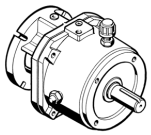
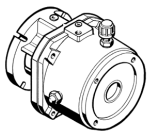
Posistop X Class Brake
INSTALLATION MANUAL

ISO 9001 CERTIFIED



1. Coupler Brake



2. Motor Brake

Models and Sizes

The ***Posistop X Class*** **Brakes** are spring-set/air release units. There are two basic types. **1. Coupler Brake** and **2. Motor Brake** There are six sizes of each type. ***XB1, XB2, XB3, XB4, XB5 and XB6.***

Unit Description

In the ***Posistop X Class*** **Brakes**, the friction surfaces in the Brake Stack consist of alternate carbon steel plates and advanced friction material on steel discs. The oil control grooves are molded into the friction material disc surfaces. The discs have internal teeth which mate with a spline on the shaft. The steel plates are pinned to the end housing. The splined sections of the shaft assembly contains a centrifugal pumping system to maintain a positive flow of fluid between the discs and plates.

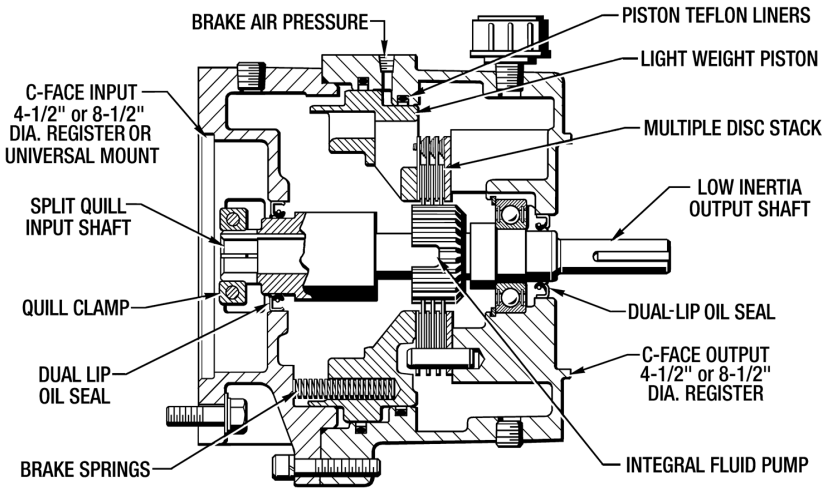


Figure 1 - Unit Description (Coupler Brake Shown)

INSTALLATION

A. RECEIVING THE *Posistop* BRAKE

Check the *Posistop* Brake for shortages or damages immediately after arrival. Prompt reporting to the Carrier's Agent, with notations made on the Freight Bill, will expedite any adjustment made by the Carrier.

When unloading or handling the *Posistop* Brake, keep it upright. All *Posistop brakes* are filled with oil for horizontal mounting, ready to run, when shipped. **Vertical mounted units will require additional fluid.** Refer to **Lubrication Section** before placing the *Posistop* Brake in service or storage. Check the fluid level to make sure none has spilled out in transit. Add fluid if necessary. Refer to **Lubrication Section**.

Remove the red plastic pipe plug from the top of the End Housing and install the Air Breather (#45).

WARNING - Failure to install the Air Breather (#45) as directed can result in serious damage to the drive unit and void the warranty.

Note - There are some pipe fittings supplied for Vertical Mounting. This is used for the Air Breather and Fill as shown in *Figure 9.*

If the *Posistop* Brake is not to be installed or operated soon after arrival, store it in a clean dry place having a slow and moderate change in ambient temperature.

B. MOUNTING THE BRAKE WITH SPLIT CLAMP QUILL TO THE DRIVE MOTOR *(See Figure 2)*

1. First make sure that the pilot diameter and mating surfaces of the C-Face Flange is clean and free of all nicks, burrs or anything that would not allow the *Posistop* Brake to fit properly.

