

# Moorfeed

A Division of EAS

**12 IN DUAL MOTION CENTRIFUGAL  
MOORFEED P\N 61200**



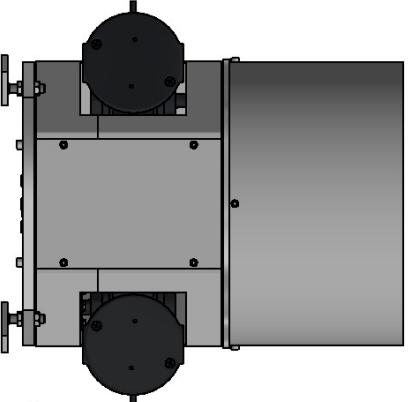
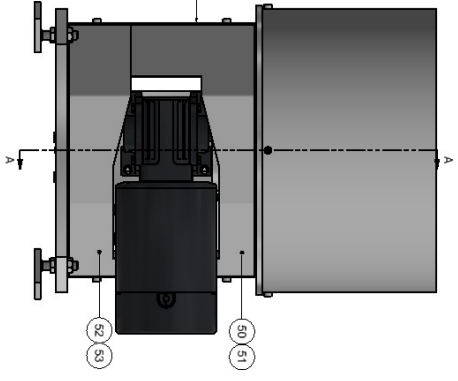
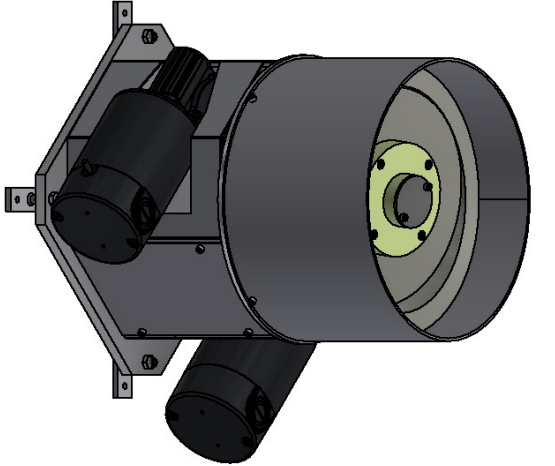
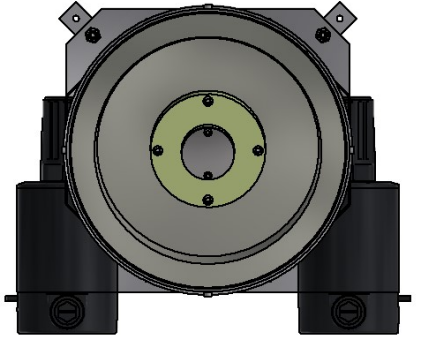
**4162 EMS BLVD.  
GREENFIELD, IN 46250  
PH 317-545-7171  
FX 317-542-7317**

With over 30,000 sq. ft. of manufacturing facilities in Indianapolis over 60 years of experience in the development of special parts feeding equipment, Moorfeed is a major leader in parts feeding and automated assembly systems of the North American and worldwide markets. Our clients include many Fortune 500 manufacturers providing systems for electronic computer, pharmaceutical, automotive, packaging, appliance, food and cosmetic industries to name but a few. We have a thorough understanding of the technology required to design and build even the most complex feed systems. Each Moorfeed component is carefully designed for durability, dependability, ease of fabrication and compliance to industry standards. We offer a variety of equipment, quality constructed and inspected. Moorfeed quality means the feed system we build for you today will be on less concern for you tomorrow.

