

**KPS-18T**  
**Service Manual**  
~Assembly~

2006.3.31

# Housing(pump , Swash plate

## NOTE:

Assemble parts on a clean place. When inserting, take care not to enter contamination in cases.

When installing, put clean oil on O-rings, lip of oil seals, seal rings and bushings.

1.Housing(pump cmp(26) [Fig.1]

2.Swash plate(59) [Fig.2]

3.Install two swash plates(59) and two washers(60) into housing(27). [Fig.3]

\*Put clean oil on contact surfaces of bushings(28).

\*Avoid damage of machined surface(housing(27)).

Fig.1

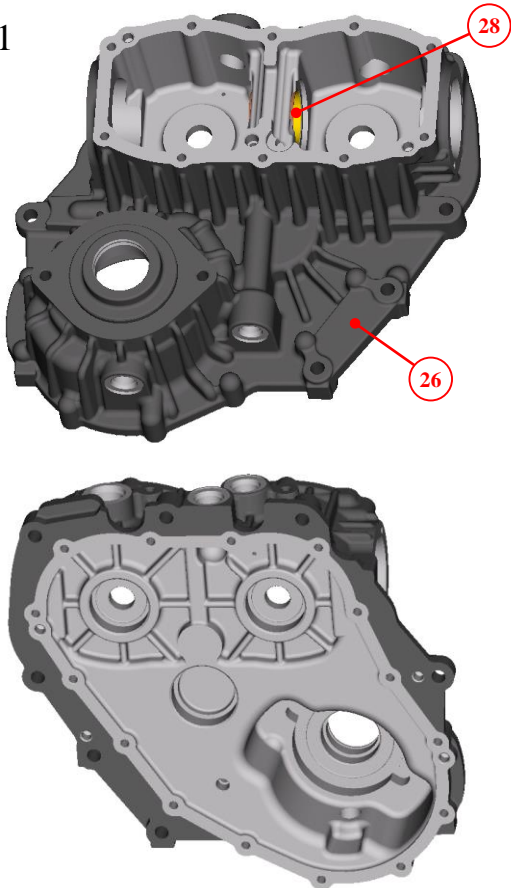


Fig.2

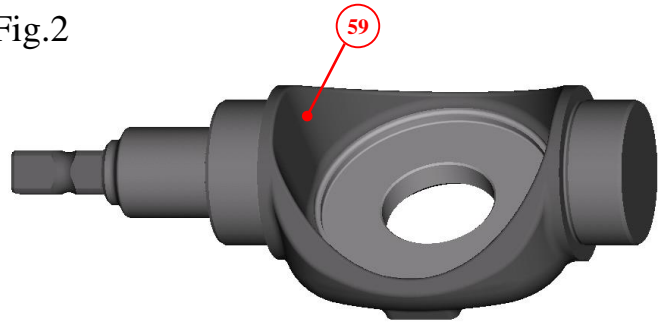
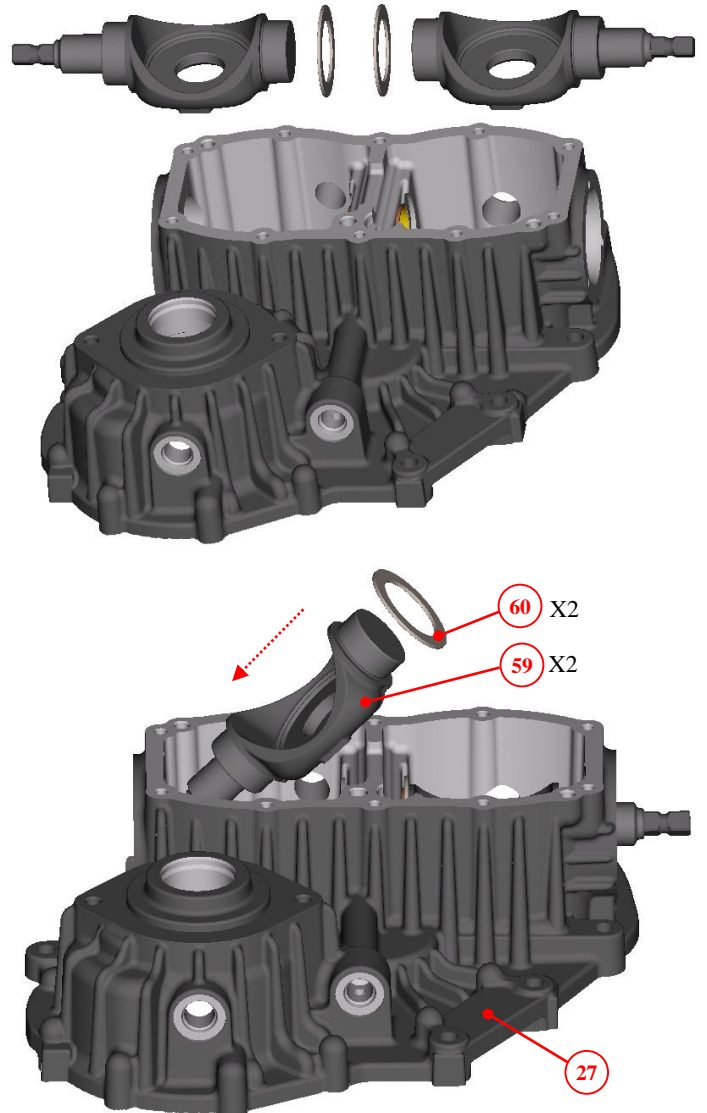
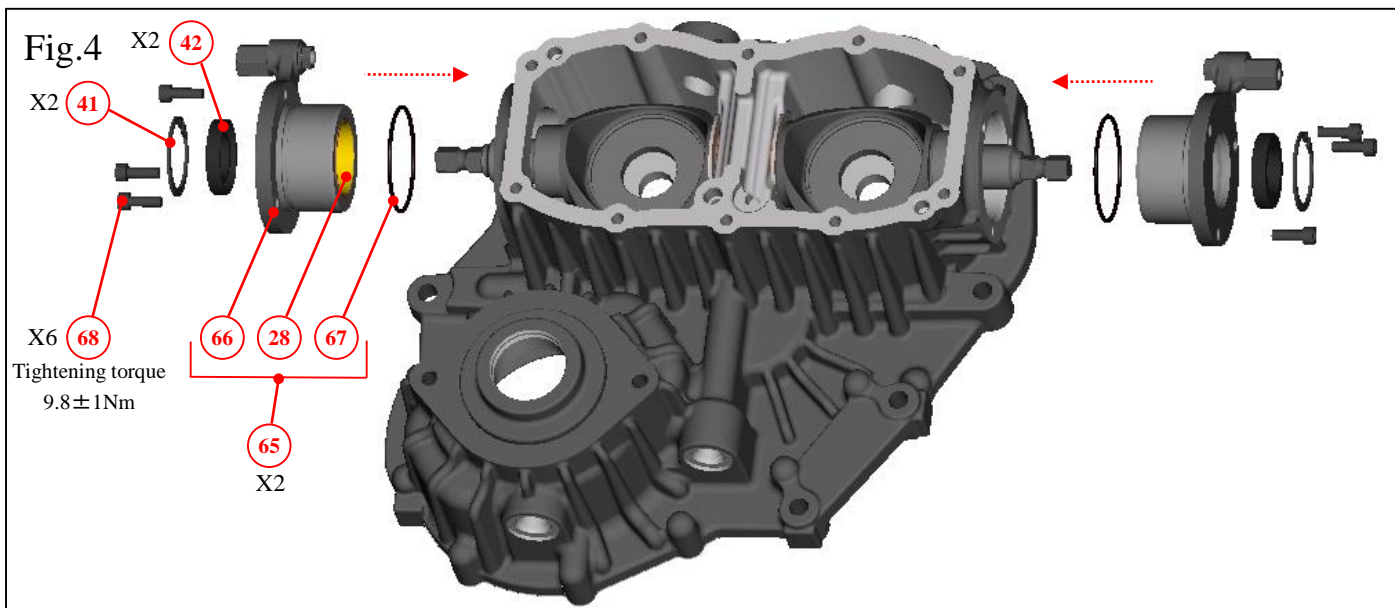


