14-116
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BIRD

INSTRUCTION MANUAL

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GRUBBENS PULPER

BIRD MACHINE COMPANY • SOUTH WALPOLE • MASSACHUSE

INSTRUCTIONS

FOR INSTALLING, OPERATING

& LUBRICATING

THE BIRD-GRUBBENS VERTICAL PULPER

SIZE 18 & 25

141-130 — V-18 — GUILLOTINE PULPER

141-116 — V-25 — BALE REPULPER

FOR Nova Scotia Pulp Ltd

S.O.# 8011-314 C.O.# NS 352

BY M MacKay DATE 11-4-70

SERIAL # GP 122-C GP 123-C

INSTRUCTIONS FOR

INSTALLATION, OPERATION AND MAINTENANCE

OF BIRD-GRUBBENS VERTICAL PULPER

INSTALLATION

Pulper vat, rotor assembly, rotor, sheaves, belts and motor bracket and motor (if ordered) are shipped separately.

Refer to installation drawing and rotor assembly drawing for mounting and connections to pulper. For static and filled weight refer to installation.

Pulper foundation to be reinforced concrete and should slope from the center to the outside for drainage. Foundation should be adequate for pulper stability without additional support. However, if pulper projects through a floor additional support may be obtained by grouting at floor line.

Level the pulper using a machined surface for reference. Leveling screws are provided on each foot pad. In order to insure proper alignment of anchor bolts provide 2" pipes in concrete foundation to allow for any inaccuracy in the location of these anchor bolts. Check pulper mounting VS motor mounting to insure correct position of bracing under pulper. Bracing should be on same side as motor to support belt tension. A belt tension plate located on rotor bearing housing shows proper belt tension and loads required for new and used belts.

Mount rotor assembly and shroud to bottom of vat as shown on rotor assembly drawing using O-ring and screws provided. Secure rotor bearing housing to bracing attached to legs using screws and shims provided.

Mount rotor to rotor shaft and lock in place with rotor locking screw provided. Use white lead on shaft and key and pack cavity around rotor locking screw with waterproof grease. Refer to Paragraph 3 under bearing maintenance and inspection.

Install packing rings and lantern ring as shown on rotor assembly drawing. Refer to repacking, under maintenance, for cutting rings if necessary. Packing rings and lantern ring should be clean before installing. Lubricate each ring by dipping in clean oil and properly seat one ring at a time. Alternate position of split in packing rings 90°. Install split gland avoiding over tightening gland nuts. A light dripping from this packing should occur while pulper is in operation.

Mount seal water filter assembly supplied by B.M.Co. in some convenient location so that gauges may be observed frequently and filter can be changed without difficulty. This should be fresh water. See start-up procedure for further information. Order of assembly of these parts should be as follows.

1. Gate Valve
2. Tee With Gauge
3. Filter
4. Tee With Gauge (There is a reducing bushing 1/4" IPS x 2" Lg. Nipple for this tee.

Connect 1/4" IPS nipple in Item 4 above to 1/4" IPS Female connection in bottom plate of pulper, see rotor assembly drawing, by some suitable means such as tubing or hose. A large capacity 40 mesh filter supplied by customer should be installed ahead of this filter assembly.

FLUSHING CONNECTION UNDER ROTOR

If necessary connect white water to one or two 1" NPT connections located in bottom plate under rotor. See rotor assembly drawing for location.

BELT DRIVE

Remove any oil, grease, rust or burrs from sheaves that may have been acquired due to handling.

Check sheave alignment and see that pulper and motor shafts are parallel.

Adjust to tension shown on tension plate located on rotor assembly housing.

Recheck belts several times during first 50 hours of operation and re tension accordingly.

Provide suitable belt guards.

OPERATION

START-UP PROCEDURE

1. Seal water on. Seal water supply pressure should be a minimum of 50 PSI. This allows for an initial 15 PSI drop across water filter piping assembly plus a potential 35 PSI increase in pressure drop across filter as it becomes clogged.

Maximum allowable seal water pressure is 100 PSI.

Caution: If the gauge after the filter should drop in pressure more than 35 PSI below pressure on the inlet gauge to filter, or if it should drop to less than 15 PSI the filter cartridge should be replaced. See spare parts list. Do not run pulper with seal water pressure after filter lower than 15 PSI.

2. Fill pulper to desired level. Each horizontal bar on inside of vat indicates approximately 500 gallons.

3. Start motor and check for proper rotation. Rotation must be in same direction as indicated by arrow on rotor bearing housing.

