

Installation of
DYNATEK
Loading Systems



DYNATEK

Suggested Tools needed for Install:

- Proper PPE as Required by Facility.
- 1 5/16" or 35mm Deep well socket.
- 1 5/16" Open ended wrench.
- 3/4" or 19 mm open ended wrench.
- Thread Lubricant
- Torque wrench capable of 70 ft/lbs-640ft/lbs
- Impact socket gun(not required,but makes it easier)



Lift pedestal to vertical position.



Pedestal lifting angles.



3
Lower pedestal into place.



4
Bolt pedestal down to mounting pad and torque nuts.



SUGGESTED ASSEMBLY TORQUE VALUES VS. BOLT LOADS

SUGGESTED ASSEMBLY TORQUE VALUES* TO PRODUCE CORRESPONDING BOLT LOADS

Size	Basic Major Dia.	Stress Area	Tensile Strength (T) Min. Proof Load (P) PSI			Grade 2			Grade 5			Grade 8			Flexalloy System FX-180		
			2 T/P	5 T/P	8 T/P	Clamp Load (lbs.)	Assembly Torque		Clamp Load (lbs.)	Assembly Torque		Clamp Load (lbs.)	Assembly Torque		Clamp Load (lbs.)	Bolt Head	Nut
							Dry (lbs.)	Lub. (lbs.)		Dry (lbs.)	Lub. (lbs.)		Dry (lbs.)	Lub. (lbs.)			
4-40	.1120	.00604	74M/55M	120M/85M	150M/120M	250	5-in.	4-in.	380	8-in.	6-in.	540	12-in.	9-in.	3450	15-ft.	12-ft.
4-48	.1120	.00661	74M/55M	120M/85M	150M/120M	275	6-in.	5-in.	420	9-in.	7-in.	600	13-in.	10-in.	3950	17-ft.	14-ft.
6-32	.1380	.00909	74M/55M	120M/85M	150M/120M	375	8-in.	8-in.	580	16-in.	12-in.	820	23-in.	17-in.	5700	26-ft.	21-ft.
6-40	.1380	.01015	74M/55M	120M/85M	150M/120M	420	12-in.	9-in.	640	18-in.	13-in.	920	25-in.	19-in.	6300	28-ft.	25-ft.
8-32	.1640	.01400	74M/55M	120M/85M	150M/120M	580	19-in.	14-in.	900	30-in.	22-in.	1260	41-in.	31-in.	8450	40-ft.	37-ft.
8-36	.1640	.01474	74M/55M	120M/85M	150M/120M	610	20-in.	15-in.	940	31-in.	23-in.	1320	43-in.	31-in.	9550	42-ft.	39-ft.
10-24	.1900	.01750	74M/55M	120M/85M	150M/120M	725	27-in.	21-in.	1120	43-in.	32-in.	1580	60-in.	45-in.	11550	65-ft.	55-ft.
10-32	.1900	.02000	74M/55M	120M/85M	150M/120M	825	31-in.	23-in.	1285	49-in.	36-in.	1800	68-in.	51-in.	15450	70-ft.	60-ft.
1/4-20	.2500	.0318	74M/55M	120M/85M	150M/120M	1320	66-in.	50-in.	2000	8-ft.	75-in.	2850	12-ft.	9-ft.	17400	130-ft.	105-ft.
1/4-28	.2500	.0364	74M/55M	120M/85M	150M/120M	1500	76-in.	56-in.	2300	10-ft.	86-in.	3250	14-ft.	10-ft.	19800	155-ft.	125-ft.
5/16-18	.3125	.0524	74M/55M	120M/85M	150M/120M	2160	11-ft.	8-ft.	3350	17-ft.	13-ft.	4700	25-ft.	18-ft.	22100	175-ft.	145-ft.
5/16-24	.3125	.0580	74M/55M	120M/85M	150M/120M	2400	12-ft.	9-ft.	3700	19-ft.	14-ft.	5200	25-ft.	20-ft.	24550	195-ft.	165-ft.
3/8-16	.3750	.0775	74M/55M	120M/85M	150M/120M	3200	20-ft.	15-ft.	4950	30-ft.	23-ft.	7000	45-ft.	35-ft.	27800	215-ft.	185-ft.
3/8-24	.3750	.0878	74M/55M	120M/85M	150M/120M	3620	23-ft.	17-ft.	5600	35-ft.	25-ft.	7900	50-ft.	35-ft.	30350	240-ft.	206-ft.
7/16-14	.4375	.1063	74M/55M	120M/85M	150M/120M	4390	32-ft.	24-ft.	6800	50-ft.	35-ft.	9550	70-ft.	55-ft.	34000	270-ft.	230-ft.
7/16-20	.4375	.1187	74M/55M	120M/85M	150M/120M	4900	36-ft.	27-ft.	7600	55-ft.	40-ft.	10650	80-ft.	60-ft.	37500	300-ft.	260-ft.
