



# Service Repair Manual

## **Models**

325-A FM L 325 325L  
EXCAVATOR

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[Previous Screen](#)

Product: EXCAVATOR

Model: 325-A FM L EXCAVATOR 7LM

Configuration: 325, 325L EXCAVATOR 7LM00001-UP (MACHINE) POWERED BY 3116 ENGINE

## Disassembly and Assembly 325, 325B and 325L Excavators

Media Number -REN1178-03

Publication Date -01/09/2000

Date Updated -09/10/2001

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### Travel Motor - Disassemble

SMCS - 4351-015

## Disassembly Procedure For The Travel Motor On CIPI Undercarriage Arrangements Which Are Based On 325 Track Type Excavators

### Start By:

- A. Remove the travel motor. Refer to Disassembly and Assembly, "Travel Motor - Remove" in this manual.

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### NOTICE

**Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.**

**Refer to Special Publication, NENG2500, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.**

**Dispose of all fluids according to local regulations and mandates.**

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1. Thoroughly clean the outside of the travel motor prior to disassembly. Fasten the travel motor to a suitable holding fixture in a vertical position. The weight of the travel motor is approximately 71 kg (157 lb).

- Put an alignment mark across the head and the body of the travel motor for assembly purposes. The head must be reinstalled in the head's original position on the travel motor body.

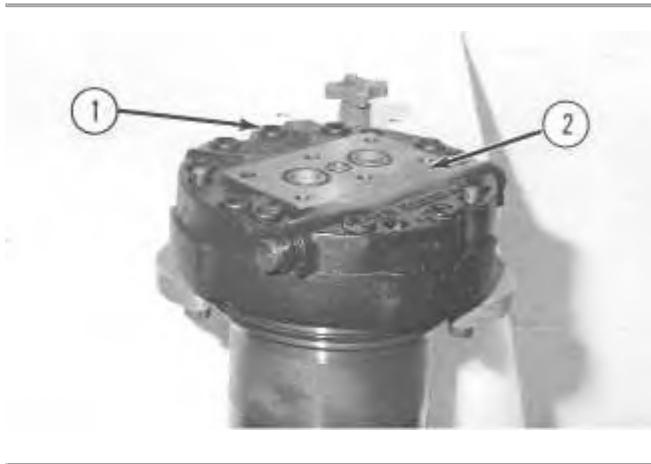


Illustration 1

g00510326

- Remove nine socket head bolts (1) and head (2) from the travel motor body.

**Note:** During the removal of head (2) from the travel motor body, be careful not to damage the mating surfaces of the components.

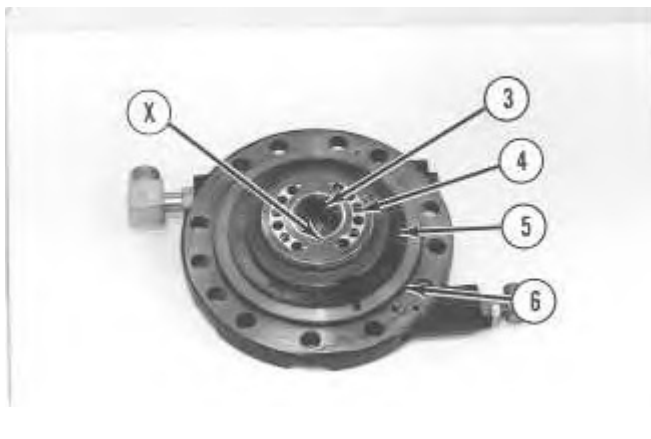


Illustration 2

g00510341

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Illustration 3

g00510349

4. Turn over head (2). Remove O-ring seal (6), shims (5), port plate (4), and bearing (3) from the head. Remove the two check valve assemblies from the head.

**Note:** There is a retainer that is located under spring (9). This retainer is a press fit in head (2). Do not remove the retainer.

5. Insert a dowel rod with a small diameter into hole "X". Tap the dowel rod with a plastic hammer in order to remove spring (9), poppet (8) and seat (7) from the head.

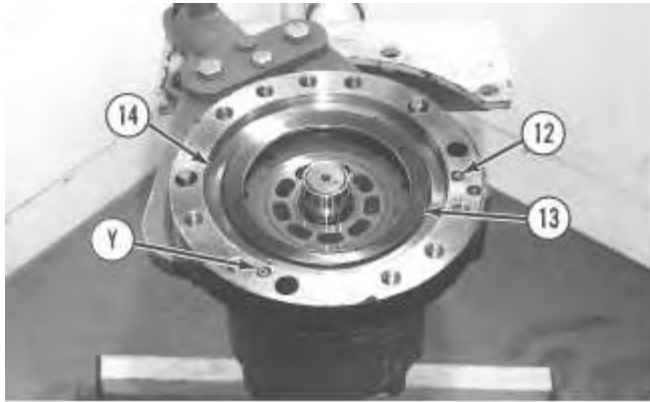


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Illustration 4

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6. Remove three fittings (10) and four plugs (11) from the head. Remove the O-ring seal from each fitting.
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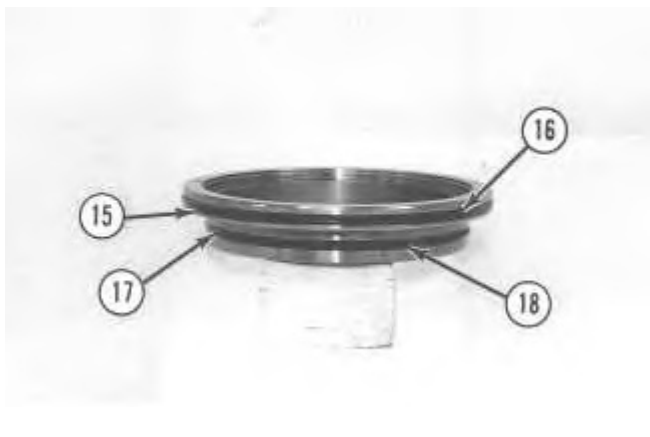


