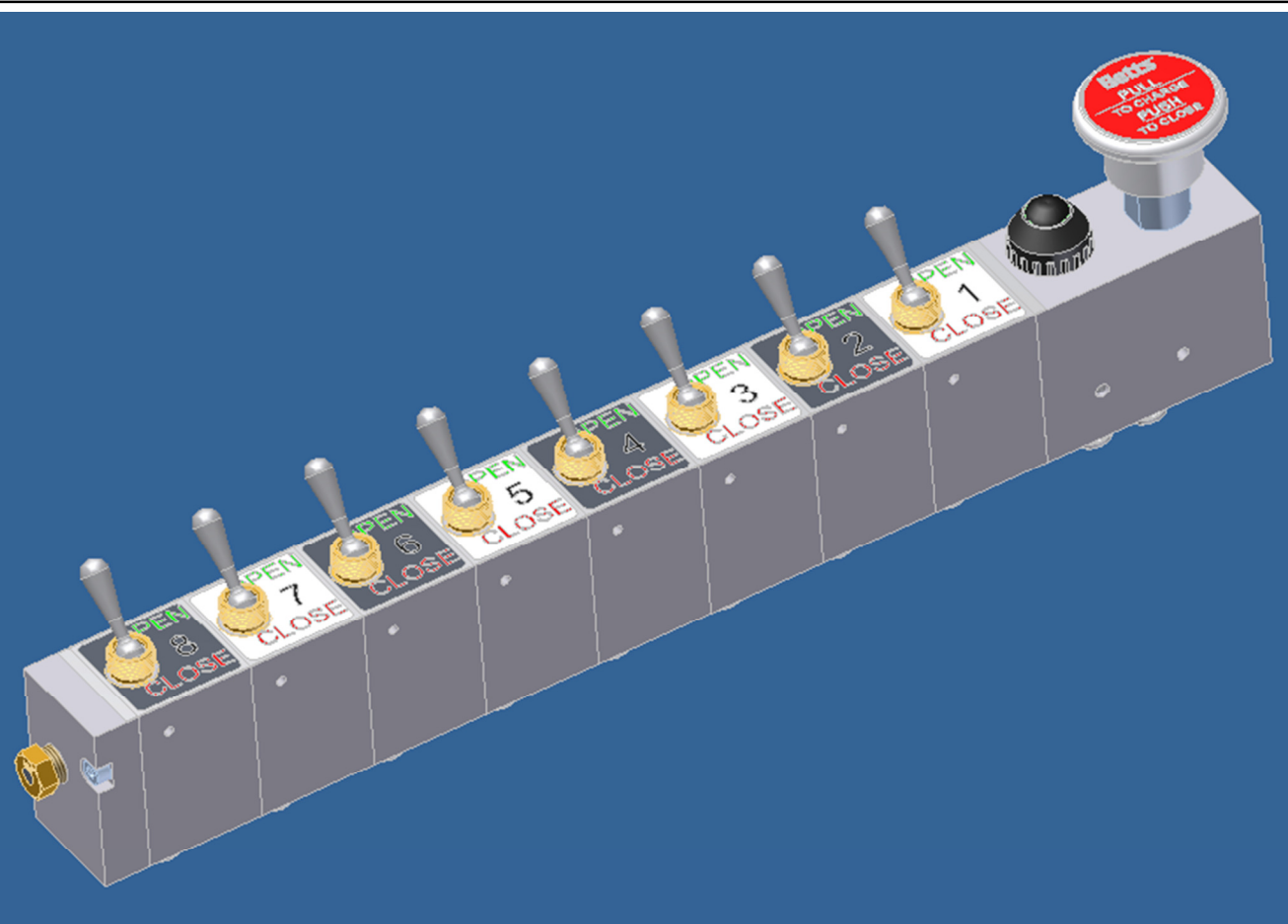


AIR DISTRIBUTOR

PART NUMBER (Including, but not inclusive)

