

**Repair Instruction**  
**Orbital Motor OMS/OMSW**



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# Chapter

# 1

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## Special Versions

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Topics:

- [Special Versions](#)
-

## **Special Versions**

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The list of spare parts cannot be used when ordering parts for special OMS versions.

In this respect, please contact the sales organisation.

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# Chapter

# 2

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## Exploded View OMS Series 3

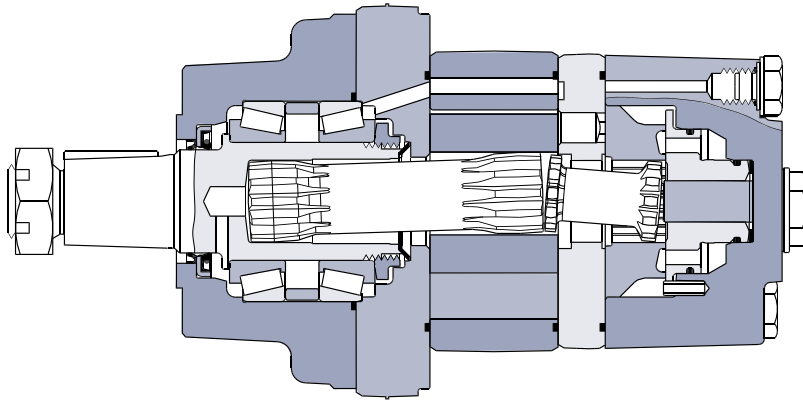
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### Topics:

- *OMSW Series 3 with Brake Nose*
- *Exploded view OMS Series 3*

## OMSW Series 3 with Brake Nose

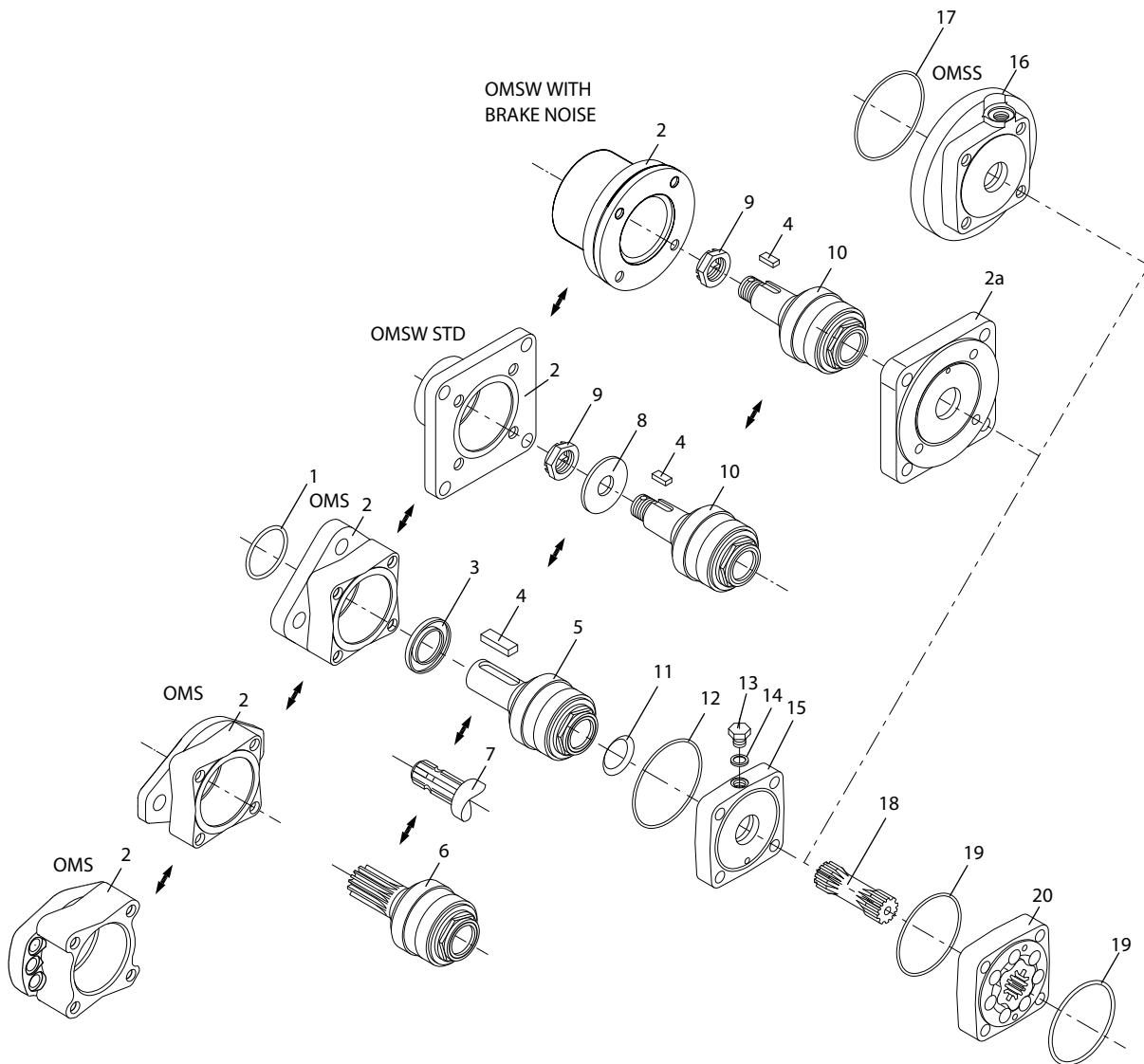
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151-2091.10