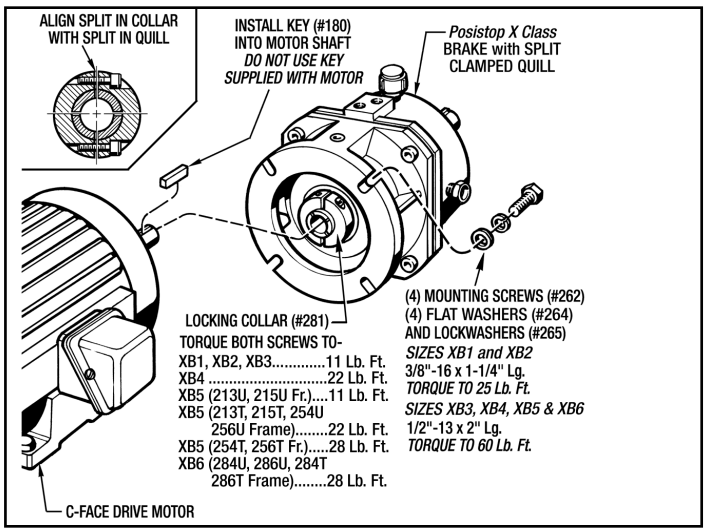


Figure 2 - Posistop X Class Brake Installation

2. Remove the drive motor key if applicable. Install the Key (#180) into the motor shaft keyway.

NOTE - The Key (#180) may need to be fitted to the motor shaft. A tight fit for the key is essential to prevent shaft damage to the drive motor and the *Posistop* brake.

IMPORTANT - Make sure the motor shaft is thoroughly cleaned, but do not use any oil or lubricant on the shaft. Torque transfer depends on friction between the motor shaft and the split quill input shaft.

3. Place the Locking Collar (#281) on the Input Shaft (#2) up against the shoulder. Only tighten the Locking collar Screws enough so it is snug on the shaft. **Do not tighten enough to compress the shaft.**
4. Slip the *Posistop* Brake onto the motor shaft with the Key (#180) aligned with the keyway in the Input Shaft (#2) as shown in *Figure 2*. Push the Brake Unit until it seats firmly onto the motor pilot diameter.
5. Attach the *Posistop* Brake with the (4) Hex Hd. Mounting Screws (#262) and (4) Lock Washers (#265). **Only finger tighten them at this time. Make sure the brake is snug up against the drive motor.**

   NOTE - There also will be (4) Flat Washers (#264) for Sizes XB1, XB2, XB3 and XB4.
6. Torque the (2) Screws in the Locking Collar(#281) in an even manner to the correct torque as shown in *Figure 2.*
7. Attach the correct pneumatic control valve and install the necessary pneumatic plumbing as described in **Section E. Pneumatic Hook-Up**. Adjust the air pressure to the correct Minimum Actuating Pressure. **(See Service Manual).**
8. Actuate the brake and turn the motor shaft by hand to make sure that the bearings turn freely. Adjust if necessary.
9. Evenly torque the (4) Mounting Screws (#262) in an opposite manner to the specified torque as shown in *Figure 2*.

C. MOUNTING MOTOR AND COUPLER BRAKE TO A GEAR REDUCER *(See Figure 3)*

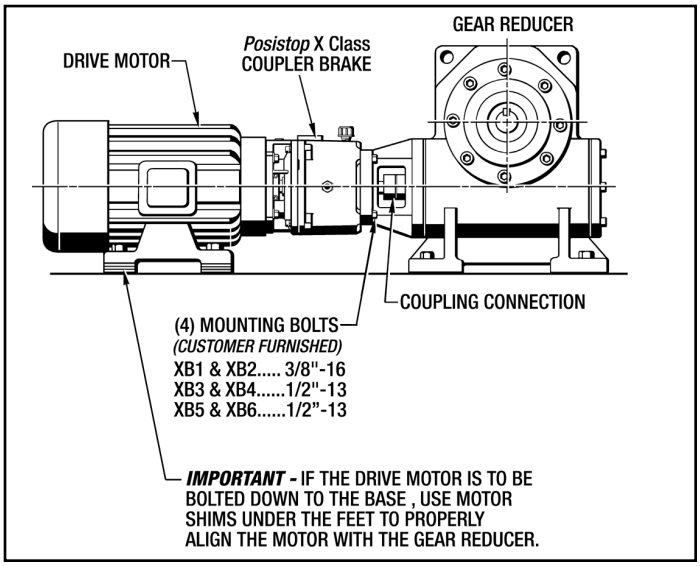


Figure 3 - Drive Motor and Gear Reducer Alignment

It is recommended that you use a Coupling, rather than a hollow shaft to connect the Coupler Brake Output Shaft to a Gear Reducer or any Driven Machinery.

