

Repair Instruction

Orbital Motors OMR, OMR C and OMRW N Series 5 and 6



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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Safety Precaution

Always consider safety precautions before beginning a service procedure. Protect yourself and others from injury. Take the following general precautions whenever servicing a hydraulic system.

Warning:

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Unintended Machine Movement

Unintended movement of the machine or mechanism may cause injury to the technician or bystanders. To protect against unintended movement, secure the machine or disable / disconnect the mechanism while servicing.

Warning:

Flammable Cleaning Solvents

Some cleaning solvents are flammable. To avoid possible fire, do not use cleaning solvents in an area where a source of ignition may be present.

Warning:

Fluid Under Pressure

Escaping hydraulic fluid under pressure can have sufficient force to penetrate your skin causing serious injury and/or infection. This fluid may also be hot enough to cause burns. Use caution when dealing with hydraulic fluid under pressure. Relieve pressure in the system before removing hoses, fittings, gauges, or components. Never use your hand or any other body part to check for leaks in a pressurized line. Seek medical attention immediately if you are cut by hydraulic fluid.

Warning:

Personal Safety

Protect yourself from injury. Use proper safety equipment, including safety glasses, at all times.

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Chapter 1 Special Versions and Cost-free Repairs

Topics:

- Special Versions
- OMR Series 5
- OMR Series 6

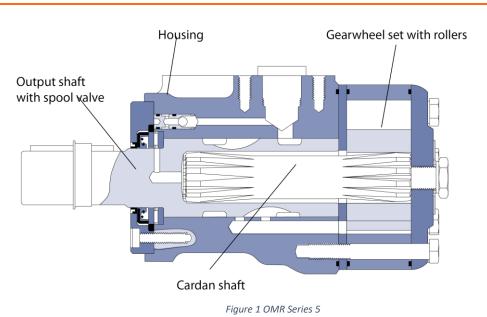


Special Versions

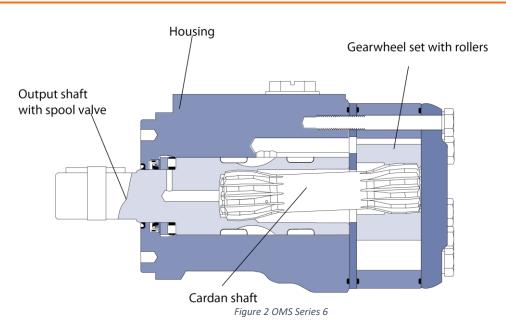
The list of spare parts cannot be used when ordering parts for special OMR versions. In this respect, please contact the sales organization.

We would point out that cost-free repairs as mentioned in General Conditions of Sale, are carried out only at service shops authorized by the organization.

OMR Series 5



OMR Series 6



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Topics:

- Exploded view OMR, metric version Series 6 with integrated spigot flange
- Exploded view OMR and OMR C, metric version Series 5 with separate spigot flange
- Exploded view for OMRW N, metric version Series 5

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Exploded view OMR, metric version Series 6 with integrated spigot flange

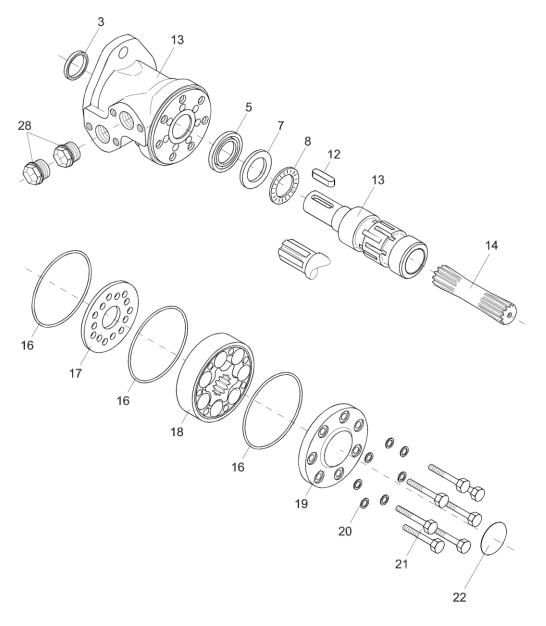


Figure 3 OMR exploded view

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Exploded view OMR and OMR C, metric version Series 5 with separate spigot flange

