

21. UPPER FRAME

21.1 PREPARATION FOR REMOVAL

- (1) Remove attachment
(Refer to LQ32 : ATTACHMENT)
- (2) Remove cab (Refer to 2. CAB.)
- (3) Remove guard (Refer to 4. GUARD)
- (4) Remove counterweight
(Refer to 11. COUNTERWEIGHT)
- (5) Remove swivel joint
(Perform the steps (1) thru (7) of 20. SWIVEL JOINT)

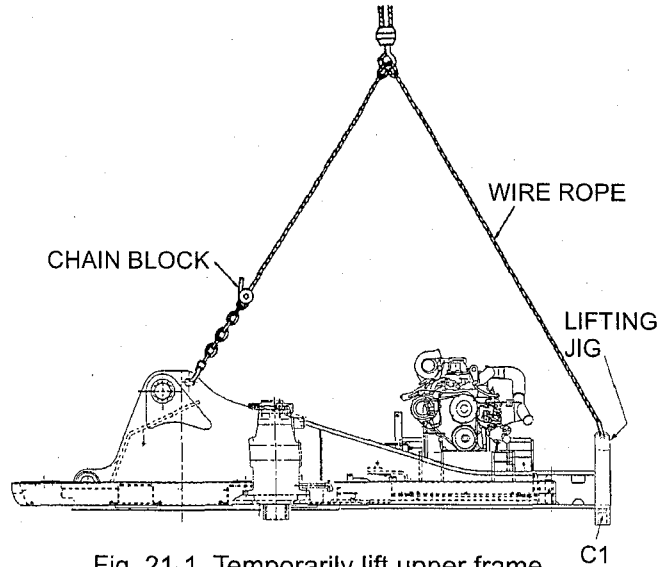


Fig. 21-1 Temporarily lift upper frame

21.2 REMOVAL

- (1) Lifting up upper frame temporarily
Insert two upper swing body lifting jigs and two counterweight fastening cap screws (C1) M30 X 330 into the counterweight mounting holes from above. Attach two chain blocks to the boom foot side and lift the upper frame at four points.

Wire rope :

Ø16 (0.630") X 2.5 m (8 ft-2 in), 2 pcs.

Ø16 (0.630") X 1.5 m (4 ft-11 in), 2 pcs.

Chain block :

For 2,000 kg (4,410 lbs) 2 pcs.

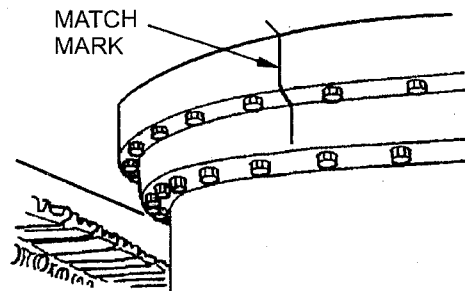



Fig. 21-2 Matching mark on swing bearing and upper frame

- (2) Marking match marks on swing bearing
Put match marks on upper frame and swing bearing.
- (3) Removing upper frame attaching bolts
Remove thirty one capscrews M20 X 115 and two reamer bolts used to install swing bearing and upper frame.
 : 30 mm
- (4) Slings upper frame
Sling according to Fig.21-1, and remove upper frame and put it on a stand.
Weight : Approx. 6 ton (13,200 lbs)

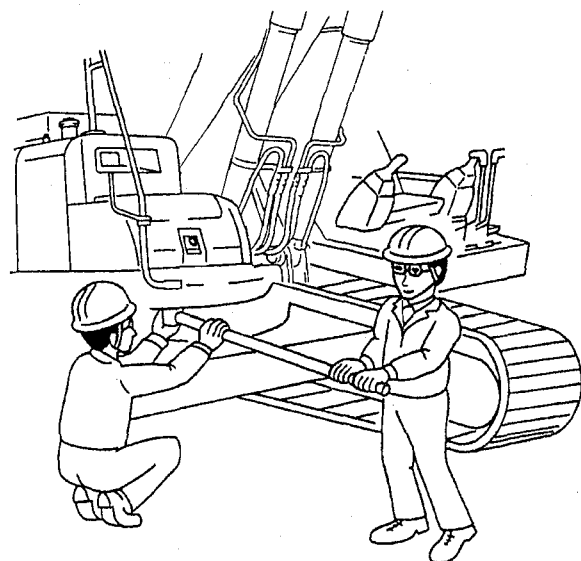



Fig. 21-3 Removing upper frame attaching bolts


21.3 INSTALLATION

- (1) Installing is done in the reverse order of removing.
- (2) Cleaning mating surfaces of upper frame and swing bearing.
- (3) Apply Loctite #515 to the inside of the capscrews on the contact surface.
- (4) Sliding upper frame
Match marks and install it with two reamer bolts (11) temporarily.