1. Attach the Drive Motor and Coupler Brake Assembly to the Gear Reducer or Driven Machinery with (4) Mounting Bolts and Lockwashers *(Customer Furnished)*.

   NOTE - The Mounting Bolts are to be 3/8"-16 for Sizes XB1 and XB2. **Torque to 25 Ft. Lbs.**

   The Mounting Bolts are to be 1/2"-13 for Sizes XB3, XB4, XB5 & XB6. **Torque to 60 Ft. Lbs.**
2. Connect the Coupling as per Manufacturer's Specifications.
3. If the Drive Motor is to be bolted down to the base, use motor shims under the feet to correctly align the motor with the gear reducer as shown in *Figure 3*. **This is very important so the Coupler Brake will not be pulled down or pushed up during operation.**

D. VERTICAL Vs. HORIZONTAL INSTALLATION

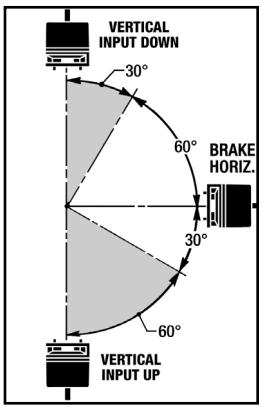


Figure 4 - Vertical Vs. Horizontal Installation

The Installation for a Vertical Mounted Brake is the same as described in the previous sections for a Horizontal Mounted Brake except for the placement of the sight gauge, breather and related fittings, which are shown in the Lubrication Section.

The following *Figure 4* shows the Mounting Angles that determines a Vertical Up, Horizontal or Vertical Down Installation for the XB1, XB2, XB3 and XB4. See *Figure 5* for the XB5 and XB6 Vertical Installation.

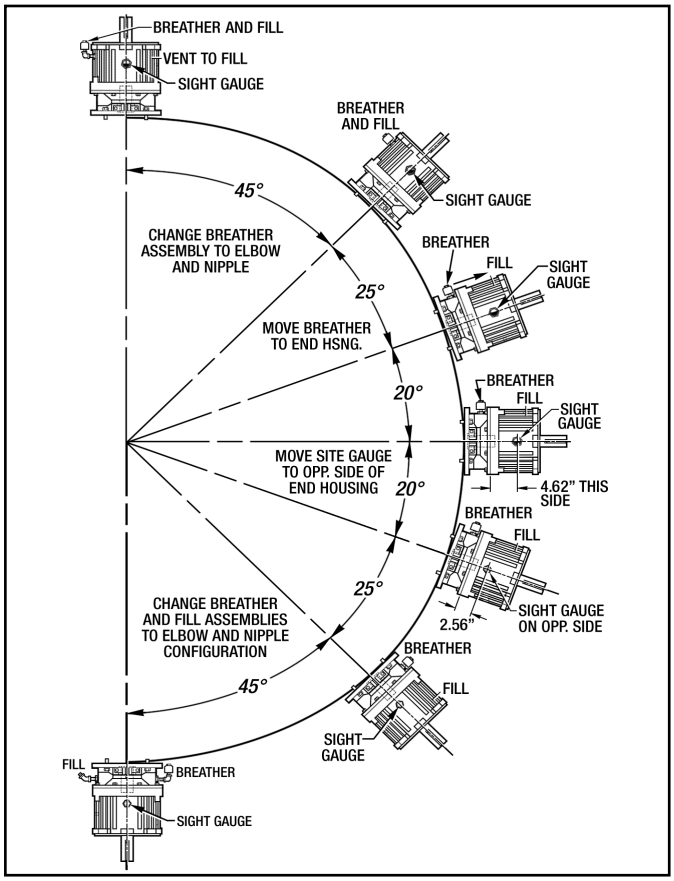


Figure 5 - Vertical vs. Horizontal Installation (XB5 and XB6)

