



Shipping: 2332 S 25th St
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www.BRAND-HYD.COM



MB LOADER DIRECTIONAL CONTROL VALVES INSTALLATION & USER GUIDE

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.

SPECIFICATIONS:

- Flow Ratings:
 - MB21 & MB22 – 10 gpm (38 lpm)
 - MB 23 – 8 gpm (30 lpm)
- Rated up to 4000 psi (275 bar).
- Port Sizes:
 - Inlet/Outlet - #8SAE (3/4-16).
 - Work Ports - #8SAE (3/4-16).
- 25 Micron Filtration Recommended.
- Weight:
 - MB21 = 8.1 lbs (3.7 kg)
 - MB22 = 10.9 lbs (4.9 kg)
 - MB23 = 14.2 lbs (6.4 kg)

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 2000 psi, unless otherwise noted within model code. Relief valve can be set anywhere within the range of 500 psi to 4000 psi by switching out the relief spring to one of the following:
 - **500-1100 psi (34-76 bar)** – Use spring P/N: S065 (Silver)
 - **1200-3000 psi (83-207 bar)** – Use spring P/N: S059 (Brown, Standard Option)
 - **3100-4000 psi (214-276 bar)** – Use spring P/N: S064 (Blue)

To adjust relief pressure: First, remove the acorn nut with 1/2" wrench. Next, loosen the 1/2" hex jam nut. Using a 5/32" allen wrench on the relief adjustment screw one full turn clockwise will increase pressure by 200 psi.
- **Handle Assembly** –
 - L-Style Handle:** Place the threaded end of the handle in either hole of the handle adapter and lock handle into position with the jam nut. Depending on mounting orientation of the valve this will allow the handles to positioned either vertically or horizontally.
 - A, A1, A2, A3-Style Handle:** Place the threaded end of the handle into the hole of the handle adapter and lock the handle into position with the jam nut.

FREQUENTLY ASKED QUESTIONS:

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

A: You cannot plumb direct to another valve, unless your valve is equipped with power beyond or has been converted to use power beyond. A valve can be ordered with power beyond already installed by adding a W to the end of the model number.

- **Converting valve to "Power Beyond"** - Order a power beyond cartridge, P/N: LV2-W. You will then install this cartridge into the outlet of the valve. Then, remove the plug in the outlet port directly above outlet valve on the side. Plumb this port directly back to tank for low pressure fluid.



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Q: Can I convert my valve to operate in a “Closed” system?

A: Yes, order a P/N: LV2-C and install it in the outlet port on the side of the casting.

Q: What kits are available for this valve?

A: There is a replacement seal kit (Part #: LV2-SK), and replacement relief kit (Part #: LV2-B2) for this valve. 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.

FREQUENTLY ASKED QUESTIONS cont'd:

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

Please note you can order a valve already painted from factoring by adding a P to beginning of model number.

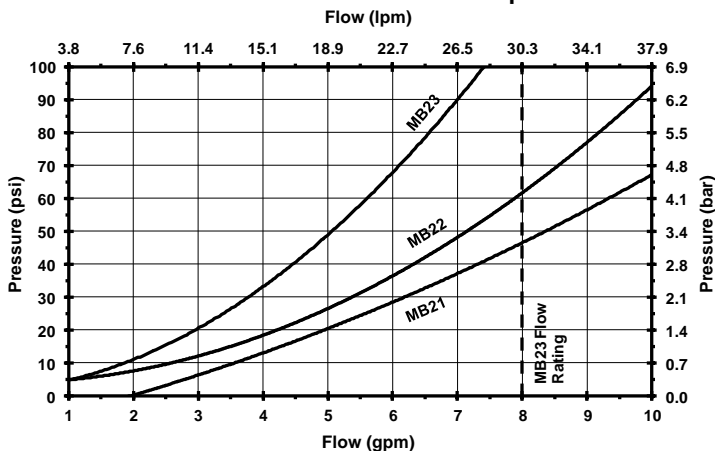
Q: Can I convert my joystick into a different configuration?

A: You can, but there are limitations. An A & A1 style cannot be converted to a A2 or A3 style.

