

# MOTORS

## Repair Instructions

*RE 535/536 Series*



*together in motion*

White is a leading global provider of motor and steering solutions that power the evolution of mobile and industrial applications around the world.

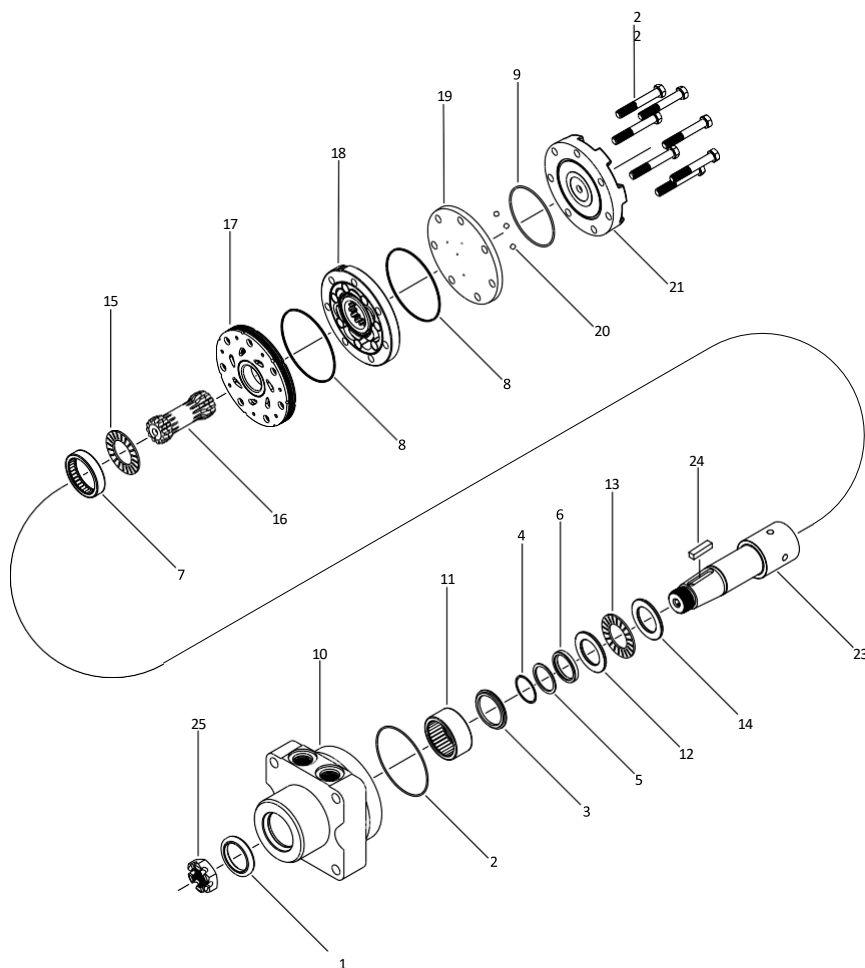


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# RE 535/536 Exploded View

## Exploded View



## Component List

Description	Item Number
Dust seal	1
Housing seal	2
Metal back-up ring	3
Back-up shim	4
Back-up seal	5
Shaft seal	6
Rear housing bearing	7
Body seal	8
Endcover seal	9
Housing	10
Front housing bearing	11
Thrust washer	12
Thrust bearing	13

Description	Item Number
Thrust washer	14
Thrust bearing	15
Drive link	16
Manifold	17
Rotor Set	18
Balance plate	19
Steel ball	20
Endcover	21
Assembly bolt	22
Shaft	23
Shaft key	24
Shaft nut	25

## RE 535/536 Seal Kit Installation

dimensions: mm [in]

1. Remove all shaft related components from shaft (23) (i.e. keys, nuts).
  - a) To aid in reassembly of the motor, make a "V" shaped set of lines from the endcover (21) to the housing (10) using either paint or a marker.
  - b) With shaft facing down, secure motor in vise by clamping on to housing (10).
2. Loosen and remove seven bolts (22) holding motor assembly together.
  - a) Remove endcover (21) and endcover seal (9).
  - b) Discard seal.
  - c) Remove balance plate (19)
 

Take care not to drop the three steel balls (20) located in the three holes in the balance plate (19).
  - d) Remove rotor set (18), manifold (17), drive link (16) and thrust bearing (15).
  - e) Remove body seals (8) from rotor set (18) and housing seal (2) from housing (10) and discard seals.
3. Gently tap shaft (23) and remove through rear of housing (10) and lay aside.
  - a) Gently tap shaft (23) and remove through rear of housing (10) and lay aside.
  - b) Pry dust seal (1) from housing and discard.
4. Using a slide and hammer bearing puller (see Figure 1) remove rear housing bearing (8) through rear of housing.



Figure 1

5. Remove the thrust washer (14), front thrust bearing (13), thrust washer (12), shaft seal (6), back-up seal (5), back-up shim (4), and back-up ring (3) from housing. Discard items (3, 4, 5, & 6).

**Note:** At this point, all parts should be cleaned in an oil-base solvent and dried using compressed air (For safety, observe all OSHA safety guidelines). All new seals should be lightly coated in clean oil prior to installation.