! Confirm the reamer bolt positions referring to Fig. 21-5.

 : 30 mm, Tightening torque :
50 kgf·m (360 lbf·ft)
Apply Loctite #262

- (5) Install swing bearing
Install thirty one capscrews (10) M20 X 115.

 : 30 mm, Tightening torque :
50 kgf·m (360 lbf·ft)
Apply Loctite #262

Apply Loctite #515 to the race surface over the whole circumference (hatched) on the inside of capscrew.

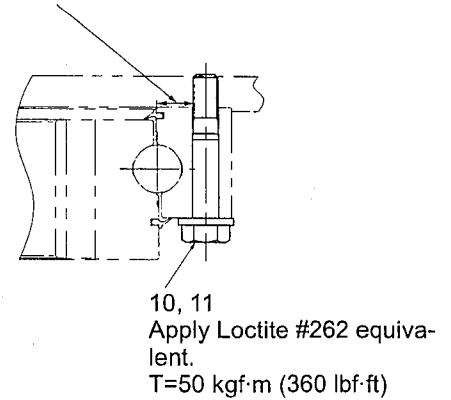


Fig. 21-4 Bearing mount

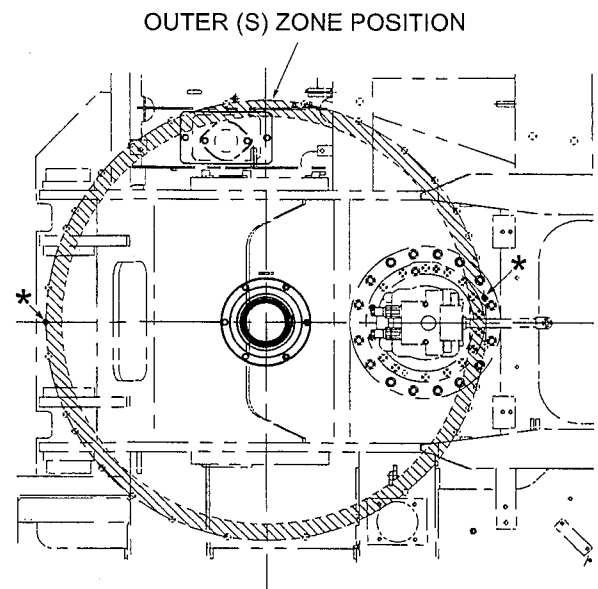


Fig. 21-5 Reamer bolt position (*)
Apply Loctite on section specified by slanting lines

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1. HYDRAULIC PUMP · REGULATOR