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Illustration 5

g00510352

7. Remove three O-ring seals (12) and washer set (13) from the body of the travel motor.
8. Place a shop towel over brake piston (14). Retain brake piston (14) by hand, and apply approximately 525 kPa (75 psi) of shop air pressure to brake release port "Y". Make sure that the shop air pressure is free of water. Brake piston (14) will move up the piston guide, and out of the piston guide. Remove brake piston (14) from the travel motor body.



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Illustration 6

g00510353

9. Remove O-ring seals (15) and (17), and backup rings (16) and (18) from the brake piston.
-



Illustration 7

g00510356

10. Remove piston guide (19), three friction plates and three steel plates (20) from the travel motor body.



Illustration 8

g00510359

11. Remove O-ring seal (21) and backup ring (22) from the piston guide.

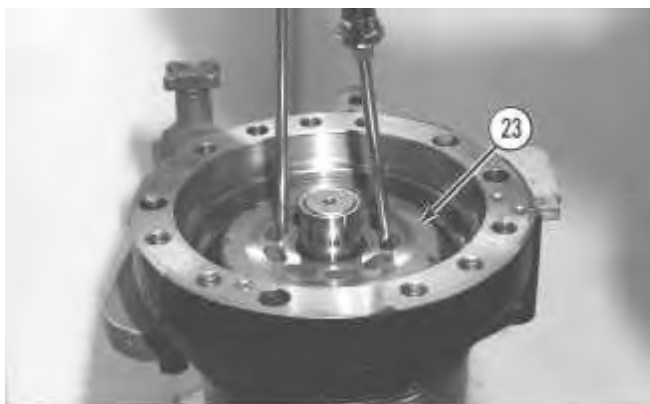


Illustration 9

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**Note:** Do not allow the components of barrel assembly (23) to come apart during the removal from the travel motor. All of the components in the barrel assembly must be reinstalled in the component's original location.

12. Use two large screwdrivers and slowly remove barrel assembly (23) from the travel motor body, as shown. Do not allow the components to fall apart.

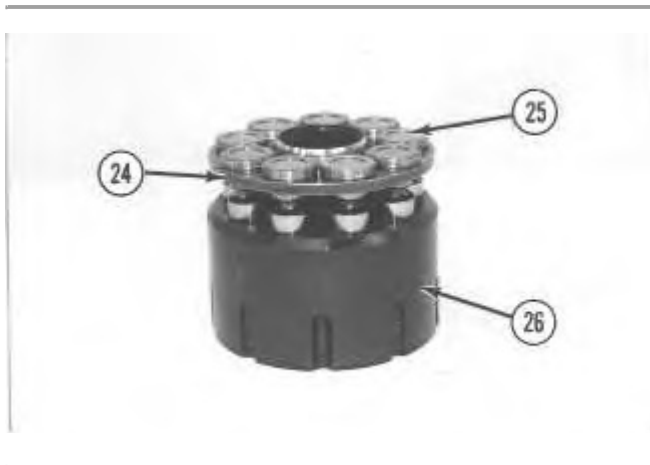


Illustration 10

g00510502

13. Shoe retainer (24) and piston shoe assemblies (25) are nonserviceable separately. Prior to the removal of the shoe retainer and the piston shoe assemblies from barrel (26), put identification marks on piston shoe assemblies (25) for assembly purposes. Identification marks are used to identify the piston shoe assembly's location in shoe retainer (24) and barrel (26). The piston shoe assemblies must be reinstalled in the piston shoe assembly's original bores in the shoe retainer and the barrel.
14. Remove shoe retainer (24) and piston shoe assemblies (25) from barrel (26). Separate the piston shoe assemblies from the shoe retainer.



Illustration 11

g00510504

15. Remove guide (27), spacer (28) and nine springs (29) from the barrel.

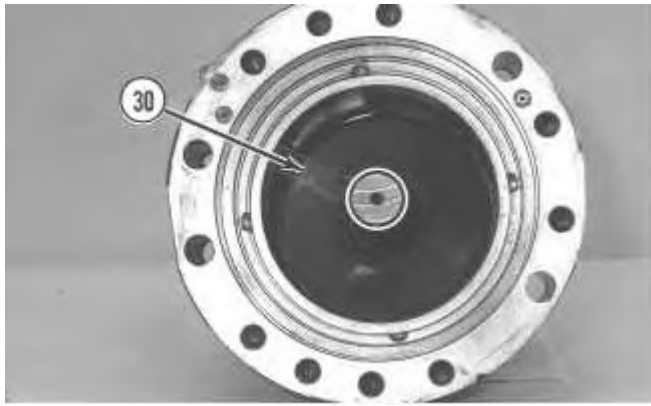


Illustration 12

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16. Remove cam plate (30) from the travel motor body.

