 115 volts, AC, 60 Hz. (Consult factory for other voltages).
- **Installation:** Valve may be mounted in any position without affecting operation.

Pipe Size (ins.)	Orifice (ins.)	Cv Flow	Pressure psi.		Catalog Number	Wattage	Rebuild Kit Number	Manual Operator Yes/No
			Min.	Max.				
2-WAY Normally Open VALVES WITH SIL BRAZED UNION ENDS (AC)								
1/2	5/8	4	0	125	AV202237002	15.4	308869	No
3/4	3/4	5	0	150	AV260161001	10.5	316436	No
1	1	13	5	150	AV198970003	15.4	300327	Yes
1	1	13	5	150	AV198970004	15.4	300328	No
1 1/2	1 1/4	22.5	5	150	AV216000001	15.4	312135-MO	Yes
2	1 3/4	43	5	150	AV260160001	10.5	316649	Yes
2-WAY Normally Open VALVES LOKRING TAILPIECE (AC)								
1/2	3/4	4	0	150	AV260161002	10.5	316436	No
3/4	3/4	5	0	150	AV260161003	10.5	316436	No
1	1	13	5	150	AV262739002	16.7	316650-MO	Yes
1 1/2	1 1/4	22.5	5	150	AV262765002	16.7	316663-MO	Yes
2	1 3/4	43	5	150	AV260160002	10.5	316649	Yes
2-WAY Normally Open VALVES STRAIGHT THREAD-O-RING BOSS MS-16142 (AC)								
Tube Size								
3/8	3/32	0.27	0	200	AV224818002	10.5	308682	No
3/8	5/8	3	0	165	AV186532001	15.4	218915	No
1/2	5/8	4	0	165	AV186532002	15.4	218915	No
1/2	5/8	4	0	150	AV228049001	10.5	310594	No

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2-Way Solenoid Valves

NORMALLY CLOSED • REFRIGERATION SERVICE



General Description

These 2-way packless internal pilot operated valves are designed to handle refrigerant liquids, suction, and discharge gases. All are supplied with manual operating devices and meet the Hi-Shock requirements of MIL-S-901. A 2 psi minimum operating pressure differential is required.

Applications

These valves meet the refrigeration solenoid requirements covered in MIL-R-16743, “Refrigeration Plants and Systems; Mechanical; and Refrigeration System Components – Dichlorodifluoromethane R12 – Naval Shipboard”, paragraph 3.6.16, the Refrigeration plant and systems specification for Naval shipboard use.

Specifications

- **Operation:** Normally Closed (valve closed when de-energized, open when energized).
- **Pipe Sizes:** 3/8” through 1-1/8” ODF extended end connections.
- **Valve Body:** Brass.
- **Valve Seat:** Resilient (Teflon).
- **Solenoid Construction:** Internal parts in contact with fluid are of 300 and 400 Series stainless steel.
- **Solenoid Enclosures:** Navy watertight Hi-Shock (15 foot submersible).
- **Electrical:** Standard 120 volts, AC, 60 Hz. (Consult factory for other voltages).
- **Installation:** Valve may be mounted in any position without affecting operation.

Tubing O.D.F.	Orifice (ins.)	Pressure psi.		Catalog Number	Wattage	Rebuild Kit Number
		Min.	Max.			
3/8	11/32	2	300	AV218671001	10.5	300189
1/2	11/32	2	300	AV218671002	10.5	300189
5/8	11/32	2	300	AV218671003	10.5	300189
5/8	7/16	2	300	AV218671004	10.5	300190
7/8	7/8	2	300	AV218671005	10.5	300190
7/8	9/16	2	300	AV218671006	10.5	300190
1 1/8	9/16	2	300	AV218671007	10.5	300190

3-Way Solenoid Valves

AIR SERVICE

General Description

These 3-way normally closed, normally open and universal operation, direct acting, fully automatic solenoid operated valves are a modification of our standard Bulletin 8320 & 8300 valves. These packless valves require no minimum operating pressure and are furnished with soft seats for bubble tight shut-off. A screw type manual operator is also furnished. These valves meet the Hi-Shock requirements of MIL-S-901 and vibration requirements of MIL-STD-167.



Applications

Primarily used on ships air service at temperatures to 180°F. Valves may be used for many other shipboard applications.

Specifications

- **Valve Body:** Brass.
- **Valve Seat:** Resilient (Buna “N”).
- **Solenoid Enclosures:** Navy watertight Hi-Shock (15-foot submersible).
- **Fluid and Service:** Air.
- **Electrical:** Standard AC voltages are 115/60; 120/60; 440/60. (Consult factory for other voltages).
- **Installation:** AV170961, AV162052, and AV220752 valves must be mounted with solenoid vertical and upright. All other valves on this page may be mounted in any position without affecting operation.

