

SMALL SIZE OBI's
22, 32, 45, 60 ton range

MISCELLANEOUS SUBJECTS

23 May 1986 SUBJECT: 30 Series Torc-pac OBIK Presses

The subject presses were not built in this Country and no records are available for replacement parts. If a Customer is requesting any parts for these presses you will have to advise him of the problem and request they send the defective parts to us We will make a replacement part to the same dimensions as the original part by copying his part.

STUCK ON BOTTOM

If press bottoms out - stuck and unable to move: Three possible solutions:

1. Burn out die parallel blocks
2. Put jacks between bed frame and 'Head' - Try to run out in reverse. NOTE: any more than one try may destroy transmission.
3. Last resort is to burn out adjusting screw.

TROUBLE SHOOTING

must be replaced .

Nature of Failure

1. Motor will not start.

Cause

1. Power off
2. Fuse blown
3. Overload heaters on starter too small.
4. Loose or disconnected wires from starter to motor.

Nature of failure

2. Motor starts but runs only for a short while. "RESET" must be depressed frequently.

Cause

1. Motor is overloaded.
2. Overload heaters on starter too small.
3. Overload heater defective.

Nature of failure

3. Flywheel slows down thru work stroke.

Cause

1. Load is applied too high up on stroke and flywheel loses momentum.
2. Cushion engaged by slide too high up on stroke.
3. Job too heavy for press.

Nature of failure

4. Slide stalls in work flywheel still runs.

Cause

1. Clutch slipping - low air pressure.
2. Clutch air cylinder not screwed for enough into transmission housing.
3. Air leak in clutch and broke air cylinder.
4. Worn clutch - replace TorcPac unit.
5. Other defects in transmission unit. Replace Torc-Pac unit.

Nature of failure

5. Press will not stroke on "Once" position. OK on other positions.

Cause

1. Press stopping on cam - due to low air pressure. Must be 65Min. to 70 PSI Max.
2. Defective limit switch.
3. Broken wiring to limit switch.

Nature of failure

6. No slide movement although flywheel is running and proper air pressure is on clutch air cylinder.

Cause

1. Defect in transmission unit. TorcPac unit

Nature of failure

7. Press stops too soon before top center.

Cause

1. Low air pressure.
2. Cam moved - reset.

Nature of failure

8. Press overtravels and stops past top center.

Cause

1. High air pressure.
2. Cam or limit switch moved - reset.
3. Brake worn - TorcPac unit must be replaced.

Nature of failure

9. Press overtravels intermittently. Sometimes over travels excessively.

Cause

1. Excessive air lubrication causing valve to become sluggish.
2. Air lubricating oil may be too heavy. Use light oil (Oil No. 2).
3. Defective solenoid air valve.

Nature of failure

10. Oil leaking from inside edge of flywheel.

Cause

1. Input shaft seal defective - replace.

Nature of failure

11. Oil coming out of breather.

Cause

1. Oil level in transmission too high. Drain off to proper level in sight glass.
2. Breather tube may have been twisted. Try repositioning tube.
3. Air leak in diaphragm of clutch and brake air cylinder causing air and oil to blow out. Replace diaphragm.

Nature of failure

12. Oil leaking around gasket surfaces.

Cause

1. Screws loose. Retighten evenly.
2. Defective gasket - replace.

TORC PAC #701 USED ON 22 - 32 - 45 AND 60 TON OBI PRESSES

This is an oil wet clutch and brake unit designed specially for press drives. Lubrication of the various moving components and cooling of the brake and clutch plates are accomplished by oil.

REFERENCE IS MADE TO DRAWING R-8201

The flywheel #21 of the unit is belt driven and rotates continuously on the input shaft #20. The input shaft #20 is connected to the clutch friction disc #26 through drive pin #10. The clutch driven disc #26 are connected to the drive spider #64. The pinion gear #53 is connected to the drive spider through a spline. The pinion gear #53 drives the cluster gear #39.