4. Check packing gland and tighten if necessary to reduce any leaking to a slow drip.

5. If a trash pocket has been provided to eliminate heavy particles, dump periodically. A connection will be provided for flushing this trash pocket.

MAINTENANCE

GENERAL

One of the most vital elements in a pulper operation is the stuffing box packing maintenance and sealing water control. Close adherance to these instructions relative to seal water and bearing greasing will result in less downtime for replacing wear sleeves and bearings.

PACKING, INSPECTION AND MAINTENANCE

To remove packing.

1. Release packing gland until packing is accessible.

2. Remove packing and lantern ring with a packing extractor.

3. Clean stuffing box and rotor sleeve and examine for scoring or excessive wear of sleeve on rotor. This can be done with a light and mirror.

4. If sleeve is O.K. replace with new packing as follows. If sleeve is excessively worn remove rotor and replace sleeve. Refer to Paragraph 3 under bearing maintenance and inspection.

   a. Use an original packing ring for a template to cut new rings or

   b. Wrap the packing around the sleeve and bevel cut with a 45° overlap. This bevel cut is relative to horizontal position of ring.

   c. Follow procedure under installation section for replacing packing rings and lantern ring.

BEARING MAINTENANCE AND INSPECTION

The pulper is provided with two (2) spherical roller bearings. Grease connections to the bearings and labyrinth seal are provided in the rotor bearing housing. Refer to rotor assembly drawing.

Bearings and labyrinth seal are greased at Bird Machine Company with Mobilux No. 2. Once a month use 1/2 ounce of Mobilux No. 2 or equivalent.

Use the following procedure for removal of bearings for inspection and or replacement.

1. Loosen split packing gland.

2. Remove rotor locking screw.

3. Remove rotor using rotor puller provided. After rotor becomes loose install eyebolt in end of rotor puller and lift rotor from pulper as straight as possible. Avoid damaging rotor sleeve by covering with some protective material.

4. Disconnect seal water from bottom plate.

5. Disconnect two (2) flushing connections from bottom plate if used.

6. Remove bottom plate from pulper.

7. Remove split gland, all seals and lantern ring from stuffing box of bottom plate. Avoid damaging bore of stuffing box. Clean thoroughly and examine for any damage.

8. Remove driven sheave and taper lock bushing.
Note: Support adequately to avoid injury to personnel.

9. Remove drip guard and gasket.

10. Remove shroud from rotor bearing housing.

11. Remove connection between rotor bearing housing and leg bracing. Set loose block and shims if any in a secure place noting position of shims.

12. Insert eyebolt in end of shaft for ease in handling.

13. Remove remaining screws holding rotor assembly to vat.
Note: Support adequately to avoid injury to personnel or damage to assembly while removing from vat to some convenient location where further disassembly can continue.

14. Remove bottom bearing cap.

15. Remove top bearing labyrinth seal by loosening set screw holding this to shaft.

16. Remove top bearing cap.

17. Remove bearing lock nuts and lock washers from each end of shaft.

18. Slide a suitable piece of pipe or tubing over shaft on bottom end and tap to loosen bearing adapter sleeve. Avoid damaging adapter sleeve or shaft.

19. Remove shaft by driving carefully from bottom of sheave end. Upper bearing will come with shaft and bottom bearing will remain in bottom bearing housing.

20. Remove bottom bearing. Clean, inspect and replace if necessary.

21. Remove top bearing. Clean inspect and replace if necessary.

22. Reassemble by reversing procedure above.
Note: Adapter sleeve on bottom bearing should be located as shown on rotor assembly drawing. This is a floating bearing on outer bearing race.

23. Install rotor and packing using procedure as indicated under "Installation" of these instructions.

24. Apply an adequate amount of grease to all three fittings on rotor bearing housing using Mobilux No. 2 or equivalent.

MOTOR

See manufacturers instructions for maintenance and service.

SUGGESTED SPARE PARTS

Refer to rotor assembly drawing.

Quantity	Part Name
1	Packing for Stuffing Box
1	Sleeve for Rotor
1	O-Ring for Top Bearing Labyrinth Seal
1	O-Ring for Bearing Housing to Pulper
1	O-Ring for Rotor Locking Screw
1	Spherical Roller Bearing - Top
1	" " " - Bottom
1	Lockwasher for Top Bearing
1	" for Bottom Bearing
1	Seal for Bottom Bearing Cap
1	Gasket for Drip Guard
1	Dyna V Belts - Matched Set
2	Seal Water Cartridges

Note: When ordering any of the above parts please specify quantity, part name and serial number of machine.

J. H. Coburn/kh/28
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