1/2-13	.5000	.1419	74M/55M	120M/85M	150M/120M	5850	50-ft.	35-ft.	9000	75-ft.	55-ft.	12750	110-ft.	80-ft.	43000	340-ft.	300-ft.
1/2-20	.5000	.1599	74M/55M	120M/85M	150M/120M	6600	55-ft.	40-ft.	10250	90-ft.	65-ft.	14375	120-ft.	90-ft.	47500	370-ft.	330-ft.
9/16-12	.5625	.1820	74M/55M	120M/85M	150M/120M	7500	80-ft.	55-ft.	11600	110-ft.	80-ft.	16375	150-ft.	110-ft.	52000	400-ft.	360-ft.
9/16-18	.5625	.2030	74M/55M	120M/85M	150M/120M	8400	80-ft.	60-ft.	13000	120-ft.	90-ft.	18250	170-ft.	130-ft.	56500	430-ft.	390-ft.
5/8-11	.6250	.2260	74M/55M	120M/85M	150M/120M	9350	100-ft.	75-ft.	14400	150-ft.	110-ft.	20350	220-ft.	170-ft.	61000	480-ft.	440-ft.
5/8-18	.6250	.2560	74M/55M	120M/85M	150M/120M	10550	110-ft.	85-ft.	16375	180-ft.	130-ft.	23000	240-ft.	180-ft.	65000	510-ft.	470-ft.
3/4-10	.7500	.3340	74M/55M	120M/85M	150M/120M	13800	175-ft.	130-ft.	21300	260-ft.	200-ft.	30100	380-ft.	280-ft.	72000	580-ft.	540-ft.
3/4-16	.7500	.3730	74M/55M	120M/85M	150M/120M	15400	200-ft.	150-ft.	23800	300-ft.	220-ft.	33500	420-ft.	320-ft.	78000	620-ft.	580-ft.
7/8-9	.8750	.4620	60M/33M	120M/85M	150M/120M	11450	170-ft.	125-ft.	29450	430-ft.	320-ft.	41600	600-ft.	460-ft.	83000	660-ft.	620-ft.
7/8-14	.8750	.5090	60M/33M	120M/85M	150M/120M	12600	180-ft.	140-ft.	32450	470-ft.	360-ft.	45900	660-ft.	500-ft.	87000	700-ft.	660-ft.
1-8	1.0000	.6060	60M/33M	120M/85M	150M/120M	15000	250-ft.	190-ft.	39600	640-ft.	480-ft.	54500	900-ft.	680-ft.	95000	740-ft.	700-ft.
1-12	1.0000	.6630	60M/33M	120M/85M	150M/120M	16400	270-ft.	210-ft.	42300	710-ft.	530-ft.	59700	1000-ft.	740-ft.	100000	780-ft.	740-ft.
1-14	1.0000	.6800	60M/33M	120M/85M	150M/120M	16800	280-ft.	210-ft.	43400	730-ft.	540-ft.	61200	1020-ft.	760-ft.	102000	800-ft.	760-ft.
1-1/8-7	1.1250	.7630	60M/33M	105M/74M	150M/120M	18900	350-ft.	270-ft.	47300	800-ft.	600-ft.	68900	1280-ft.	960-ft.	110000	820-ft.	780-ft.
1-1/8-12	1.1250	.8560	60M/33M	105M/74M	150M/120M	21200	400-ft.	300-ft.	47500	880-ft.	660-ft.	77000	1440-ft.	1080-ft.	115000	850-ft.	810-ft.
1-1/4-7	1.2500	.9690	60M/33M	105M/74M	150M/120M	24000	500-ft.	380-ft.	53800	1120-ft.	840-ft.	87200	1820-ft.	1360-ft.	125000	900-ft.	860-ft.
1-1/4-12	1.2500	1.0730	60M/33M	105M/74M	150M/120M	26600	550-ft.	420-ft.	59600	1240-ft.	920-ft.	96600	2000-ft.	1500-ft.	130000	930-ft.	890-ft.
1-3/8-6	1.3750	1.1550	60M/33M	105M/74M	150M/120M	28600	600-ft.	490-ft.	64100	1460-ft.	1100-ft.	104000	2380-ft.	1780-ft.	140000	960-ft.	920-ft.
1-3/8-12	1.3750	1.3150	60M/33M	105M/74M	150M/120M	32500	750-ft.	560-ft.	73000	1680-ft.	1260-ft.	118400	2720-ft.	2040-ft.	155000	1000-ft.	960-ft.
1-1/2-6	1.5000	1.4050	60M/33M	105M/74M	150M/120M	34800	870-ft.	650-ft.	78000	1940-ft.	1460-ft.	126500	3160-ft.	2360-ft.	165000	1050-ft.	1010-ft.
1-1/2-12	1.5000	1.5800	60M/33M	105M/74M	150M/120M	39100	980-ft.	730-ft.	87700	2200-ft.	1640-ft.	142200	3560-ft.	2660-ft.	171900	1100-ft.	1060-ft.