There is one air cylinder #55 mounted on top of the Torc Pac transmission. The purpose of this cylinder is to release the brake #8 and engage the clutch when air is applied. Air from the electric air valve comes in at the 3/8" inlet port of the cover plate #1 and exerts pressure against the piston #3. This force forces the piston shaft downward against the clevis #50. Pin #49 links the clevis to the bell crank #48. Through thrust collar #47, Bearing #46 and tie rod #44 the spring loaded brake #8 is released and the clutch #26 is engaged. When air is exhausted from the cylinder #55, the spring action of the brake #8 through the tie rod #44 forces the Piston #3 back upward, releasing the clutch and engaging the brake.

Installation of replacement units

The drive is shipped less flywheel and no oil in unit. After assembling to the head assembly using the gasket furnished, install the flywheel before filling with oil. Sometimes during shipping the input shaft #20 will become loose. The following procedures must be followed when installing the flywheel.

The flywheel #21 is a slip fit to input shaft #20. Do not force flywheel on shaft as this can result in early bearing failure. After sliding the flywheel over the input shaft as far as it will go without forcing, line up the keyway by inserting the taper key loose in the keyway. Use a puller to continue pulling the input shaft into the flywheel until no further movement is noticed. Drive in the tapered key and secure retainer #19.

Fill the Torc Pac with Mobilfluid 350 half way up on the sight gauge.

Connect air inlet pipe and set regulator pressure to setting indicated on tag located near regulator.

In some cases it may be necessary to remove the Clutch and Brake air cylinder for handling. In removing the cylinder from the unit, the electric air valve inlet pipe must be removed. Set screw #6, must be loosened and the entire cylinder unscrewed until all the threads are out. Because the snap ring #51 offers considerable resistance it may be necessary to pry up, but be sure to do this evenly under both sides of the cylinder #55 so as not to bend the shaft #62.

In putting the air cylinder back into service, be sure that the clevis #50 is lined up properly before inserting the piston shaft #62. The cylinder #55 is screwed down all the way so that it is flush against the machined edge of the transmission case #34. Then install socket set screw #6 with nylon Plug #5 between set screw and cylinder.

Enough travel has been built into this cylinder, so that full wear of both the clutch and the brake discs is obtainable.

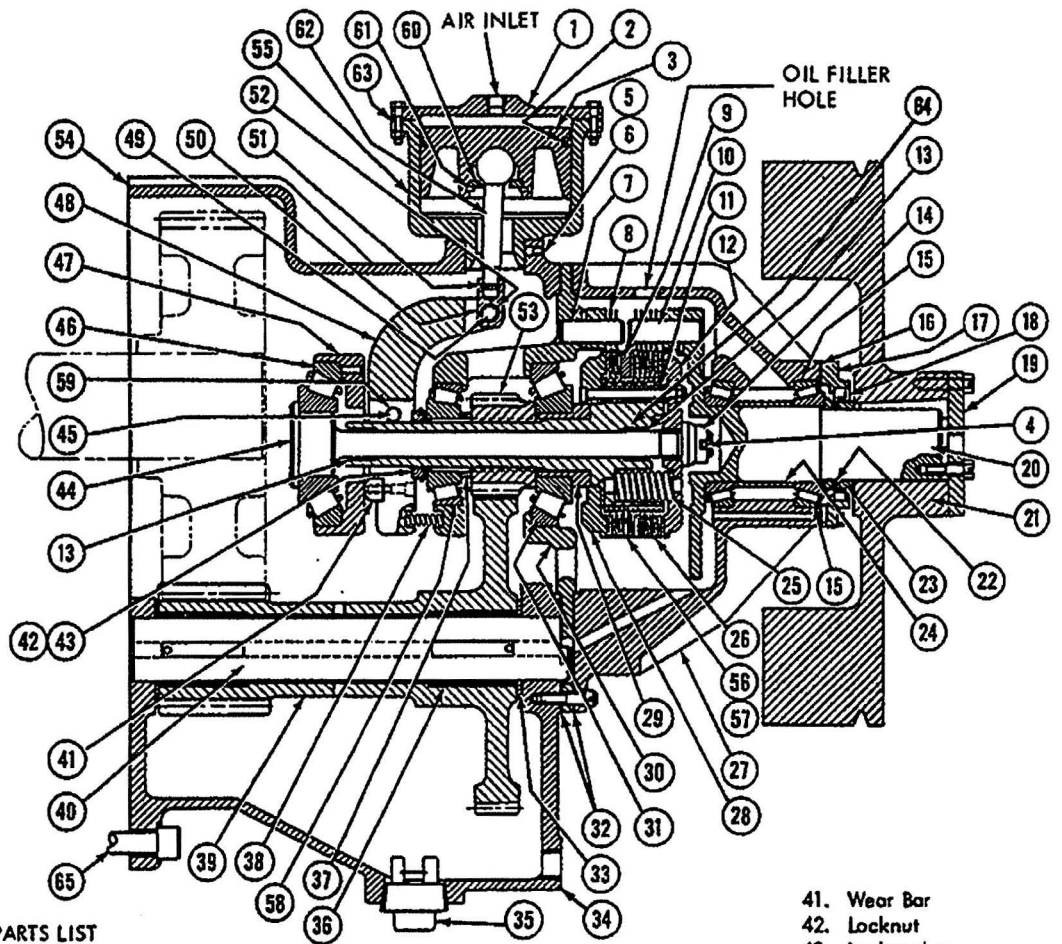
CARE AND MAINTENANCE OF TORC-PAC OPERATING FLUIDS

