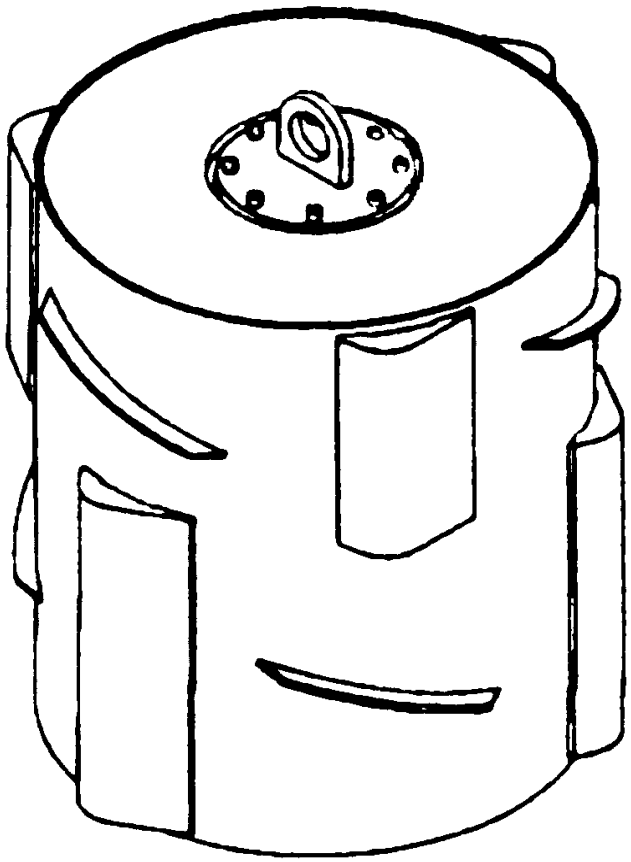
NS II ROTOR: SERVICE INSTRUCTIONS

Service Bulletin No. 625SB1A2 **April 22, 1997**

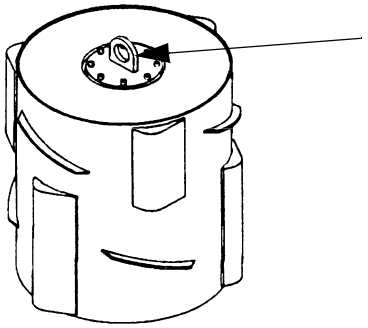


Features

NS rotors were designed for pressure screen applications to prevent coarse debris from stringing up on foil/stud style rotors. This new design eliminates surfaces where stringing can occur. Thus, power in high debris environments does not increase with operating time due to build up.

Because of the possible personal danger and danger to property from accidents which may result from the improper use of products, always follow correct procedures. Proper installation, maintenance, and operation procedures must be observed. The instructions in your owner's manual may vary or be different than the instructions contained in this bulletin. Make inspections as necessary to assure safe operation under prevailing conditions. It is your responsibility to be aware of, use, and provide safety devices and procedures that are appropriate and to adhere to safety codes--none of which is Thermo Black Clawson's responsibility. This unit and its associated equipment must be installed, adjusted, and maintained by qualified personnel who are familiar with the construction of all equipment in the system and all of the potential hazards involved.

INSTALLATION



Lifting lug on the access cover should be in the up position as shown. The lifting lug is provided for shipping/ in-plant handling only.

WARNING

Bring all services to a zero mechanical state (see definition on page 5).

WARNING

Never stand underneath equipment being moved. To do so risks injury or death.

WARNING

Do not lift the NS Rotor until all access bolts are checked for tightness.

The shipment should include the following:

- One NS II Rotor complete with access cover and o-ring seal.
- One cage/hub drive shaft cap complete with o-ring seal.

