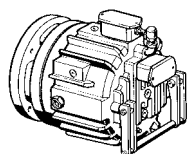
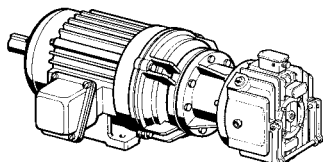




# MSB 8, 9, 10 & 12 "Quick Mount" MagnaShear INSTALLATION MANUAL



MagnaShear MSB10  
Motor Brake



MagnaShear MSB12 Motor Brake  
Furnished as an Assembled Electric  
Brake Motor (EBM).

## DESCRIPTION & OPERATION

### ● UNIT DESCRIPTION (See Figure 1)

The "Quick Mount" MagnaShear Fully Electric Motor Brake with Oil Shear dependability mounts to NEMA standard motor frame sizes. Spring set torque ratings range from 100 Lb. Ft. to 1250 Lb. Ft.

A spring set brake stack is released when 120 VAC or 240VAC (depending on model) power is supplied to the MagnaShear Brake. Control logic is made simple by use of the motor starter auxiliary contactors. Back EMF effect from the motor windings is eliminated.

### ● UNIT OPERATION (See Figure 1)

The cross section in Figure 1 shows the **MSB10 MagnaShear Brake** in the Stopped position with the brake stack engaged. All **MagnaShear Brakes** will default to this position when power is off.

To run the Motor the Brake Coil must be energized, pulling the Armature Plate Assembly away from the Brake Stack which allows the splined hub and drive motor to rotate independently from the brake.

To stop the Motor the Brake Coil is de-energized. This allows the brake springs to push the Armature Plate Assembly against the Brake Stack, clamping it and stopping the splined hub and drive motor.

### ● IMPORTANT SAFETY PRECAUTIONS

The **MagnaShear Brake** unit described in this manual must not be installed in any manner except as specified and must not be operated at speeds, horsepower loads or temperatures other than those specified.

Failure to limit the operation of the drive to the conditions specified could damage the unit or damage interconnected equipment and void the Warranty.

#### WARNING

**BEFORE INSTALLATION OR ATTEMPTING ANY REPAIRS TO THE MOTOR BRAKE, OPEN THE DISCONNECTS TO THE DRIVE MOTOR. LOCK IT OUT TO AVOID THE POSSIBILITY OF PERSONAL INJURY.**

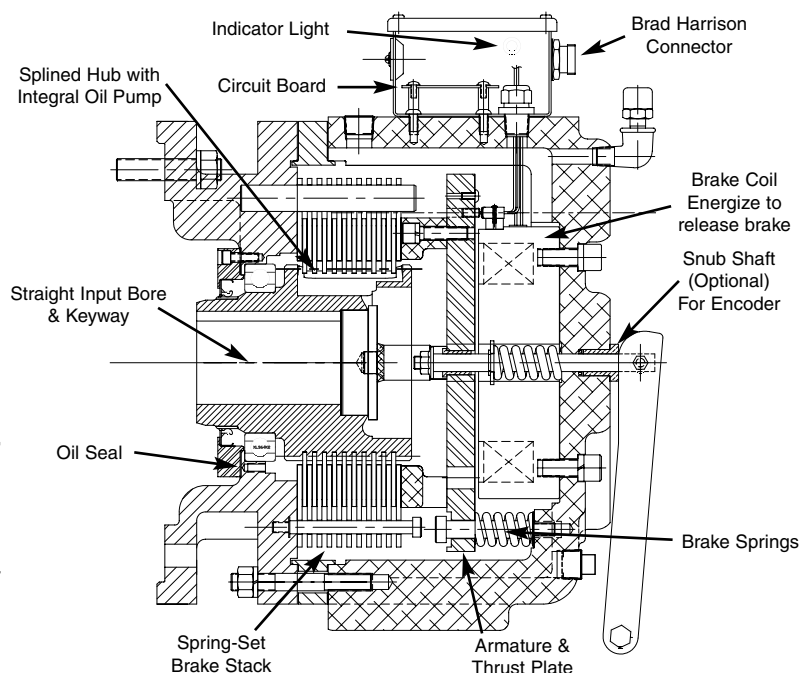


Figure 1 - Unit Description and Operation

### ● RECEIVING THE MagnaShear BRAKE

Check the brake for shortage or damage immediately after arrival. Prompt reporting to the carrier's agent, with notations made on the freight bill, will expedite satisfactory adjustment by the carrier.

The standard **MSB MagnaShear Brake** has been completely assembled and filled with fluid. The Air Breather, (4) Mounting Bolts, Key and (4) Lockwashers are shipped separate in a plastic bag stapled to the shipping side.

A red plastic plug is installed in place of the Air Breather to prevent fluid from spilling out in shipment.

**IMPORTANT - This red plastic plug must be removed and the Air Breather installed before operating your MagnaShear Brake.**

Also check the fluid level to see if any has spilled out in transit. **The fluid must be in the center of the Sight Gauge.** Add fluid if necessary.

### ● INSTALLING THE MagnaShear BRAKE

1. Always lift with appropriate lifting device.
2. **IMPORTANT** - Make sure the motor shaft and motor mounting surfaces are thoroughly cleaned before installing the Brake.
3. The motor shaft must meet NEMA Standards to ensure reliability of the Motor Brake Oil Seal. To verify, measure (1) Motor Shaft Runout and (2) Mounting Face Runout with a Dial Indicator.