1. Fluid Specifications - Refer to Lubrication bulletin in service manual.
2. Operating Temperature Range - 70°F to 180°F recommended. Operating at temperatures exceeding 200°F will reduce useful life of operating fluid.
3. Oil Change Period - It is recommended that the operating fluid be changed at the following intervals:
average service: 3 million intermittent cycles or 1 year
severe service: 1-1/2 million intermittent cycles or 6 months

The above is intended as a guide only. Operating period of fluid may be reduced or extended beyond above

PARTS DESCRIPTION

Torc-Pac Press Drive



PARTS LIST

- | | | |
|---------------------|----------------------|---------------------------|
| 1. Cylinder Cover | 21. Flywheel | 41. Wear Bar |
| 2. Quad Ring* | 22. "O" Ring* | 42. Locknut |
| 3. Air Piston | 23. Bearing Retainer | 43. Lockwasher |
| 4. Lock Pin | 24. Spacer | 44. Tie Rod |
| 5. Nylon Plug | 25. Spring | 45. Bell Crank Pin |
| 6. Socket Set Screw | 26. Friction Disc | 46. Bearing |
| 7. Drive Pin | 27. Rear Housing | 47. Thrust Collar |
| 8. Disc | 28. Brake Plate | 48. Bell Crank |
| 9. Back Up Plate | 29. Sleeve | 49. Pin |
| 10. Drive Pin | 30. Bearing Support | 50. Clevis |
| 11. Spacer | 31. Bearing | 51. Snap Ring |
| 12. Clutch Plate | 32. Gasket | 52. Bushing |
| 13. Bushing | 33. Thrust Washer | 53. Pinion |
| 14. Special Nut | 34. Front Housing | 54. Gasket |
| 15. Bearing | 35. Magnetic Plug | 55. Cylinder |
| 16. Gasket* | 36. Bushing | 56. Socket Head Set Screw |
| 17. Seal Housing | 37. Spacer | 57. Socket Head Set Screw |
| 18. Oil Seal* | 38. Spring | 58. Bearing |
| 19. Retainer | 39. Cluster Gear | 59. Bushing |
| 20. Input Shaft | 40. Shaft | 60. Ball Retainer |
| | | 61. Retaining Ring |
| | | 62. Piston Shaft |
| | | 63. Gasket* |
| | | 64. Drive Spider |
| | | 65. Mounting Screws |

*Indicates Part Subject To Wear.

Figure 2B
Torc-Pac Press Drive



recommended period on the recommendation of the fluid supplier after fluid analysis.

TROUBLE SHOOTING

(1) Leaks Oil thru Breather

- a. Check oil level - may be over; filled.
- b. Piston quad ring #2 faulty.

Stop machine - remove breather - engage clutch - then hold finger over breather hole - if air is coming out this hole, piston quad rings need replacement.

(2) Leaks Oil Through Rear Seal

- a. Check to see if flywheel #21 was installed properly. (refer to front page)
- b. Seal #18 faulty, and must be replaced.
- c. Be sure breather is not plugged or blocked.