E. PNEUMATIC HOOKUP

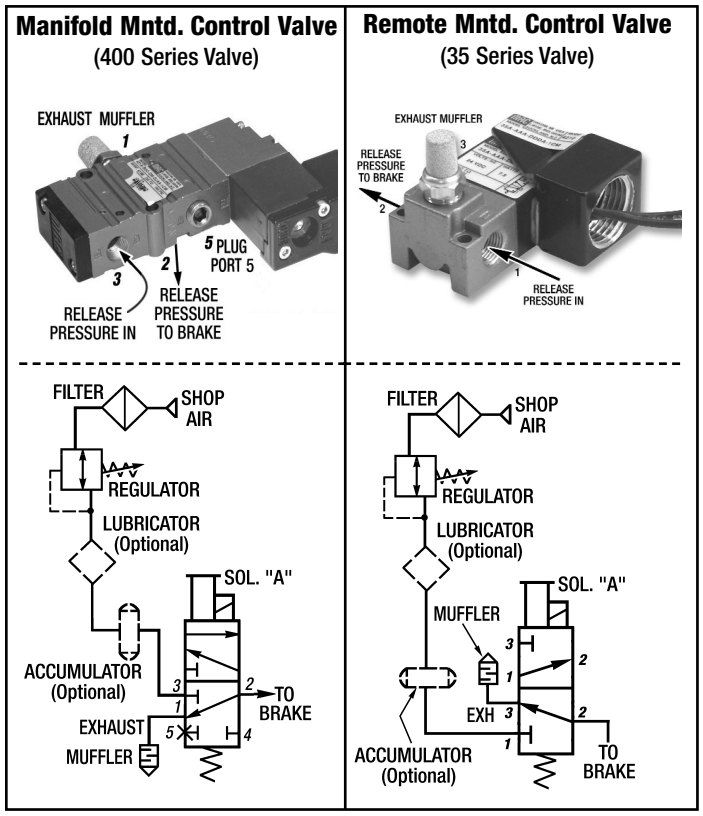


Figure 6 - Pneumatic Control Valves and Schematics (XB1, XB2, XB3 and XB4)

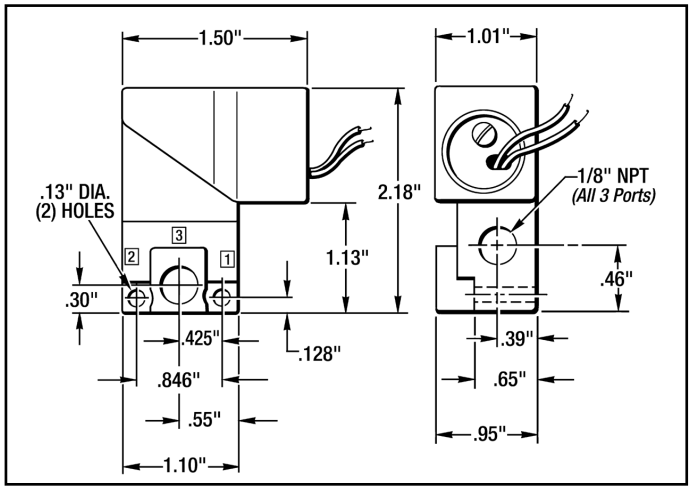


Figure 7 - Valve Dimensions For Remote Mounting (XB1, XB2, XB3 and XB4)

Figure 6 **illustrates a typical compressed air system for the XB1, XB2, XB3 and XB4** ***Posistop X Class*** **Brake Unit. See** ***Figure 8*** **for XB5 and XB6** ***Posistop X Class*** **Brake Unit.**

Note the following when planning and installing the air system:

1. Use direct acting solenoid air valves or pilot operated valves to give the response speed required. Locate the valves as close as possible to the air inlets on the *Posistop* Brake.