AD28483-_ALB, AD28563-_ALB, AD36097-_ALB,
AD36098-_ALB, **AD28485-_ALB**



TANK TRUCK SERVICE & SALES, INC. WARREN, MICHIGAN
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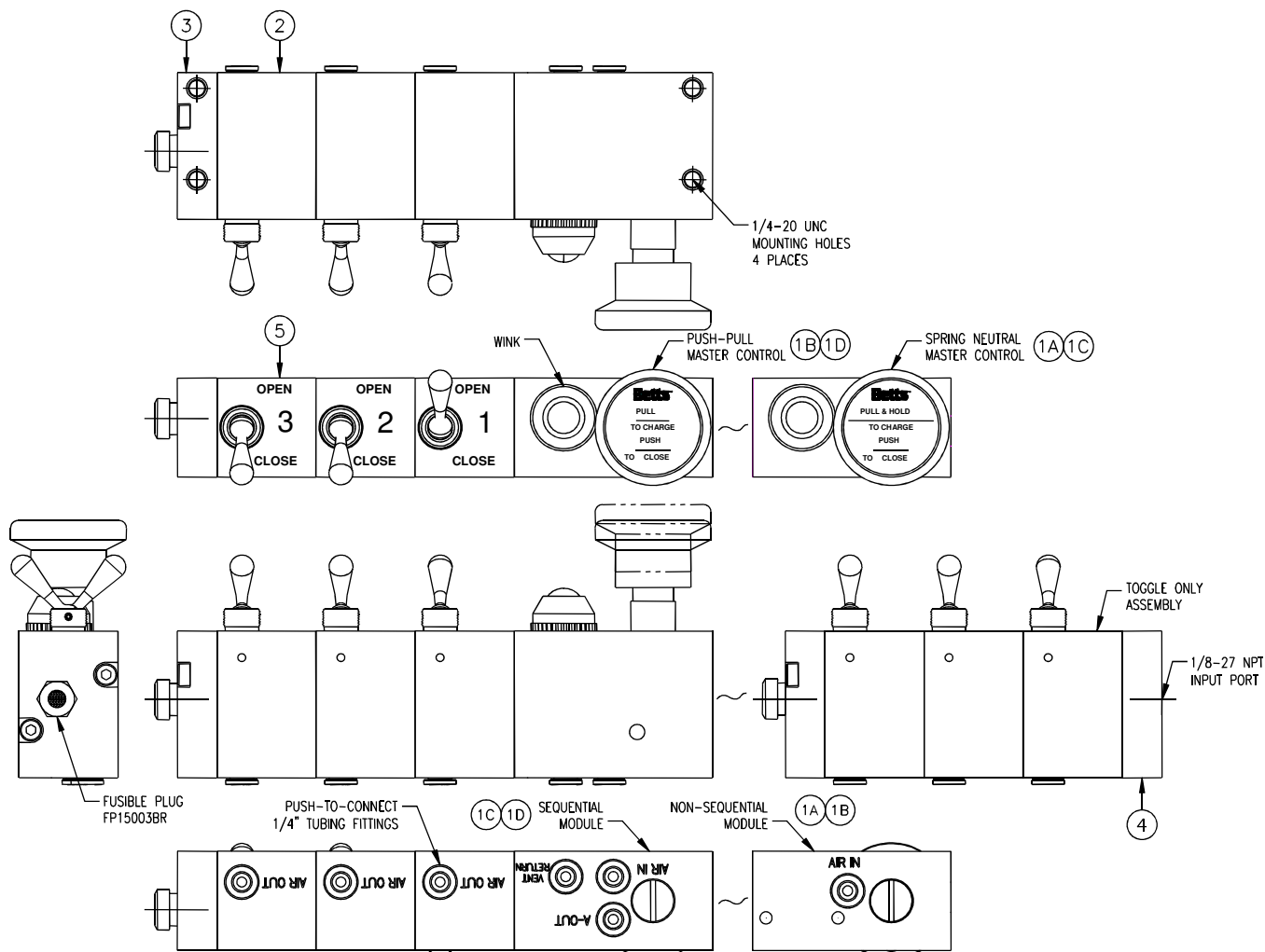



Figure 1




No.	Description	Req.	Material	Part No.
1A	Non-Sequential - Spring Neutral Module	1	Alumimun/Nitrile	AD28483-0ALB
1B	Non-Sequential - Push-Pull Module			AD28563-0ALB
1C	Sequential - Spring Neutral Module			AD36097-0ALB
1D	Sequential - Push-Pull Module			AD36098-0ALB
2	Toggle only	1	Alumimun/Nitrile	AD75592-ALB
3	End Plate	1	Aluminum	75643AL
4	Mirror End Plate	1	Aluminum	75644AL
5	Label - 1 Through 8	1	Vinyl	AD75596