Installation Procedure

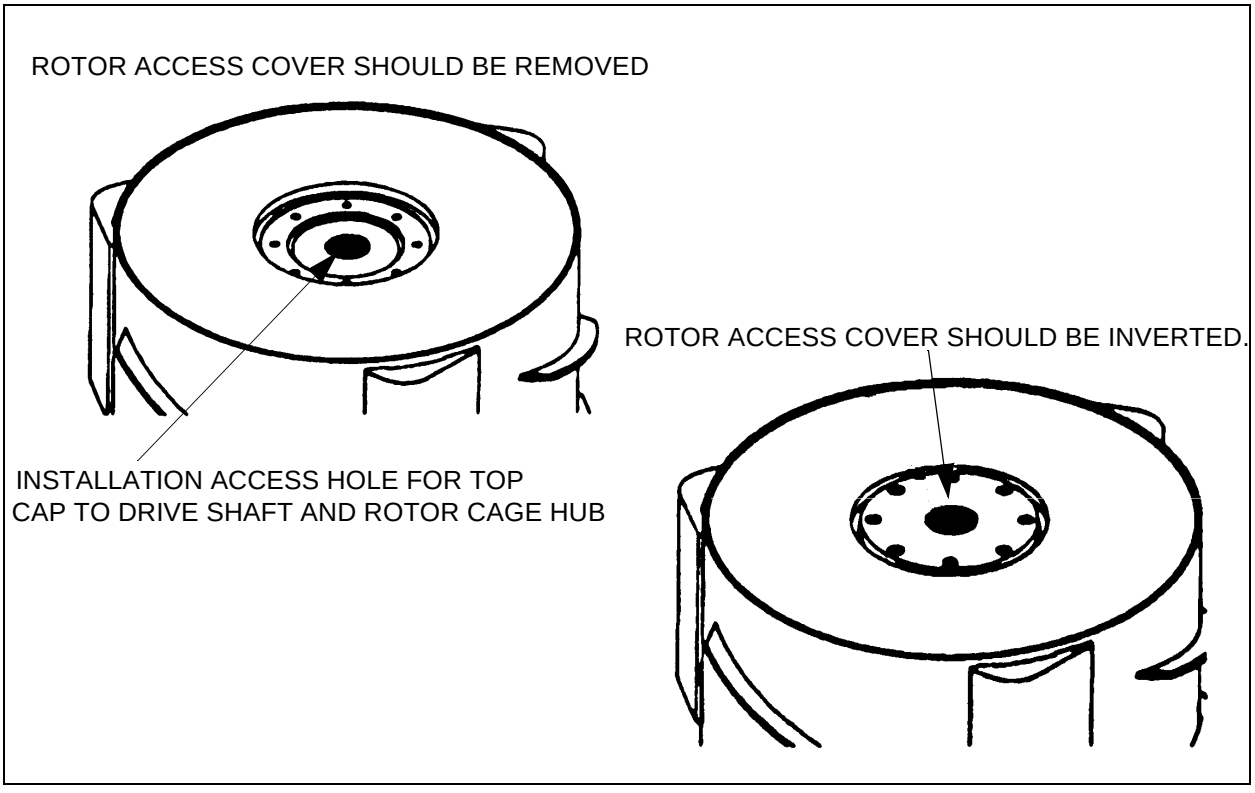
- Clean the drive shaft and the bore in the rotor cage hub.
- Lubricate the tapered shaft and place the key in the drive shaft keyway.
- Remove the access cover and install two eye bolts directly opposite of each other in the tapered holes in the top of the rotor where the access cover was attached. Lift and install the rotor in the unit. Be careful not to damage the screen cylinder when installing the rotor.
- Release the lift on the rotor and remove the two eye bolts used to lift the rotor during installation.
- Check and be sure the top of the rotor hub is seated within 1/8 inch above the top of the drive

shaft. If this gap is more than 1/8 inch, contact Black Clawson for instructions on how to proceed with the installation.

CAUTION

Under no circumstance should the rotor be hand driven or force fit in an attempt to reduce the gap. Damage to the cartridge drive components and mechanical seal can result.

- Install the top cap and o-ring to the cage hub with the two screws provided.
- Install the seal washer and thrust screw. Be sure the thrust screw is tight.
- Check rotor foil/cylinder clearance: approximately 1/2 inch gap (off of cylinder inner diameter) for most screen cylinders.
- Check rotor rotation. The rotation should be clockwise rotation when viewed from the top of the screen.
- Install the rotor access cover and o-ring on the rotor. The lifting lug should be down and inside the rotor.
- Replace the unit's top cover and o-ring. Be sure that the attaching bolts are tight and that the proper tightening sequence is followed.