(3) CLUTCH FAILS TO ENGAGE

- a. Check air regulator.
- b. Check air valve (pressure in and pressure out to cylinder).
- c. Check air cylinder for proper installation. (refer to installation).
- d. Check quad ring #1.
- e. Check special nut #14 by removing rear housing #27.
- f. Check clearance between clutch disc and clutch plate #12 should be approximately .055 to .060.

(4) BRAKE FAILS TO ENGAGE

- a. Check for worn disc #8.
- b. Check for broken springs , #25.

(5) UNIT OPERATES WITH EXCESSIVE NOISE AND VIBRATION

- a. Low oil level.
- b. Mounting screws #65 not tight.
- c. Damaged bearings #15 - #31- #46.
- d. Bent input shaft #20.
- e. Flywheel #21 out of balance.
- f. Damaged gears #39 - #53 .

(6) UNIT OPERATES ERRATICALLY

- a. Check electrical system, particularly look for limit switch bounce, etc.
- b. Air valve defective.
- c. Poor air supply.
- d. Bearing failure.

If it becomes necessary to remove the entire unit from the head assembly the following procedures should be followed.

- (1) Remove main motor and base.
- (2) Drain oil.
- (3) Remove flywheel.
- (4) Remove air line from air valve.
- (5) Secure with overhead crane and remove all bolts securing the transmission to the head assembly.
- (6) Pry unit off (2) two dowel pins used for locating unit in its proper position.

The unit comes sealed from the factory, and is covered by CLEARING warranty against defective materials and workmanship. Caution: Do not tamper with unit. It has been properly set and adjusted at the

factory. Breaking the seals automatically voids the warranty.

After expiration of warranty period, should unit need replacing, a new or a rebuilt Torc-Pac drive is available at a nominal charge. Consult CLEARING Service Department for further information.

NOTE: Should it be necessary to ship Torc-Pac drive units back to factory, remove flywheel, flywheel key and flywheel retainer. The flywheel retainer is designed to be used as a puller for removing flywheel.

It is CLEARING's suggestion that you send the unit to CLEARING for all repairs, however parts are available in kits if you should choose to repair your own unit.

PRESS INFORMATION

	GA Drwg.	Weight	Gibs Min.	Max.	TorcPac Oil, Qts	Motor HP
22 Ton TorcPac	D-705, D-706	2300	.0025	.0035	21	3
32 Ton TorcPac	D-707, D-708	3400	.0025	.0035	22	5
45 Ton TorcPac	D-709, D-710	6000	.003	.0045	24	7.5
60 Ton TorcPac	D-711, D-712	9800	.003	.0045	26	10
75 Ton Geared		16,000				7.5
75 Ton Flywheel		15,500				7.5
90 Ton Geared		17,500				10
90 Ton Flywheel		17,000				10
110 Ton Geared		24,000				10
110 Ton Flywheel		23,500				10
150 Ton, Geared		39,000				
200 Ton, Geared		50,000				

CUSHION INFORMATION

OBI tons	Max Stroke	Max. Tonnage
22	2"	1.4 tons
32	2.5"	3.0 tons
45	3"	5.6 tons
60	3.5"	7.5 tons

GIB ADJUSTMENT

The gibs have been set with proper running clearances at the factory. Do not readjust unless it is definitely necessary.

To adjust, the slide should be at the top of the stroke. (See Fig 1B.) The left hand gib is fixed. Adjustment is done with the right hand gib. Loosen the front screws on the right gib slightly. Next loosen the jam nuts of the adjustment set screws and back off the set screws. Tighten the cap screws to bring the gib against the slide. Then alternately loosen the cap screws and tighten the adjustment set screws, to back the gib off for the required running clearance (see chart below). After retightening and locking the set screws, check clearance again to make sure adjustment has not changed.