Fig.3



# Housing(pump , Swash plate)



4. Install two side cover cmp(65), six bolts(68), two oil seals(42) and two rings(41) into housing (27). [Fig.4]

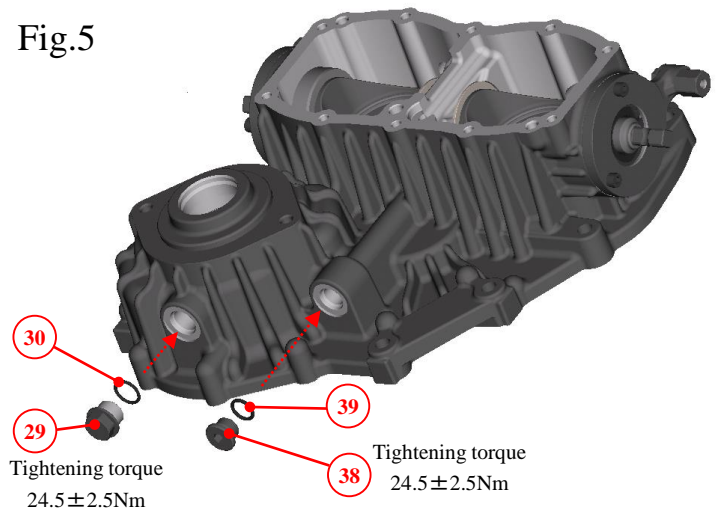
5. Install plugs(29)(38) and O-rings(30)(39) into housing(27). [Fig.5]

6. Install friction plate(45) onto housing(27). [Fig.7]

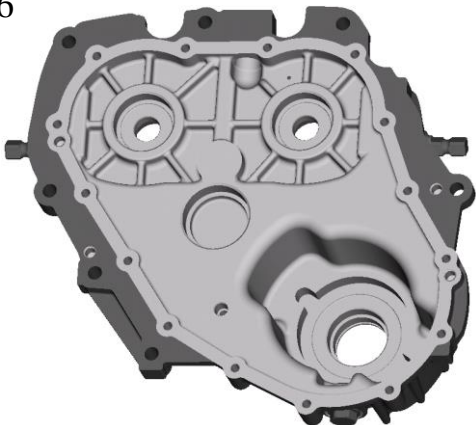
\*If damage is detected, side cover cmp(65) must be replaced.

\*When installing, take care not to damage lip of oil seal(42).

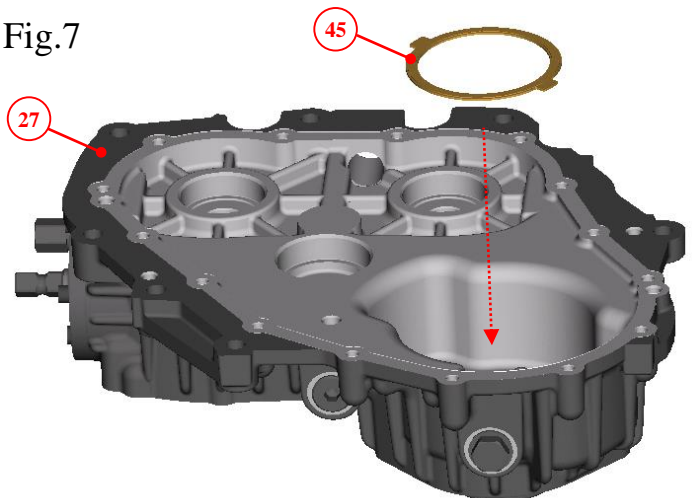
**Fig.5**



**Fig.6**



**Fig.7**



# PTO cmp

7. Install bearing(57), three A-plates(95), three friction plates (98), C-plate(97), B-plate(96), two seal rings(56) onto PTO shaft(75). [Fig.9]

8. Install two bearings(93) and ring(87) into gear(77). [Fig.9] (PTO gear cmp)

9. Install key(92) onto PTO shaft(75). And install three rods (90), PTO gear cmp into clutch cylinder cmp(78). And install this assembly onto B-plate(96). And install spacer (89) and bearing(93) onto PTO shaft(75). [Fig.10] (PTO cmp)

\*Avoid damage of machined surfaces(gear(77), shaft(74)).  
 \*If damage is detected, seal ring(56) must be replaced.  
 \*When installing, take care of the direction of key(92).

Fig.8

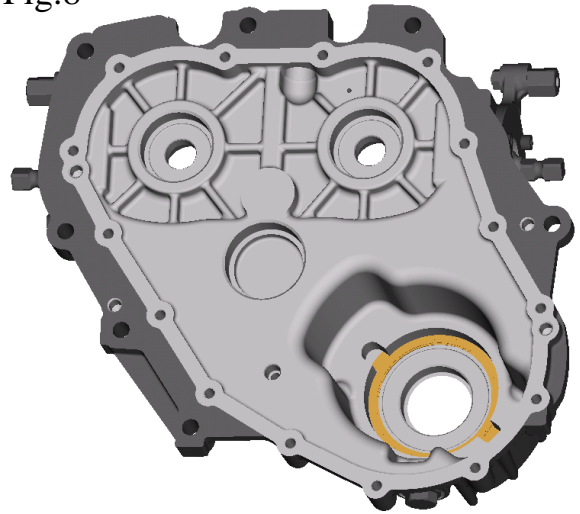


Fig.9

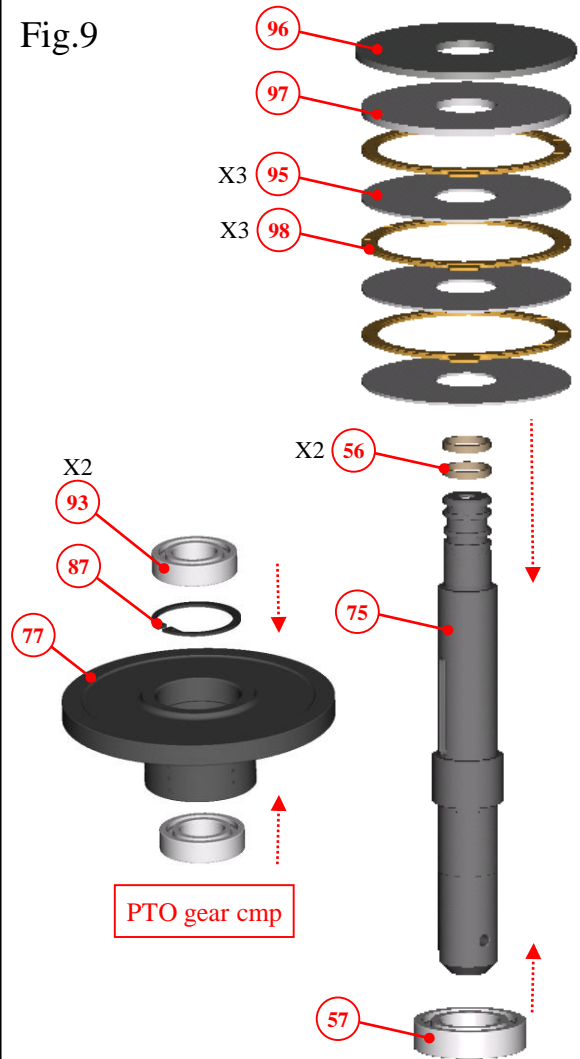
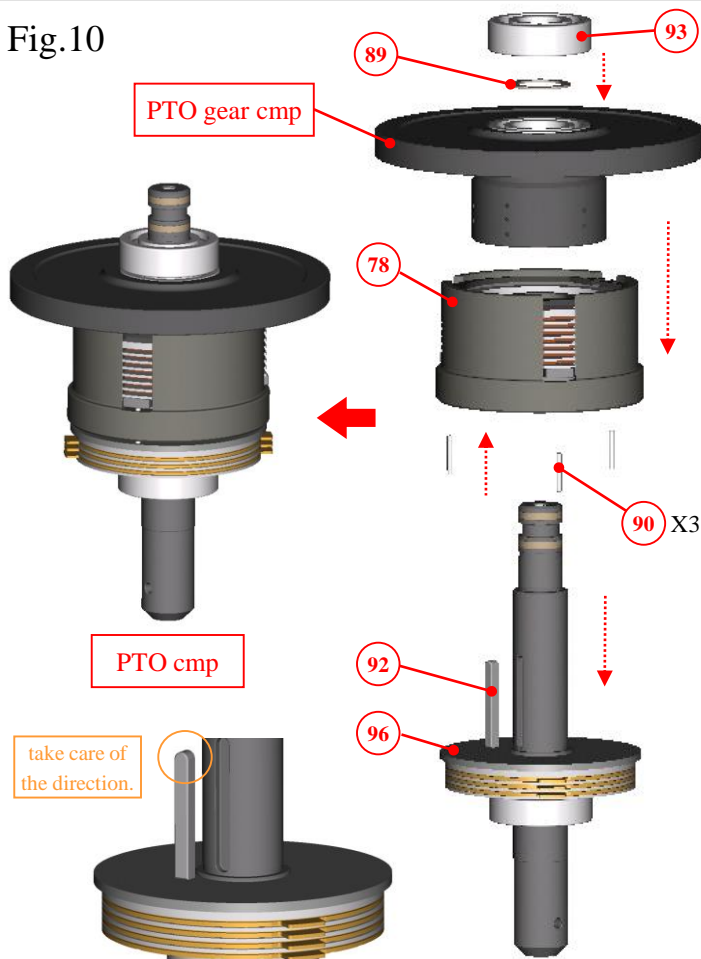