1. Clampload = 75% x Proof x Stress Area. (*) Depending upon assembly conditions, it may be necessary to adjust suggested torque values to induce recommended clampload.
2. Grade 2 requirements for sizes 1/4 through 3/4 apply only to bolts and screws 6 inches and shorter in length, and to studs of all lengths. For bolts and screws longer than 6 inches, the values would be T/P 60M/33M.
3. "Lubricated" includes lubricants, lubricizing, plating and hardened washer.



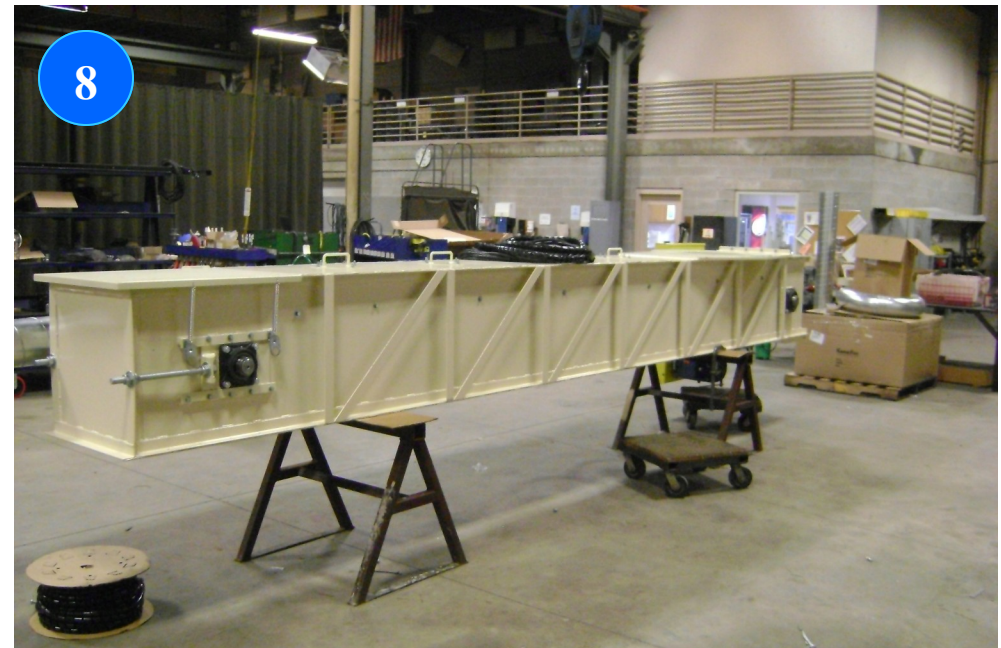
Pedestal arm—right side.



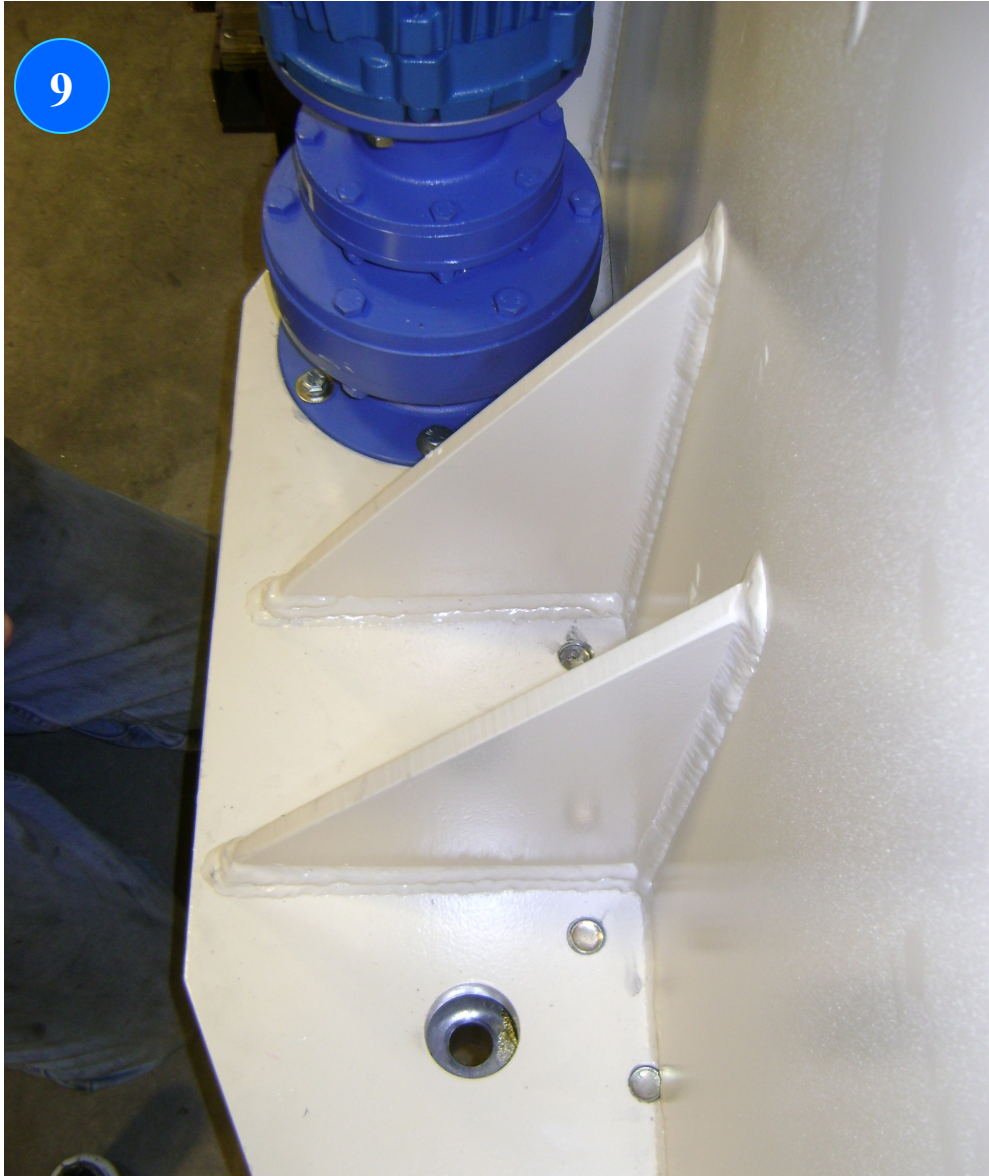
Pedestal arm—left side.



