



# Size 210 Shaft Mounted Posistop Brake INSTALLATION MANUAL



## DESCRIPTION

The Size **210 Shaft Mounted Posistop Brake** is a multiple surface, spring activated, pneumatic release braking device that effectively dissipates the heat generated from frequent starting and stopping.

This **210 Posistop Brake** has a range of **20 Lb. Ft. to 90 Lb. Ft.** of braking torque. This is accomplished with 5 different Brake Stack Configurations, which are described on Page 2.

The brake is mounted and locked to a driven or jack shaft by a Locking Collar that effectively locks the brake hub to the driven shaft. The torque arm is mounted to the back face of the brake.

## OPERATION

The **210 Shaft Mounted Posistop Brake** shown in Figure 1 shows the brake in the normally spring-loaded braked position.

Compressed air, controlled by an external valve, enters the piston chamber and moves the piston back to disengage the brake stack, allowing the driven or jack shaft to rotate freely.

When the air pressure is released the piston, which is spring loaded, returns to the normal braked position. (See Minimum Release Air Pressure on Page 2.)

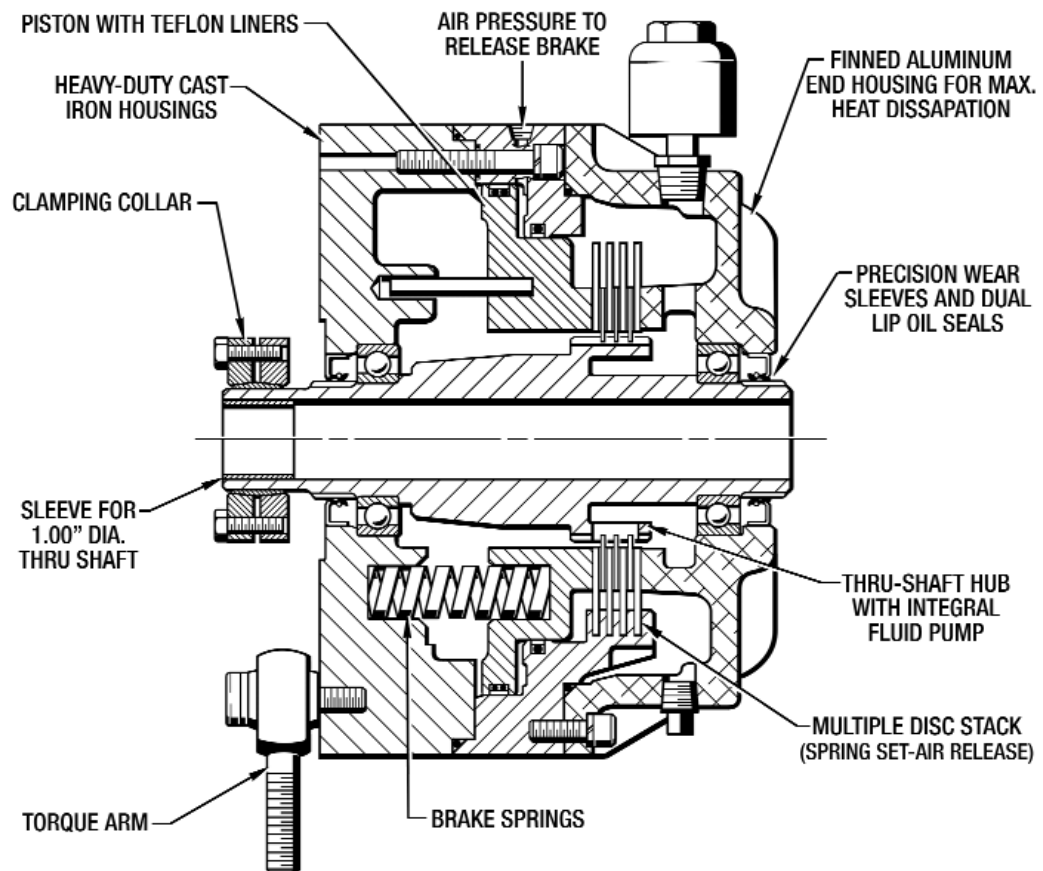

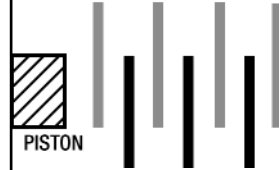





Figure 1 - Brake Cross Section

# SPECIFICATIONS

## • BRAKE STACK CONFIGURATIONS

A (20 Lb. Ft.)	B (30 Lb. Ft.)	C (45 Lb. Ft.)	D (60 Lb. Ft.)	E (90 Lb. Ft.)
(6) DRIVE PLATES (#12)	(4) DRIVE PLATES (#12)	(4) DRIVE PLATES (#12)	(4) DRIVE PLATES (#12)	(4) DRIVE PLATES (#12)
				
(2) FRICTION DISCS (#13)	(3) FRICTION DISCS (#13)	(3) FRICTION DISCS (#13)	(3) FRICTION DISCS (#13)	(3) FRICTION DISCS (#13)
(2) SPRINGS (#36)	(2) SPRINGS (#36)	(3) SPRINGS (#36)	(4) SPRINGS (#36)	(6) SPRINGS (#36)

## • OPERATING SPECIFICATIONS

BRAKE STACK CONFIGURATION <i>(See Above)</i>	BRAKE TORQUE (Lb. Ft.)		PRESSURE TO RELEASE <i>(PSI)</i>	CYCLIC WK <sup>2</sup> <i>(Lb. Ft.<sup>2</sup>)</i>	MAXIMUM KE per ENGAGEMENT <i>(Ft. Lbs.)</i>	THERMAL RATING <i>(HP Sec./Min.)</i>	PISTON VOLUME <i>(Cu. In.)</i>