Fig.10



# Shaft, gear

10. Install PTO cmp onto housing(27) adjusting forks of friction plates(45).  
[Fig.11]

11. Install two bearings(48) and gear(47) onto shaft(input(46). [Fig.12] (Shaft(input cmp))

12. Install two bearings(57) and gear(50), seal ring(56) onto shaft(pump R(58)).  
[Fig.13] (Shaft(pump R cmp))

13. Install two bearings(57), gear(50), seal ring(56) onto shaft(pump L(49)). [Fig.14]  
(Shaft(pump L cmp))

\*Avoid damage of machined surfaces  
(housing(27), gears, shafts).

\*If damage is detected, seal ring(56) must be replaced.

\*When installing PTO cmp onto housing(27),  
forks of three friction plates(98) fit grooves  
of housing(27).

Fig.11

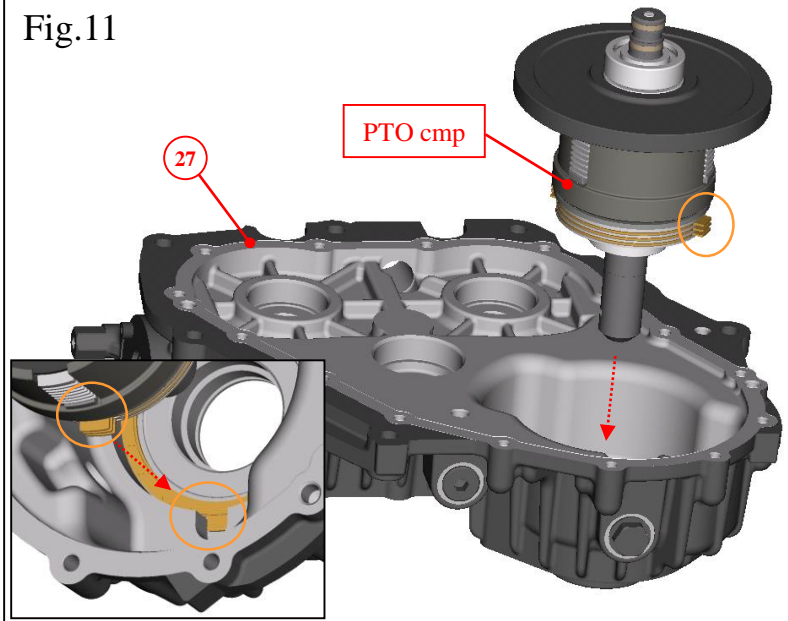


Fig.12

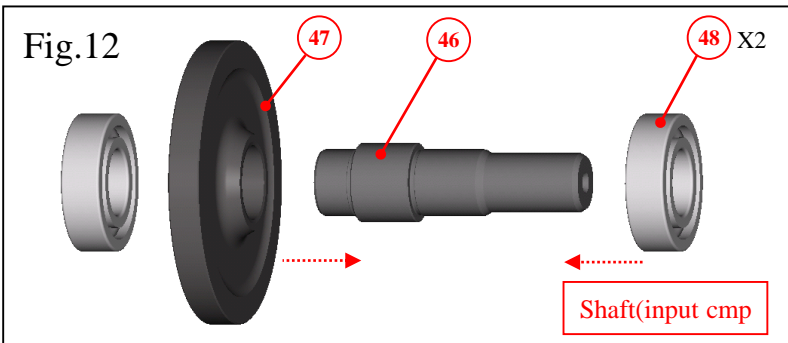


Fig.13

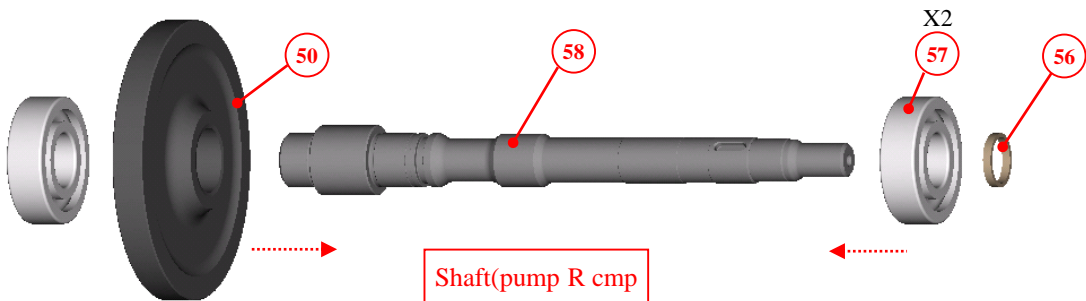
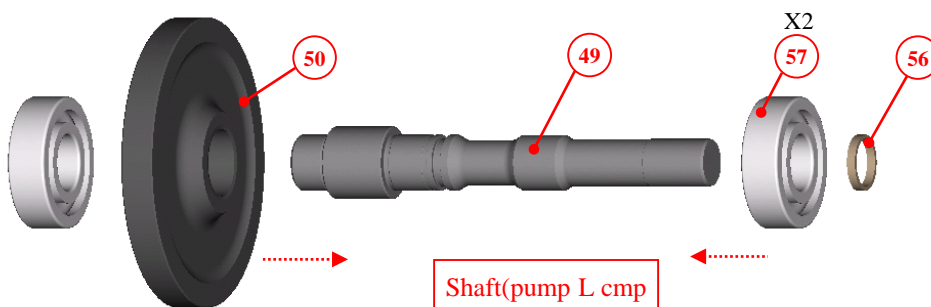


Fig.14





# Housing(gear , Shaft , Gear

14.Install shaft(input cmp, shaft(pump R cmp, shaft(pump L cmp and pipe(A cmp(32) into housing (27). [Fig.15]

15.Install two pins(40) into housing(27). And install packing(44) and housing(43) onto housing(27). And install fifteen bolts(45) into housing(43). Tighten screws evenly in a crossing pattern until they are snug. And install oil seal(42) and spacer(37) and ring(41) into housing(43). [Fig.16]

16.Install plug(38), O-ring(39), two plugs(23) and O-rings(24). [Fig.17]

\*Avoid damage of machined surfaces(housings, gears, shafts).