Pipe Size (ins.)	Orifice (ins.)	Cv Flow	Pressure psi.		Catalog Number	Wattage	Rebuild Kit Number
			Min.	Max.			
3-WAY Normally Closed SIL BRAZED UNION ENDS (AC)							
1/4	1/16	0.09	0	150	AV182830001	15.4	218901
1/4	3/32	0.12	0	120	AV222573002	10.5	300175
1/4	11/64	0.35	0	40	AV226476001	15.4	218901
1/4	1/4	0.39	0	120	AV170961001	15.4	300283
3-WAY Normally Open SIL BRAZED UNION ENDS (AC)							
1/4	3/32	0.12	0	120	AV222573001	10.5	300174
3-WAY 3/8 VALVE STRAIGHT THREAD 0-RING BOSS MS-16142 - UNIVERSAL FLOW (AC)							
3/8	1/16	0.09	0	165	AV208912001	16.7	218916
3-WAY 3/8 VALVE STRAIGHT THREAD 0-RING BOSS MS-16142 - Normally Open FLOW (AC)							
3/8	1/4	0.39	0	200	AV162052001	32.5	226590
3-WAY 1/2 VALVE STRAIGHT THREAD 0-RING BOSS MS-16142 - Normally Closed FLOW (AC)							
1/2	5/8	4	10	125	AV272158001	16.7	318588
3-WAY Normally Closed NPT (AC)							
1/2	5/16	0.75	0	125	AV220752001	20	300169
3-WAY Normally Open FLOW - 5/16" FLARELESS STAINLESS STEEL TUBING CONNECTIONS (AC)							
5/16	1/16	0.09	0	150	AV180090002	10.5	218861

3-Way Manual Reset Valves

NO VOLTAGE RELEASE

General Description

These 3-way valves are designed in accordance with the requirements of MIL-DTL-16556. An electrical indicating switch is provided to close when the valve shifts to the bypass position and to open when the valve is manually shifted to allow distillate flow.

Applications

These valves are for use with fresh water distilling units to bypass the distillate to bilge when the salinity indicating system signals that the distillate is of unacceptable purity for use in the ship's fresh water system.

Specifications

- **Pipe Sizes:** 1" and 1 1/2" 150 psi. flanges per MIL-F-20042.
- **Valve Body:** Bronze.
- **Valve Seat:** Monel and Resilient.
- **Solenoid Enclosures:** Navy watertight Hi-Shock (15-foot submersible).
- **Fluid and Service:** Water at 50 psig.
- **Electrical:** Continuous Duty Class H Insulated Coil.
- **Installation:** Valve must be mounted with solenoid vertical and upright. The valve will operate satisfactorily under conditions of roll and pitch normally encountered in Marine service.



Pipe Size (ins.)	Orifice (ins.)	Cv Flow	Pressure psi.		Catalog Number	Wattage	Rebuild Kit Number
			Min.	Max.			
1	1	CF	0	50	AV182430 001	32.5	224157
1 1/2	1 1/2	CF	0	50	AV182430 003	32.5	224158

4-Way Solenoid & Air Operated Valves



Pipe Size (ins.)	Orifice (ins.)	Cv Flow	Pressure psi.		Catalog Number	Wattage	Rebuild Kit Number
			Min.	Max.			
4-WAY SIL BRAZED UNION ENDS (AC)							
3/4	3/4	5.6	10	180	JV182695002	16.7	-
AIR OPERATED 2-WAY VALVES FLANGED ENDS							
1 1/4	1 1/4	-	30	60	AV046646001	-	314168
1 1/2	1 1/4	-	-	400	AV262865001	-	316693
AIR OPERATED 3-WAY VALVES - 5/16" AUX. AIR TUBING CONNECTION 3/8" TUBING PORT CONNECTIONS							
5/16	AUX.	-	30	150	AV272157001	-	318445
3/8	5/8	-	10	150	AV272157001	-	318445

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Solenoid Valves

The largest selection of 2, 3, and 4-way solenoid valves, designed to handle the most demanding fluid control applications.



Pneumatic Controls

Directional control valves, air preparation equipment, actuators, and accessories for fluid power applications.