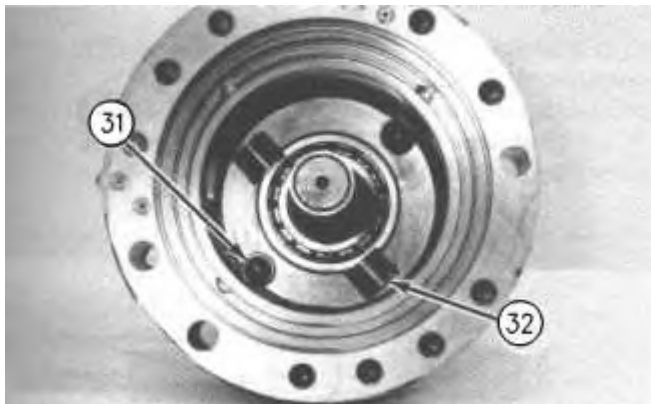


Illustration 13

g00919084

17. Put identification marks on two balls (31) and two keys (32) in the travel motor body for assembly purposes. Remove two balls (31) and two keys (32) from the travel motor body.



18. Remove O-ring seal (33) from the travel motor body.
19. Use a soft faced hammer to remove shaft assembly (34) from the travel motor body. Remove the shaft assembly in the direction that is indicated by the arrow. Refer to Illustration 33.

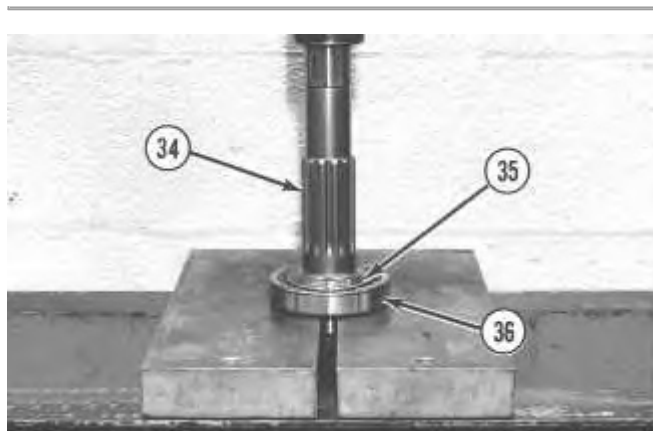


Illustration 15

20. Remove retaining rings (35) from each side of bearing (36). Push shaft (34) out of bearing (36) with a press.

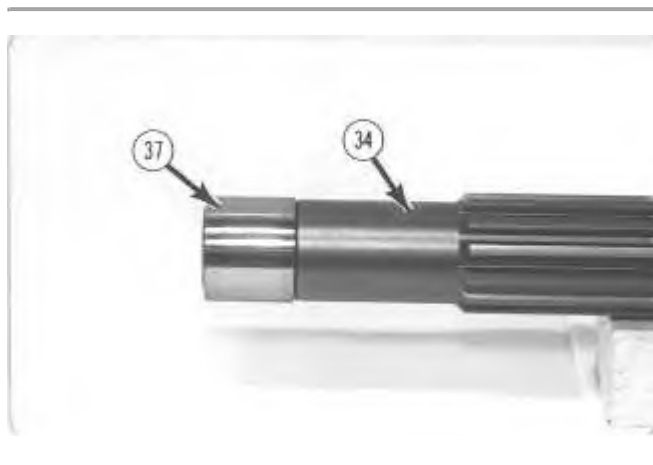


Illustration 16

21. Remove inner race (37) from shaft (34) .
-



Illustration 17

g00510599

22. Remove lip type seal (38) from the travel motor body.



Illustration 18

g00510605

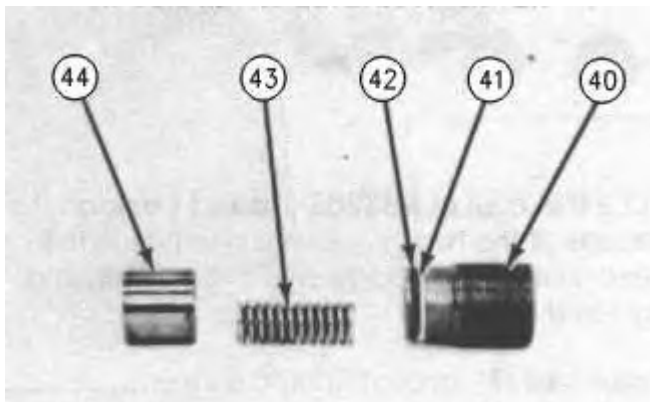


Illustration 19

g00918957

23. Remove two cam plate tension adjusters from the travel motor body. Loosen two nuts (39). Remove two adjusters (40), two springs (43), and two pistons (44) from the travel motor body.

24. Remove O-ring seal (42) and backup ring (41) from each adjuster (40) .

## **Disassembly Procedure For The Travel Motor On CIPI Undercarriage Arrangements Which Are Based On 325B Track Type Excavators**

### **Start By:**

- A. Remove the travel motor. Refer to Disassembly and Assembly, "Travel Motor - Remove" in this manual.

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### **NOTICE**

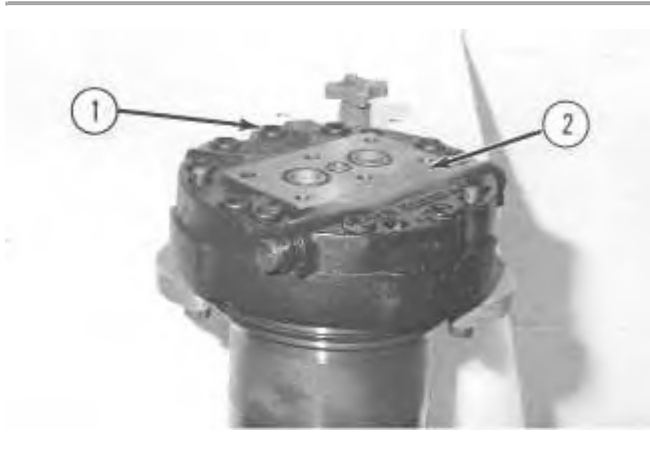
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**Refer to Special Publication, NENG2500, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.**

**Dispose of all fluids according to local regulations and mandates.**

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1. Thoroughly clean the outside of the travel motor prior to disassembly. Fasten the travel motor to a suitable holding fixture in a vertical position. The weight of the travel motor is approximately 50 kg (110 lb).
2. Put an alignment mark across the head and the body of the travel motor for assembly purposes. The head must be reinstalled in the head's original position on the travel motor body.