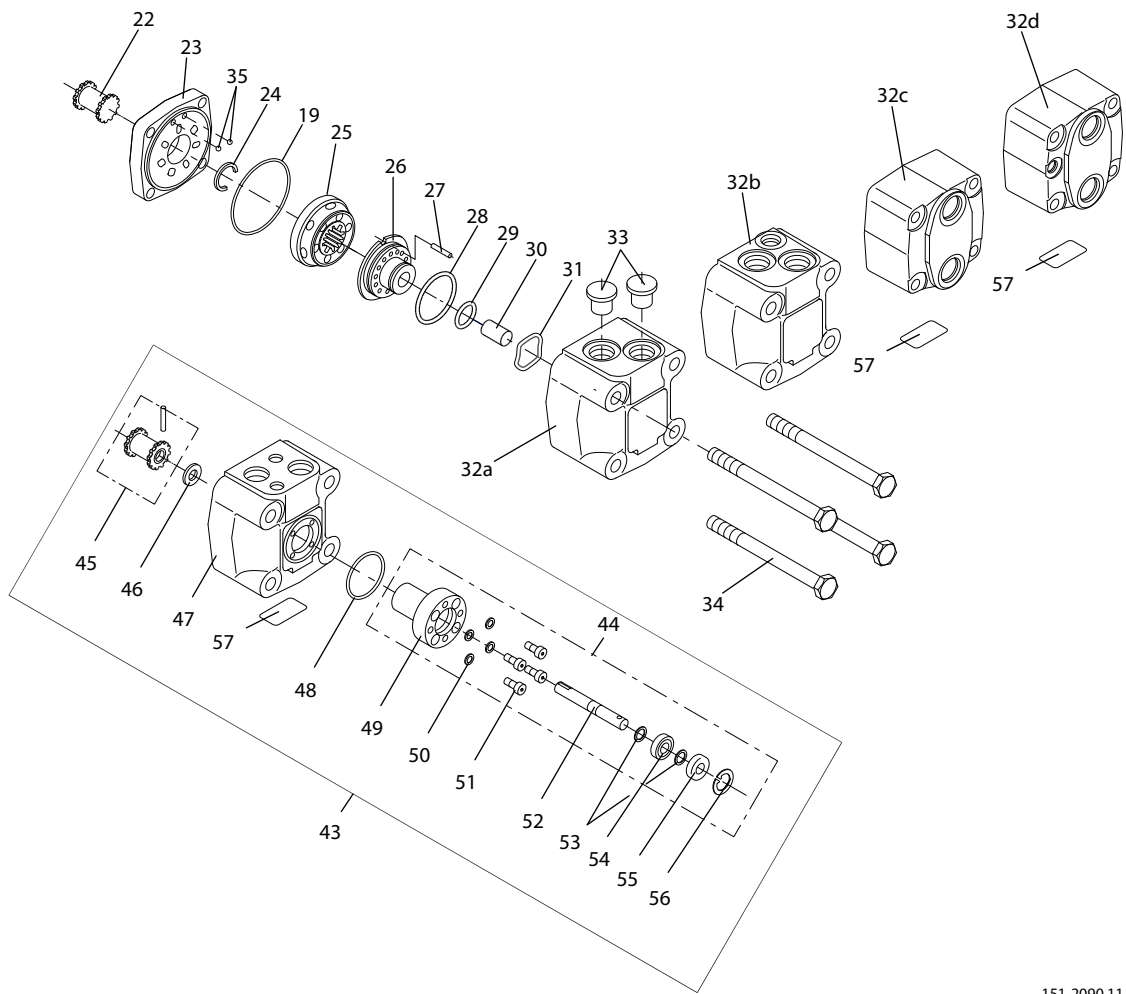
## Exploded view OMS Series 3




151-2089.10

Tightening torque: 

Item 13, with item 14: 30 - 60 N.m [ 270 - 530 lbf.in]



151-2090.11

Tightening torque: 

Item 34: 75 - 80 N.m [660 - 705 lbf.in]

Item 51: 4 - 6 N.m [35 - 55 lbf.in]

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# Chapter

# 3

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## Spare Parts List

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Topics:

- [Spare parts list](#)
-

## Spare parts list

Item	Spare parts		Code No.	Number per motor
1	<u>Dust seal ring</u> (p.t.o. shaft)	35 • 42 • 3.5 mm [1.38 • 1.65 • 0.14 in]	633B3198	1
		40 • 47 • 4.0 mm [1.57 • 1.85 • 0.16 in]	633B3356	1
2	<u>Bearing housing</u> OMS Standard flange OMS Standard flange and P.t.o. shaft OMS Special flange OMS A - 2 flange OMS Magneto flange OMS SAE B flange OMSW Metric standard OMSW SAE standard OMSW with brake nose		151F1534	1
			151F1549	1
			151F1536	1
			151F1685	1
			151F1858	1
			151F1864	1
			151F1535	
			151F1620	
			151F1852	
			151F1827	1
3	<u>Shaft seal</u>  P.t.o. shaft	35 • 52 • 5 mm [1.38 • 2,05 • 0.20 in] NBR	633B3197	1
		35 • 52 • 5 mm [1.38 • 2,05 • 0.20 in] FPM		1
		40 • 60 • 6 mm [1.57 • 2.36 • 0.24 in] NBR	633B3196	1