	AIR DISTRIBUTOR INSTALLATION, OPERATION & MAINTENANCE MANUAL			
	Manual #: MM-AD001	12/5/11	Rev. A	Page 3 of 8

1.0 General

- 1.1 It is strongly recommended that this entire manual be read prior to any operation, disassembly, or assembly of this equipment.
- 1.2 Betts Industries, Inc. provides this manual as a guideline for reference only and assumes no responsibility for personal or property damage that may occur in conjunction with this manual. Betts Industries, Inc. cannot be held responsible for incorrect installation, operation or maintenance of product.
- 1.3 Betts Industries, Inc. recommends all equipment be placed on a regular maintenance schedule that includes the routine replacement of seals and gaskets and visual inspection for leaks and corrosion. The end user must make their own determination and set their own schedule based upon use and environment. In some cases, regulations may dictate the minimum testing frequency of items. Make sure operators are aware of all applicable codes.
- 1.4 Only trained personnel should attempt to perform maintenance on this equipment.
- 1.5 As with any maintenance work, proper safety gear and procedures must be used at all times. A list of hazards may include but are not limited to contents under pressure, loaded springs, residual product, flammable liquid and vapors, pinch points.
- 1.6 Safety alert symbols are used to alert operator to potential personal injury hazards. These symbols are per ANSI 2535.5 and are listed below. Operator **MUST** obey all instructions that follow a safety symbol.

Alerts will be used to indicate known safety concerns. Additional concerns are possible and should be identified and avoided by the operator.

	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

- 1.7 Product Warranty shall be void if product is subject to misapplication, misuse, neglect, alteration or damage.
- 1.8 Specific design details described in this document are for reference only and are subject to change without notice. See Betts Industries, Inc. web page for the most recent revision to this document. www.bettsind.com
- 1.9 For additional questions or more detailed technical assistance, contact the Betts Industries, Inc. Sales or Engineering Department at (814)723-1250.

2.0 Description and Intended Use

2.1 The Betts air distributor is designed as a corrosion resistant, modular, lightweight and compact air distribution system that can be used to control any sequential or non-sequential air operated valve or vent system.

2.2 The distributor body is made from anodized aluminum, with internal parts made from brass and stainless steel with nitrile seals.

2.3 The individual valve toggle switches are easily accessible for replacement.

2.4 Push-to-connect fittings allow quick and easy installation with 1/4" air lines.

2.5 Master Control Valve Options:

2.5.1 Spring Neutral

- The spring neutral master control valve allows for the air system to be manually charged and automatically isolates the system from the air supply when the master control is released.
 - Pull and hold the knob out until the system is charged with air – pressure wink will turn green.
 - Release knob to neutral position – air is trapped in system (no air flows to valves and no air flows back from valve – system is isolated).
 - Push the knob in and the air is fully vented from the system.
- Isolation of the air supply allows for more effective emergency shut down by a fusible plug or end of line remote.

2.5.2 Push-Pull

- The push-pull master control valve is a two position detent valve.
 - Pull the knob out and the system is charged with air – pressure wink will turn green.
 - Push the knob in and the air is fully vented from the system.

2.6 Piping options:

2.6.1 Non-Sequential

- The non-sequential piping option has a single air input, AIR IN. When charged, allows the air to pass directly to the toggles.
- See Section 3 for possible piping layout.