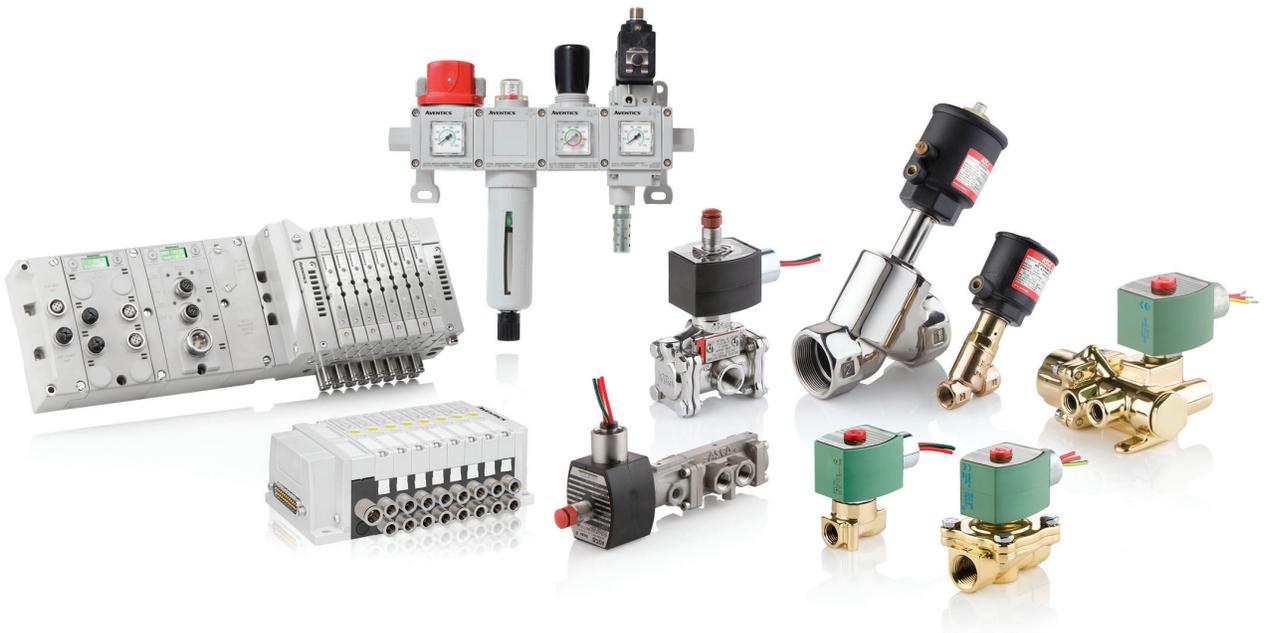
Valve Monitoring Systems

Integrated visual indication technology with network communication capabilities that revolutionizes position indication solutions.



Process Automation

Pilot valves and control accessories for reliable process solutions.



Listed below are some typical types of ships and applications which use ASCO valves.

Navy/Marine Ships:

AD = Attack Tender
AO = T-3 Type Oiler
AOR = Wichita Class Replenishment Oiler
ARS = Rescue & Salvage Ships
BB = Battleship
CG = Guided Missile Cruiser
CGN = Guided Missile Cruiser
Corvetts
CV = Multi-Purpose Aircraft Carrier
CVN = Multi-Purpose Aircraft Carrier
DD = Destroyers
DDG = Guided Missile Destroyer
FFG = Guided Missile Frigate
LHA 1,2,3,4,5 = Amphibious Assault Ships
LHD = Amphibious Assault Ship
LPD = Amphibious Transport Dock
LSD = Dock Landing Ship
SSBN = Ballistic Missile Submarines
SSGN = Guided Missile Submarine
SSN = Attack Submarine

Some of the Many Navy Applications:

Air Compressor Systems
Air Intake/Ventilation Dampers
2-way Exhaust Escape & Extraction Steam Systems
Anti-Icing Solenoid Valves
Aviation Photo Lab & Ionic Potable Water Systems
Catapult Air Systems
Chilled Water Systems
Condensate & Feed Systems
Control Air Compressors/Air Systems
Distilling Plants
Expansion Tank Solenoid Valve Manual Reset
Fuel Oil Purifier – Divert Valve Control
High Salinity Dump Valve for Distilling Systems
Low Pressure Compressors
Nitrogen Gas Service (Vacuum)
Purifier USPX-204
Reactor Plant Evacuation Systems
RAST-Recovery Assist, Secure & Traverse Systems
Ships Service Air Systems
Solenoid Operated Trip Valve for Auxiliary Steam Systems
Fresh & Distilled Water Systems
SSTG Lube Oil
Steam Heating & Control Air Systems
Steam Overpressure Trip
Stern Gate Seal Systems

Achieve Engineering Excellence



ASCO™

Our valves set the industry standard for reliability and reduced power consumption, improving uptime, increasing productivity, and accomplishing greater precision and safer conditions for next generation rigorous applications. Whatever your application needs are, our world class engineering teams can work with you to create high-quality custom assemblies.

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