			633B3355	

Item	Spare parts		Code No.	Number per motor	
4	<u>Parallel key</u>	Metric:	A 10 • 8 • 45 mm for 32 mm cyl. shaft	682L801	1
		Metric:	B 6 • 6 • 20 mm for tap. shaft	9	1
		SAE:	5/16 • 5/16 • 1 ¼ in for 1 ¼ in cyl. and tapered shaft	682L802	1
		SAE:	¼ • ¼ • 1 ¼ in BS 46 for 1 in cylindrical shaft	151-4109	1
				682L803	
				6	
5	<u>Cylindrical shaft</u>	Metric:	Ø32 mm with bearings incl. item 4	151F011	1
		SAE:	Ø1 ¼ in with bearings incl. item 4	2	1
		SAE:	Ø1 in with bearings incl. item 4	151F011	1
				8	
		151F012			
		7			
6	<u>Splined shaft</u>	Metric:	1 ¼ in with bearings	151F011	1
		SAE:	1 ¼ in with bearings	3	1
		SAE:	1 in with bearings	151F011	1
		SAE:	0.875 in with bearings	9	1
				151F012	1
		6			
		151F013			
		8			
7	P.t.o. shaft incl. bearing, DIN 9611		151F011	1	
			6		
8	Washer metric version only	20.5 • 44 • 4 mm	684X253	1	
			0		
9	<u>Castellated nut</u>	Metric:	M20 • 1.5 mm	681X823	1
		SAE:	1 - 20 UNEF	5	1
				151-4154	
10	<u>Tapered shaft</u>	Metric:	35 mm with bearings incl. item 4, (8) and 9	151F011	1
		SAE:	1 ¼ in with bearings incl. item 4 and 9	4	1
				151F011	
			5		
11	<u>Conical seal ring</u>		633B902	1	
			3		
12	<u>O-ring</u>	70 • 2 mm [2.75 • 0.08] NBR	633B137	1	
			9		