REMOVING THE ROTOR

The rotor consists of a cage from which the foil bars are extended by arms. The cage is fitted to the drive shaft by a tapered bore, keyed, and retained by a cap and thrust screw. The shaft is sealed from the stock by an o-ring under the cap and a seal washer under the thrust screw.

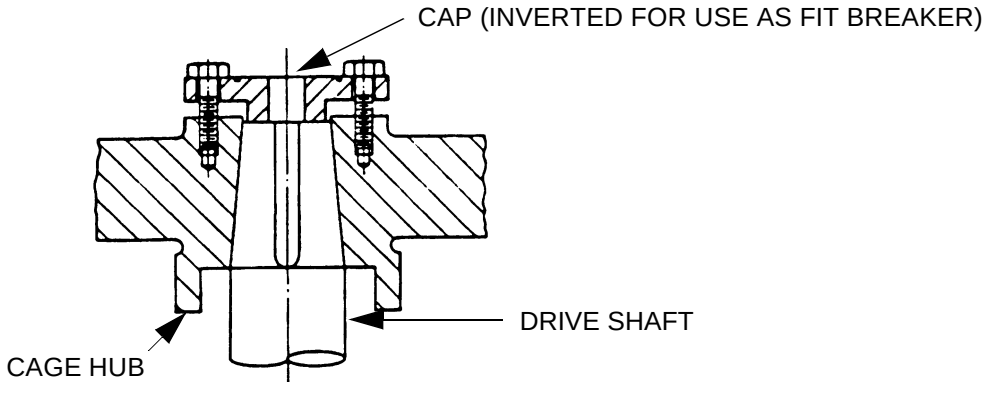
WARNING

Before removing the top cover from the screen, be sure to check to make sure that all service are brought to a zero mechanical state (see definition on page 5) and the unit is drained.

- Remove the thrust screw from the drive shaft.
- Remove the two screws holding the cap to the cage hub.
- Invert the cap. Put the boss against the top of the drive shaft.
- Re-insert the two cap screws into the two tapped holes in the cage hub.
- Tighten to break the fit.
- Lift the rotor out of the screen.

CAUTION

Be careful not to damage the screen cylinder while removing the rotor.



NOTE: The cap is made with a boss on the top side. This design permits the cap to be used as a fit breaker when removed and turned over.

Items to Clean and Inspect for Wear

With the original foil/cage rotor removed, the following hardware items should be cleaned and checked for damage or wear (replace as required):

- all seals--o-ring and seal washer
- screen cylinder
- all drive cartridge components
- key and keyway
- surface condition of the tapered end of the shaft

If the rotor is to be out of the screen for an extended period of time, coat the tapered fit on the drive shaft with grease or oil to prevent rusting.

Definition of Zero Mechanical State (ZMS)

(1) Every power source that can produce a machine member movement has been locked off; (2) Pressurized fluid (air, oil, or other) power lockoffs (shut-off valves), if used, will block pressure from the power source and will reduce pressure on the machine side port of that valve by venting to atmosphere or draining to tank; (3) All accumulators and air surge tanks are reduced to atmospheric pressure or treated as power sources to be locked off, as stated in paragraph 1 and 2; (4) The mechanical potential energy of all portions of the machine is at its lowest practical value--so that opening of pipe(s), tubing, hose(s), or actuation of any valve(s) will not produce a movement that could cause injury; (5) Pressurized fluid (air, oil, or other) trapped in the machines lines, cylinders, or other components is not capable of producing a machine motion upon actuation of any valve(s); (6) The kinetic energy of the machine members is at its lowest practical value; (7) Loose or freely movable machine members are secured against accidental movement; (8) A workpiece or material supported, retained, or controlled by the machine shall be considered as part of the machine if the workpiece or material can move or can cause machine movement.