

ARAG® Modular Electric Valve

Operating Instructions and Parts Manual

Description

Hypro/ARAG Electric Modular Controls are designed for agricultural and industrial spraying of a variety of fluids. These direct-acting valves can be used for pressure control or boom section on/off control. The modular

design reduces plumbing and allows easy service of components. These valves work well with roller, diaphragm and centrifugal pumps.

Electric Boom Section Valve

Features:

863 series is 12 gpm with a 7 psi pressure drop.

- Maximum pressure: 290 psi
- 0.6 second cycle time
- Operate in 12 VDC 2-wire or 3-wire systems
- Viton® seals
- Modular design
- Internal parts in Delrin® and stainless steel



Part Number
8630001 with 1/2" hose barb
Dimensions
width = 2.5"
height = 8.5"
length = 4.5"

Electric Boom Section Valve with Metered Bypass

Features:

863 series is 12 gpm with a 7 psi pressure drop.

- Maximum pressure: 290 psi
- 0.6 second cycle time
- Operate in 12 VDC 2-wire or 3-wire systems
- Viton® seals
- Modular design
- Internal parts in Delrin® and stainless steel



Part Number
8630011 with 3/4" hose barb
Dimensions
width = 2.5"
height = 9.5"
length = 4.5"

Description (continued)

Proportional Control Valve

The proportional flow control valve is used to control spray boom pressure.

Features:

- 7 or 14 seconds to fully open or close
- Maximum pressure: 580 psi
- Modular design
- Internal parts in Delrin® and stainless steel
- 1/4" FNPT Gauge Port*
- Reversed head
- Reverse mounted motor head



Part Number
8630024S with 3/4" hose barb
8630D24S with 3/4" hose barb (Head mounted in reverse orientation)
Dimensions
width = 2.5"
height = 8.5"
length = 4.5"

General Safety Information

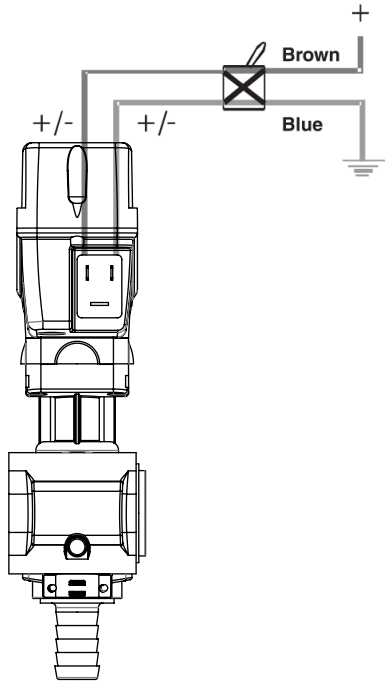
For roller or diaphragm pumps, use a pressure relief device on the discharge side of the pump to prevent damage from pressure buildup when the pump discharge is blocked or otherwise closed, and the power source is still running.

1. **WARNING: Never pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Never use in explosive atmospheres. The valve should be used only with liquids compatible with the valve component materials. Failure to follow this warning can result in personal injury and/or property damage and will void the product warranty.**
2. Never pump at pressures higher than the maximum recommended pressure.
3. Never pump liquids at temperatures higher than the maximum recommended temperatures (140° F / 60° C).
4. Disconnect power before servicing.
5. Release all pressure within the system before servicing any component.
6. Drain all liquids from the system before servicing any component.
7. Check all hoses for weak or worn condition before each use. Make certain that all connections are tight and secure.
8. Periodically inspect the valve and the system components. Perform routine maintenance as required (see Maintenance section).
9. Use only pipe, hose and fittings rated for the maximum psi rating of the valve.

Wiring Instructions for ARAG Motorized Plunger Valves

A unique feature of Hypro/ARAG's motorized plunger valves is that they are adaptable to any 12-volt system, including switch boxes and automatic rate controllers. These systems are generally termed "two wire" or "three wire". Below are simple instructions on how to integrate Hypro/ARAG valves into these systems.