Item	Spare parts		Code No.	Number per motor	
13	<u>Drain plug</u>	Metric:	G ¼	151-1524	1
		SAE:	7/16 - 20 UNF	151-5439	1
14	<u>Washer</u>		684X2120	1	
15	<u>Intermediate plate</u>	Metric:	151F181	1	
		SAE:	1	1	
			151F1812		
16	<u>Mounting flange for OMSS</u>	Metric:	151F1817	1	
17	<u>O-ring for OMSS</u>	100 • 3 mm [3.94 • 0.12 in] NBR	633B1486	1	
18	<u>Cardan shaft</u>	OMS/OMSW/OMSS 80	1 = 70 mm [2.75 in]	11075495	1
		OMS/OMSW/OMSS 100	1 = 73 mm [2.87 in]	11077519	1
		OMS/OMSW/OMSS 125	1 = 78 mm [3.07 in]	1107783	1
		OMS/OMSW/OMSS 160	1 = 84 mm [3.31 in]	11077838	1
		OMS/OMSW/OMSS 200	1 = 91 mm [3.58 in]	11075528	1
		OMS/OMSW/OMSS 250	1 = 99.5 mm [3.92 in]	11077921	1
		OMS/OMSW/OMSS 315	1 = 111 mm [4.37 in]	11077921	1
		OMS/OMSW/OMSS 400	1 = 124.5 mm [4.90 in]	11077919	1
		OMS/OMSW/OMSS 500	1 = 120.5 mm [4.74 in]	11075576	
					151F1830
			151F1861		
19	<u>O-ring</u>	82.5 • 2 mm [3.25 • 0.08 in] NBR	633B1431	3	

Item	Spare parts	Code No.	Number per motor
20	<u>Gearwheel set</u>		
	OMS/OMSW/OMSS 80	151F108	1
	w = 14 mm [0.55 in]	1	1
	OMS/OMSW/OMSS 100	151F108	1
	w = 17 mm [0.67 in]	2	1
	OMS/OMSW/OMSS 125	151F108	1
	w = 22 mm [0.87 in]	3	1
	OMS/OMSW/OMSS 160	151F108	1
	w = 28 mm [1.10 in]	4	1
	OMS/OMSW/OMSS 200	151F108	1
	w = 35 mm [1.38 in]	5	1
	OMS/OMSW/OMSS 250	151F108	1
	w = 44 mm [1.73 in]	6	1
	OMS/OMSW/OMSS 315	151F108	1
	w = 55 mm [2.16 in]	7	1
	OMS/OMSW/OMSS 400	151F108	1
	w = 68.4 mm [2.69 in]	8	1
	OMS/OMSW/OMSS 500	151F108	1
	w = 68.4 mm [2.69 in]	9	1
		151F108	
		151F108	
		151F108	
		151F108	
		151F108	
		151F108	
		151F108	
		151F108	
22	<u>Valve drive</u> OMS 80 - 400 OMS 500	1103092	1
		4	1
		151F186	
		2	
23	<u>Channel plate</u>	151F182	1
		1	
24	<u>Stop ring</u> (OMSS 200, 250, 315, 400 and 500 only)	151F154	1
		2	
25	<u>Disc valve</u>	151F102	1
		2	
26	<u>Balance plate</u>	151F173	1
		8	
27	<u>Guide pin</u> Ø 5 mm [0.20 in], 1 = 14 mm [0.55 in] ISO 8750	682L910	1
		5	
28	<u>O-ring</u>	633B142	1
	45 • 2 mm [1.77 • 0.08] NBR	9	1
	45 • 2 mm [1.77 • 0.08] FPM	633B145	
		5	