\*When installing, take care not to damage lip of oil seal(42).

Fig.15

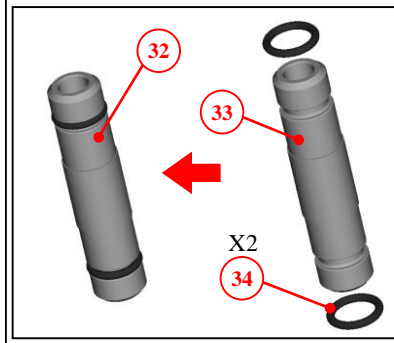
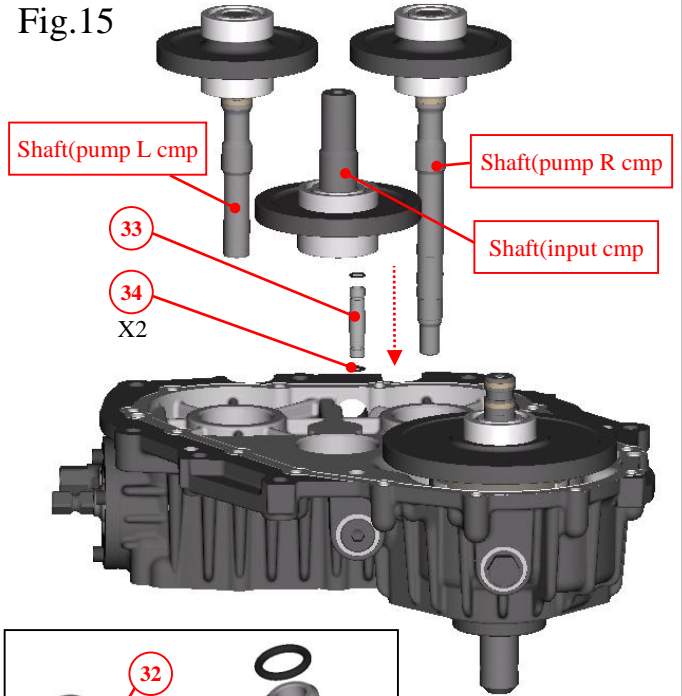


Fig.16

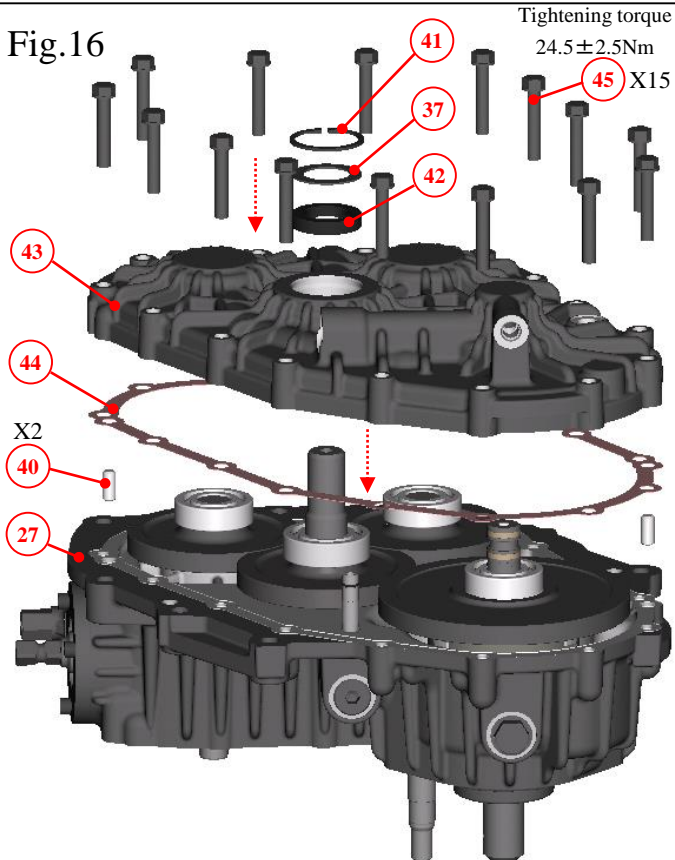
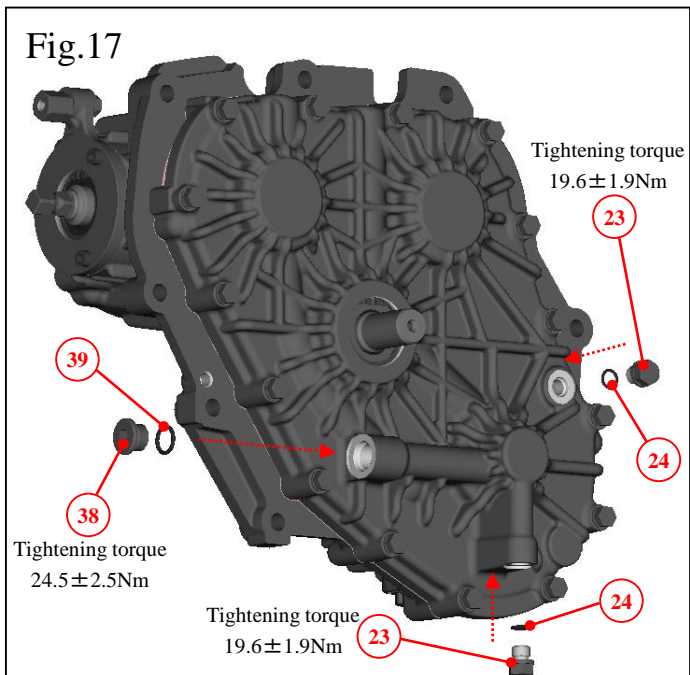


Fig.17



# Cylinder block cmp

17. Install two thrust plates(61) onto swash plates (59). And install oil seal(42), spacer(37) and ring(41) into housing(27).  
And install two control arms(62), two bolts(63) and two nuts(64) onto swash plates(59). [Fig.18]