Two Wire



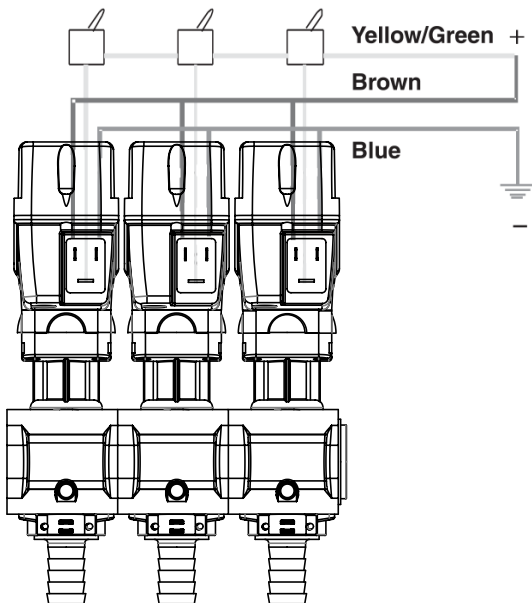
Two wire systems have the ability to reverse the polarity of the circuit that switches the position of the valve.

This type of switch is generally termed "double throw, double pole".

Note the positions of the wires on the valve connector.

The circuit should be protected with a 5-amp fuse or circuit breaker.

Three Wire



Three wire systems use a positive, negative and an "activator" wire. The "activator" wire is switched by simple "single pole, single throw" switches found in most switch boxes and rate controllers.

Power is fed constantly through the blue wire to create a normally closed position. When power is switched on through the yellow wire, it activates the valve and opens it.

Note the positions of the wires on the valve connector.

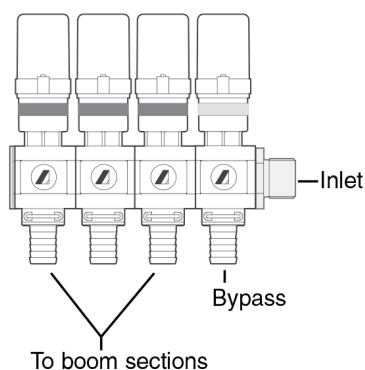
The circuit should be protected with a 5-amp fuse or circuit breaker.

System Installation

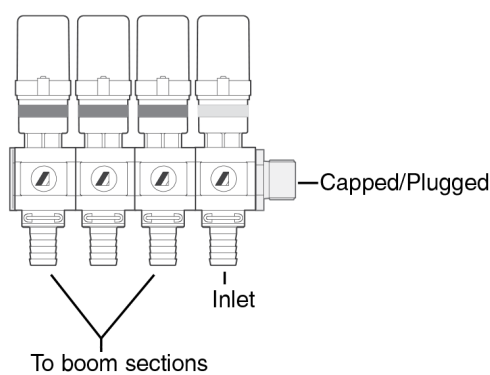
NOTE: Use only pipe, fittings, accessories, hose, etc. rated for the maximum pressure rating of the valve.

1. These valves can be used as either a bypass or throttling system.
2. When used as a throttling system, the polarity of the wires on the flow control valve needs to be reversed.
3. Use the supplied brackets for mounting.
4. Avoid unnecessary restrictions in the line, such as elbows, check valves, and all extraneous curves and bends.
5. Avoid using looped sections of tubing or pipe which might permit air to become trapped.
6. Selection of the right type and size of hose is vital to good performance.
7. Never attach an agitator or any restriction to a bypass line of a pressure relief device because system damage may occur.

Bypass System



Throttling System



Hazardous Substance Alert

1. Always drain and flush valve before servicing or disassembling for any reason.
2. Always drain and flush valve prior to returning unit for repair.
3. Never store valve containing hazardous chemicals.
4. Before returning valve for service/repair, drain out all liquids and flush unit with neutralizing liquid. Then, drain the valve. Attach tag or include written notice certifying that this has been done. Please note that it is illegal to ship or transport any hazardous chemicals without United States Environmental Protection Agency Licensing.