**When you want to feed more  
parts through your line, think Moorfeed.....  
Our name says it all.**

**Moorfeed  
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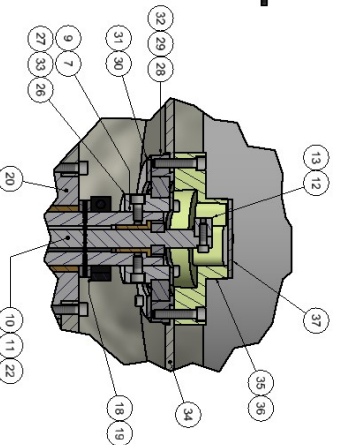
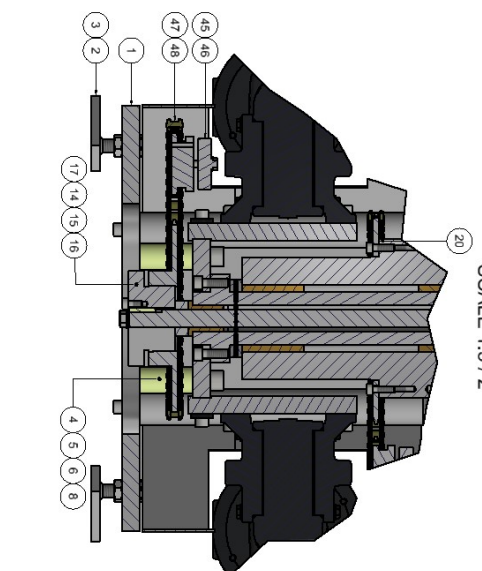
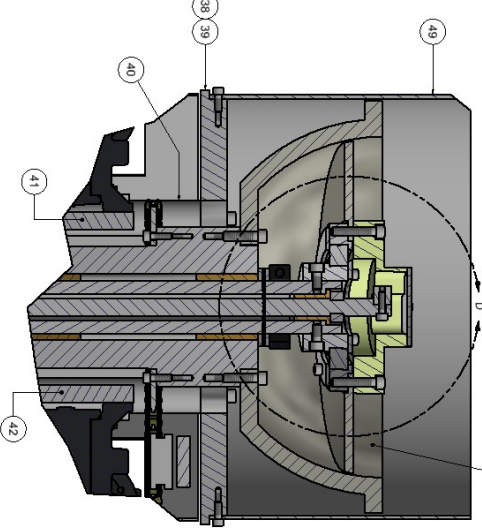
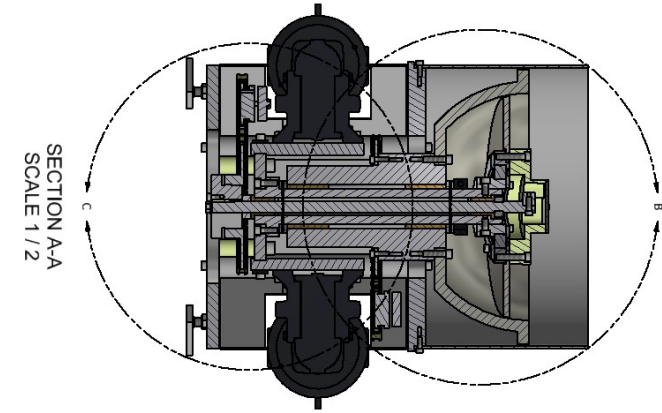
ITEM	QTY	PART #	DESCRIPTION
1	1	60137	LOWER PLATE
2	4	60129	FOOT WELDMENT
3	8	60149	3/8-16 JAM NUT
4	4	60178	SPACER
5	4	60173	SPACER
6	4	60176	POST
7	1	60176	POST
8	12	1 420 X .75 SHCS	FLANGE BEARING (MASTER CARR #638K424)
9	2	81660	SHAFT
10	1	60180	CLAMP COLLAR (MASTER CARR #643K13)
11	1	81760	STUD
12	5	10-24 X .62 SHCS	
13	5	60172	SPACER
14	1	81672	SH BUSHING (MASTER CARR #62778K21)
15	1	81678	SH BUSHING (MASTER CARR #62778K21)
16	1	81196	1/8 KEY (MASTER CARR #98870A100)
17	4	81681	THRUST WASHER (ORRINGTON #TRD-2435)
18	4	81682	THRUST BEARING (ORRINGTON INTA-2435)