18. Cylinder block cmp and piston [Fig.19]

19. Install two cylinder block cmp(51) onto thrust plates(61). And install pipe(B cmp(36) into housing(27). [Fig.20]

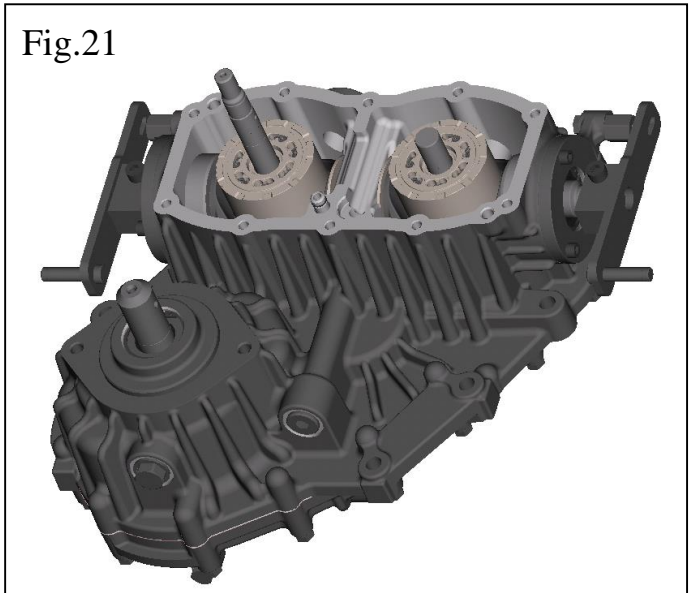
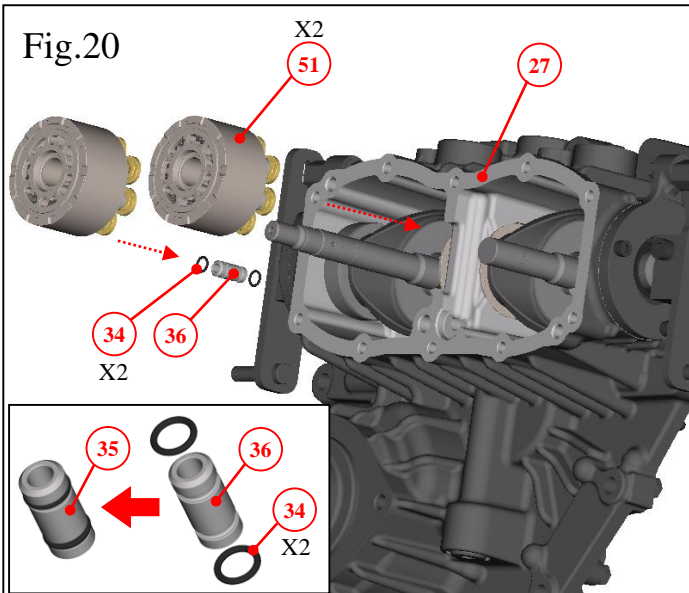
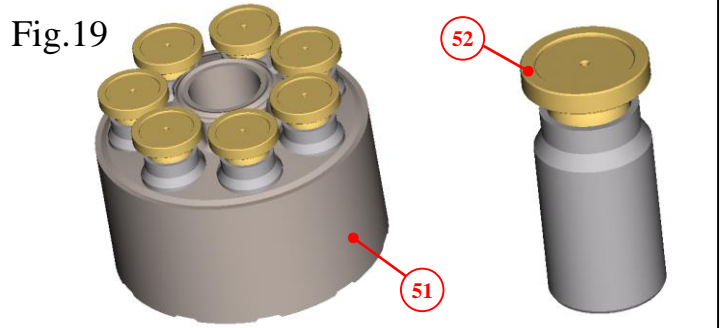
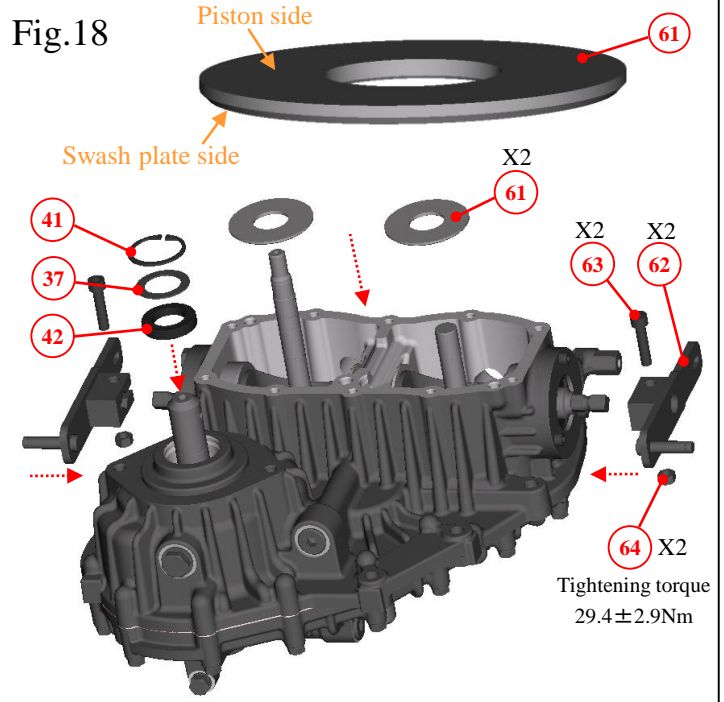
\*When installing, take care of the direction of thrust plates(61).

\*Put clean oil on the contact surfaces of cylinder block(55) and pistons(52).

\*Do not drop pistons(52) when installing cylinder block cmp(51).

\*Avoid damage of surfaces(pistons(52), cylinder blocks(55) and thrust plates(61)).

\*When installing, take care not to damage lip of oil seal(42).



# Center case

20. Install six plugs(23), six O-rings(24), valve(11), spring(12), valve(16), spring(17), two plugs(13), two O-rings(14) into center case(3). [Fig.22]

\*Put clean oil on the contact surfaces of valves(11)(16).  
\*Avoid damage of surfaces(center case(3) and valve plates(9)).

21. Valve plate(9). [Fig.23]

22. Bypass valve cmp(18)  
CR-valve F cmp(7)  
CR-valve R cmp(8) [Fig.24]

Fig.22

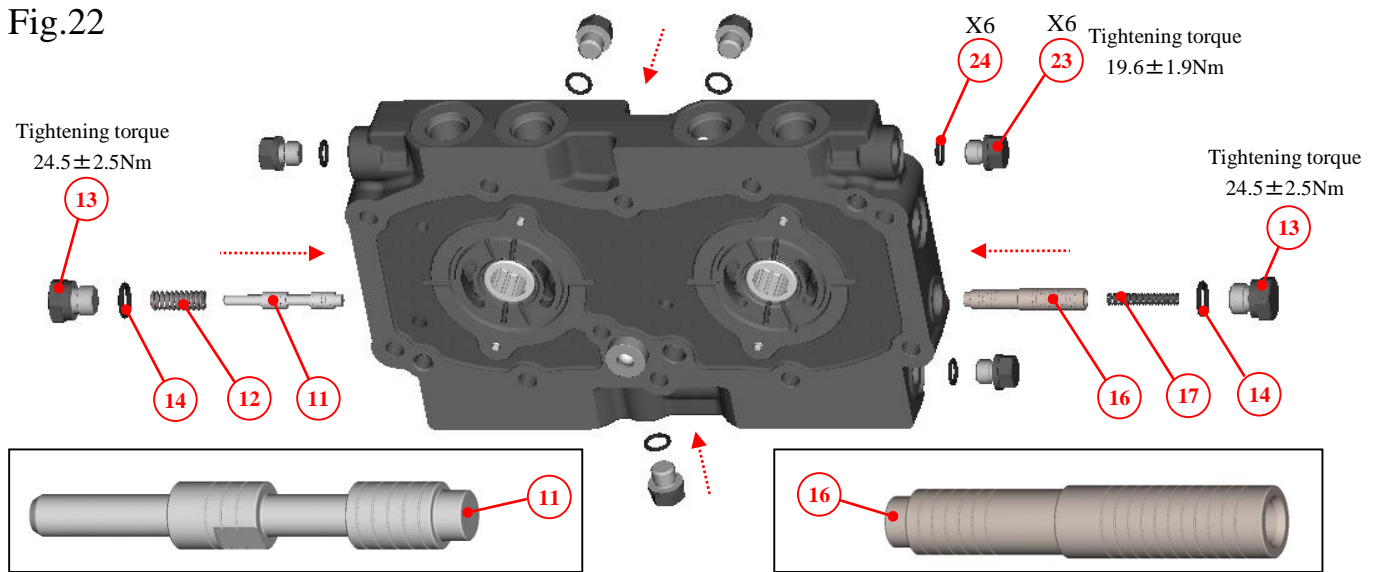


Fig.23

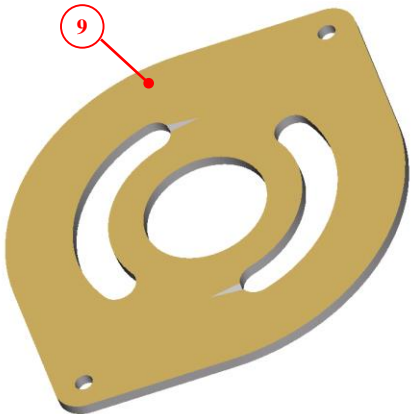
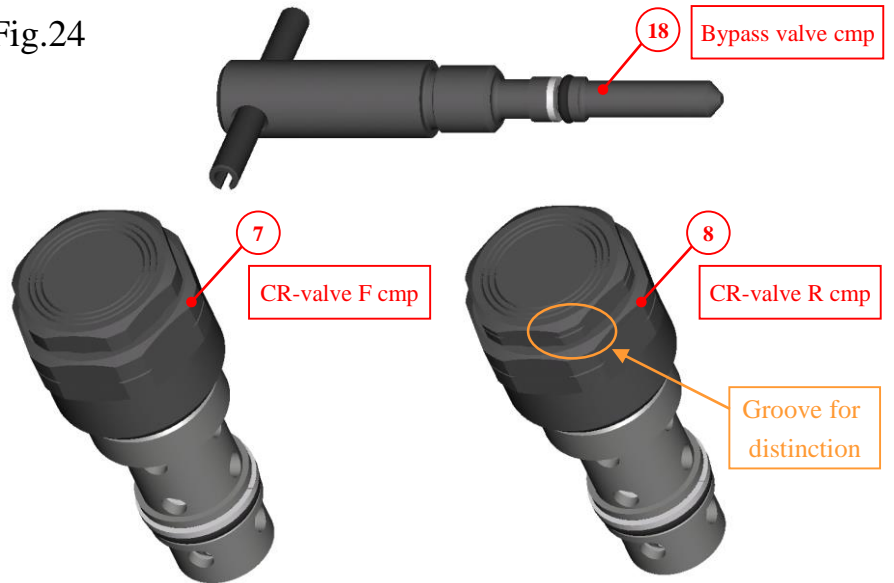