Outboard arm—right side.



Outboard arm—left side.



Align hole in base plate with bolt hole in bearing.



Drop 7/8-9x7" bolt into bearing



11

There are (2) access holes in base plate to install bolts on right and left sides



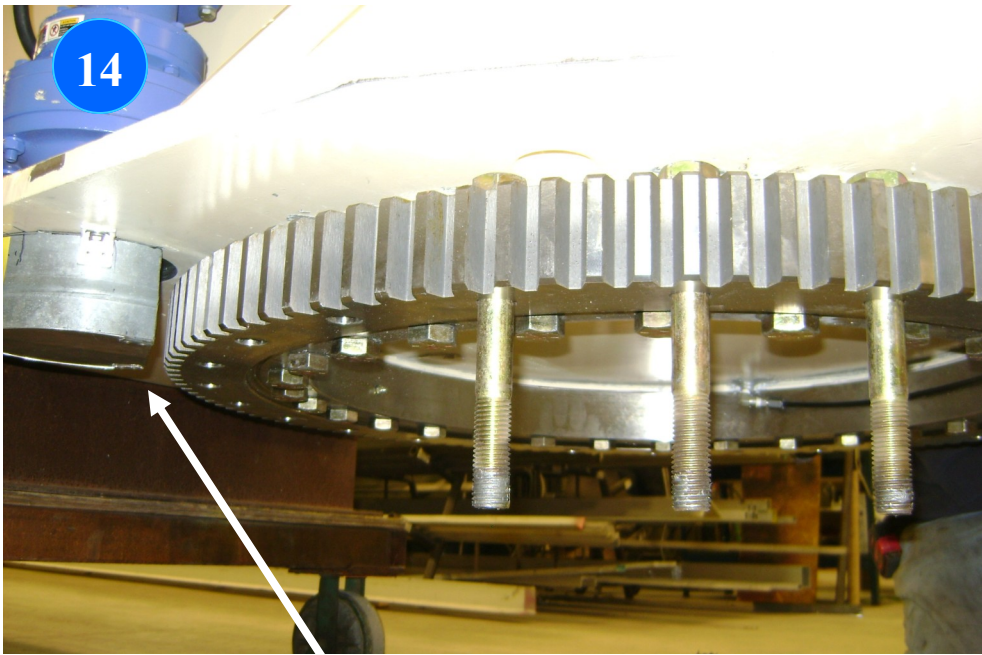
12

Rotate bearing drop in (2) two more bolts.



13

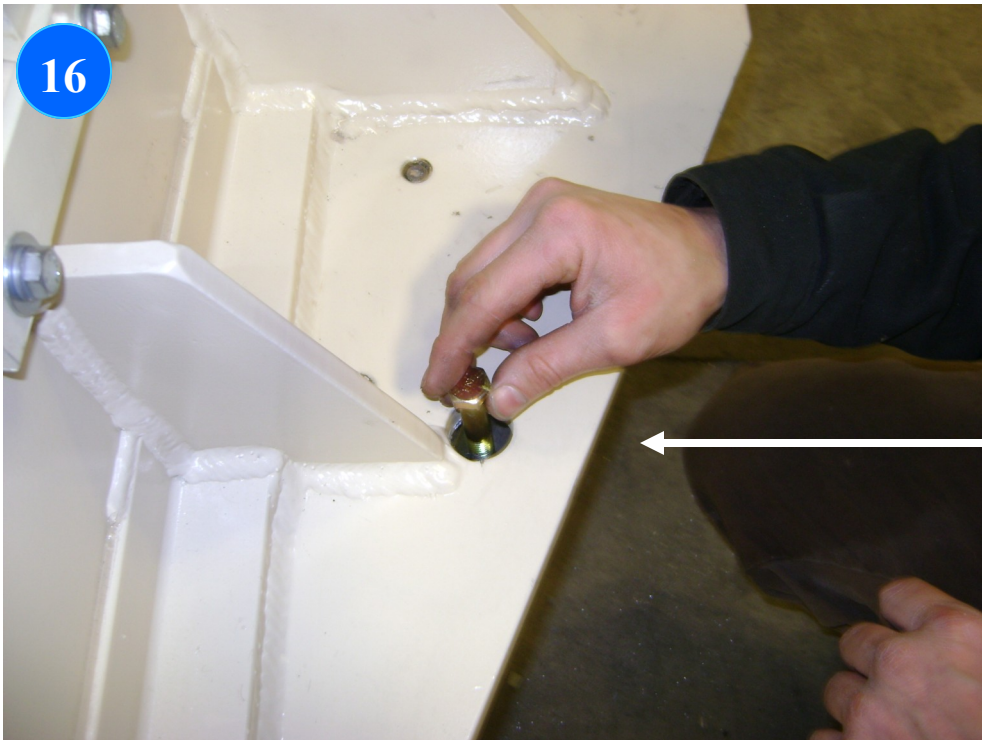
Rotate bearing drop in (2) two more bolts.



Remove guard.



Outboard arm install 1/2-13x3” bolts.



There are (2) two access holes on base plate to install bolts. One on right and one on left sides. (26) Twenty-six 1/2-13x3” bolts.



17

Install 1/2-13x3" bolts, rotate bearing.



18

Rotate bearing drop in bolts.