Item	Spare parts	Code No.	Number per motor
29	<u>O-ring</u> 24 • 2 mm [0.94 • 0.08] NBR 24 • 2 mm [0.94 • 0.08] FPM	633B142 8 633B145 3	1 1
30	<u>Spacer</u>	151F144 9	1
31	<u>Spring washer</u>	684X009 7	1
32a	<u>Valve housing</u> sideport	without drain port Metric	151F180
32a		without drain port SAE	1
32b		with drain port SAE	151F180
32c	endport	without drain port SAE	5
32d		with drain port SAE	151F180
			7
			151F185
			5
			151F185
			6
33	<u>Seal plug</u>	G 1/2	633X007
		7/8-14 UNF	2
			4
			633X001
			7



Item	Spare parts	Code No.	Number per motor
34	<u>Screw M10:</u>		
	OMS/OMSW 80	l = 120 mm [4.72 in]	681X134 4
	OMS/OMSW 100, 125	l = 130 mm [5.12 in]	9 4
	OMS/OMSW 160, 200	l = 140 mm [5.51 in]	681X135 4
	OMS/OMSW 250	l = 150 mm [5.91 in]	0 4
	OMS/OMSW 315	l = 160 mm [6.30 in]	681X135 4
	OMS/OMSW 400, 500	l = 180 mm [7.09 in]	2 4
			681X135 4
			3
			681X135
			6
			681X003
			8
	OMSS 80, 100	l = 100 mm [3.94 in]	681X134 4
	OMSS 125, 160	l = 110 mm [4.33 in]	7 4
	OMSS 200	l = 120 mm [4.72 in]	681X134 4
	OMSS 250	l = 130 mm [5.12 in]	8 4
	OMSS 315	l = 140 mm [5.52 in]	681X134 4
	OMSS 400, 500	l = 150 mm [5.91 in]	9 4
			681X135 4
			0
			681X135
			2
			681X135
			3
35	Check valve ball	Ø3/16 in	689X100 2
			5
43	Tacho valve housing, complete		151F013 1
			7
44	Tacho connection, complete		151F103 1
			1
45	Tacho valve drive + guide pin		151F103 1
			2
46	Spacer ring		151F150 1
			2
47	Tacho valve housing		151F180 1
			2
48	O-ring	40 • 2 mm [1.57 • 0.08 in]	633B137 1
			8

\* OMSW with brake nose and drain port. Do not have check valve

<b>Item</b>	<b>Spare parts</b>		<b>Code No.</b>	<b>Number per motor</b>
49	Bearing housing		5.6 • 8.5 • 1 mm [0.22 • 0.33 • 0.04 in]	151F149 1 9
50	Washer			684X201 4 2
51	Screw M5;		l = 15 mm [0.59 in]	681X188 4 0
52	Tacho drive shaft			151F150 1 0
53	Locking ring		UR 6 • 0.7 mm [0.24 • 0.03 in] DIN 6799	682L492 2 2
54	Bearing		8 • 22 • 7 mm [0.31 • 0.87 • 0.28 in]	981X102 1 0
55	Shaft seal			633B317 1 5
56	Locking ring		N 22 • 1 mm [0.87 • 0.04 in] DIN 472	682L400 1 8
A	Set of seals NBR	OMS, OMSW	item 1, 3, 11, 12, 19, 28 and 29	151F011 1
		OMS (p.t.o.)	item 1, 3, 11, 12, 19, 28 and 29	1 151F011 7
B	Set of seals NBR	OMS, OMSW, OMSS	item 11, 17, 19, 28 and 29	151F010 1 3
C	Set of seals FPM	OMS, OMSW, OMSS	item 1, 3, 28 and 29	151F010 1 9
D	Set of seals NBR	OMSS	item 11 and 17	151F103 1 3

NBR: Buna N, Perbunan (ISO1629)

FPM: Viton (ISO 1629)

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# Chapter

# 4

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## Special Tools

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### Topics:

- *Special Tools*
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## Special Tools