3. Remove ten socket head bolts (1) and head (2) from the travel motor body.

**Note:** During the removal of head (2) from the travel motor body, be careful not to damage the mating surfaces of the components.

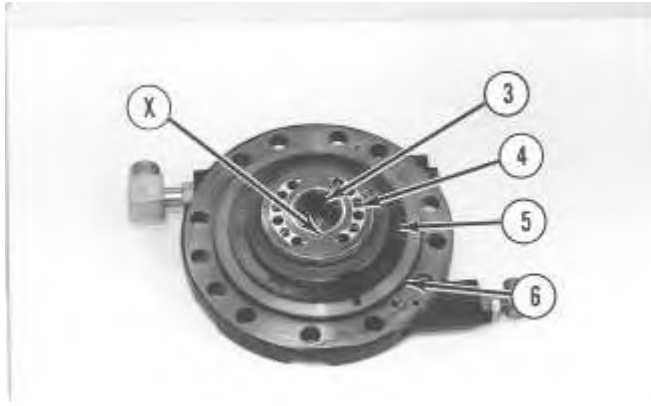


Illustration 21

g00510341



Illustration 22

g00510349

4. Turn over head (2). Remove O-ring seal (6), shims (5), port plate (4), and bearing (3) from the head. Remove the two check valve assemblies from the head.

**Note:** There is a retainer that is located under spring (9). This retainer is a press fit in head (2). Do not remove the retainer.

5. Insert a dowel rod with a small diameter into hole "X". Tap the dowel rod with a plastic hammer in order to remove spring (9), poppet (8) and seat (7) from the head.
-

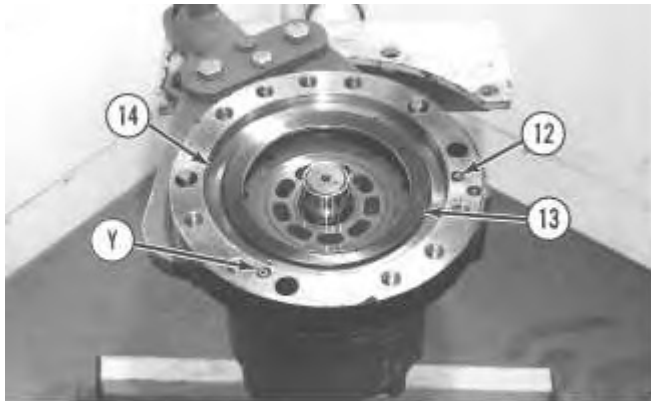


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Illustration 23

g00510351

6. Remove three fittings (10) and plugs (11) from the head. Remove the O-ring seal from each fitting.



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Illustration 24

g00510352

7. Remove three O-ring seals (12) and washer set (13) from the travel motor body.
  8. Place a shop towel over brake piston (14). Retain brake piston (14) by hand, and apply approximately 525 kPa (75 psi) of shop air pressure to brake release port "Y". Make sure that the shop air pressure is free of water. Brake piston (14) will move up the piston guide, and out of the piston guide. Remove brake piston (14) from the travel motor body.
-