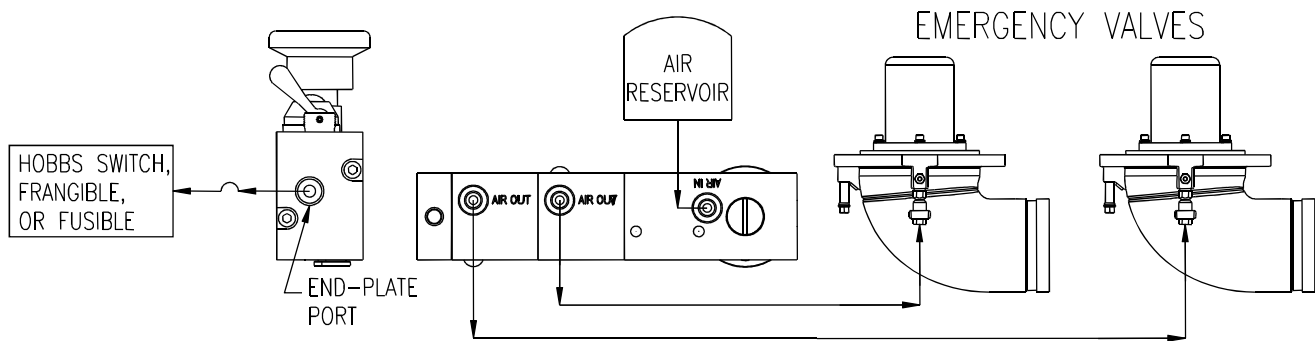
2.6.2 Sequential

- The sequential piping option has a single air input, AIR IN. When charged, air is directed out of the module through the A-OUT port to be sent to sequential vents.
- The air is returned to the module from the last sequential vent through the AIR RETURN port and is then sent to the toggles.
- See Section 3 for possible piping layout.

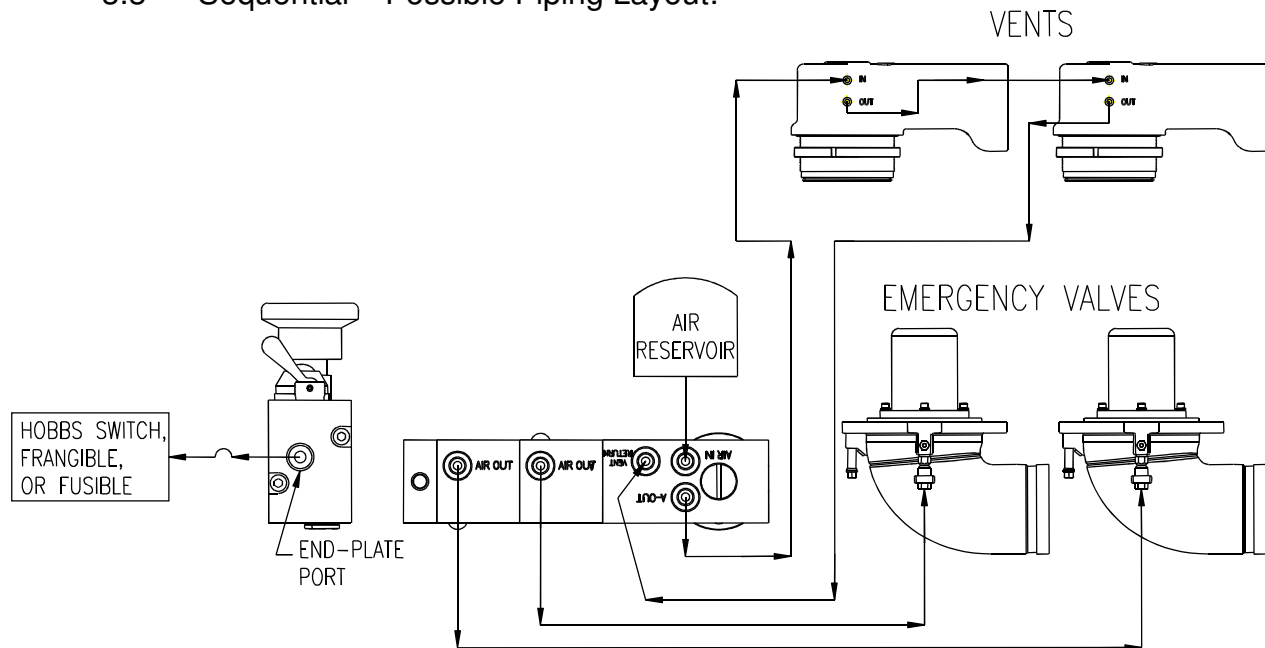
- 2.7 The individual compartment toggle valves are used to open and close the emergency valves.
- 2.8 The master control valve can be used as a complete system shutdown. If the master control knob is depressed to the detent exhaust position, air is fully vented from the system, shutting down all valves/vents connected to the toggle outlets.

3.0 Installation

- 3.1 Be sure that all tubes are cut square with no burrs before inserting into quick connect fittings.
- 3.2 Non-Sequential – Possible Piping Layout:



- 3.3 Sequential – Possible Piping Layout:



4.0 Inspection and Testing

- 4.1 Hook up air lines accordingly.
- 4.2 Apply air pressure, 125 psi max, to the system.
 - 4.2.1 Inspect for leaks around wink.
 - If leaks are present, replace module.
 - 4.2.2 Inspect quick connect fittings for leakage between fitting and aluminum housing.
 - If leaking on module, replace module.
 - If leaking on toggle(s), replace toggle(s).
 - 4.2.3 Inspect quick connect fittings for leakage between fitting and air line.
 - If leaking, remove air line, inspect end of air line, square off and deburr if necessary, retry.
 - If leaking persists, replace leading module or toggle.