Maximum Allowable T.I. R. as per NEMA MG 1 Standard:

1. Motor Shaft Runout - .002"
2. Mntg. Face Runout - .004"

- Install Key into keyway of motor. Lubricate shaft of motor with anti-seize lubricate. Slide the Brake Unit onto the motor shaft until the brake mounting flange contacts the motor face. Align the mounting holes with the motor and attach with Mounting Bolts and Mounting Lockwashers. Finger tighten the (4) bolts. **Make sure the brake is snug against the motor face.**
- Connect the electrical service to the Brad-Harrison Connector and actuate the brake coil to release the brake. (See Figures 3 and 4)
- Turn the motor shaft by hand to make sure the bearings turn freely.
- Evenly torque the (4) Mounting Bolts in an opposite manner to following values:
 

1/2"-13 .....	.60 Lb. Ft.
5/8"-11 .....	.120 Lb. Ft.
3/4"-10 .....	.200 Lb. Ft.

### ● VERTICAL MOUNTING

Vertical Mounting vs. Horizontal Mounting is determined by the mounting angle. See Figure 2 below to determine the correct mounting configuration for your *MagnaShear* Motor Brake.

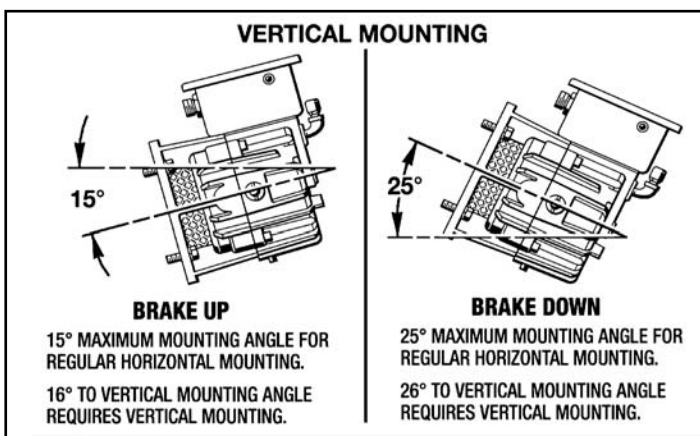


Figure 2 - Vertical Mounting Angles

### ● WIRING SPECIFICATIONS (See Figure 3 and 4)

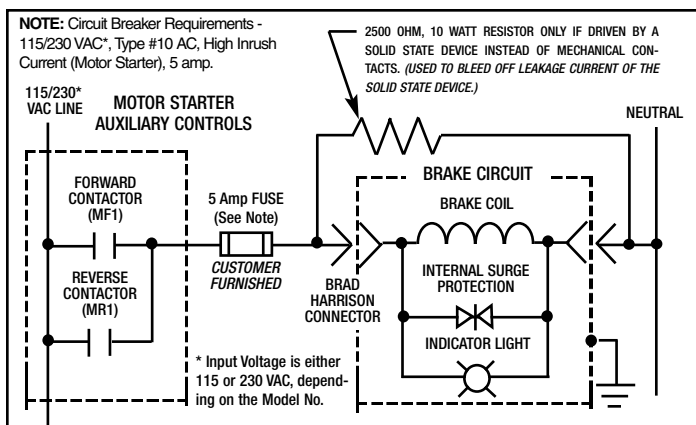


Figure 3 - Electrical Wiring Diagram

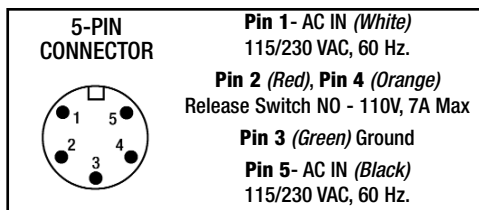


Figure 4 - Electrical Connector

### ● START-UP

Verify that the Brake Coil is connected correctly. Check to see if the Motor is wired correctly, fuses are in place and the motor disconnect is turned on. Set-up preliminary settings on positioning switches to insure the brake will stop. Verify that the Brake Coil Indicator Light on the Conduit Box is **ON** while the drive motor is running. **(The indicator light comes on bright for .4 seconds and then dims after that.)**

FUNCTION	BRAKE COIL	
	On/Off	Ind. Light
RELEASE	ON	ON
BRAKING	OFF	OFF

Next, complete a cycle to insure that there are no interference problems within the system.

Set-up Position Switches as required.

### ● CHECKING THE OIL LEVEL

When the brake is installed and weekly thereafter, check the oil level. Always check the oil level with the brake at room temperature and while it is not running.

The *MagnaShear Brake* has an Oil Sight Gauge to visually check the fluid level. The oil level is to be at the center of this Sight Gauge **with the drive motor turned off.**

It is located on the side of the End Housing for a Horizontal brake and on the side of the Input Housing for a Vertical Down brake.

### ● OPERATING TEMPERATURES

The standard oil used in the *MagnaShear Brake* was designed to operate with a maximum ambient temperature of 125° F and maximum operational oil sump temperature is 200° F. If the ambient temperature or operational sump temperature is higher than these values please contact Force Control for recommendations.

### ● CHANGING THE OIL

**IMPORTANT - Always open the disconnects to the drive motor and lock them out before changing the oil.**

Every three months completely drain the oil from the brake by removing the Drain Plug. The Sight Gauge and Air Breather should also be removed and cleaned at this time.

The oil should be changed more frequently when used in harsh environments or high cyclic applications.

- Remove Pipe Plug and drain out all the oil into a suitable container. Discard used oil in an approved manner. Replace the pipe plug when finished.
- Remove the Pipe Plug and fill with fresh oil to the center of the sight Gauge. Replace the pipe plug when finished.

**CAUTION - Do not overfill the brake unit. Excess oil will cause the brake to over heat.**

### ● TYPE OF OIL

Use only Mobil Automatic Transmission Fluid ATF-210 or Mobil Multi-Purpose Automatic Transmission Fluid for most drives. Other fluids may be specified for special applications.

**Always use the type of oil specified on the Name Plate.**

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