	STATIC	DYNAMIC					
A	20	17	20	.034	6425	25	3
B	30	26	20				
C	45	39	28				
D	60	52	35				
E	90	78	51				

Maximum Speed - 1800 RPM

# INSTALLATION

### IMPORTANT SAFETY PRECAUTIONS

The brake units described in this manual must not be installed in any manner except as specified in this manual. This brake must not be operated at speeds, torque loads or temperatures other than those specified in this manual. Failure to limit operation of the brake to these conditions could damage the brake and may cause malfunction or damage to interconnecting equipment and void the warranty.

**WARNING:** The following precautions must be taken if the installation of the brake is to be a retrofit for an existing application. Before installing, open the motor disconnect, shut-off the control electrical supply and shut-off the air supply. Lock them out to avoid the possibility of personnel injury.

### • INSTALLING BRAKE TO YOUR SHAFT

(See Figure 2)

1. Remove the red plastic plug at the top of the brake and install the Reducer Bushing (#76) and the Air Breather (#45).

2. Check the fluid level in the brake as indicated in Lubrication Section. Add oil if necessary.
3. Place the Locking Collar (#29) on the extended part of the Hub (#2). Finger tighten the (5) screws just enough so it won't slip on the hub.
4. Clean the Jack Shaft completely with a suitable solvent.

**WARNING: Open flames or smoking must not be permitted in the area when using flammable solvents.**

5. Measure the Jack Shaft to make sure it is the correct diameter for the Locking Collar (#29) to properly lock the brake to the shaft. See Table below.

Jack Shaft Nominal Diameter	Jack Shaft Tolerances
1" Dia.	1.000"-.999" Dia.
1-1/8" Dia.	1.125"-1.124" Dia.