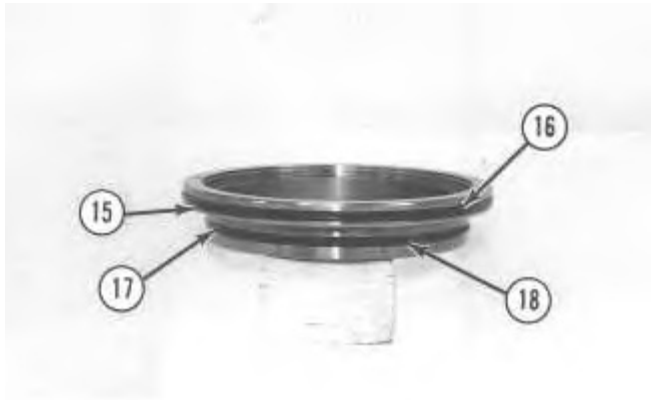


Illustration 25

g00510353

9. Remove O-ring seals (15) and (17) from the brake piston. Remove backup rings (16) and (18) from the brake piston.



Illustration 26

g00510356

10. Remove piston guide (19), five friction plates (20) and the four steel plates from the travel motor body.

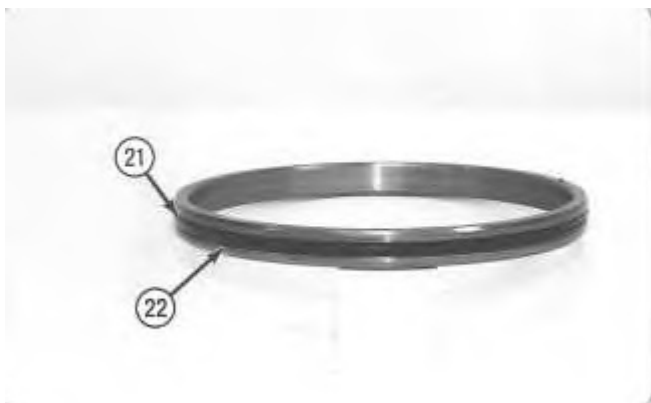


Illustration 27

g00510359

11. Remove O-ring seal (21) and backup ring (22) from the piston guide.

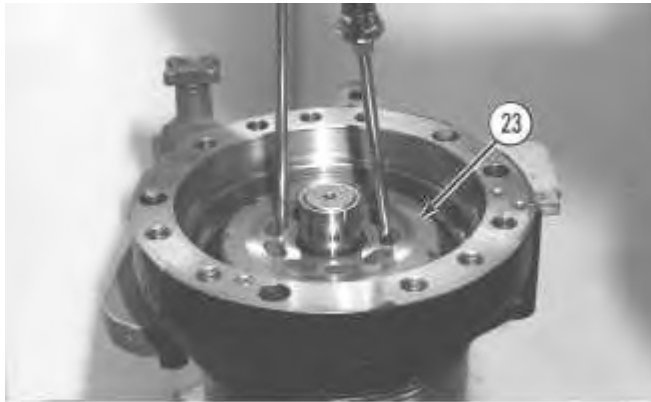


Illustration 28

g00510365

**Note:** Do not allow the components of barrel assembly (23) to come apart during the removal from the travel motor. All of the components in the barrel assembly must be reinstalled in the component's original location.

12. Use two large screwdrivers and slowly remove barrel assembly (23) from the travel motor body, as shown. Do not allow the components to fall apart.



Illustration 29

g00510502

13. Shoe retainer (24) and piston shoe assemblies (25) are nonserviceable separately. Prior to the removal of the shoe retainer and the piston shoe assemblies from barrel (26), put identification marks on piston shoe assemblies (25) for assembly purposes. Identification marks are used to identify the piston shoe assembly's location in shoe retainer (24) and barrel (26). The piston shoe assemblies must be reinstalled in the piston shoe assembly's original bores in the shoe retainer and the barrel.
14. Remove shoe retainer (24) and piston shoe assemblies (25) from barrel (26). Separate the piston shoe assemblies from the shoe retainer.



Illustration 30

g00510504

15. Remove guide (27), spacer (28) and nine springs (29) from the barrel.

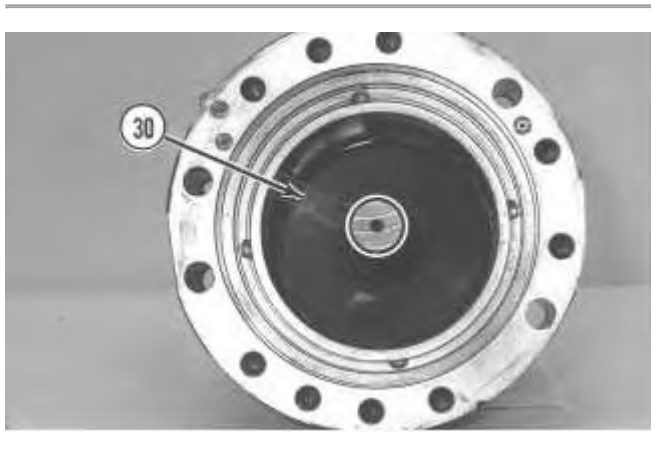
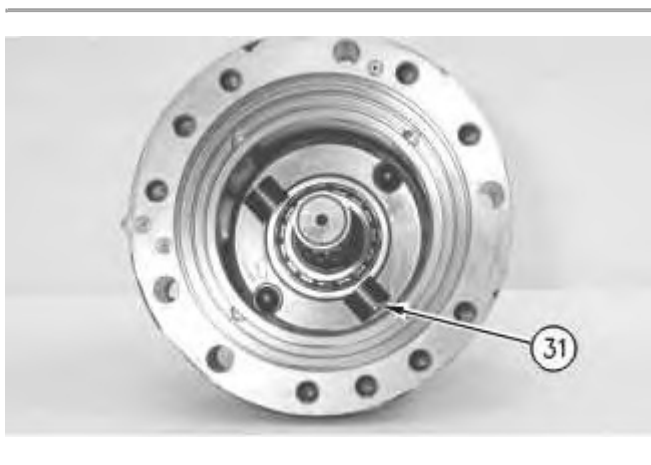


Illustration 31

g00510547

16. Remove cam plate (30) from the body of the travel motor.



17. Remove two keys (31) and the two locating pins (not shown) from the travel motor body.

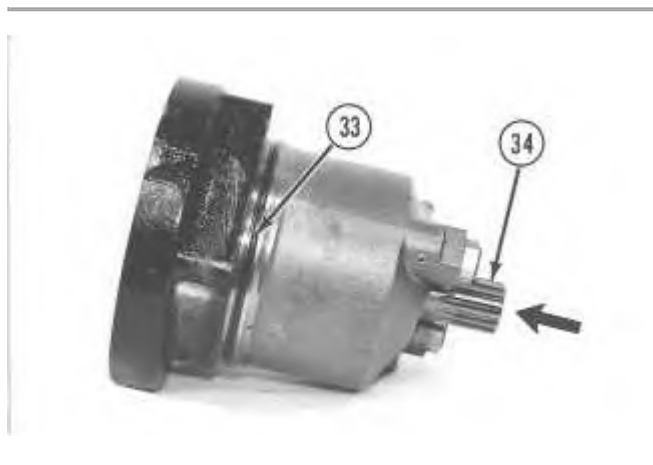


Illustration 33

g00510551

18. Remove O-ring seal (33) from the travel motor body.
19. Use a soft faced hammer to remove shaft assembly (34) from the travel motor body. Remove the shaft assembly in the direction that is indicated by the arrow. Refer to Illustration 33.