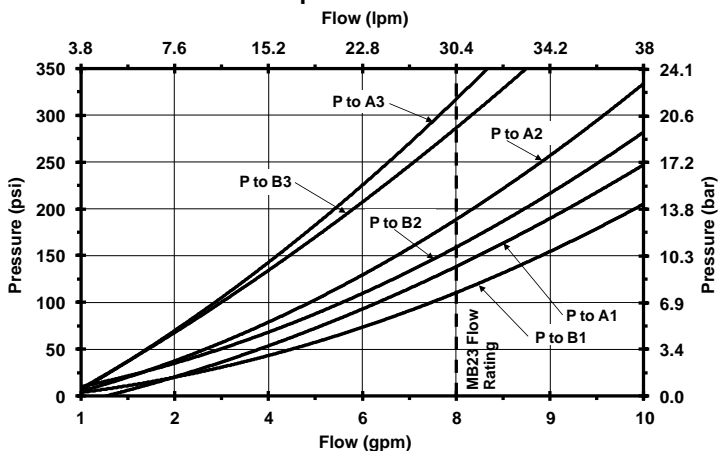
- To convert an A to A1 please see the instructions: [Instructions for Converting the LV/MB Joystick from A to A1](#)
- To convert an A2 to A3 please see the instructions: [Instructions for Converting the LV/MB Joystick from A2 to A3](#)

FLOW & PRESSURE INFORMATION:

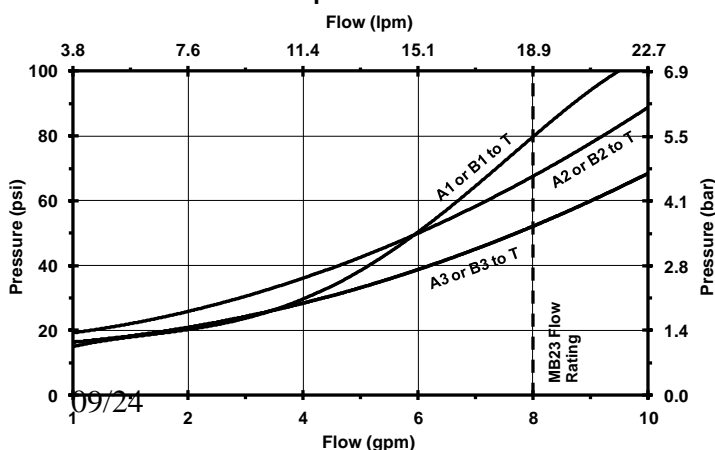
Neutral Flow Pressure Drop



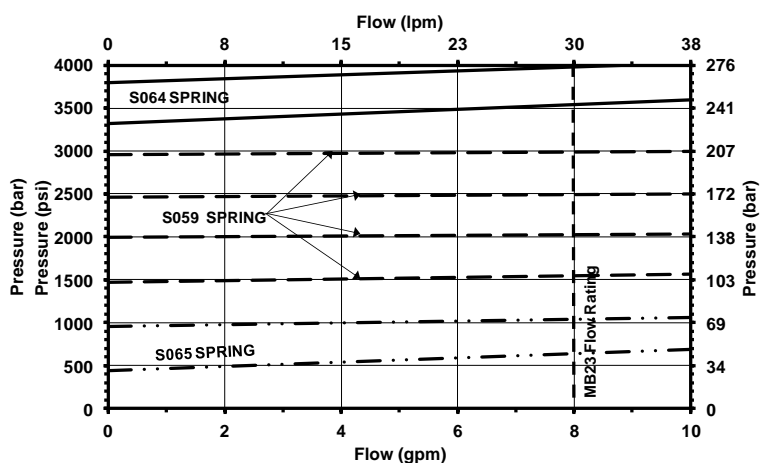
Pressure Drop vs. Flow for P to A or B



Pressure Drop vs. Flow for A or B-T



Pressure vs. Flow for MB Relief



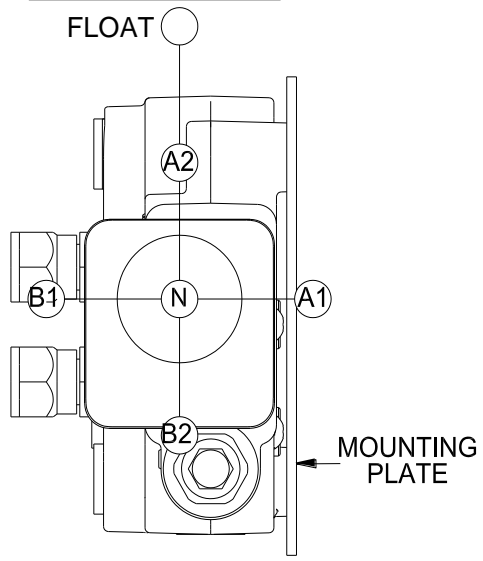


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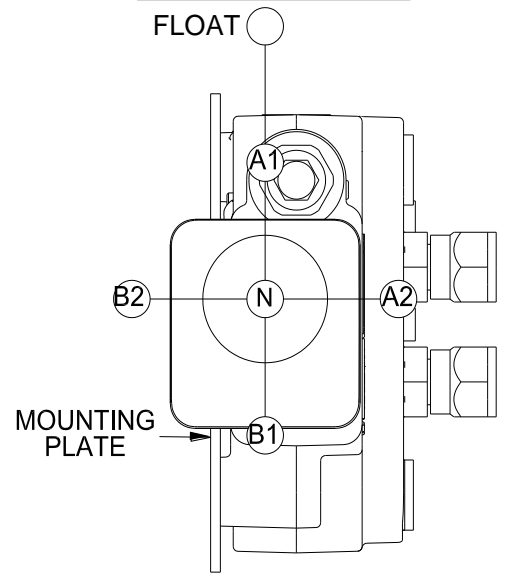


JOYSTICK MOVEMENT SCHEMES:

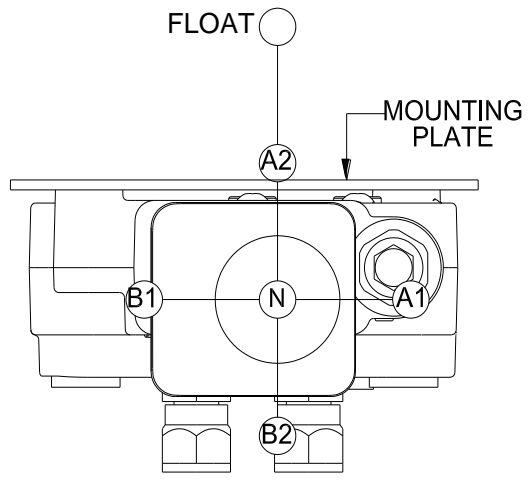
MB22TSTKAB



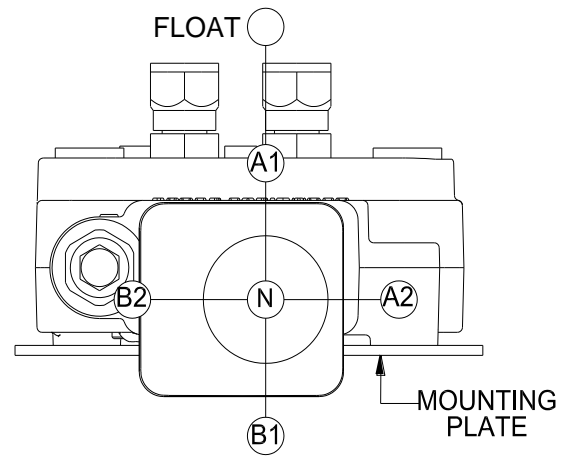
MB22TKTSA1B



MB22TSTKA2B



MB22TKTSA3B



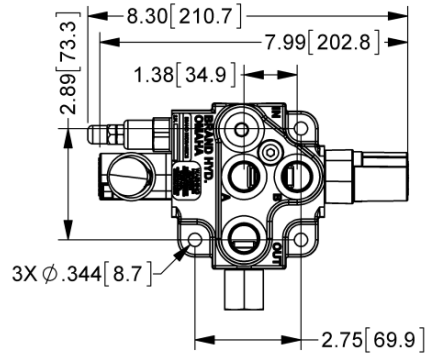
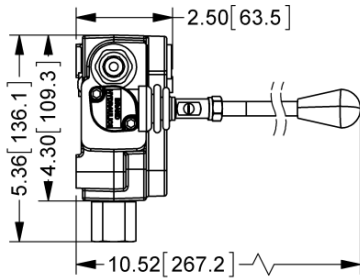


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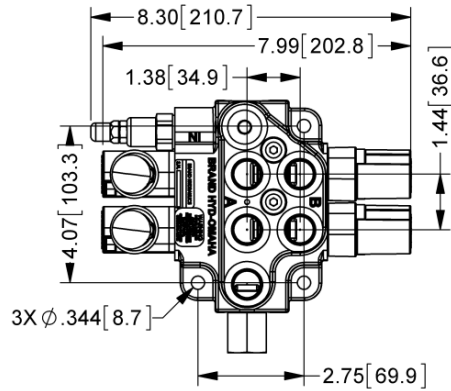
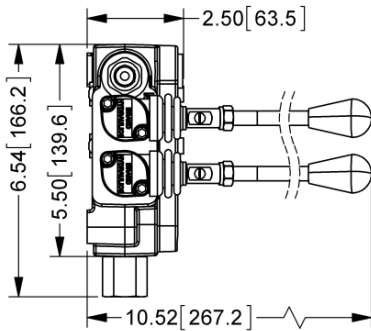