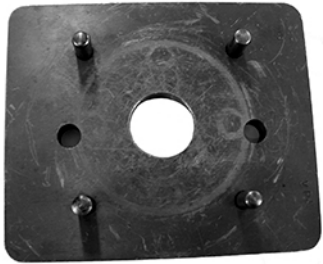
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A. Main holding tool SJ 151-9000-1



Figure 1: A

B: Holding tool for OMSS SJ 151F9000-1



F300 745

Figure 2: B

C : Holding tool for OMSW SJ 151B9000-1

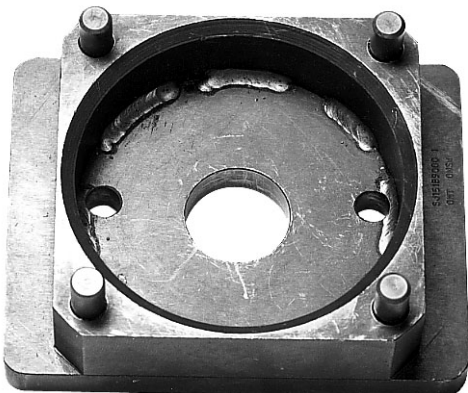


Figure 3: C



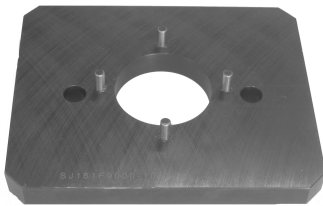
D: Mandrel for fitting shaft seal SJ 151F9000-7

**Figure 4: D**



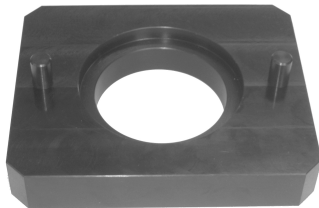
E.: Mandrel for fitting PTO shaft seal SJ 151F9000-8

**Figure 5: E**



F : Holding tool for OMSW with brake nose SJ 151F9000-10

**Figure 6: F**



G: Holding tool for OMS SAE B - flange SJ 151F9000-11

**Figure 7: G**

**Note:**

Service tool drawing can be ordered from the organization.



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# Chapter

# 5

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## Dismantling

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**Topics:**

- *Dismantling*
  - *Tacho connection*
-

## Dismantling

Item	Part to remove	Comments
4	Parallel key	Cylindrical or tapered shafts
11**	Conical seal ring	
13, 14	Drain plug and washer	
33	Seal plugs (2off)	Place the motor in holding tool.
34	Screw (4 off)	Use 17 mm socket spanner.
32	Valve housing	Lift off carefully as a unit, holding your fingers under the channel plate (Item no. 23).
23	Channel plate	
19	O-ring	
35	Ball (2 off)	
24	Stop ring	Only on OMSS 200, 250, 315, 400 and 500
25	Disc valve	
30	Spacer	
26	Balance plate	Fill in oil into the spacer hole and use the $\varnothing 14.25$ mm [0.56 in] mandrel as a piston to press up the balance plate
27	Guide pin	
28	O-ring	
29	O-ring	
31	Spring washer	
22	Valve drive	
20	Gearwheel set	Hold fingers under the gearwheel set to prevent the parts from dropping out
19	O-ring	
18	Cardan shaft	
15	Intermediate plate	

\* Except for OMSS



Item	Part to remove	Comments
11**	Conical seal ring	Not on OMSS, is already removed
12	O-ring	
5**, 6, 7, 10	Shaft incl. bearings	Turn the bearing housing. Press out the shaft/bearing assembly using a hydraulic press (pressing Force max. 2500 N [550 lbf])  <b>Note:</b> Shaft/bearing assembly should not be dismantled.
1**	Dust seal ring	Item no. 1 and 3 to be knocked out by means of the special mandrel (“D” on page 9)
3**	Shaft seal	

## Tacho connection

Item	Part to remove	Comments
51	Screw (4 off)	
44	Tacho connection	Remove from tacho valve housing
48	O-ring	
46	Spacer ring	
56	Retaining ring	Loosen tacho shaft package (by tapping lightly at the end of the shaft) and extract the package from tacho housing.
55	Shaft seal	
53	Retaining ring (2 off)	
54	Bearing	

**Note:**

After dismantling, clean all parts in low aromatic kerosene.