1.1 HYDRAULIC PUMP

1.1.1 STRUCTURAL EXPLODED VIEW

(1) Main pump

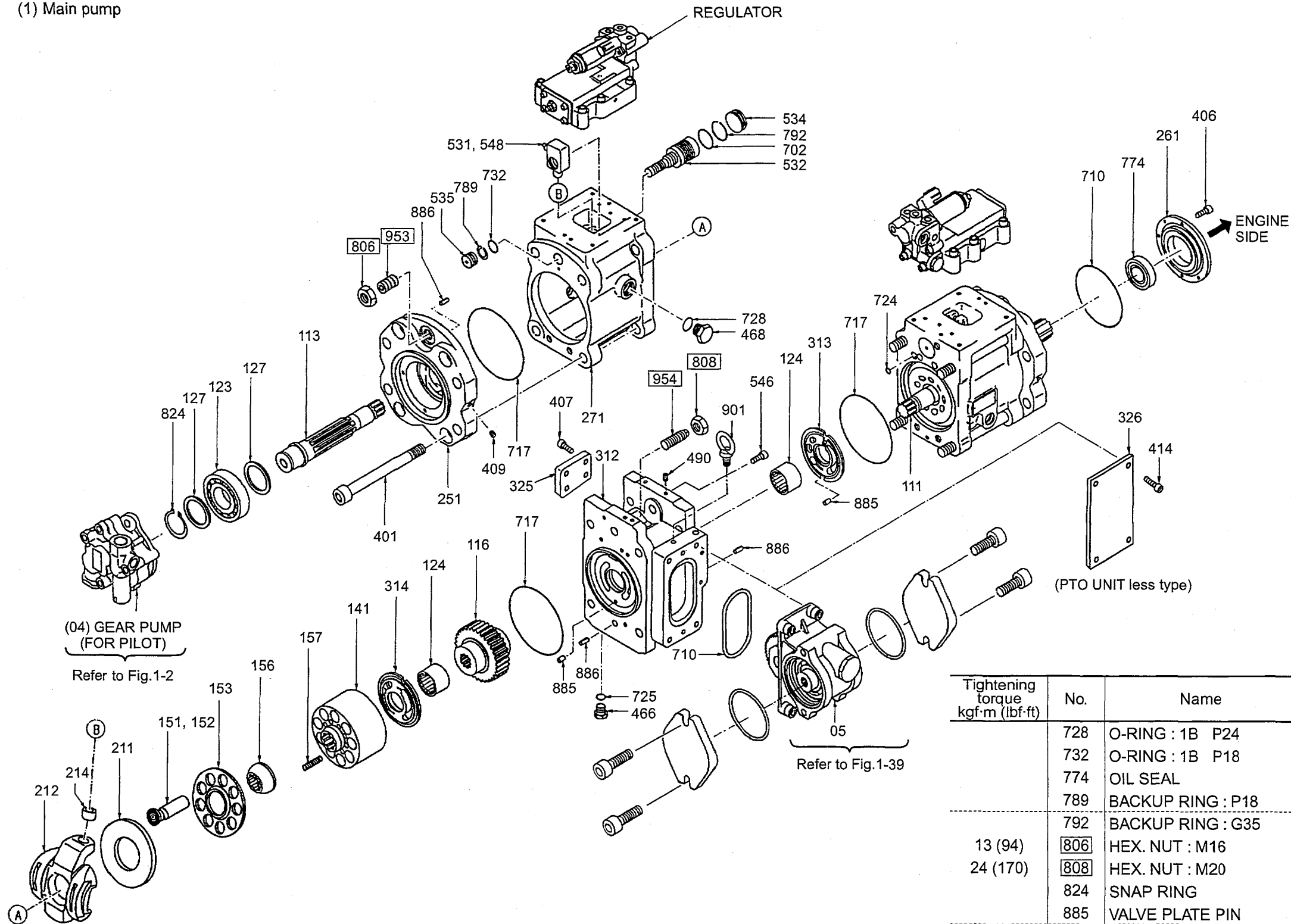


Table 1-1

Tightening torque kgf·m (lbf·ft)	No.	Name	Q'ty
	111	SHAFT (F)	1
	113	SHAFT (R)	1
	116	1st GEAR	1
	123	ROLLER BEARING	2
	124	NEEDLE BEARING	2
	127	BEARING SPACER	4
	141	CYLINDER BLOCK	2
	151	PISTON	18
	152	SHOE	18
	153	PLATE (RETAINER PLATE)	2
	156	SPHERICAL BUSHING	2
	157	CYLINDER SPRING	18
	211	SHOE PLATE	2
	212	SWASH PLATE	2
	214	TILTING BUSHING	2
	251	SWASH PLATE SUPPORT	2
	261	SEAL COVER (F)	1
	271	PUMP CASING	2
	312	VALVE BLOCK	1
	313	VALVE PLATE (for CW rotation)	1
	314	VALVE PLATE (for CCW rotation)	1
	325	COVER	1
	326	COVER	1
44 (320)	401	SOCKET BOLT : M20 X 210	8
3.0 (22)	406	SOCKET BOLT : M8 X 20	4
1.2 (8.7)	407	SOCKET BOLT : M6 X 30	3
5.8 (42)	414	SOCKET BOLT : M10 X 16	4
3.7 (27)	466	VP PLUG : PF1/4	2
17 (120)	468	VP PLUG : PF3/4	4
0.9 (6.5)	490	PLUG : NPTF1/16	32
24 (170)	531	TILT PIN : M24 X 2	2
24 (170)	532	SERVO PISTON : M24 X 2	2
	534	STOPPER (L)	2
	535	STOPPER (S)	2
	546	SPACER	2
	548	FEED BACK PIN	2
	702	O-RING : 1B G35	2
	710	O-RING : 1B G95	2
	717	O-RING : 1B G145	2
	724	O-RING : 1B P8	18
	725	O-RING : 1B P11	6
13 (94)	806	HEX. NUT : M16	2
24 (170)	808	HEX. NUT : M20	2
	824	SNAP RING	2
	885	VALVE PLATE PIN	2
	886	SPRING PIN	4
	901	EYE BOLT : M10	2
	953	SET SCREW : M16 X 30	2
	954	SET SCREW : M20	2
	(04)	GEAR PUMP	1s
	05	PTO UNIT	1s

Fig. 1-1 Structural exploded view of main pump

The codes in a rectangle represent adjust screws. Do not tamper with the adjust screws as much as possible.