Fig.24





# Center case

23. Install two valve plates(9) onto center case(3). And install two bypass valve cmp(31), two CR-valve F cmp(7), two CR-valve R cmp(8) into center case(3). [Fig.25]

24. Center case assembly [Fig.26]

25. Install two pins(40) into housing (27). And install packing(31) and center case assembly onto housing (27). [Fig.27]

Fig.25

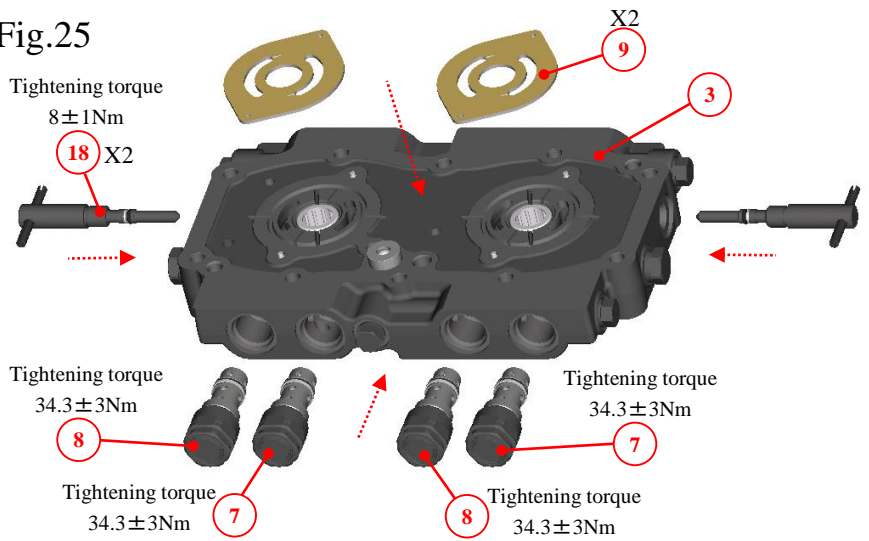


Fig.27

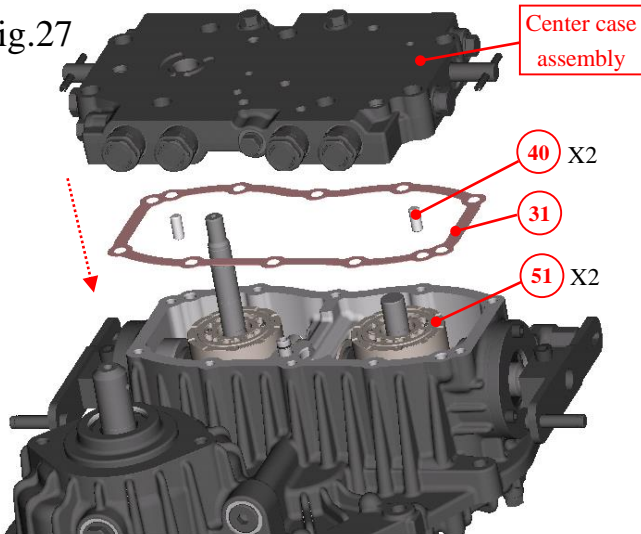
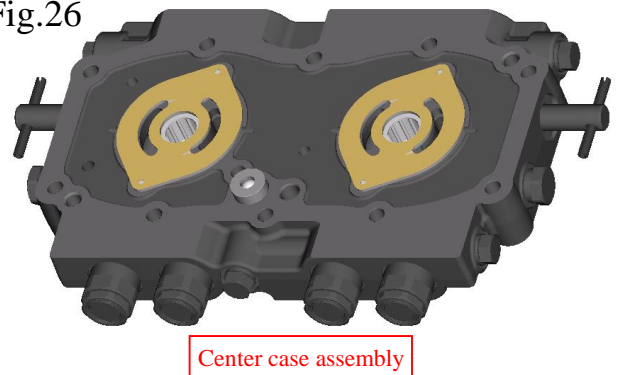


Fig.26



26. Install key(127) onto shaft(58). And install eight bolts(25) into center case(3). [Fig.28]

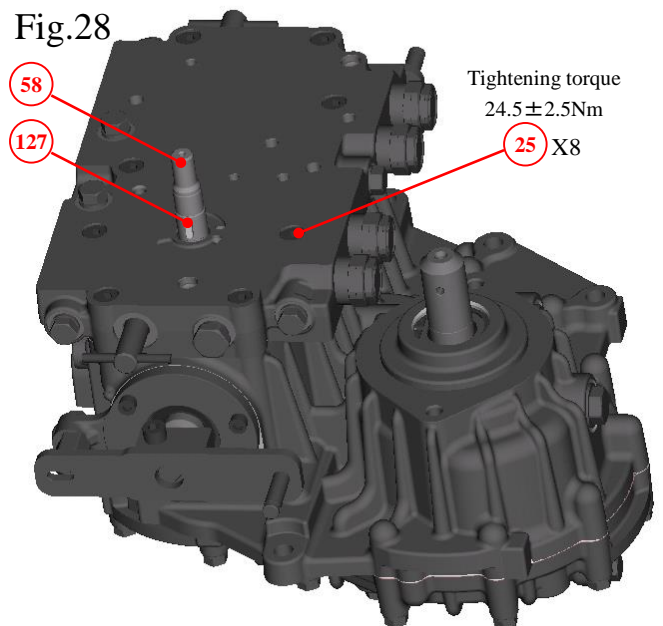
\*Put clean grease on mating surface between center case(3) and valve plates(9) to prevent parts come off.

\*Coat oil onto surface of valve plates(9) to prevent initial wear.

\*Do not drop valve plates(9) when installing center case assembly.

\*Avoid damage of machined surfaces(center case(3) and housing(27)).

Fig.28



# Charge pump

27. Install inner rotor(103) and outer rotor(104) onto center case(3). [Fig.29]

28. Install two plugs(23), two O-rings(24), O-ring (128), five O-rings(39) and two pins(126) into pump body(100). And install four plugs(105) with seal tape into pump body(100). [Fig.30]

29. Install pump body assembly onto center case(3). [Fig.31]

30. Install three bolts(45) and two bolts(129) into pump body(100). [Fig.32]

\*Put clean oil on all surfaces of charge pump rotors (103)(104).

\*Avoid damage of machined surfaces(center case(3) and pump body(100)).