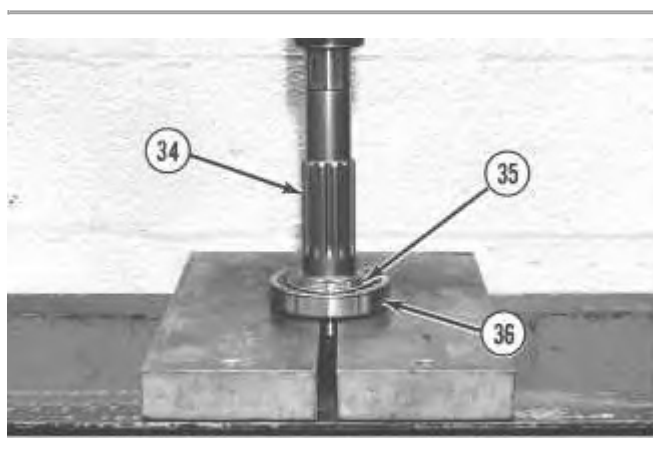


Illustration 34

g00510595

20. Remove retaining rings (35) from each side of bearing (36). Push shaft (34) out of bearing (36) with a press.
-

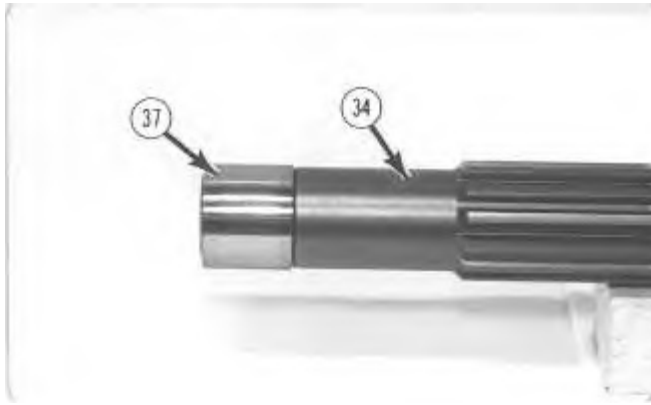


Illustration 35

g00510598

21. Remove inner race (37) from shaft (34) .



Illustration 36

g00510599

22. Remove lip type seal (38) from the travel motor body.



Illustration 37

g00510605

23. Remove two cam plate tension adjusters from the travel motor body. Loosen two nuts (39). Remove two adjusters (40), two springs (43), and two pistons (44) from the travel motor body.
24. Remove O-ring seal (42) and backup ring (41) from each adjuster (40) .

## **Disassembly Procedure For The Travel Motor On CIPI Undercarriage Arrangements Which Are Based On 325C Track Type Excavators**

### **Start By:**

- A. Remove the travel motor. Refer to Disassembly and Assembly, "Travel Motor - Remove" in this manual.

---

### **NOTICE**

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**Dispose of all fluids according to local regulations and mandates.**

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1. Thoroughly clean the outside of the travel motor prior to disassembly.
  2. Fasten the travel motor to a suitable holding fixture in a vertical position. The weight of the travel motor is 60 kg (132 lb).
  3. Put an alignment mark across the head and the body of the travel motor for assembly purposes. The head must be reinstalled in the head's original position on the body of the travel motor.
-



Illustration 38

g00510326

**Note:** During the removal of head (2) from the travel motor, be careful not to damage the mating surfaces of the components.

4. Remove bolts (1) .
5. Remove head (2) from the body of the travel motor.

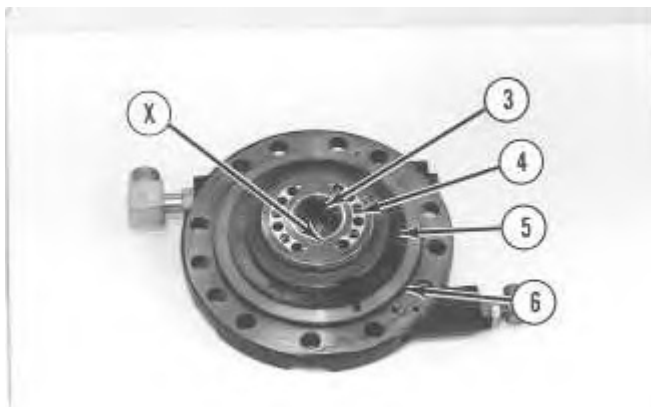


Illustration 39

g00510341



Illustration 40

g00510349

6. Turn over head (2) .
7. Remove O-ring seal (6), shims (5), port plate (4), and bearing (3) from the head.
8. Remove the check valve assemblies from the head.

**Note:** There is a retainer under spring (9). This retainer is a press fit in head (2). Do not remove the retainer.

9. Insert a dowel rod with a small diameter into Hole (X). Tap the dowel rod with a plastic hammer in order to remove spring (9), poppet (8), and seat (7) from the head.