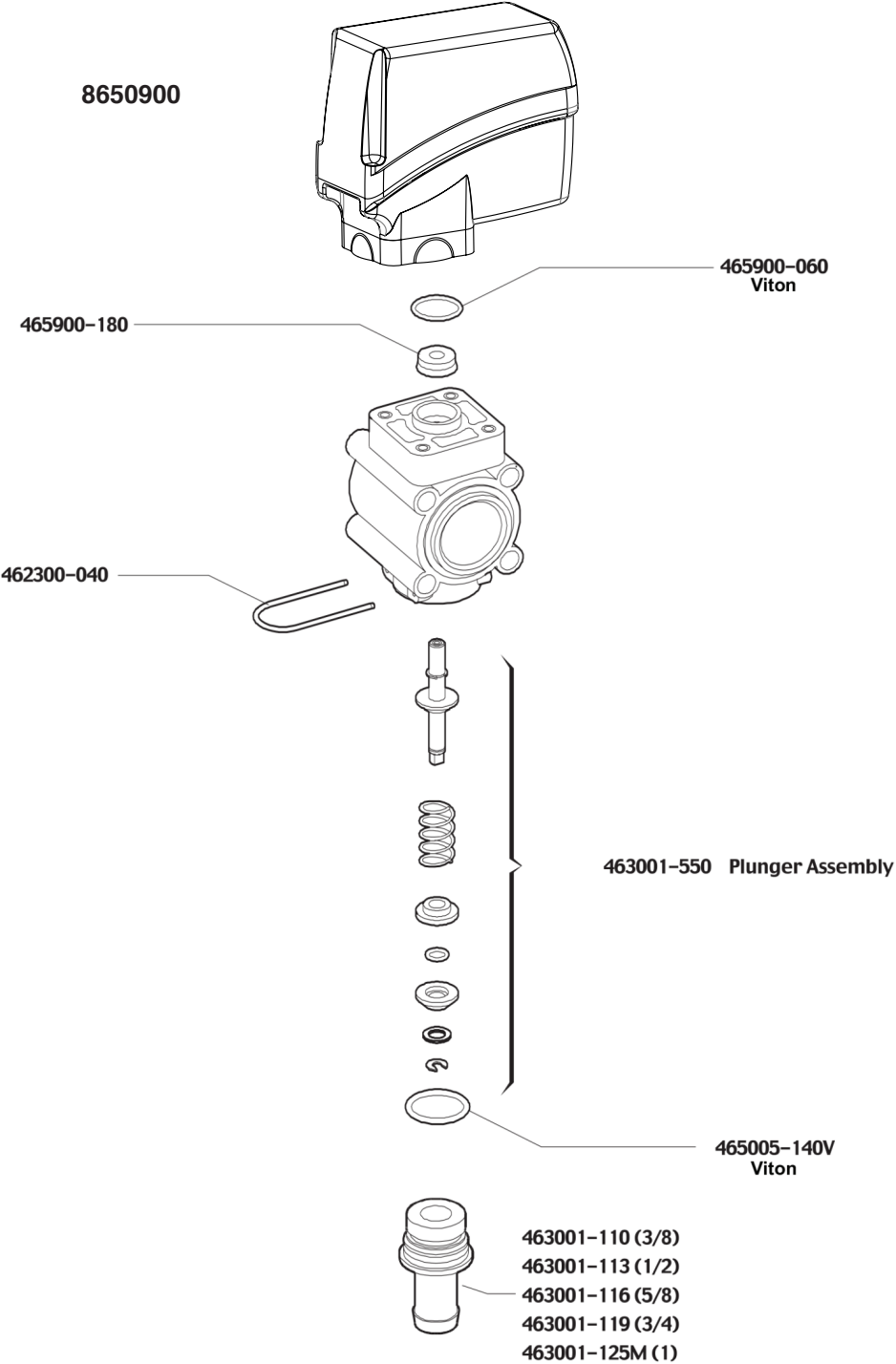
Maintenance

1. Flush system with clean water after chemical use.
2. In climates where freezing occurs, drain fluids after use to avoid damage, or store with antifreeze.
3. Periodically check valve assembly for leaks. Replace parts as needed.
4. Lubricate o-rings before assembly.