19

Outboard bearing with all 1/2-13X3" bolts installed.



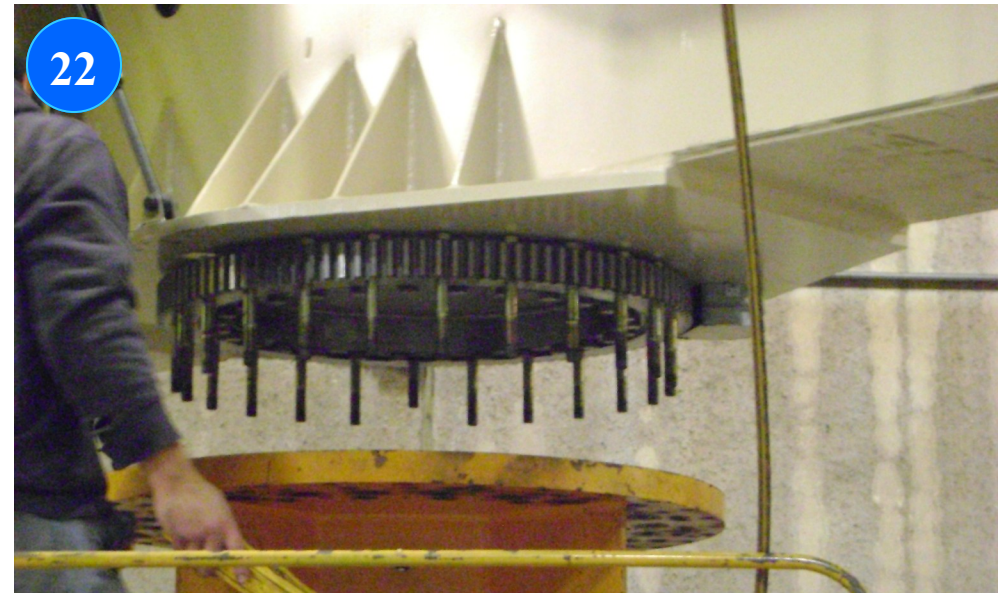
20

Lift main arm—arm must be level left to right—back to front.



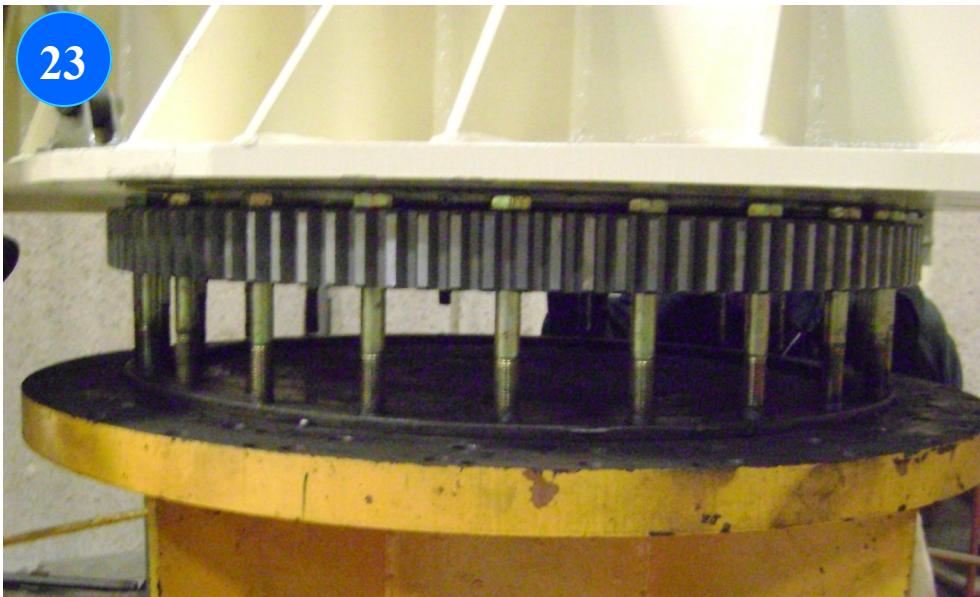
21

Position main bearing over top of pedestal.



22

Lower arm to top of pedestal. Aligning bolts with holes.



23

Move bolts or rotate bearing to align with pedestal holes.



24

Lower until bolts go thru pedestal plate. Install nuts only on bolts.



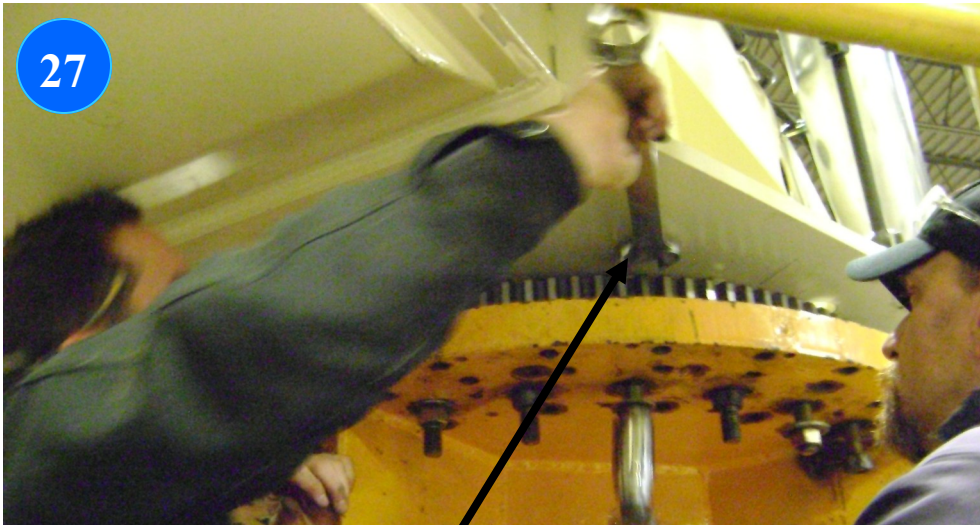
25

Pedestal nuts installed.