LUBRICATION

Lubricating Pump - Automatically

Lubricates the Following Points:

1. Main Bearing (Rear)
2. Main Bearing (Front)
3. Connection Bearing
4. Gib RH. Front
5. Gib LH. Front
6. Gib RH. Rear
7. Gib L.H. Rear
8. Wrist Pin

The Following Points Are to Be Lubricated as Specified:

- Inclining Screw - (Swab with Moly-Kote when necessary)
- Air Line Lubricator (maintain Level)
- Main Motor (As per Manuf. requirement)
- TorcPac Oil Fill & Breather - Check oil level at gage
- Cam Lifter Bushing (Add few drops of oil per week)
- Cam pin (Add few drops of oil per week)

Optional Equipment, Manual Lubrication Points:

- Cushion piston
- Cushion cylinder
- Counterbalance cylinder packing
- Counterbalance shaft

Lubrication

Proper lubrication, essential to successful operation of all machine tools, is necessary for satisfactory operation of your TorcPac OBI press. By referring to the nameplate on side of the press, recommendations for type of oil and frequency of application are obtained. Points 1 through 8, which includes the main and connection bearings, gibs and wrist pin, are covered on a separate instruction plate mounted near the centralized point of application at the right rear of press.

A "one shot" hand pump system is standard. A fully automatic system is an optional type, which can be readily installed and added to the standard system .

Operation of Centralized Lubrication System
Briefly, the operation of the centralized lubrication system is as follows: Oil under pressure, as can be observed on the gauge from the "one shot" pump or the automatic oiler, is fed to each

of the 8 metering units. As long as pressure is observed on the gauge, these metering units control the rate of oil fed to each of the bearing points.

In using the "one shot" pump or the automatic - pump, be sure that after refilling they are primed so as to assure oil flow. Several extra strokes on the hand lever of the pump, or pulling up and releasing several times the feed rod on the automatic pump until oil appears at the bearings, will usually be sufficient.

The frequency of lubrication on the automatic system is preset at the factory. For further information regarding the automatic system consult manufacturers service instructions. Contact nearest manufacturer's representative if persistent trouble occurs.

Description of Lubricants Specified

Lubricants are referred to on the name plate and lubrication plate by U. S. i. oil numbers. The general description and commercially available types are listed. We do not exclusively recommend any one manufacturer. The following are listed for your convenience, and any other lubricant of equivalent quality or specifications is acceptable.

C'rtbalance Cylinders, Cushions & Points 1-8
Oil should be a well refined base oil of turbine or hydraulic quality.

(See Lubrication Matrix under the Resources Tab of our website.)

Airline Lubricating Bowl

Oil should be of hydraulic or turbine quality highly oxidation inhibited and foam resistant.

(See Lubrication Matrix under the Resources Tab of our website.)

TorcPac Transmission

DTE10 EXCEL 46

IMPORTANT: Maintain oil level in transmission.
Oil level should be at center of gauge with
press in upright position. Drain, flush and
refill every 6 months.

Oil Capacity

22 Ton - 21 Qts.
32 Ton - 22 Qts.
45 Ton - 24 Qts.
60 Ton - 26 Qts.

REPAIR KITS

Torc Pac Clutch & Brake Transmissions
Old Style 57 Series
Models 610, 611, 620, 630, 640

If you are rebuilding your own transmission, you must replace of the following parts to insure proper and safe operation.

1	# 9 Backup Plate	1	#31 Bearing
1	#28 Brake Plate	1	#12 Clutch Plate
1	#68 Pipe Plug	1	#46 Bearing
1	#67 Special Dowel Pin	1	#58 Bearing
1	#64 Output Shaft	1	#14 Special Nut
1	#66 Sprialux Ring	1	# 4 Lock Pin
7	# 8 Steel Disc	2	#13 Bushings
9	#26 Friction Disc	2	#32 Gaskets
2	#15 Bearing	1	#54 Gasket

New Style 57 Series
Models 710

Same part numbers as above but different cost...

AB50
Model 701

1	# 2 Gasket	1	# 27 O-Ring
2	# 12 Gaskets	1	# 28 Oil Seal
2	# 13 Bearing	1	# 33 Brake Plate
8	# 14 Friction Disc	1	# 40 Bearing
1	# 15 Backup Plate	1	# 41 Bearings
6	# 16 Steel Discs	1	# 49 Gasket
1	# 21 Special Nut	1	# 15 Special Dowel
1	# Dowel Pin	1	# 15 Pipe Plug
2	# 22 Bearings		