19	2	60167	HUB
20	1	81665	CLAMP COLLAR (MASTER CARR #643K23)
21	1	60156	SPROCKET (BOSTON GEAR #5448 MODIFIED AS SHOWN)
22	1	60131	TUB
23	1	60177	BEARING PLATE
24	12	1 420 X .50 SHCS	
25	2	81807	DISC SUPPORT
26	1	81807	DISC BEARING (THK #R80131UCD)
29	1	60179	LOWER RETAINER
30	1	60179	LOWER RETAINER
31	9	81143	1/4-28 TAPER GREASE FITTING
32	1	60178	UPPER RETAINER
33	1	60173	DISC
34	1	60189	1 420 X 1.25 SHCS
36	6	60171	COVER
37	1	60133	UPPER PLATE
38	14	10-24 X .50 SHCS	
39	1	60136	SPACER
40	4	60160	RIGHT MOTOR MOUNT
41	1	60161	LEFT MOTOR MOUNT
42	4	80989	1/4 IN BOWL WASHER
43	4	81675	SPACER (MASTER CARR #62778K11)
44	2	81675	SPACER (MASTER CARR #62778K11)
47	1	81278	12 IN ROTARY TIE DRIVE CHAIN
48	1	60132	BAND
49	1	60164	UPPER LH GUARD
50	1	60162	UPPER RH GUARD
51	1	60165	LOWER LH GUARD
52	1	60168	LOWER RH GUARD
53	1	60166	END GUARD
54	2	90134	RODINE GEARMOTOR 42ASBEPH-5N (MODEL 44134)