26

Use a 1 5/16" or 35mm deep well socket to tighten all the nuts.



27

Use a 1 5/16" or 35mm open end flat wrench to tighten all the nuts.



28



29

After all nuts are tight it is time to torque the nuts down.



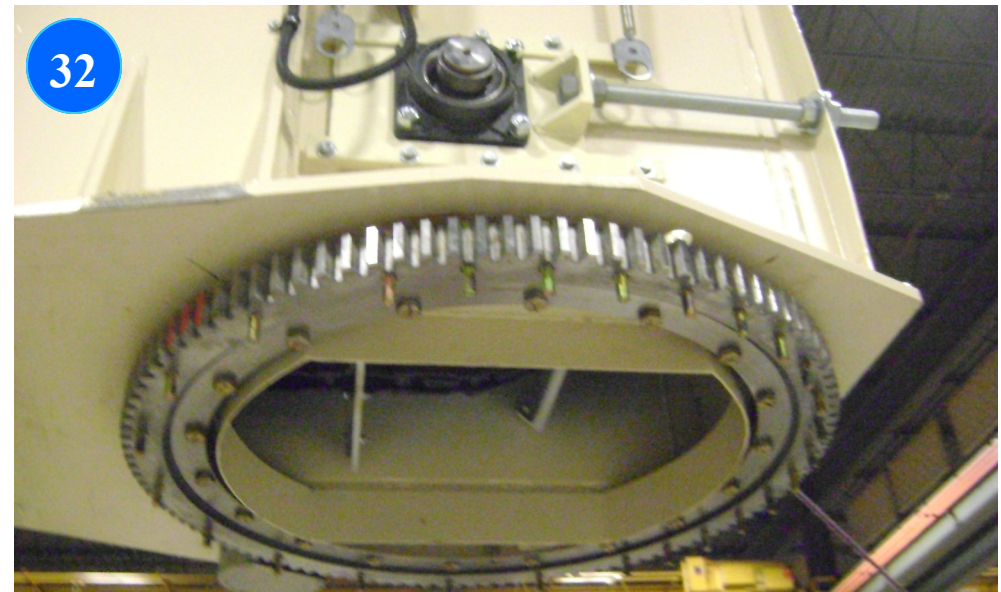
30

Torque Setting
470 ft lbs or 624 Nm



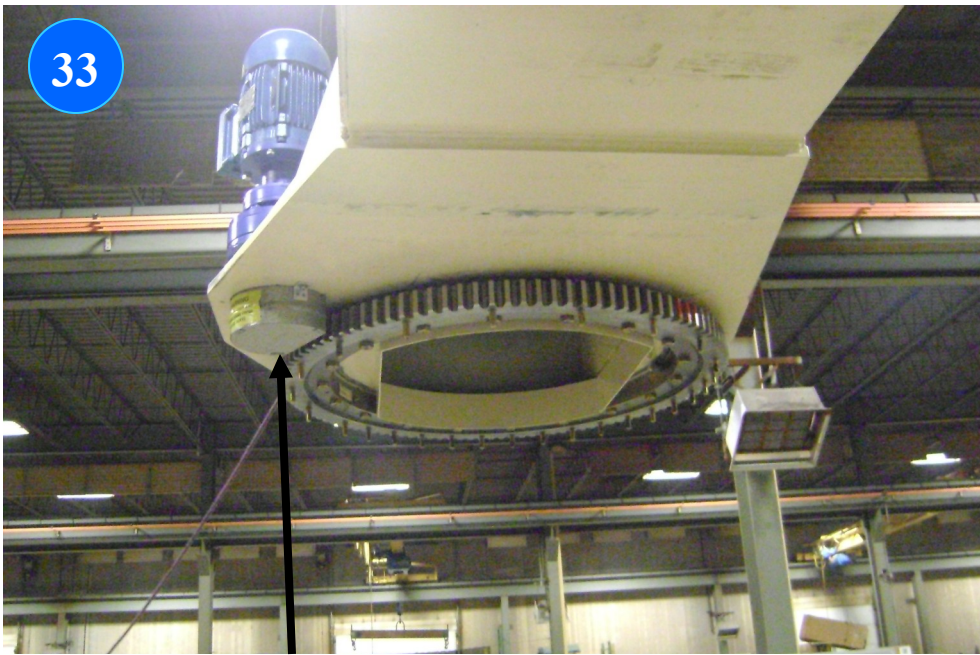
31

Main arm installed on pedestal.



32

Out board bearing with bolts installed.



33

Remove guard.



34

Rotate bearing to align with bolt holes in outboard arm.



35

Outboard arm must be level right to left and front to back.