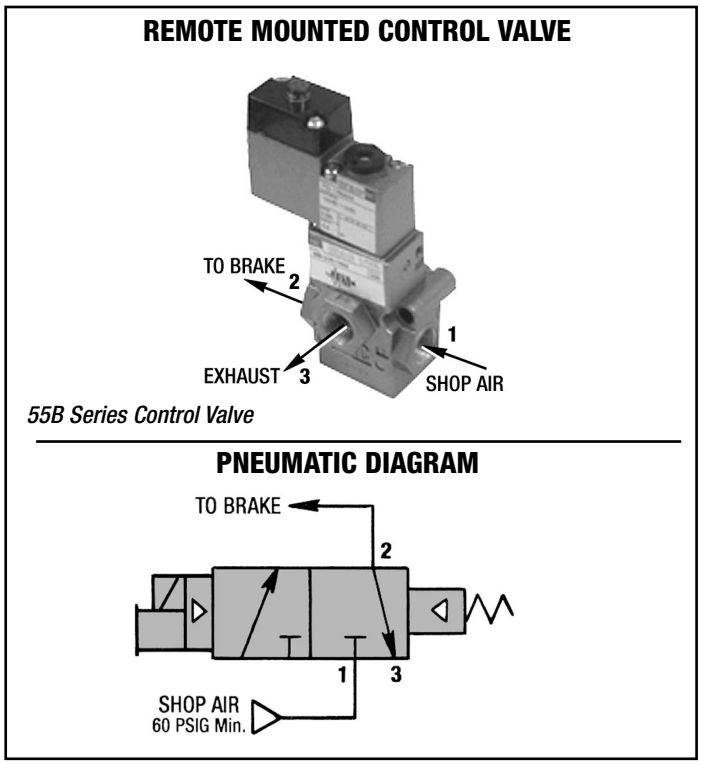


Figure 8 - 1PI-Br-3/8 Control Valve and Schematic (XB5 and XB6 Only)

2. The optional accumulator should be used for quick response, particularly if the air line loss and the nature of the air supply is such that recovery is slow. Size the accumulator to be at least 10 times the air required per engagement.
3. A small amount of oil in the air supply may prolong the life of the pneumatic control valve, but too much oil will fill the *Posistop* Brake piston chamber with oil and make the actuation sluggish.

   No oil in the air supply is better than too much oil in the air supply.
4. The air pressure regulator should be sized and set to provide the required torque. ***(See StaticTorque Chart in Service Manual for Release Air Pressure.)***
5. 80 PSI is the maximum pressure for “A” Logic on all sizes. Use only the air pressure necessary. This will give additional life to the Brake Unit.

   NOTE: Use 3/16” I.D. tubing or hoses for Remote Installation for Sizes XB1, XB2 and XB3 *Posistop*. Use 1/4” I.D. tubing or hoses for Remote Installation for Size XB4, XB5 and XB6 *Posistop.*

F. FINAL INSTALLATION CHECKS

1. After the machinery has been in operation for a few hours, make sure that all mounting bolts are tight and recheck the alignment of all components.
2. After machinery has been in operation for 40 hours check the mounting bolts and tighten if necessary.

LUBRICATION

A. CHECKING THE FLUID LEVEL

When the *Posistop* Brake is installed and weekly thereafter, or until experience dictates otherwise, check the fluid level. Always check the fluid level with the brake at room temperature and while it is not running.

The *Posistop* Brake has a fluid sight gauge located on the side of the *Posistop* Brake except if your brake is mounted vertically with the input up *(See Figure 9 below).* The fluid level is to show at the center of the gauge with the motor turned off.

B. CHANGING THE FLUID *(See Figure 9)*

IMPORTANT : Open the disconnects to the drive motors before attempting to change the fluid.

After the first 30 days of operation completely drain the fluid from the drive using the drain plug provided. If the fluid sight glass is dirty it should be removed and cleaned. Also the Magnetic Drain Plug (#73) should be cleaned and any metal shavings removed.

After the first fluid change check the fluid level and color of the fluid at least once per month. Maintain the fluid level to the center of the sight glass by adding additional fluid as needed. The fluid should be changed after every 12 months of operation or sooner if the fluid color darkens. High energy applications, high cycle rates and extremely dirty environments will darken the color of the fluid.

CAUTION: Do not overfill the Drive Unit. Excess fluid will cause the unit to overheat.