DETAIL B  
SCALE 1.5/2

DETAIL C  
SCALE 1.5/2

DETAIL D  
SCALE 1.5/2



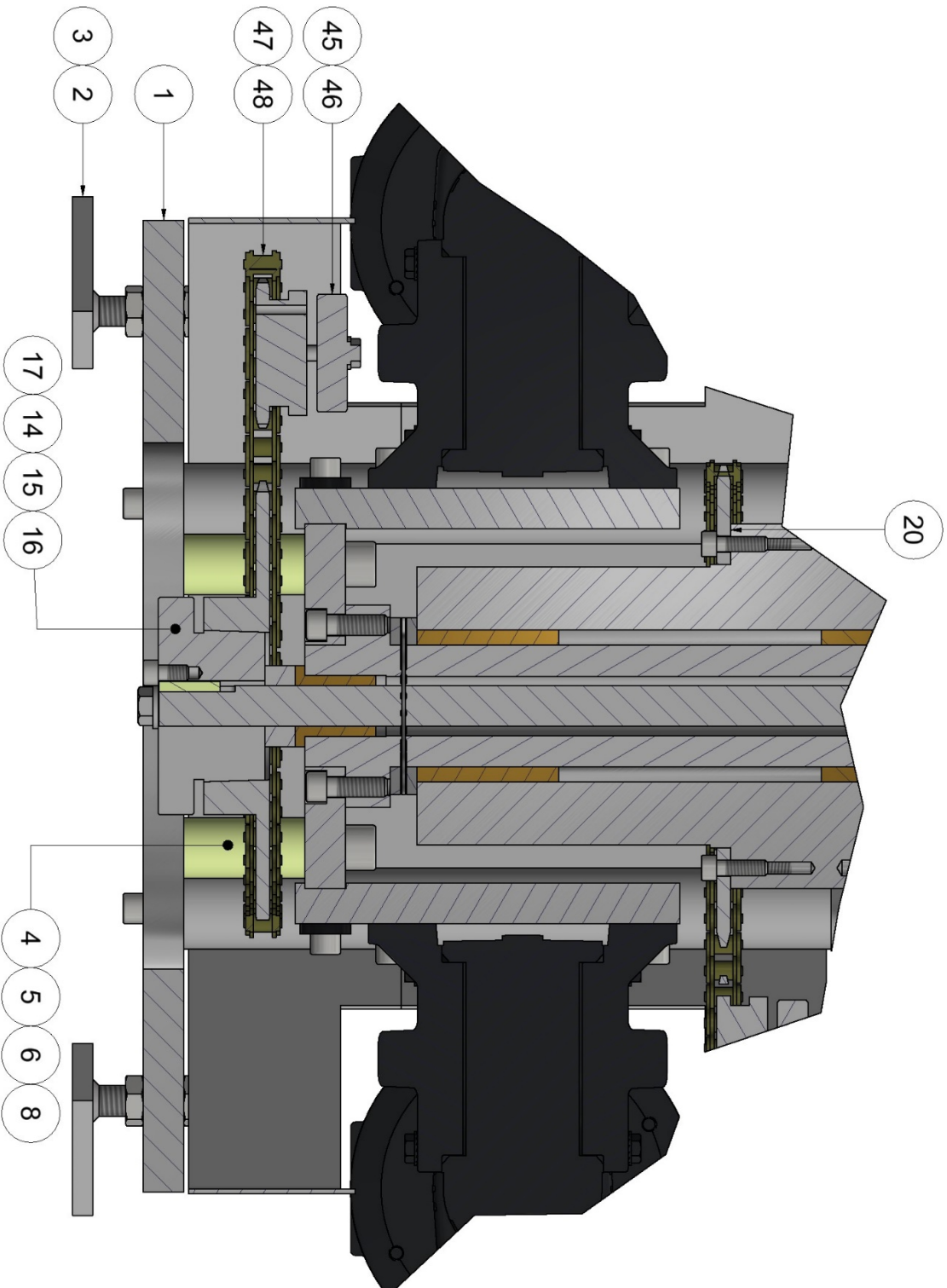
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SCALE 1/2