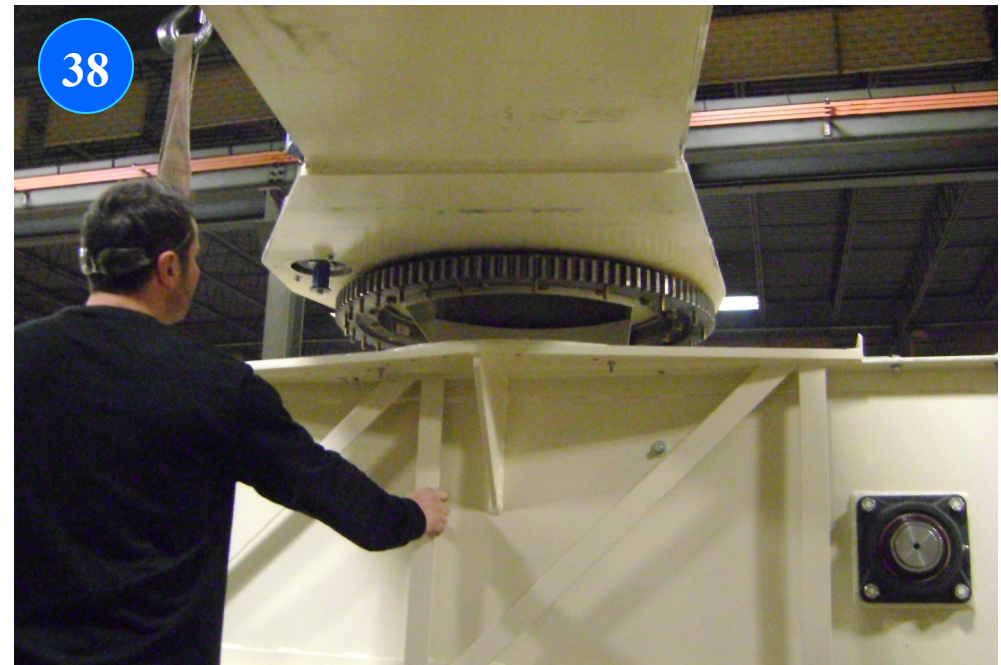


36

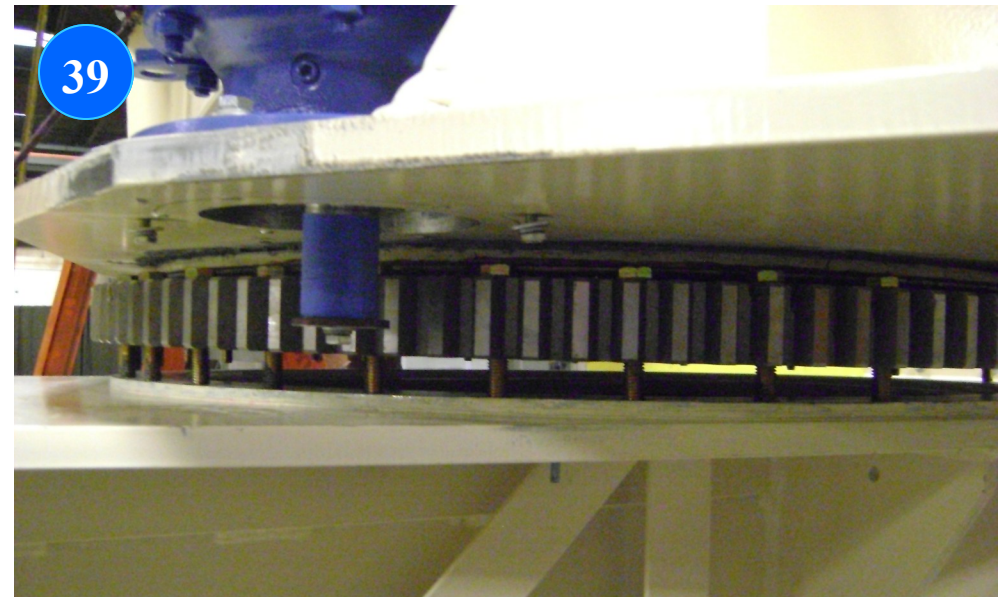
Arm must be level.



Lift arm.



Move outboard arm in place.



Align bolts in bearing with bolt holes in the outboard arm.