• Horizontal Brakes

1. Remove the Magnetic Drain Plug (#73) and drain out all of the fluid. Replace the drain plug.
2. Remove the Pipe Plug (#92) and fill the brake with fresh fluid to the center of the Sight Gauge (#46).

• Vertical - Brake Up

1. Remove the Magnetic Drain Plug (#73) and drain out all of the fluid. Replace the drain plug.
2. Remove the Breather (#45) and fill the brake with fresh fluid to the center of the Sight Gauge (#46).

• Vertical - Brake Down

1. Remove the Magnetic Drain Plug (#73) and drain out all of the fluid. Replace the drain plug.
2. Remove the Breather (#45) and the Pipe Plug (#92) out of the (2) Street Elbows (#117). Fill the brake through the top elbow with fresh fluid until the fluid starts to run out of the top of the lower elbow or is in the center of the sight gauge. Replace the pipe plug and breather back into the brake

C. TYPE OF FLUID

Use only Mobil Automatic Transmission Fluid ATF-210 (Type F) or Mobil Multi-Purpose Automatic Transmission Fluid for all drives. ***Always use the type of fluid specified on the Name Plate.***

For Washdown and/or Food Processing Applications use **Mobil Synthetic ATF Fluid.**

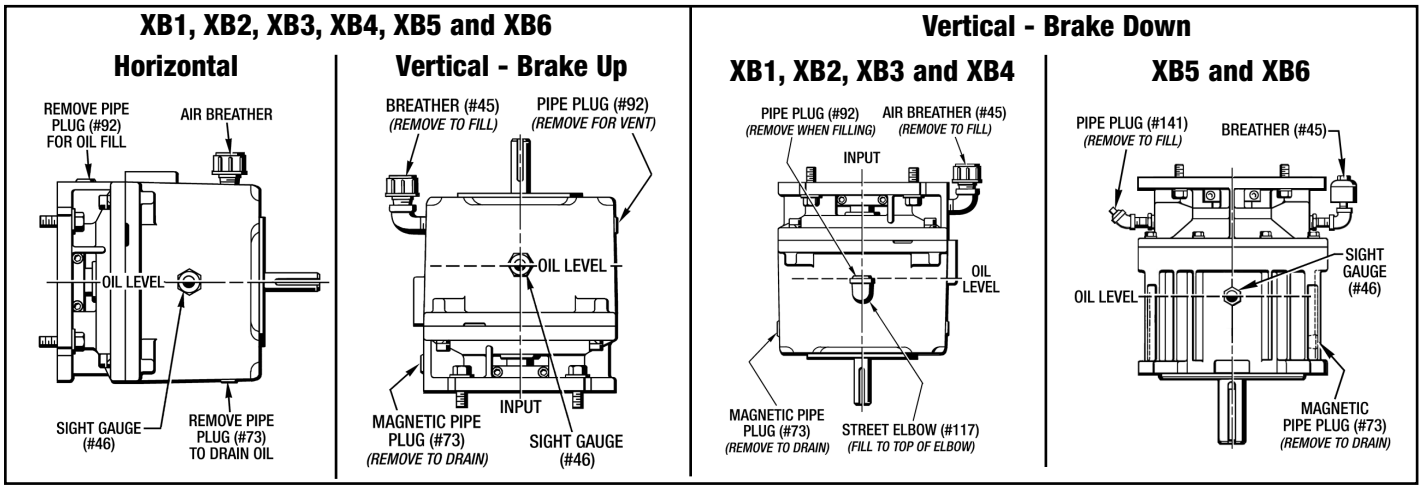


Figure 9 - Lubrication

FACTORY REBUILD SERVICE & COMPLETE SERVICE MANUALS

A. FACTORY REBUILD SERVICE

A Factory Rebuild Service is offered by Force Control Industries, Inc. Contact our service and sales department at Force Control for additional information

B. COMPLETE SERVICE MANUALS

A complete Service Manual can be downloaded and printed off of our website.
Go to: **www.forcecontrol.com**

All of our Catalogs and Service Manuals on the web site are in PDF format and will require Adobe Acrobat Reader 5.0 or later to open them. This Adobe Acrobat Reader can be downloaded from our web site if you do not have it installed on your computer.

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