Examine the parts and exchange them if necessary.

Immediately before assembly, lubricate each part with hydraulic oil and grease rubber parts with vaseline.



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# Chapter

# 6

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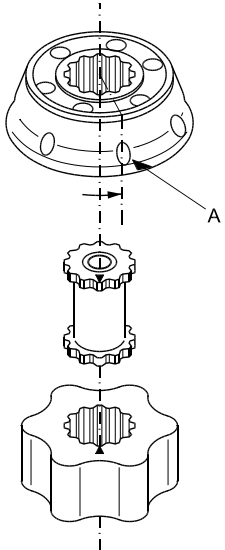
## Assembling

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### Topics:



- *Assembling*
- *Assembling of Tacho Connection*

## Assembling

Item	Part to assemble	Comments
3	Shaft seal	Knock into position in the bearing housing, using the assembly mandrel. Grease lip with vaseline.
1*	Dust seal ring	Use assembly mandrel and plastic hammer. Grease lip with vaseline.
5*, 6, 7, 10	Shaft incl. bearings	Use the hydraulic press. (max. 2500 N [550 lbf])  <b>Note:</b> Always press on the bearing outer ring.
15, 12, 11*	Intermediate plate, O-ring, conical seal ring	Screw the guide bolts into the bearing housing. Fit the O-ring into the bearing housing. Fit the conical seal ring (biggest diameter facing the intermediate plate) into the recess in the intermediate plate. Place the intermediate plate in position on the bearing housing with the conical seal ring downwards.
18	Cardan shaft	Guide the cardan shaft down into the output shaft so that the splines engage.
19	O-ring	Grease with vaseline.
20, 21		Hold fingers under the gearwheel set to prevent parts falling out. Carefully lay the gearwheel set on the intermediate plate so that the O-ring groove is upwards. The through-hole (6 mm [0.24 in]) must line up with the hole in the intermediate plate. Mark the wheel of the gearwheel set at the point where the bottom of an internal tooth is opposite the bottom of an external tooth (see drawing).

**Figure 8: Gearwheel set**

\* Except for OMSS

Item	Part to assemble	Comments
22	Valve drive	<p>Mark the tip of a spline tooth on the end of the valve drive with the widest splines. Line up mark on rotor and valve drive. The end with the widest splines must point upwards.</p> <p><b>Note:</b></p> <p>Applies to motors with tacho connection: Pin on valve drive must point upwards.</p>
19	O-ring	Grease with vaseline. Mount in the gearwheel and channel plate groove
23	Channel plate	Fit the channel plate so that the O-ring groove is upwards and the check valve holes line up with the through-hole in the gearwheel set.
35	Ball (2 off)	
25	Disc valve	<p>Align mark on valve drive with a hole in the outer rim. (A on drawing).</p> <p>Turn disc valve counter clockwise until splines in the two parts engage.</p>
31	Spring washer	Place into valve housing
28, 29	O-ring	Fit the two O-rings (greased with vaseline) in the balance plate grooves.
27	Guide pin	Mount in valve housing
26	Balance plate	Mount in valve housing
30	Spacer	Grease with vaseline to prevent the spacer from dropping out
32	Valve housing	Mount unit on the rest of the motor. Ports should face in the same direction as the drain port.
34	Screw (4 off)	Lubricate threads and cross tighten screws to  75 - 80 N.m [660 - 705 lbf.in].
35	Ball (2 off)	
4*	Parallel key	Secure with plastic ring or tape
13	Drain plug and washer	<p>Fill motor with oil before plugging.</p> <p>Tighten to  30 - 60 N.m [270 - 530 lbf.in].</p>
11*	Conical seal ring	Grease with vaseline to keep in place
33	Seal plug (2 off)	

## Assembling of Tacho Connection

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The tacho connection must be reassembled in reverse order in relation to the procedure described under *Tacho connection* on page 25.

4 screws (pos. 51) to be tightened to 4 - 6 N.m [35.5 - 53 lbf.in].