

## AO DIRECTIONAL CONTROL VALVES INSTALLATION & USER GUIDE

### **SPECIFICATIONS:**

- Rated for 0-18 gpm (0-68.1 lpm).
- Rated for 3000 psi (207 bar).
- Weighs 5-1/2 lbs. (2.5 kg).
- Std. Port sizes (Consult factory for others).  
3/4" NPT Inlet/outlet and 1/2" NPT work ports.  
#12SAE Inlet/outlet and #10SAE work ports.
- 30 – Micron filtration recommended.

### **MOUNTING, ADJUSTMENT & ASSEMBLY INSTRUCTIONS:**

- **Mounting** – Valve can be mounted in any orientation. Valve must be mounted on a flat surface. Special attention should be paid to not bend or twist the casting when mounting. Doing so may cause the valve to fail.
- **Relief Adjustment** – Relief setting is factory preset to 1500 psi, unless otherwise noted within model code. Relief valve can be set anywhere within the range of 500 psi to 3000psi.  
**To adjust relief pressure:** First, remove chrome hex plug next to the inlet port using a 7/8" combination wrench, etc. and set aside. You will then have access to the relief set screw. Turning this screw with a 5/32" allen wrench clockwise ¼ turn will increase pressure approximately 200psi.
- **Handle Assembly** – Regardless of handle style, the handle retainer will be installed on valve from factory. Unless specified, the retainer's placement is defaulted so the handle points up when the valve is placed on a flat surface. To change this, prior to handle installation, the screws holding the retainer must be removed and the retainer can then be rotated around the valve in 180° increments.  
**L-Style Handle:** Recognized by the single hole in the end of the spool, place the ball end of the handle in the spool and then join the handle and the retainer using the supplied pin.  
**J-Style Handle:** Recognized by the single slot in the end of the spool, first, place a pin thru the bracket welded to the retainer and secure with a pin clip. Next, place the C-notch of the handle over and onto the pin. Finally, align the hole of the handle with the hole on the spool and secure both together using the second pin and clip.

### **FREQUENTLY ASKED QUESTIONS:**

**Q:** Can I plumb another valve downstream from this valve, using the outlet of this valve?

**A:** No. The outlet of this valve should be plumbed back to tank.

**Q:** If my current valve does not have a relief included, can I add one?

**A:** You cannot add a relief to an AO valve that does not have a relief factory installed

**Q:** What kits are available for this valve?

**A:** There is a replacement seal kit (Part #: SDC-K) There are also a number of different kits available for this valve depending on the spool action, and handle option the valve is equipped with. Please contact factory for specific kit numbers relating to different spool actions, and handle options.

**Q:** Can I paint the valve?

**A:** Painting valves is acceptable as long as the following precautions are taken:

1- All ports must be plugged

2- Spool must be masked or taped off completely.

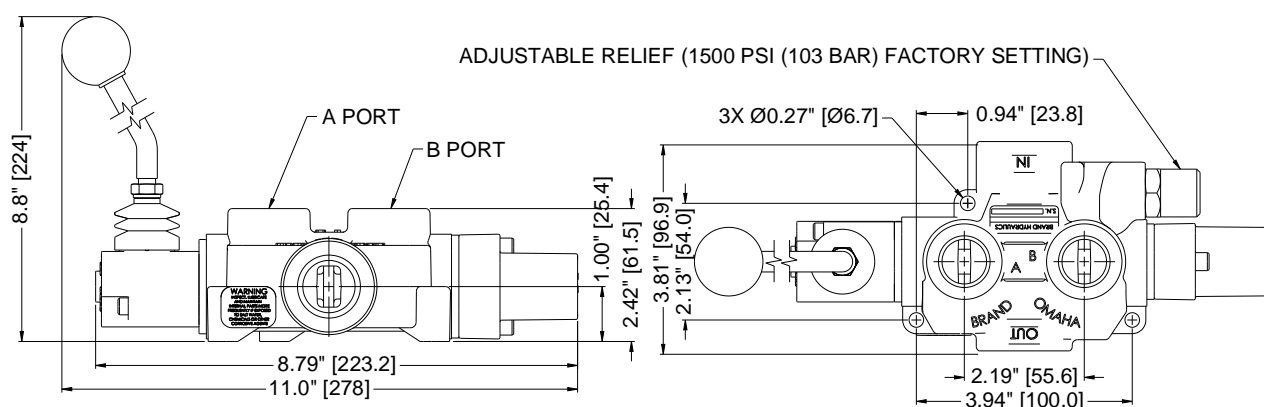
Any paint on the spool will cause leakage when it chips off. Warranty is void if any valve is returned with paint on the spool.