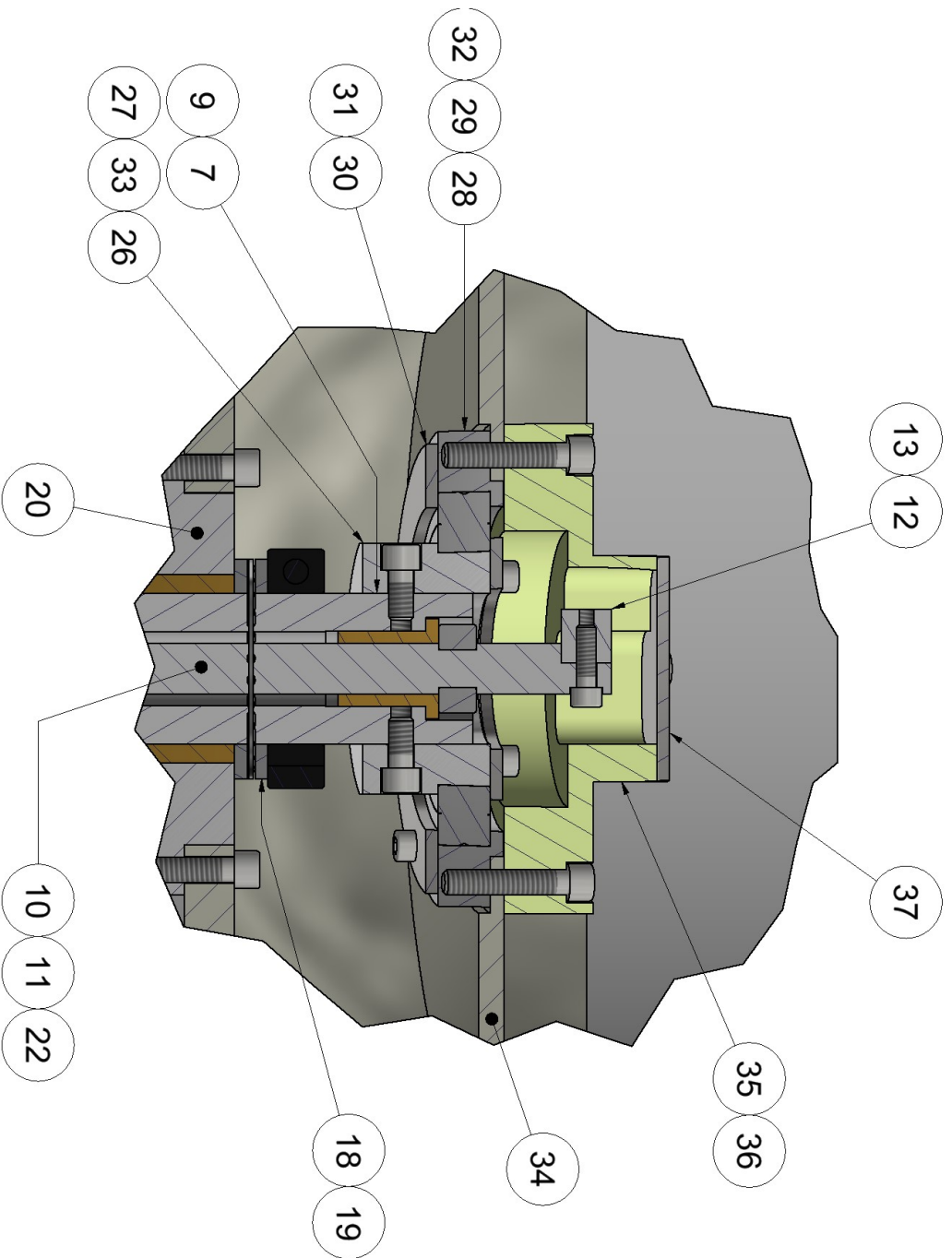
**MOOREHEAD**  
127 DM ROTARY  
61200

REVISIONS  
REV. NO. 1  
DATE 1/16  
BY 61200

MOOREHEAD  
127 DM ROTARY  
61200

DETAIL C  
SCALE 1.5 / 2





DETAIL D  
SCALE 1.5 / 2

## 12 IN DUAL MOTION MAINTENANCE INSTRUCTION

**TOOLS REQUIRED:**

Allen Wrench set range from 1/16" to 5/8"  
 Torque Wrench  
 Flat bladed screwdriver  
 Rubber mallet  
 Adjustable wrench

**BOLT TORQUE REQUIREMENTS:**

BOLT SIZE

10-24 SHCS
10-32 SHCS
1/4-20 SHCS
5/16-18 SHCS
3/8-16 SHCS
1/2-13 SHCS

TORQUE REQUIREMENTS

<b>INCH·POUNDS</b>	<b>FOOT·POUNDS</b>
79 IN·LBS	6.5 FT·LBS
90 IN·LBS	7.5 FT·LBS
200 IN·LBS	16.5 FT·LBS
415 IN·LBS	34.5 FT·LBS
740 IN·LBS	61.5 FT·LBS
1800 IN·LBS	150 FT·LBS