5.0 **Disassembly and Rebuild Instructions**

5.1 To replace module (1A, 1B, 1C, 1D).

5.1.1 Remove 2 cap screws in end plate (3).

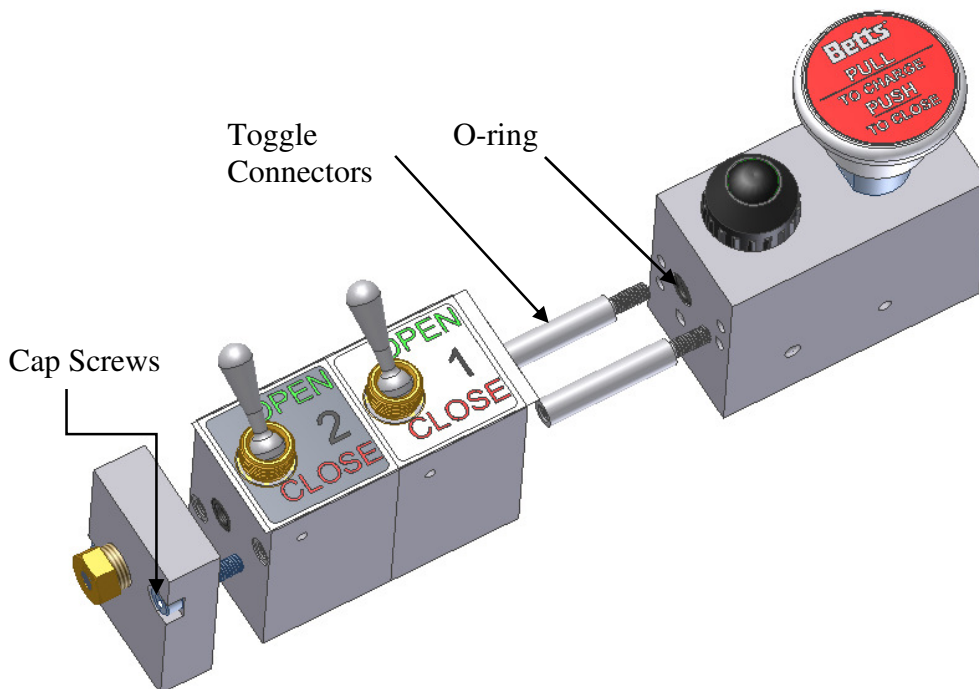
- It is ok if Toggle Connectors come out with cap screws

5.1.2 Remove toggles (2) and set aside.

5.1.3 Remove toggle connectors from module (1A, 1B, 1C, 1D).

5.1.4 Replace module (1A, 1B, 1C, 1D) being sure o-ring is in place and surface of module and toggles are clean and free from debris.

Apply high quality removable thread locking compound to threads of cap screws and reassemble toggle connectors and cap screws.



5.2 To replace toggle (2).

5.2.1 Remove 2 cap screws in end plate (3).

- It is ok if Toggle Connectors come out with cap screws

5.2.2 Slide toggles (2) from toggle connectors.

5.2.3 Remove label (5) from toggles.

5.2.4 Replace non-functioning toggle (2) and slide all toggles back onto toggle connectors being sure o-rings are in place and surface of module and toggles are clean and free from debris.

- Apply high quality removable thread locking compound to threads of cap screws and reassemble toggle connectors and cap screws.

SEE TROUBLE SHOOTING GUIDE ON PAGE 8

Troubleshooting Guide

Problem	Cause	Solution
Valve drifts closed	Leak in air system	Check fittings and air lines for damage or leaking.
System will not stay charged	Module knob is damaged and will not stay at charged position	Refer to Section 5.1 to replace module.
Toggle will not stay in closed position	Toggle finger is broken	Refer to Section 5.2 to replace toggle.
	O-ring in toggle is damaged or worn out	Refer to Section 5.2 to replace toggle.
System will not exhaust when toggle is switched to the CLOSED position	Toggle is clogged or not operating correctly.	<p>Short term – wiggle toggle slightly toward the open position. This should allow the air to exhaust.</p> <p>Long term – Refer to Section 5.2 to replace the toggle.</p>