Parts Breakdown

BOOM SECTION VALVE

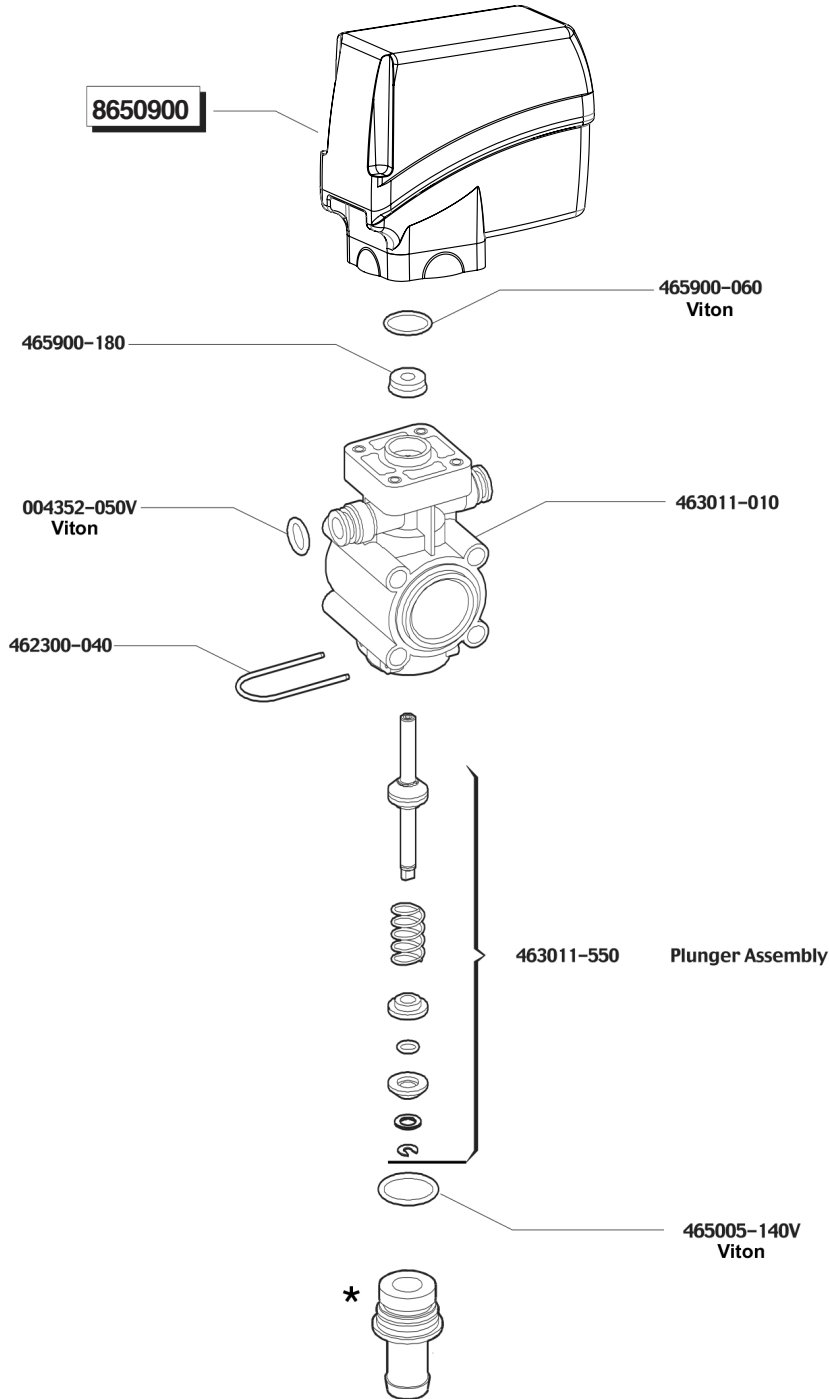
PART NUMBER 8630001



Parts Breakdown

BOOM SECTION VALVE

PART NUMBER 8630011



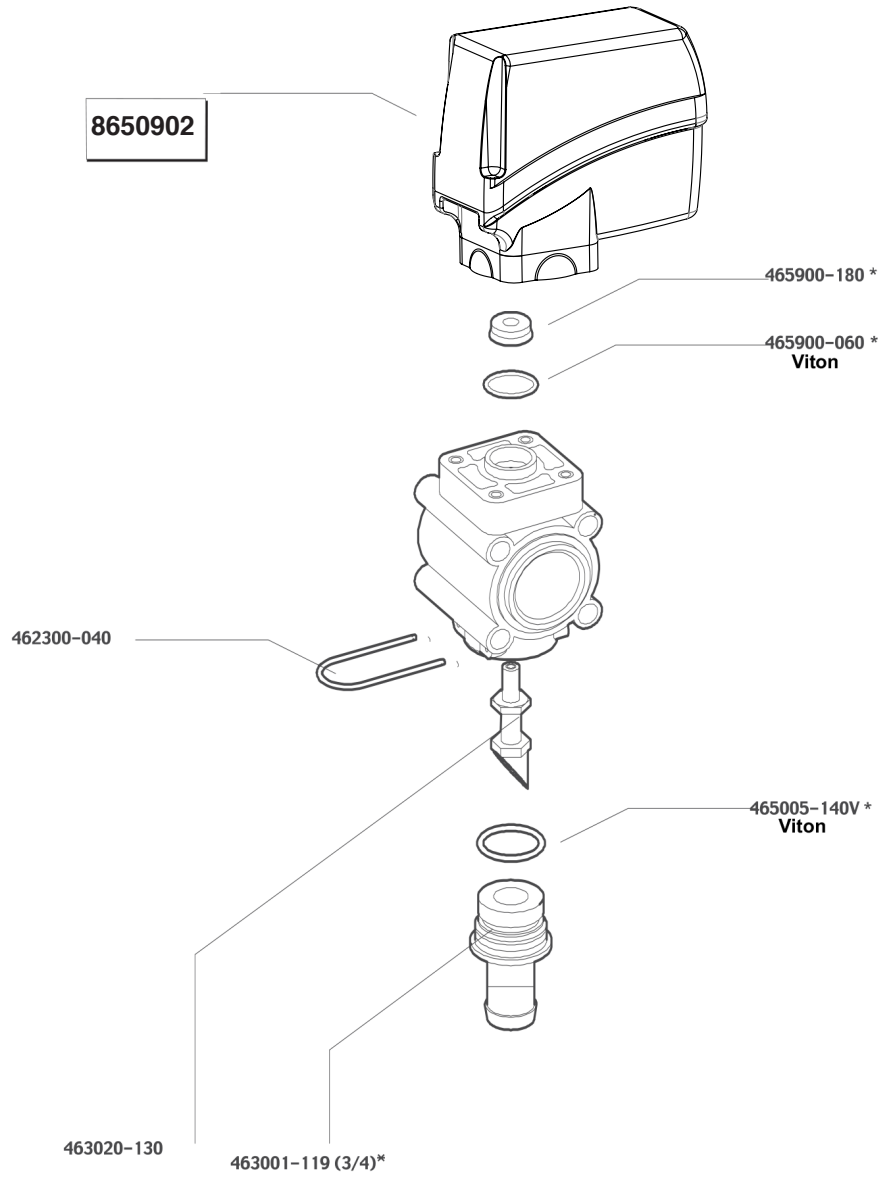
*** Outlet ports with Viton O-Rings**

Part Number	Hose Barb	FNPT
463001-110	3/8"	-
463001-113	1/2"	-
463001-119	3/4"	-
463001-275N	-	3/4"

Parts Breakdown

PROPORTIONAL CONTROL VALVE

PART NUMBER 8630D24S
8630024S



* = 463020-500 Gasket set

Manifold Assemblies



Part Number

EV-463001ST-3

463 Series — inlet 1" FNPT, outlet 3/4" FNPT, 1/4" FNPT Gauge Port

Manifold Assemblies with Metered Bypass



Part Number

EV-463011ST-3

463 Series — inlet 1" FNPT, outlet 3/4" FNPT, 1/4" FNPT Gauge Port

Mounting Kits



Boom Manifold Mounting Kits

Brackets can be rotated into any 90° position. Kit includes two mounting brackets, four proper length bolts, washers, lock nuts, and Viton® o-rings as required.