NEWTON·METERS

M8X1.25 SHCS
M8X1.25 FHCS
M10X1.50 SHCS
M10X1.50 FHCS

65 Nm
28 Nm
130 Nm
56 Nm

- I. TOOLING BAND REMOVAL (Detail 49)
  - 1. Remove the four 10-24 S.H.C.S. (Detail 38) located 90 degrees apart on outside lower portion of band
  - 2. It may be necessary to remove some tooling and disconnect electrical and/or air line connections before removing tooling band
- II. TOOLING BAND INSTALLATION
  - 1. Reverse above procedure.
- III. DISC REMOVAL (Detail 34)
  - 1. Remove four 1/4-20 S.H.C.S. (Detail 36). Lift off the cap (Detail 35).
  - 2. Remove disc (Detail 34)
- IV. DISC INSTALLATION
  - 1. Reverse above procedure
- V. TUB REMOVAL (Detail 24)
  - 1. Proceed by going through steps I and III preceding this section.
  - 2. Remove two 1/4-20 S.H.C.S. (Detail 27). Remove bearing plate (Detail 26).
  - 3. Remove four 1/4-20 S.H.C.S. (Detail 25). Tub assembly can now be lifted from spindle.
- VI. TUB INSTALLATION
  - 1. Reverse above procedure.

VII. HUB REMOVAL (Detail 20)

1. Proceed by going through step V preceding this section.
2. Remove four 1/4-20 S.H.C.S. (Detail 25) and remove the Upper Plate (Detail 39)
3. Remove upper chain by removing master link from chain.
4. Remove clamp (Detail 22) by loosening and removing screw. Insert flat bladed screwdriver in slot of (Detail 22) and remove clamp.
5. Remove upper thrust bearing and washers (Details 18 and 19).
6. Remove hub.
7. Remove lower thrust bearing and washers.

VIII. HUB INSTALLATION

1. Reverse above procedure.

IX. POST REMOVAL (Detail 7)

1. Proceed by going through steps I, III, V and VII preceding this section.
2. Remove lower chain by removing master link from chain.
3. Remove four 3/8-16 S.H.C.S. (Detail 6) that fasten the plate (Detail 5) to the lower plate (Detail 1)
4. Lift post out.
5. Shaft (Detail 10) runs in two sealed bearings, upper and lower. Access to shaft bearing requires removal of hub (Detail 20) and post (Detail 7).
6. To access shaft bearings, remove sprocket (Detail 15).

NOTE: Do not lose keystone

7. Remove spacer (Detail 14)
8. Using a rubber mallet or soft faced hammer, tap shaft out. Tap on sprocket end of shaft, tap shaft out of top – upper bearing and shaft will be removed.
9. Separate plate (Detail 5) from post (Detail 7) by removing four 1/4-20 S.H.C.S. (Detail 8) at the bottom of plate.

X. POST INSTALLATION

1. Reverse above procedure.

XI. MOTOR AND GEAR REDUCER REMOVAL

NOTE: Make sure power is disconnected

1. Disconnect electrical connections.
2. Remove the four 10-24 S.H.C.S. (Detail 38) to remove the Upper, Lower, and End guards (Details 50, 51, 52, 53, and 54)
3. Remove the four 10-24 S.H.C.S. (Detail 31) from the sprocket (Detail 45).
4. Remove the chain from the reducer.

XII. MOTOR AND GEAR REDUCER INSTALLATION

1. Reverse above procedure.



<b>PART</b>	<b>LUBRICANT RECOMMENDED</b>
THRUST BEARING (DETAIL 18)	LUBRIPLATE #1200-2 OR COMPARABLE QHEEL BEARING GREASE
THK BEARING (DETAIL 12)	LUBRIPLATE #630-AA OR COMPARABLE SUBSTITUTE
CHAINS (DETAIL 47,48)	LIGHTWEIGHT OIL
GEAR REDUCERS (DETAIL 56)	90 WEIGHT GEAR OIL

IT IS RECOMMENDED THAT ALL PARTS LISTED IN THE ABOVE LUBRICATION DATA CHART  
HAVE LUBRICATION CHANGED ONCE EVERY SIX MONTHS.

## RECOMMENDED LUBRICANTS

The table indicates the type and viscosity of suitable lubricants and applicable AGMA numbers for speed reducers operating at various temperatures. It is important to use the proper type of oil since many oils are not suitable for the lubrication of worm gears. Different types of gears require different lubricants.

The lubricant must remain free from oxidation and contamination by water or debris since only a very thin film of oil stands between efficient operation and failure. To ensure long service life, the speed reducer should be periodically drained (preferably while warm) and refilled to the proper level with a recommended gear oil.

