# MAINTENANCE FOR THE MODEL 210-3, -4, -5 EQ MT

# SAFETY PRECAUTIONS FOR THE MODEL 210-3, -4, -5 EQ MT

***System Under Pressure***: Shut off air supply and disconnect the air hose before disassembling or disconnecting any parts.

***Flying Debris***: During boring, chips may be ejected. Remain behind control panel and wear safety glasses to prevent eye injury.

***Pinch Points***: Keep hands clear of carriage assembly. Hands or fingers caught between carriage and frame may be seriously injured.

***Moving Parts***: When moving the drill unit, use the carriage lock to prevent the carriage assembly from sliding onto hands or fingers.

***Transporting***: Ensure all carriage locks are in place, and the swivel brake is engaged.

# SAFETY PRECAUTIONS FOR THE MODEL 210-3, -4, -5 EQ MT (continued)

***Loud Noise***: Wear ear protection to prevent eardrum damage potentially caused from the air compressor.

***Dust***: Wear a dust protection mask to protect from concrete dust.

***High Pressure***: High air pressure from the air compressor can damage the drill and can void the warranty.

# MAINTENANCE FOR THE MODEL 210-3, -4, and -5 EQ MT

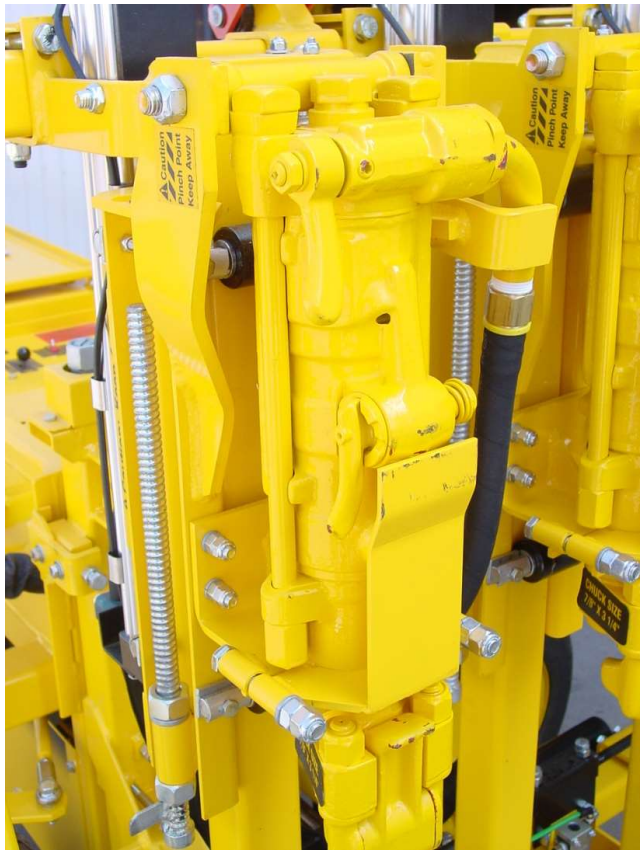
- Check buts and bolts daily for tightness. Due to the extreme amount of vibration, bolts will loosen. It is important keep nuts and bolts tight.

  **EXCEPTION**: The two ½” x 4” bolts that connect the upper drill bracket and the lower drill bracket can be too tight. There should be a gap between the two brackets. When tightening these bolts, put a drill bit in the chuck and turn it as you tighten the nuts. At some point, it will “catch” or “drag” while turning the bit. This means the bracket is too tight. Loosen the nuts until you can turn the bit freely, the tighten the ½” lock nuts.

# MAINTENANCE FOR THE MODEL 210-3, -4, and -5 EQ MT

- Check all nuts and bolts around the carriage assembly daily. Tighten as needed.

*Allowing bolts or connections to work loose may disqualify any warranty on these parts.*



# MAINTENANCE FOR THE MODEL 210-3, -4, and -5 EQ MT

- Check all nuts and bolts on the rock drill daily.

  IMPORTANT: If a nut on one of the thru bolts gets loose, or if a nut on one of the trunnion bolts gets loose, it will cause the other one that is tight to break.

# MAINTENANCE FOR THE MODEL 210-3, -4, and -5 EQ MT

Check all stop rods and stop rod nuts daily and keep them tight.

# MAINTENANCE FOR THE MODEL 210-3, -4, and -5 EQ MT

- Check nuts and bolts on all frame clamps daily.

# MAINTENANCE FOR THE MODEL 210-3, -4 , and -5 EQ MT

**⚠WARNING** **DO NOT REMOVE CAP UNDER PRESSURE !**

*(to remove pressure from system, have air supply disconnected from drill unit, and turn the power switches to the "On" position)*

- Push relief button next to oil cap to relieve pressure in the oil tank.
- Fill the oil reservoir daily with the recommended rock drill oil (do not use oil that is too light, such as Marvel Mystery Oil, automatic transmission fluid, air tool oil, etc.). Running the oil tank dry can cause damage the drill motors and drive motors and requires that you bleed any air out of the oiler and oil lines.
- (See "Recommended Specifications for Rock Drill Lubricant")

# RECOMMENDED SPECIFICATIONS FOR ROCK DRILL LUBRICANT

The use of synthetic oils is NOT RECOMMENDED due to possible damage to seals, “O” rings, hoses, blades, and polycarbonate oiler/filter bowls. Use only a non-detergent, Class 2, pneumatic lubricating oil (viscosity 100-200 S.S.U. @ 100° F and minimum aniline point of 200°F); which contains no synthetic additives; and which is compatible with Buna-N, Neoprene, Urethane, Silicone, and Hytrel components.

Consistency shall be such that the oil will adhere readily to metallic surfaces under extreme pressure conditions that exist in a rock drill.

Flash, Cleveland open cup……..380°F Min. (a)
Carbon Residue……0-30% Max.
Viscosity at Atmospheric Temperature
Below 20°F…… SAE #10
20° to 40°F…… SAE #20
40° to 80°F…… SAE #30
80° to 110°F…….. SAE #40
Above 100°F…… SAE #50
Mineral Activity…… None
Free Fatty Acid (as Oleic %)…… 0.40% Max.
ASTM Steam Emulsion No…….. 600 Max. (b)
Metallic Soaps…… None
Pour Point F…… +10 Max. (c)
Film Strength PSI
Almen Test…….. 12,000 (d)
Weeks Test……. 8,000 (d)

(a) Where lower than normal viscosity oil is used at extreme low temperature, 350°F flash point permissible.

(b) 1200+ desired where moisture is a major factor. Operator must compensate for foaming when filling the lubricator.

(c) For below normal atmospheric temperature operation, lower pour test product may be required.

(d) Desired values, not minimum. Rock drill oils must have appreciably greater load carrying ability than straight mineral oils of like viscosity. High film strength is required by the heavy rotational loads present in drilling conditions. Additives which impart extreme pressure characteristics to the oil must be non-corrosive to the drill mechanism.

# MAINTENANCE FOR THE MODEL 210-3, -4, and -5 EQ MT

Grease All Grease Zerks Daily:

All Pivots

Mast

All Hinges

Mast

# MAINTENANCE FOR THE MODEL 210-3, -4, -5 EQ MT

- It is highly recommended that the concrete dust on the drill unit be cleaned off daily to prevent it from hardening.

- For longer storage periods, flush the drill motors with a substance that will prevent rust from forming due to moisture in the drills. Any amount of rust can cause the cycling valve to seize. If this happens, the drill motor generally must be taken apart and cleaned thoroughly before it will operate. Substances such rock drill oil, Marvel Mystery Oil, or even diesel fuel can be used to flush the drill motors.