Galvanized Part Number	Stainless Steel Part Number	Boom Sections
463000-910	463900-910 473900-910	1
463000-920	463900-920 473900-920	2
463000-930	463900-930 473900-930	3
463000-940	463900-940 473900-940	4
463000-950	463900-950 473900-950	5
463000-960	463900-960 473900-960	6
463000-970	463900-970 473900-970	7
463000-980	463900-980 473900-980	8
463000-990	463900-990 473900-990	9

Service Parts

Description	Part Number
Stainless Steel Bracket	463911-100
Galvanized Bracket	463011-100
Stainless Steel Nut	B12251
Galvanized Nut	B12151
Stainless Steel Washer	B202H0
Galvanized Washer	B201H1
463 Viton O-Ring	G10071V
473 Viton O-Ring	454236-080V

Limited Warranty on Hypro/SHURflo Agricultural Pumps & Accessories

Hypro/SHURflo (hereafter, "Hypro") agricultural products are warranted to be free of defects in material and workmanship under normal use for the time periods listed below, with proof of purchase.

- Pumps: one (1) year from the date of manufacture, or one (1) year of use. This limited warranty will not exceed two (2) years, in any event.
- Accessories: ninety (90) days of use.

This limited warranty will not apply to products that were improperly installed, misapplied, damaged, altered, or incompatible with fluids or components not manufactured by Hypro. All warranty considerations are governed by Hypro's written return policy.

Hypro's obligation under this limited warranty policy is limited to the repair or replacement of the product. All returns will be tested per Hypro's factory criteria. Products found not defective (under the terms of this limited warranty) are subject to charges paid by the returnee for the testing and packaging of "tested good" non-warranty returns.

No credit or labor allowances will be given for products returned as defective. Warranty replacement will be shipped on a freight allowed basis. Hypro reserves the right to choose the method of transportation.

This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on Hypro's behalf. Hypro shall not be liable for any labor, damage or other expense, nor shall Hypro be liable for any indirect, incidental or consequential damages of any kind incurred by the reason of the use or sale of any defective product. This limited warranty covers agricultural products distributed within the United States of America. Other world market areas should consult with the actual distributor for any deviation from this document.

Return Procedures

All products must be flushed of any chemical (ref. OSHA section 1910.1200 (d) (e) (f) (g) (h)) and hazardous chemicals must be labeled/tagged before being shipped* to Hypro for service or warranty consideration. Hypro reserves the right to request a Material Safety Data Sheet from the returnee for any pump/product it deems necessary. Hypro reserves the right to "disposition as scrap" products returned which contain unknown fluids. Hypro reserves the right to charge the returnee for any and all costs incurred for chemical testing, and proper disposal of components containing unknown fluids. Hypro requests this in order to protect the environment and personnel from the hazards of handling unknown fluids.

Be prepared to give Hypro full details of the problem, including the model number, date of purchase, and from whom you purchased your product. Hypro may request additional information, and may require a sketch to illustrate the problem.

Contact Hypro Service Department at 800-468-3428 to receive a Return Merchandise Authorization number (RMA#). Returns are to be shipped with the RMA number clearly marked on the outside of the package. Hypro shall not be liable for freight damage incurred during shipping. Please package all returns carefully. All products returned for warranty work should be sent **shipping charges prepaid** to:

HYPRO / PENTAIR
Attention: Service Department
375 Fifth Avenue NW
New Brighton, MN 55112

For technical or application assistance, call the **Hypro Technical/Application number: 800-445-8360**, or send an email to: **technical@hypropumps.com**. To obtain service or warranty assistance, call the **Hypro Service and Warranty number: 800-468-3428**; or send a fax to the **Hypro Service and Warranty FAX: 651-766-6618**.

*Carriers, including U.S.P.S., airlines, UPS, ground freight, etc., require specific identification of any hazardous material being shipped. Failure to do so may result in a substantial fine and/or prison term. Check with your shipping company for specific instructions.

Visit www.hypropumps.com/register today to register your product and stay up-to-date on new products and promotional offers.

The following information is required:

Model # _____ Serial # _____