## GENERAL INFORMATION:

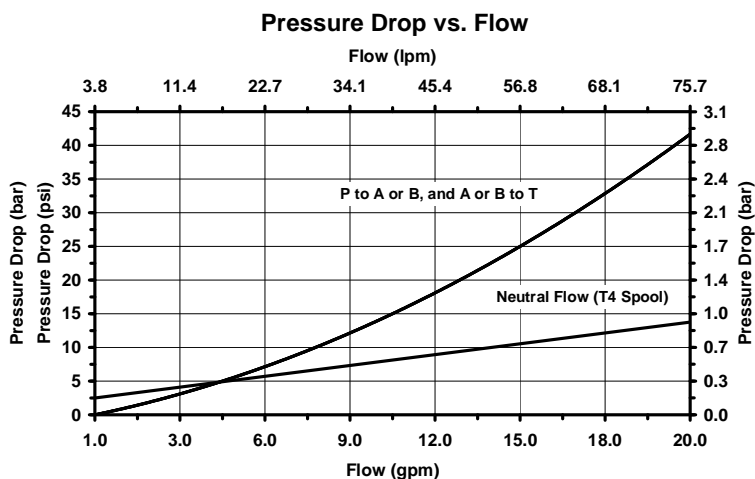
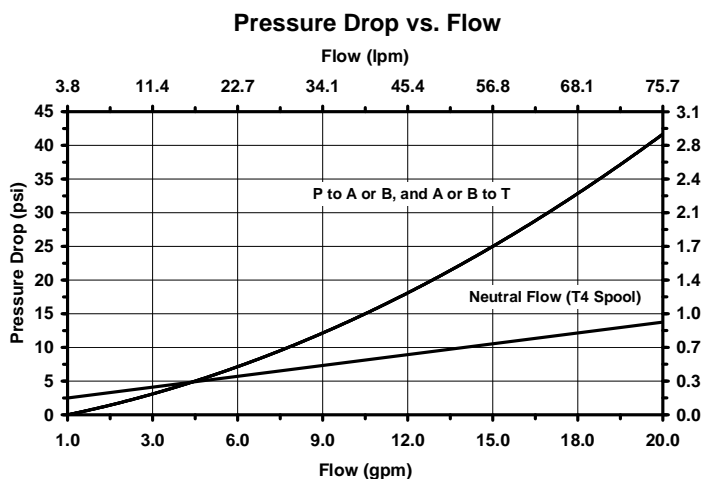
**Pipe Thread Sealant** - Warranty is void when Teflon tape is used to seal pipe threads. This is because Teflon tape is a friction reducing agent which allows customers to over-torque fittings. We recommend using a sealant that does not include friction reducing agents i.e. Lead Plate.

**Spool Information** - All AO's are built with Iosso plated spools to help prevent the spools from locking up when they are in a corrosive environment. For highly corrosive environments, i.e. marine applications, we recommend using a stainless steel spool. To order a valve with a stainless steel spool simply add "SS" to the end of the model code.

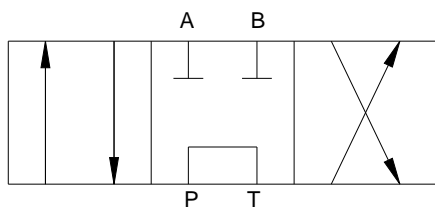
## DIMENSIONAL DATA:



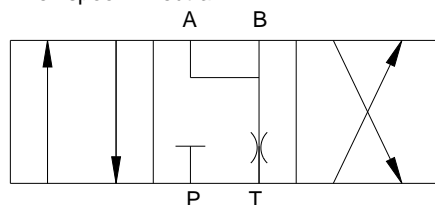
## FLOW & PRESSURE INFORMATION:



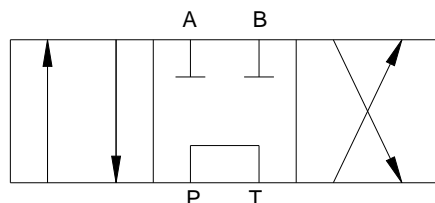
## SPOOL SCHEMATICS:



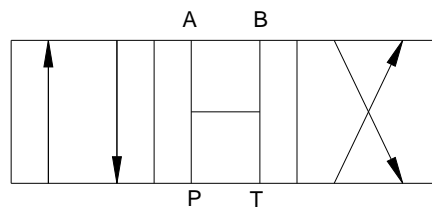
Tandem Center (T) - Powers cylinder or motor in both directions. Pump unloads to tank when spool is in neutral. Cylinder or motor blocked when spool in neutral.



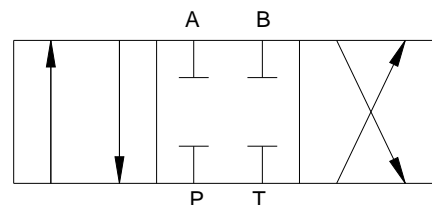
Fine Metering Spool (M) - Requires external locking valves to hold cylinder when spool is in neutral position. Extremely fine metering control. This spool requires a pressure compensated pump.



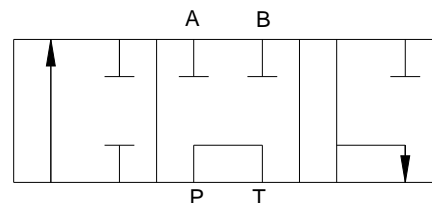
Tandem Metering Spool (TM) - Similar to (T) spool except much finer metering control. Cylinder or motor blocked in neutral and pump unloads to tank.



Open Center (O) - All of the ports are connected to tank when the spool is in neutral. Allows cylinder to move or motor to rotate when spool is in neutral.



Closed Center (C) - All ports are blocked in neutral. Blocks cylinder or motor in neutral. Required for use with pressure compensated pump.



Tandem Three Way (T3) - Powers the cylinder in one direction. Pump unloads to tank when spool is in neutral, or when spool is being reversed. Cylinder is blocked when spool is in neutral. Port "B" is plugged.

## SAFETY PRECAUTIONS:

- It is the purchaser's responsibility to determine the suitability of any Brand Hydraulics Co. product for an intended application, and to ensure that it is installed in accordance with all federal, state, local, private safety and health regulations, codes and standards. Due to the unlimited variety of machines, vehicles and equipment on which our products can be used, it is impossible for Brand Hydraulics Co. to offer expert advice on the suitability of a product for a specific application. It is our customer's responsibility to undertake the appropriate precautions, testing and evaluation to prevent injury to the end-user.
- Overpressure may cause sudden and unexpected failure of a component in the hydraulic system, resulting in serious personal injury or death. Always use a gauge when adjusting a relief valve.