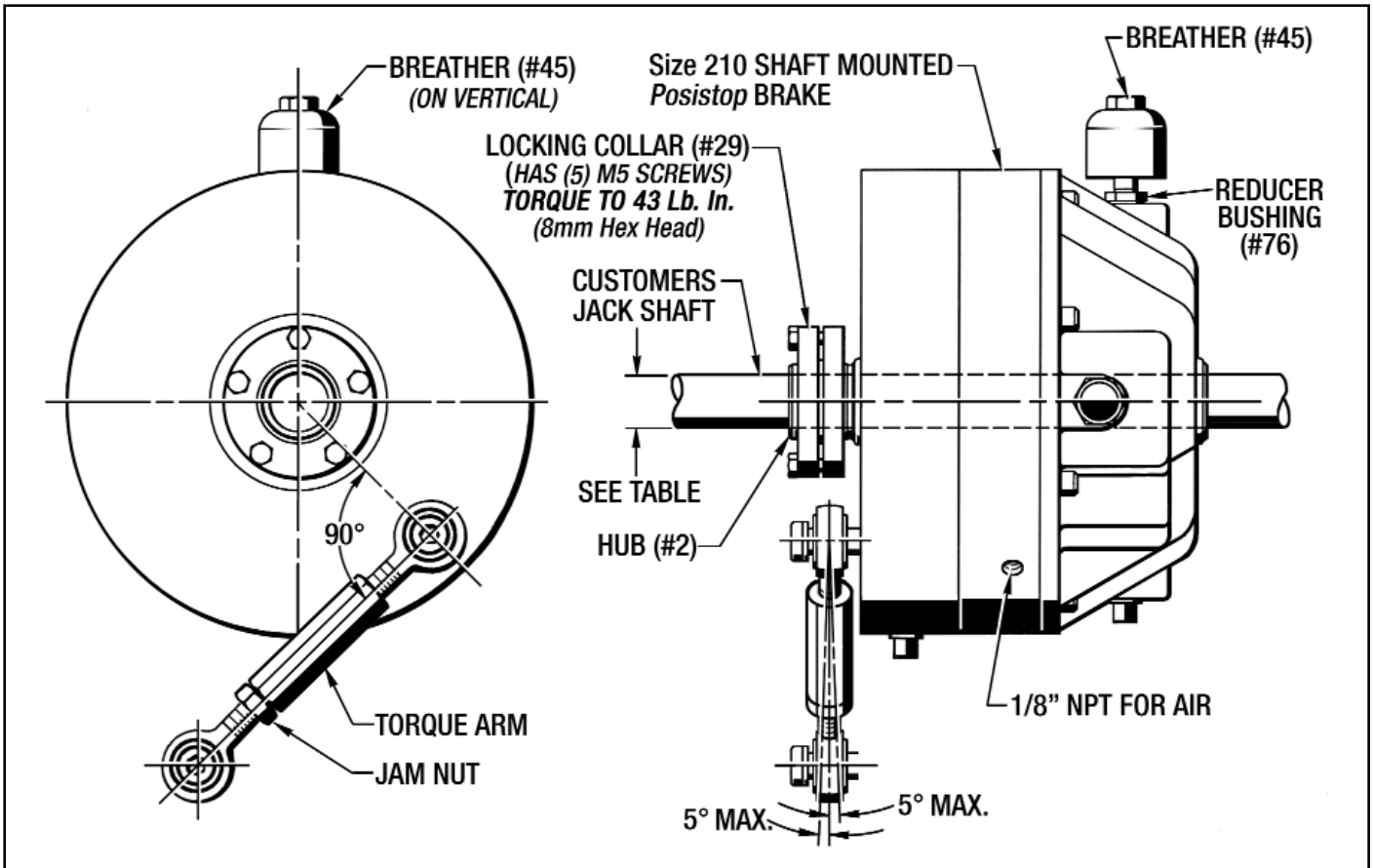


Figure 2 - Size 210 Shaft Mounted Brake Installation

6. Slide the brake on to the shaft in position to attach the Torque Arm.

7. Attach the Torque Arm as shown in Figure 2. Adjust the turnbuckle so the Air Breather (#45) is on the vertical center line.

**Please Note:** The maximum allowable angular misalignment is  $\pm 5^\circ$  as shown in Figure 2.

8. Torque the Locking Collar (#29) as per manufacturers instructions. (See the Installation and Removal Instruction Sheet for B-Loc Shrink Discs that was shipped with the Locking Collar.)

• **PNEUMATIC HOOK-UP**

The following schematic shown in Figure 3 illustrates a typical Pneumatic Control Diagram for your **Size 210 Shaft Mounted Posistop Brake**.

Valving to be 3/8" NPT minimum and located as close to the brake as possible. See **Operating Specifications** for operating pressures to release the brake.

**NOTE:** Lubrication of the air supply is not recommended because oil will accumulate in the piston chamber and cause the brake to act sluggish.