Fig.29

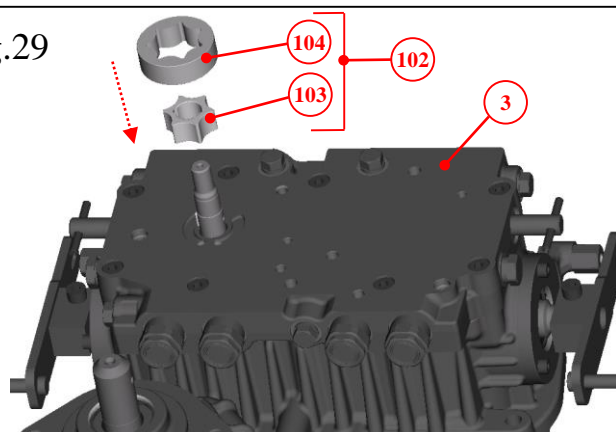


Fig.31

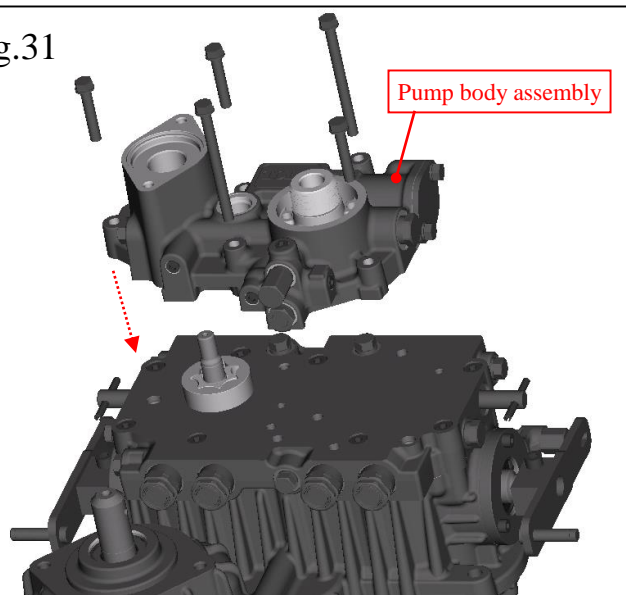


Fig.30

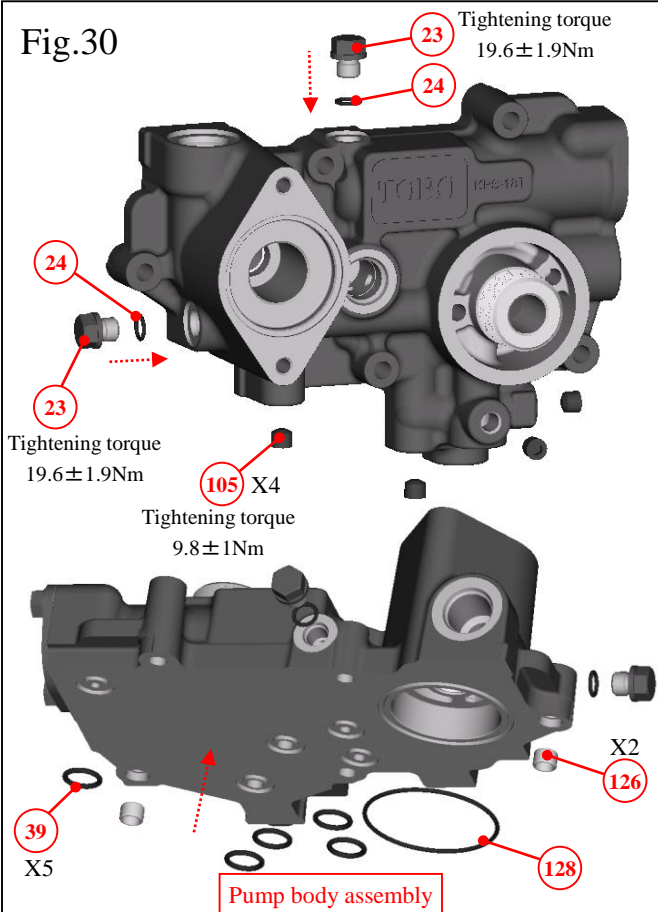
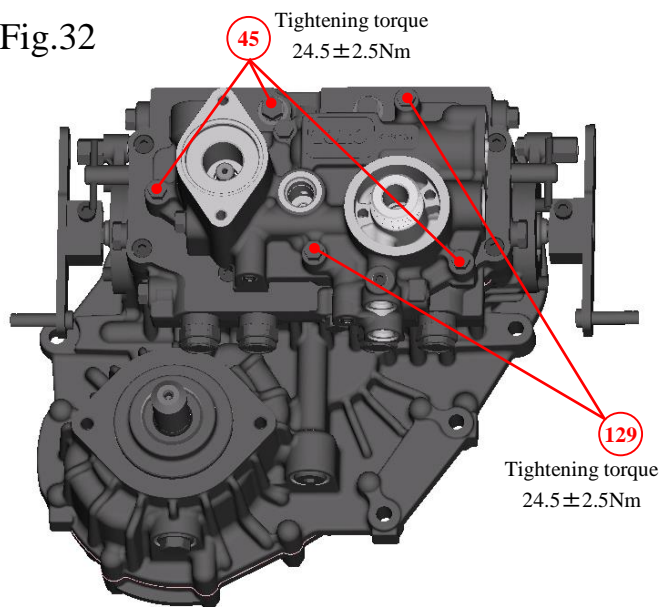
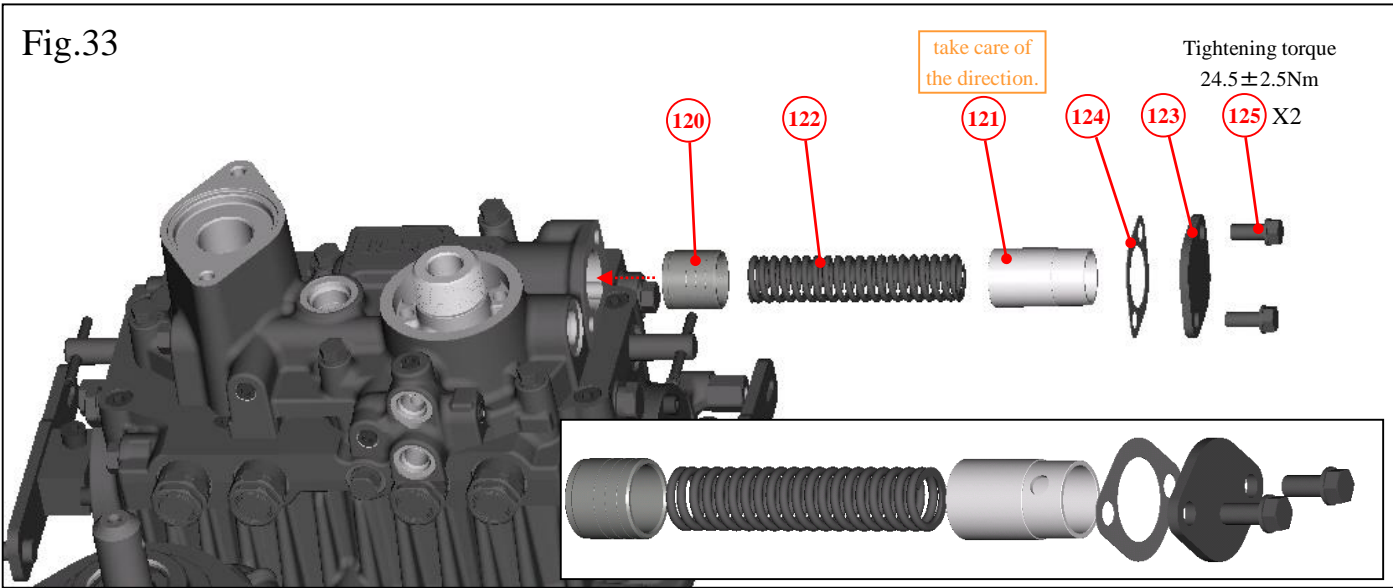


Fig.32



# Charge pump

Fig.33



31. Install piston(120), spring(122), collar(121) into pump body(100). And install gasket(124) and cover(123) onto pump body(100). And install two bolts(125) into pump body(100).  
[Fig.33] (Accumulator)

32. Install valve(112), spring(114), plug(113) and O-ring(14) into pump body(100).  
[Fig.34] (Charge relief valve)

33. Install valve(108), spring(110), plug(109) and O-ring(14) into pump body(100).  
[Fig.34] (Pressure valve)

34. Install valve(116), spring(117), plug(118) and O-ring(39) into pump body(100).  
[Fig.35] (Filter bypass valve)

- \*Put clean oil on the contact surfaces of valves.
- \*When installing, take care of the direction of collar(121).
- \*Install bolts(125) while holding plate(123) with your hand.