Illustration 41

g00510351

10. Remove three fittings (10) and plugs (11) from the head. Remove the O-ring seal from each fitting.

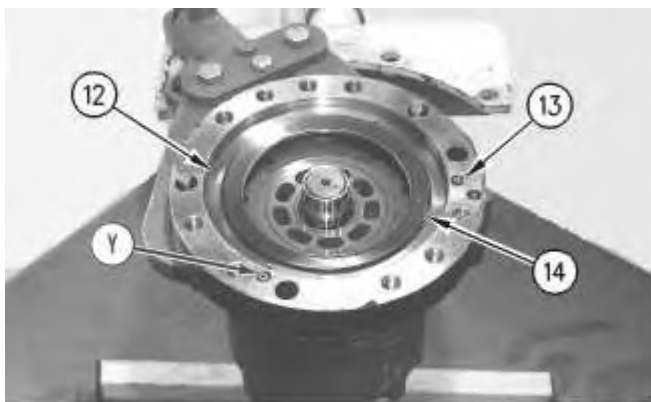


Illustration 42

g00878239

11. Remove O-ring seals (13) and washer set (12) from the body of the travel motor.
12. Place a shop towel over brake piston (14). Retain brake piston (14) by hand, and apply approximately 525 kPa (75 psi) of shop air pressure to brake release Port (Y). Make sure

that the shop air pressure is free of water. Brake piston (14) will move up the piston guide, and out of the piston guide. Remove brake piston (14) from the body of the travel motor.

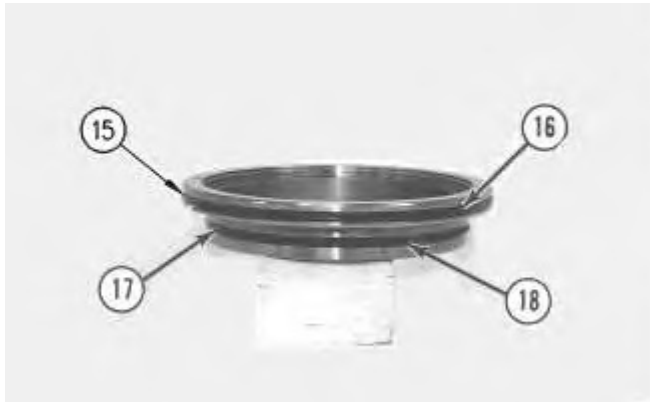


Illustration 43

g00878248

13. Remove O-ring seal (16) from the brake piston. Remove backup ring (15) from the brake piston.
14. Remove O-ring seal (17) from the brake piston. Remove backup ring (18) from the brake piston.



Illustration 44

g00510356

15. Remove piston guide (19), five friction plates (20) and the four steel plates from the body of the travel motor.
-

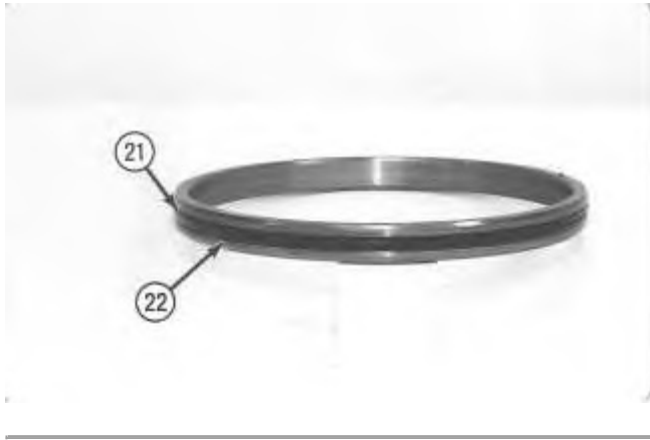


Illustration 45

g00510359

16. Remove O-ring seal (21) from the piston guide. Remove backup ring (22) from the piston guide.

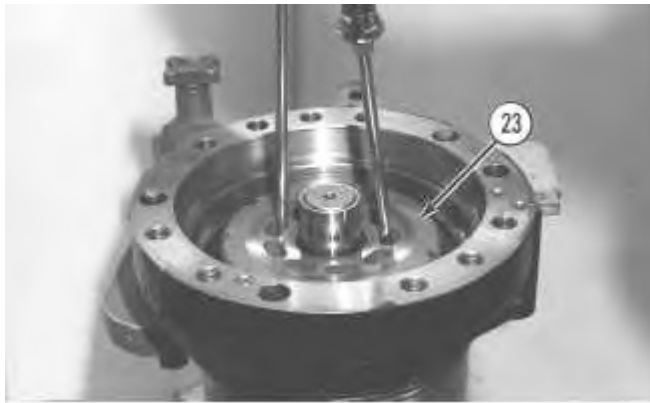


Illustration 46

g00510365

**Note:** Do not allow the components of barrel assembly (23) to come apart during the removal from the travel motor. All of the components in the barrel assembly must be reinstalled in the component's original location.

17. Use two large screwdrivers, as shown. Slowly remove barrel assembly (23) from the body of the travel motor. Do not allow the components to fall apart.

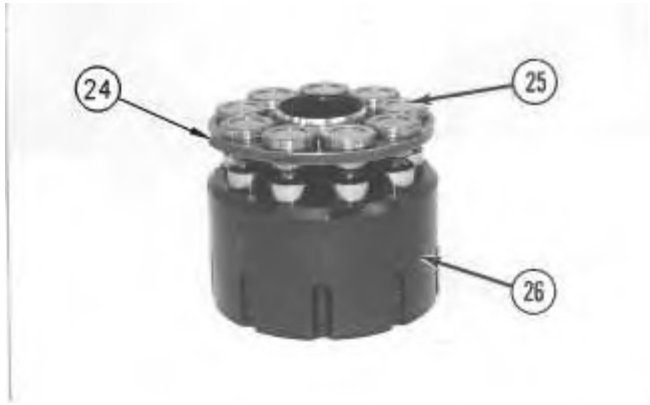


Illustration 47

g00878253

**Note:** Shoe retainer (24) and piston shoe assemblies (25) are nonserviceable separately. Prior to the removal of the shoe retainer and the piston shoe assemblies from barrel (26), put identification marks on piston shoe assemblies (25) for assembly purposes. Identification marks are used to identify the piston shoe assembly's location in shoe retainer (24) and barrel (26). The piston shoe assemblies must be reinstalled in the piston shoe assembly's original bores in the shoe retainer and the barrel.