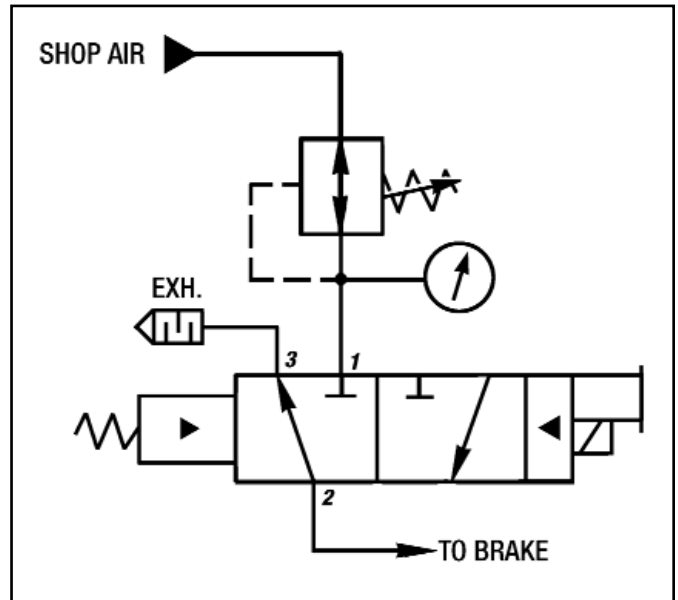


Figure 3 - Pneumatic Diagram

# LUBRICATION

## • CHECKING THE OIL LEVEL

Check the oil level when the drive is installed and weekly thereafter (until experience dictates otherwise). Always check the oil level with the unit stationary (not running). NOTE - The brake Sight Gauge (#46) and Pipe Plug (#75) may be reversed so that level is visible from other side.

## • CHANGING THE OIL

Oil in the Posistop brake should be changed every twelve (12) months. More frequent oil change may be required for high kinetic energy applications or in extremely dirty environments.

Remove the (2) Drain Plugs (#74) at the bottom of the End Housing (#9) and Housing (#8). Drain all oil before refilling. Check the Sight Gauge (#46) and Breather (#45) for dirt. Remove and clean if necessary. Replace the (2) Drain Plugs (#74), Sight Gauge (#46) and Breather (#45). Remove the Pipe Plug (#114) and refill the brake with fresh fluid to the center of the Sight Gauge (#46). Replace Pipe Plug (#114).

**CAUTION - Do not over-fill. Excess oil will cause the unit to overheat.**

## • TYPE OF OIL

Use Automatic Transmission Fluid, Mobil ATF-210 Type F ONLY (unless otherwise specified on the unit nameplate).

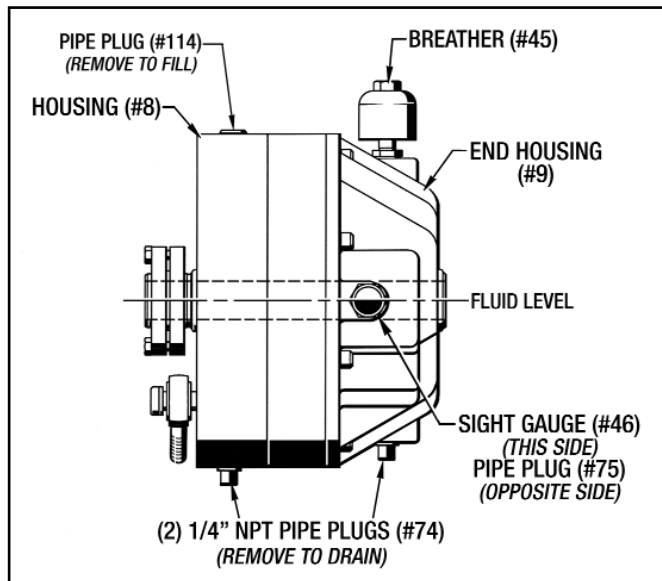


Figure 4 - Lubrication

## FACTORY RE-BUILD SERVICE, MAINTENANCE & MANUALS

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

A complete Service Manual can be downloaded and printed off of our web site or ordered directly from Force Control. It is as follows:

Service Manual and Repair Parts for Size 210 Oil Shear Shaft Mounted Brake #502-210-SM-001-00

Go to: [www.forcecontrol.com](http://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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