Fig.34

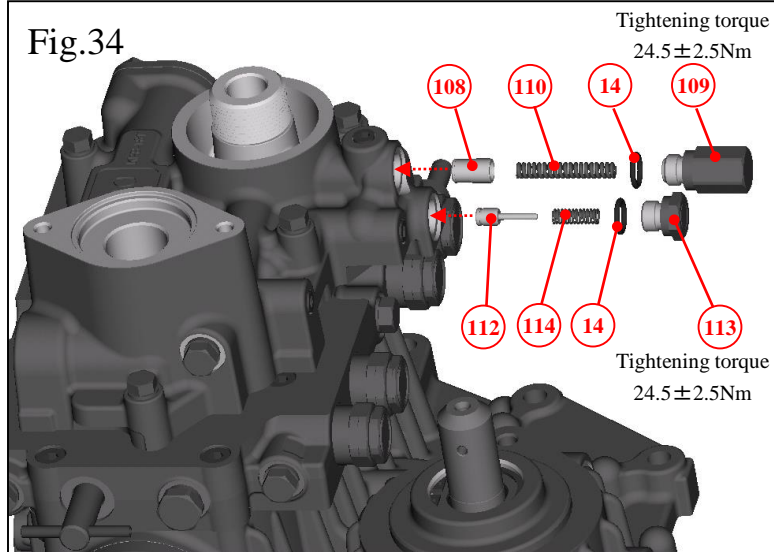
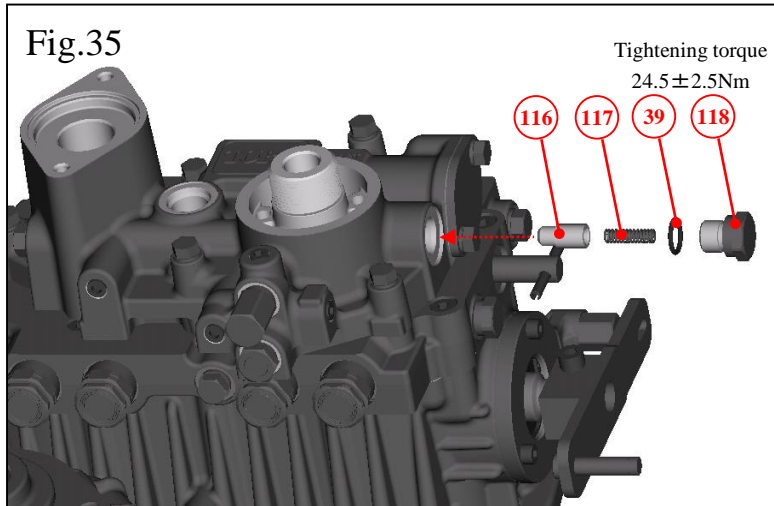


Fig.35





# Solenoid cmp , Complete of assembly

35. Install spring(134), sleeve(132) and spool (133) into pump body(100). [Fig.36, Fig.37]

36. Install solenoid cmp(135) into pump body (100). [Fig.36, Fig.37]

37. Install filter(119) into pump body(100). [Fig.38]

38. KPS-18T Assembly(1) [Fig.39]

\*Put clean oil on the contact surfaces of sleeve (132) and spool(133).

\*When installing, take care of the direction of sleeve(132) and spool(133) and coil(141).

Fig.36

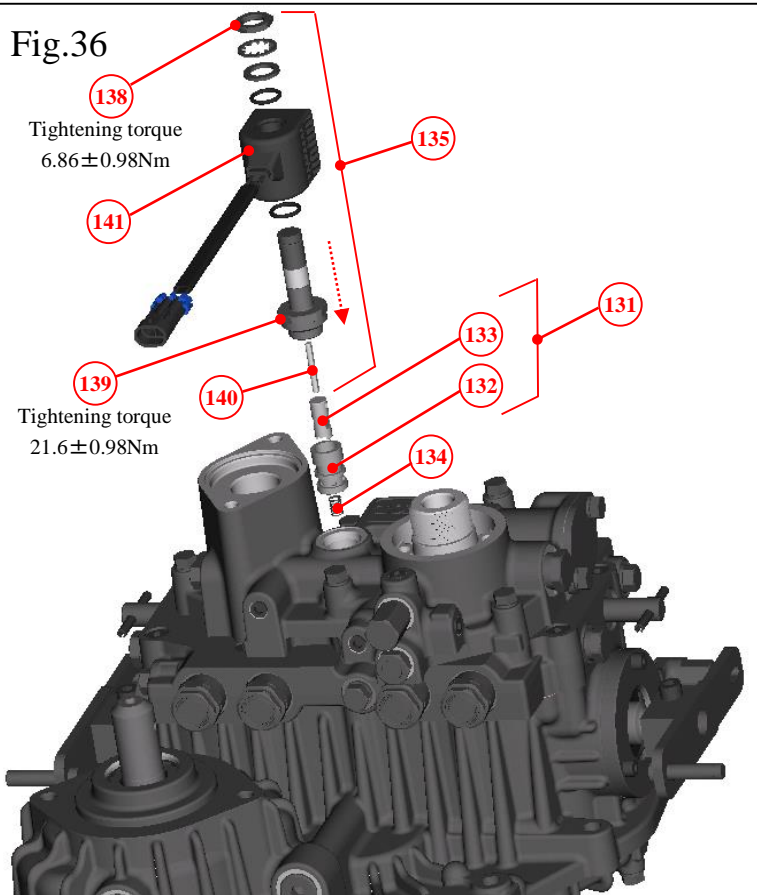


Fig.37

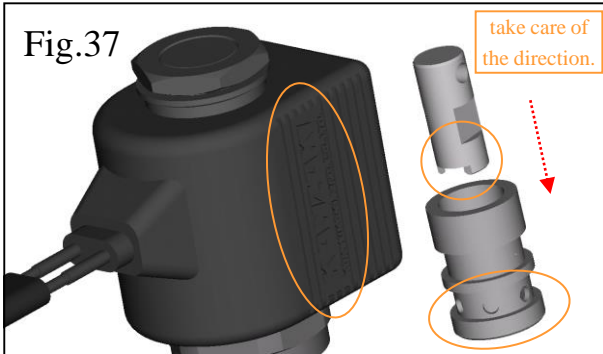


Fig.38

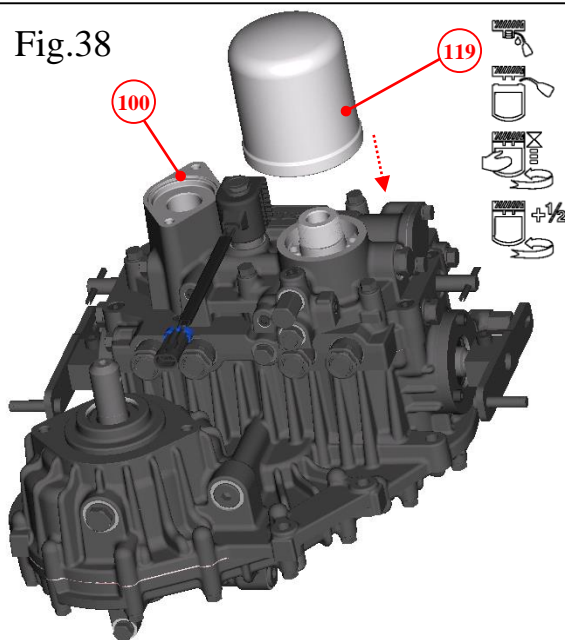


Fig.39