18. Remove shoe retainer (24) and piston shoe assemblies (25) from barrel (26). Separate the piston shoe assemblies from the shoe retainer.

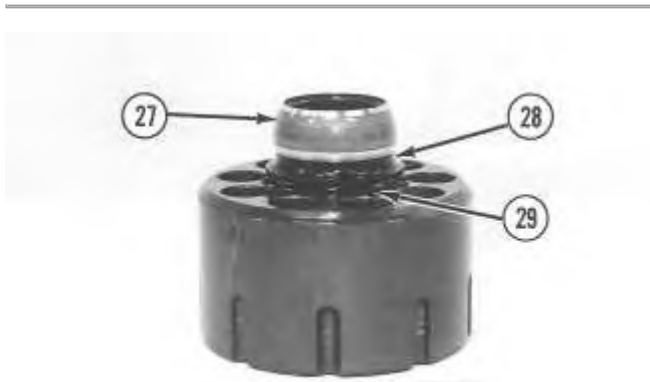


Illustration 48

g00510504

19. Remove guide (27), spacer (28), and springs (29) from the barrel.

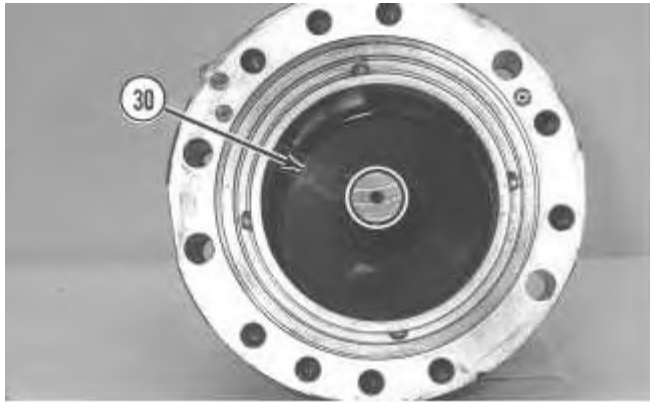


Illustration 49

g00510547

20. Remove cam plate (30) from the body of the travel motor.



Illustration 50

g00510550

21. Remove two keys (31) and the two locating pins (not shown) from the body of the travel motor.



Illustration 51

g00510551

22. Remove O-ring seal (33) from the body of the travel motor.
23. Use a soft faced hammer to remove shaft assembly (34) from the body of the travel motor. Remove the shaft assembly in the direction that is indicated by the arrow. Refer to Illustration 51.

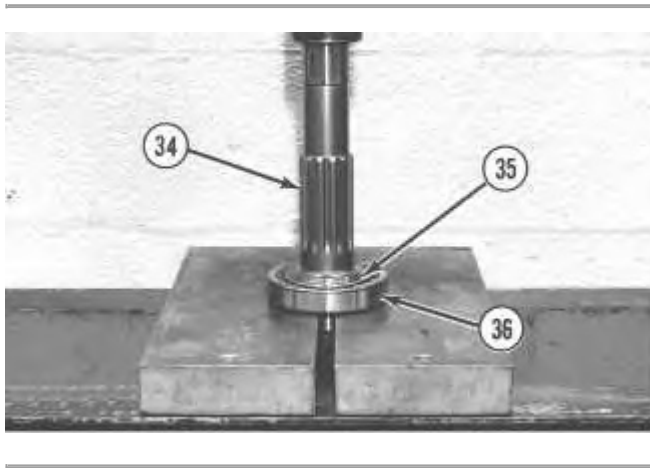


Illustration 52

g00510595

24. Remove retaining rings (35) from each side of bearing (36). Push shaft (34) out of bearing (36) with a press.

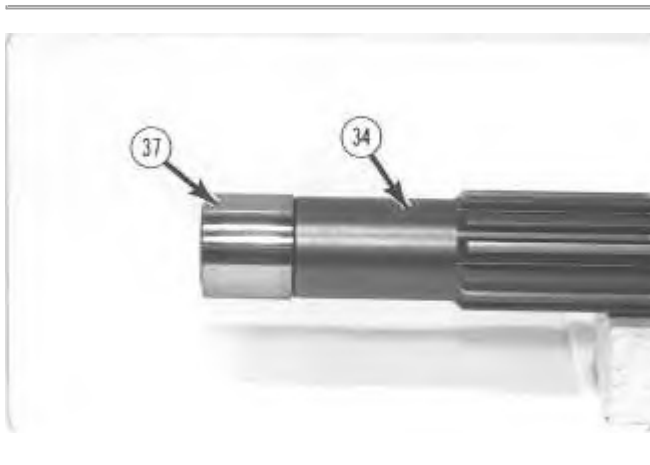


Illustration 53

g00510598

25. Remove inner race (37) from shaft (34) .
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Illustration 54

g00510599

26. Remove lip seal (38) from the body of the travel motor.



Illustration 55

g00510605

27. Remove two stoppers (39) and the two pistons from the body of the travel motor.

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