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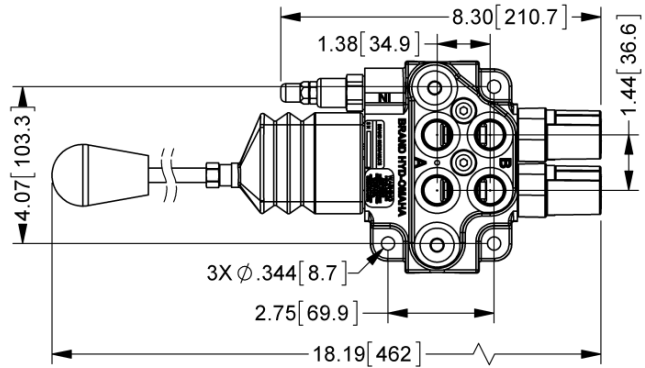
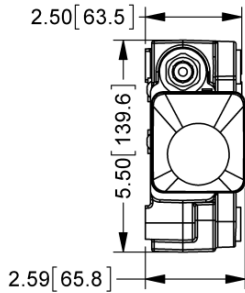
MB21TSLBW



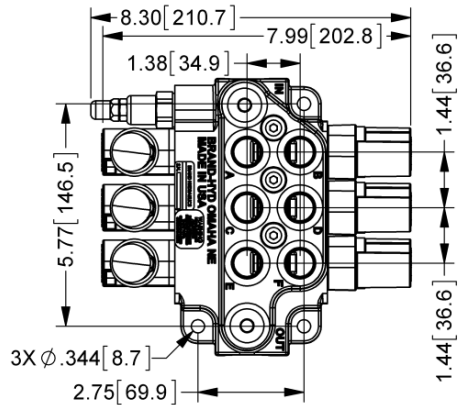
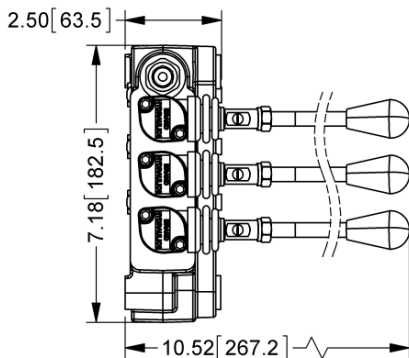
MB22TSTSLBW



MB22TSTSAB



MB23TSTSTSLB

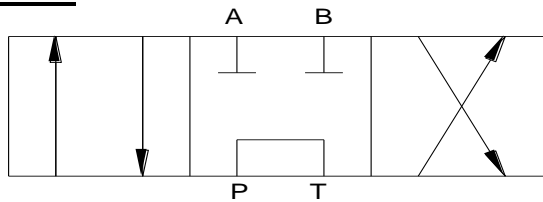




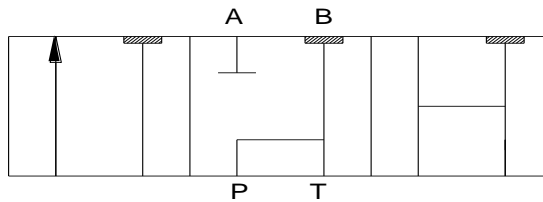
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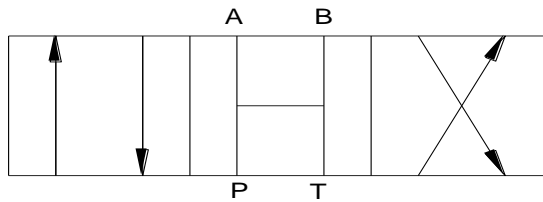
SPOOL SCHEMATICS:



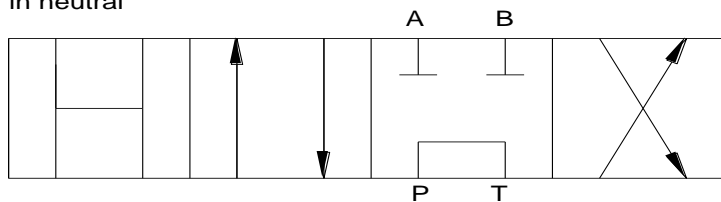
Tandem Center (T) - Powers cylinder or motor in both directions. Pump unloads to tank when spool is in neutral. Cylinder or motor blocked when spool in neutral.



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. Second spool only.



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



Float (K) - Same as Tandem spool in standard three positions. Detented Fourth position allows cylinder to move or motor to rotate when spool is detented.