6. Place shaft (23) on a clean flat surface with output end facing up.
  - a) Place on shaft, the thrust washer (14), then thrust bearing (13), then thrust washer (12).
  - b) Lightly coat seal area of shaft with clean oil and place shaft seal (6) down onto shaft (23) making sure that lip on seal faces down (See Figure 2 for correct seal orientation) until it contacts thrust washer (12).
  - c) Carefully install the back-up seal (5) onto the shaft (23) with the flat side up and the seal lip facing the shaft seal (6).
  - d) Place the metal back-up shim (4) onto the shaft, then place the back-up ring (3) onto the shaft with the flat side against the backup shim (4).

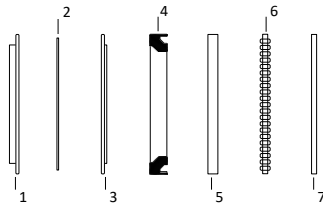


Figure 2

7. Place housing (10) onto shaft assembly.
  - a) Place housing shaft assembly back in vise with output shaft facing down.
  - b) Install rear housing bearing (7) into rear of housing until bearing contacts the stop in the housing (flat side of bearing (8) should face up).
8. Place thrust bearing (15) on top of shaft (23) and bearing (7).
 

If shaft assembly and bearing (7) are properly seated in housing (10), thrust bearing (15) will be slightly countersunk with rear surface of housing (10).

  - a) Lower drive link (16) into shaft (23).
 

The side of the drive link with the longest splines goes into the shaft first.
9. Install housing seal (2) into groove in housing (10).
  - a) Place manifold (17) onto housing (10).
 

The side of the manifold with the seven tear drop shapes faces the housing (10).
  - b) Place body seals (8) in grooves in both sides of rotor set (18).
  - c) Place rotor (18) onto manifold (17) with side of rotor with chamfer in splines facing manifold (17).
10. Install balance plate (19) onto rotor (18) making sure holes for steel balls faces up and that all three balls (20) are seated in the holes.
  - a) Install endcover seal (9) into groove in endcover (21) and place endcover onto balance plate (19).
  - b) Install seven assembly bolts (22) and pre-torque to 13.6 Nm [10 ft-lb].
  - c) Using the bolt torque sequence shown in Figure 3, final torque all bolts to 67.8 [50 ft- lb].

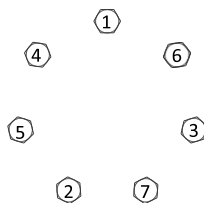


Figure 3

11. Remove motor from vise and place on work surface with shaft (23) facing up.
  - a) Making sure that lip on seal (1) faces up, place dust seal (1) over shaft (23).
  - b) Using a sleeve and a hammer, carefully drive dust seal (1) into place.

## RE 535/536 Replacement Kits

### Available parts kits

**Note:** Refer to the Exploded View for item numbers

*Table 1: Seal kit*

Description	Exploded View Item Number	Qty. In Kit	Order Number
Dust seal	1	1	500444535(Includes item numbers 1-9)
Housing seal	2	1	
Back-up ring	3	1	
Back-up shim	4	1	
Back-up seal	5	1	
Shaft seal	6	1	
Rear housing bearing	7	1	
Body seal	8	2	
Endcover seal	9	1	

*Table 2: Miscellaneous kits*

Description	Exploded View Item Number	Order Number
Front housing bearing	11	530018000
Front thrust washer	12	500018283
Front thrust bearing	13	500018282
Thrust washer	14	300018002
Rear thrust bearing	15	500018059
Standard manifold	17	500015006
Revers timed manifold	17	500015007
Balance plate (3 balls included)	19	500012001
Steel ball	20	500018048
Endcover	21	500016001

### Rotors, drive links and spacers, and bolts

When changing motor displacements, a matching rotor and bolt set kit must be ordered. A new drive link kit may be necessary. Drive link spacers are included in drive link kits, but may also be ordered separately by using the drive link spacer kit number.

Exploded View Item Number	18	18	16	22
Displacement	Standard Rotor Kit	Freeturn Rotor Kit	Drive Link Kit	Bolt Set Kit
200	500167004	-	535014001	500445012
230	500147002	-	535014002	500445014
300	500247005	-	535014003	500445018
375	500307005	-	535014004	500445024

## Housing Kits

Exploded view item #10

Housing kits include front housing bearing (#11) installed in the housing.

Description	Housing Kit
#T31- Wheel motor with 7/8" O-ring	535013054

## Shafts and related components kits

Shaft kits come with related shaft components (i.e. keys, nuts, etc.).

Exploded View Item Number	23	24	25
Description	Shaft Kit	Key Kit	Nut Kit
#22 1-1/4" Tapered	535011001	255018201	500449304
#31 1-1/2" Tapered	535011000	500449105	700018038





White Drive Motors & Steering, LLC  
110 Bill Bryan Blvd, Hopkinsville, Kentucky, 42240

White Drive Motors and Steering sp. z o.o.  
ul. Logistyczna 1, Bielany Wrocławskie, 55-040 Kobierzyce

[whitedriveproducts.com](http://whitedriveproducts.com)