Recommended oil change intervals for Boston Gear speed reducers:

Under normal environment conditions, oil changes are suggested after the first 250 hours of operation, and thereafter at regular intervals of 2500 hours or every six months. Synthetic lubricants will allow extended lubrication intervals because of their increased resistance to thermal and oxidation degradation. If a synthetic lubricant is used, it should be changed after the first 1500 hours of operation, and thereafter at 5000 hour intervals.

**CAUTION:** Speed reducers must be lubrication more frequently when operated at high ambient or operation temperatures, in unusually contaminated environments, or with high loads.

### LUBRICANTS FOR BOSTON GEAR 700 SERIES WORM GEAR SPEED REDUCERS

Ambient (Room) Temperature	Recommended Lubricant (or equivalent)	Viscosity Range SUS at 100° F.	Lubricant AGMA No. +	ISO Viscosity Grade	Boston Gear Catalog Nos. Of Standard Lubricant Container Sizes ++
					1 qt. 1 gal.
-30° to +156°F.** (-34° to +52° C.)	Mobil SHC 634* Synthetic	1950/2150	-	320/460	51493 41494
40° to 90°F. (4.4° to 32.2°C.)	Mobil 600W Cylinder Oil	1920/3200	7 or 7C	460	27300 51492
80° to 125°F. (26.7° to 51.7°C.)	Mobil Extra Hecla Super Cylinder Oil	2850/3600	8 or 8C	680	- -

\*Synthetic recommendation is exclusively for Mobil SHC 634.

\*\*Mobil SHC 634 lubricant will perform at oil temperatures exceeding 225°F. However, factory should always be consulted before operating at higher temperatures since damage may occur to oil seals and other components.

+Other lubricants corresponding to AGMA numbers are available from most major oil companies.

++Boston Gear Distributors stock Mobil SHC 634 (synthetic) and Mobil 600W (cylinder oil) in both 1 quart and 1 gallon containers.

## OIL ORDER QUANTITY FOR ENCLOSED GEAR DRIVES

Oil capacity is determined by oil level plug or dip stick measurement as indicated in installation and lubrication instructions furnished with each drive. This chart indicates suggested quantity of oil to purchase for each drive to be serviced.

<b>Model No.</b>	<b>Order Quantity Per Unit</b>	<b>Model No.</b>	<b>Order Quantity Per Unit</b>	<b>Model No.</b>	<b>Order Quantity Per Unit</b>
221	1 Pint	710	1/2 Pint	H1270	1 Pint
226	2 Pints	713	1/2 Pint	H1350	1 Quart
231	3 Pints	715	1 Pint	H1530	2 Quarts
239	3 Quarts	718	1 1/2 Pints	R131/R231	1/2 Pint
247	4 Quarts	721	1 1/2 Pints	R137/R237	1/2 Pint
252	6 Quarts	724	1 1/2 Pints	R146/R246	1 1/2 Pints
259	11 Quarts	726	2 1/2 Pints	R158/R258	2 1/2 Pints
621	1 Quart	732	2 1/2 Quarts	VR131VR231	1/2 Pint
631	1 Quart	738	3 1/2 Quarts	VR137VR237	1/2 Pint
641	1 Quart	752	8 Quarts	VR146VR246	1 1/2 Pints
651	1 1/2 Quarts	760	12 Quarts	VR158VR258	2 1/2 Pints
661	3 Quarts	FW & W713	1 Pint	R1211	1 Pint
622/623	1 Pint	FW & W718	2 Pints	R1214	1 Pint
632/633	1 1/2 Quarts	FW & W721	2 Pints	R1215	1 Pint
642,643 (R)	2 Quarts	FW & W726	3 Pints	R1216	1 Pint
652,653 (R)	2 1/2 Quarts	FW & W732	3 Quarts	R1412	1 1/2 Pints
662,663 (R)	4 1/2 Quarts	FW & W738	4 Quarts	R1413	2 Pints
		FW & W762	9 Quarts	R1414	2 Pints
		FW & W760	14 1/2 Quarts	R1416	1 1/2 Pints
		TW 113	1/2 Pint	R1511	4 Pints
				R1514	5 1/2 Pints
				R1515	4 1/2 Pints
				R1516	4 1/2 Pints