40



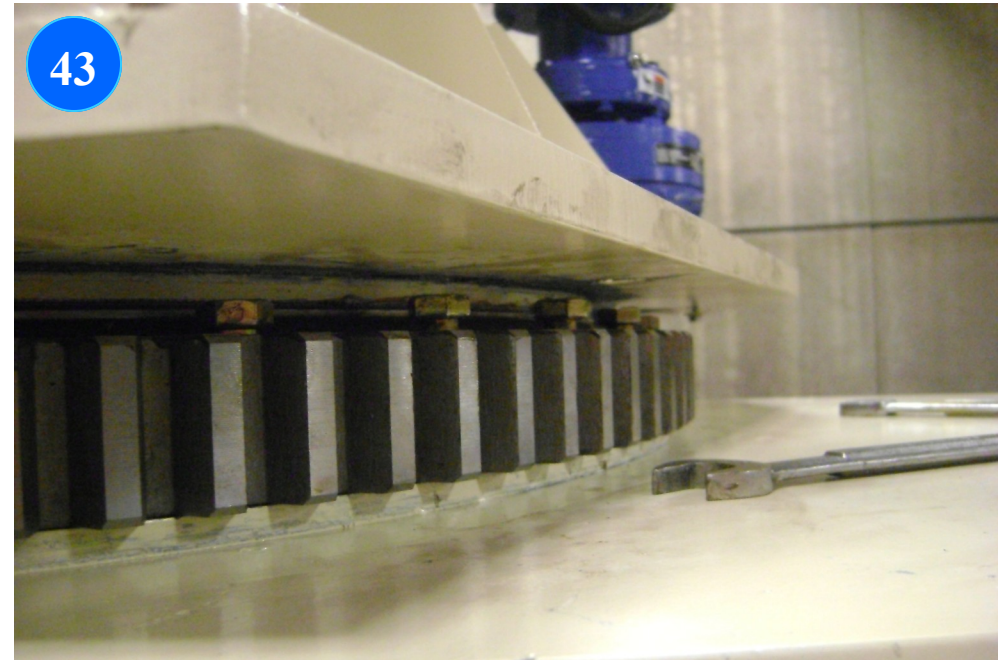
41

Using your fingers screw bolts into outboard arm working your way around bearing.



42

Using a flat open end wrench 3/4 or 19mm, tighten bolts—move around the bearing when doing this step.

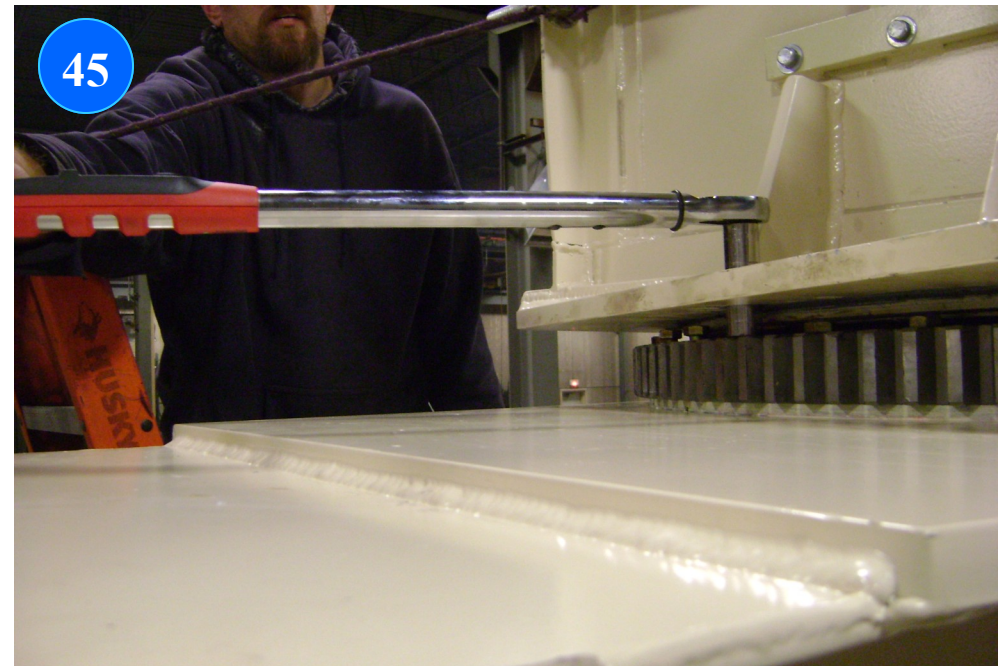


43

Bolts almost tightened.



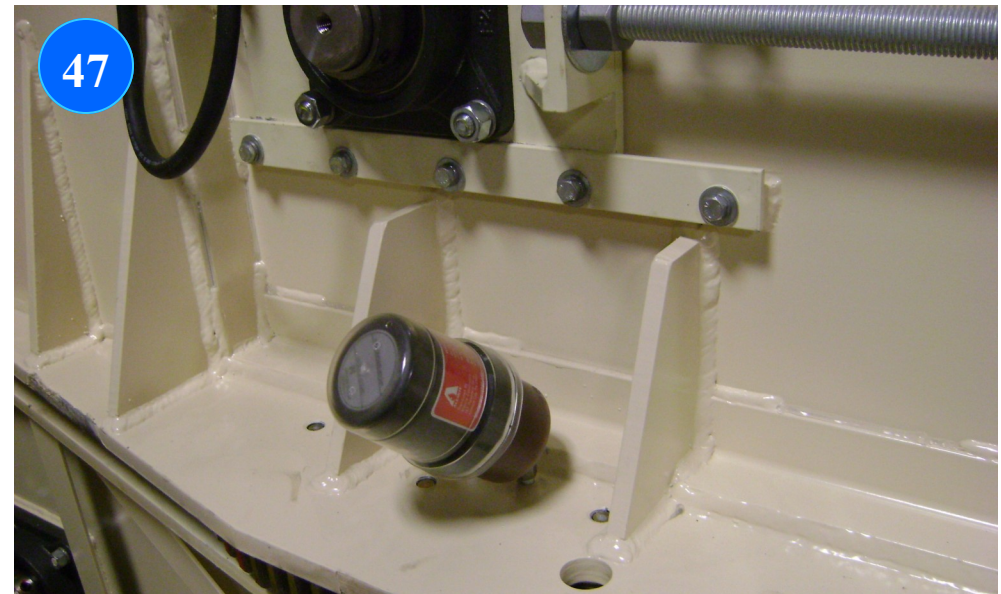
Torque bolts to
70 ft lbs or 109Nm



3/4" or 19mm socket.



Install auto greaser main pivot.
Only use -40°C grease refill.



Install auto greaser outboard arm.
Refill with -40°C grease only.