**TROUBLE SHOOTING**

<b>SYMPTOM</b>	<b>POSSIBLE CAUSES</b>	<b>REMEDY</b>
I. DISC WILL NOT SPIN	<p>1. FOREIGN OBJECT LODGED BETWEEN DISC AND TUB</p> <p>2. WORN BEARING DISC</p> <p>3. SHAFT BEARING WORN</p> <p>4. BAD MOTOR OR GEAR REDUCER</p>	<p>REMOVE DISC AND REMOVE ANY FOREIGN OBJECTS</p> <p>REMOVE DISC AND CHECK DISC BEARING FOR WEAR. IF WORN, REPLACE.</p> <p>FOLLOW MAINTENANCE MANUAL THROUGH NUMBER IX POST REMOVAL. CHECK UPPER AND LOWER SHAFT BEARINGS. IF WORN, REPLACE.</p> <p>CHECK GEAR REDUCER FOR PROPER OIL LEVEL. IF MOTOR OR REDUCER IS BAD, REPLACE.</p>
II. TUB IS HARD TO SPIN	<p>1. WORN UPPER AND LOWER THRUST BEARINGS</p> <p>2. BAD MOTOR OR GEAR REDUCER</p>	<p>FOLLOW MAINTENANCE MANUAL THOUGH NUMBER VII HUB REMOVAL. CHECK UPPER AND LOWER THRUST BEARINGS FOR WEAR AND PROPER LUBRICATION. IF BAD, REPLACE.</p> <p>CHECK GEAR REDUCER FOR PROPER OIL LEVEL. IF MOTOR OR REDUCER IS BAD, REPLACE.</p>
III. TUB APPEARS TO WOBBLE OR HAVE RUNOUT	<p>1 WORN HUB BEARINGS</p> <p>2. BENT TUB</p>	<p>FOLLOW MAINTENANCE MANUAL THOUGH NUMBER VII HUB REMOVAL. INSPECT HUB BEARING FOR WEAR. IF BAD, REPLACE.</p> <p>REMOVE TUB AND INSPECT FOR IMPERFECTIONS. IF TUB IS BEND, REPLACE.</p>

## **RECOMMENDED SPARE PARTS LIST**

1. BODINE GEARMOTOR – MOORFEED #960134
2. TORRINGTON THRUST BEARING – MOORFEED #81682
3. SLEEVE BEARING (HUB) – MOORFEED #60167
4. FLANGE BEARING – MOORFEED #81680
5. DISC BEARING - -MOORFEED #81807

## **WARRANTY INFORMATION**

**WARRANTY:** Moorfeed warrants the equipment to be free from defects in material and workmanship under normal use and service for a period of two (2) years after delivery. The warranties shall not apply to and Moorfeed will not be responsible for any equipment or part which has been repaired or altered in any way that, in our judgement, affects its stability or its reliability or which has been subjected to misuse, negligence or accident.

**SERVICE WARRANTY:** Moorfeed warrants that it will cover all labor, travel expense and materials for a service call as a result of faulty workmanship and materials or as a result of not meeting performance specifications that were mutually agreed to in writing. The service warranty period begins 30 days after shipment of equipment from Moorfeed. Service warranty does not cover installation or interface with equipment supplied by another manufacturer. Service warranty work covers only products shipped and installed in the continental United States. Moorfeed will not be responsible for any equipment or part which has been repaired or altered by customer or outside service or which has been subjected to misuse, negligence or accident.