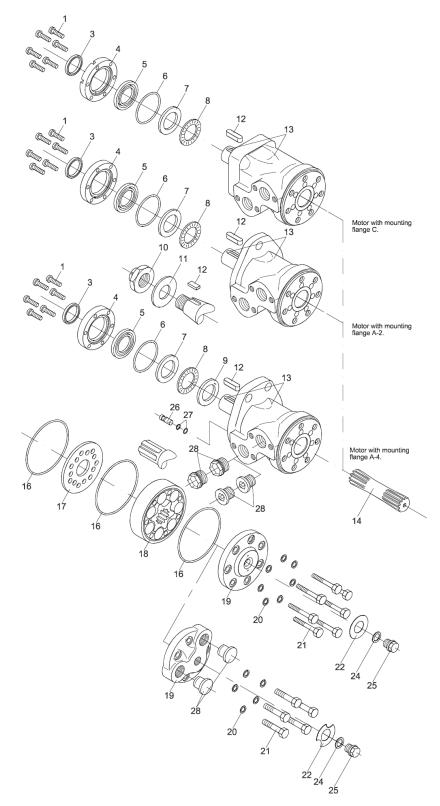


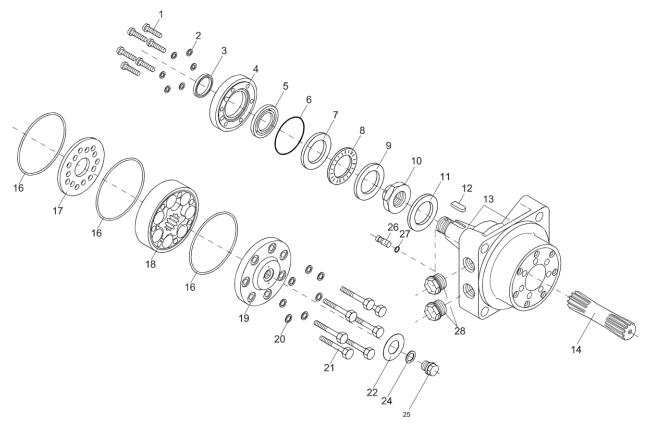
Figure 4 Exploded view OMR and OMR C, metric version Series 5 with separate spigot flange

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OMRW N Metric Version, Series 5



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Figure 5 OMRW N Metric Version, Series 5
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Chapter 3 Spare part list

Topics:

- Spare part list
- Tightening torque

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Spare part list

	Spare Part			Number per motor					
		Dimensions	Code	Serie 6* Series 5 with separate spigot flange					lange
Item			no.	OMR	OMR	OMRC	OMR	OMR	OMRW
				Flange	Flange	Flange	Flange	Flange	N
				A2	A2	A2	A4	С	
1	Screw	M6: L = 16	681X1989		6		6		
		M5: L = 16	681X1961					6	
		M6: L = 16	681X0247			6		6	
		M6: L = 25	681X1454						6
2	Washer	9.9 • 6.1 • 0.5 mm	681X2047						6
3	Dust seal ring	1			T	1	n	1	1
	\varnothing 25 mm, \varnothing 1", 1" spl. shaft (HPS)	35.0 • 27.5 • 2.2 mm	633B0370	1					
	arnothing28.5 mm tapered shaft	28.56 • 35.0 • 4.0mm	151-1313		1		1	1	1
	arnothing25 mm shaft	35.0 • 28.5 • 4.0 mm	633B0010			1			
	\varnothing 32 mm shaft	42.0 • 35.0 • 3.5 mm	633B3198		1		1		
	arnothing 32 $arnothing$ 35 mm shaft (HPS)	42.0 • 35.0 • 1.9 mm	633B0369		1		1		
4	Spigot flange	•				•		•	
	∅25 mm, ø1", 1" spl. shaft (HPS)		151-5588		1		1		
	Ø25 mm, ø1"		454 5450						
	1" spl. shaft		151-5458		1		1		
	\oslash 25 mm shaft		151-5473			1			
	\oslash 25 mm shaft		151-1827					1	
	\oslash 32 mm shaft (HPS)		151-5589		1	1	1		
	\varnothing 32 mm shaft,		151-1734		1		1		
	\oslash 35 mm tapered shaft		151-1988						1
5	Shaft seal			<u>n</u>		1	1	1	
	∅25 mm, ø1", 1" spl. Shaft (HPS)	39.0 • 28.6 • 4.9 mm	633B0361	1	1		1		
	Ø25 mm, ø1",1" spl.	42.0 • 28.6 • 5.5 mm NBR	633B3385		1	1	1	1	
	28.5 mm tapered shaft								
	Ø25 mm, ø1", 1" spl. shaft	42.0 • 28.6 • 5.5 mm, FPM	633B0323		1	1	1	1	
	28.5 mm tapered shaft								
	Ø32 mm shaft, (HPS)	46.0 • 35.0 • 4.6 mm	633B0363		1		1		
	Ø32 mm shaft, 35 tapered shaft	48.0 • 35.0 • 5.5 mm	633B3273		1		1		1
6	O-ring				_		_		_
-	Ø25 mm, Ø1", 1" spl.	47.2 •3.5 mm, NBR	633B1191		1	1	1		1
	28.5 mm tapered shaft	47.2 *3.3 mm, NBK	05561191		1	T	1		1
	Ø25 mm	48.0 • 2.0 mm, NBR	633B1333					1	
	\emptyset 32 mm shaft					1		1	
	35 mm tapered shaft	53.0 • 2.0 mm, NBR	633B1528			1			1
7	-		633B0063						1
7	Bearing race			1	1				1
	\emptyset 25 mm, \emptyset 1", 1" spl. shaft	41.6 •29.0 • 4.0 mm	11043824	1					
	\oslash 25 mm, \oslash 1", 1" spl. shaft	47.5 • 29.5 • 3.0 mm	151-1608		1	1	1	1	

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WHITE 13

28.5 mm tanered shaft								
	52.0.05.0.05	11015051						
	52.0 • 35.0 • 3.5 mm	11045961				1		1
		11043825	1					
	45.6 • 28.7 • 3.0 mm	151-1458		1	1	1	1	1
		981X3198				1		1
Bearing race						1	1	
\varnothing 32 mm shaft				1				
35 mm tapered shaft	52.0 • 35.0 • 3.5 mm	11045961				1		1
Castellated nut								
28.5 mm tapered shaft		681X8202		1				
35 mm tapered shaft	M20 • 1.5	681X8235						1
Washer								
28.5 and 35 mm tapered shaft	44.0 •20.5 • 4.0 mm	684X2530		1				1
Parallel key								
for Ø25 mm shaft	A8 • 7 • 32 mm, DIN6885	682L8035	1	1		1	1	
for Ø25 mm shaft	A8 • 7 • 31 mm	682L9007			1			
for Ø1" shaft	¼•¼•1¼ in, B.S.46	682L8036	1	1		1	1	
for Ø32 mm shaft	A10 • 8 • 45 mm, DIN6885	682L8019		1		1		
for 28.5 mm tapered shaft	B5 • 5 • 14 mm, DIN6885	682L8016		1				
35 mm tapered shaft	B5 • 5 • 20 mm, DIN6885	682L8021						1
Housing + output shaft								
Cardan shaft								
OMR 50	L = 96.6 mm	151-1812		1		1	1	1
OMR 50	L = 79.7 mm	11046200	1		1			
OMR 80	L = 101.0 mm	151-1813		1		1	1	1
OMR 80	L = 84.4 mm	11046261	1		1			
OMR 100	L = 104.5 mm	151-1814		1		1	1	1
OMR 100	L = 87.8 mm	11077943	1		1			
OMR 125	L = 109.0 mm	11087573		1		1	1	1
OMR 125	L = 92.2 mm	151-2655	1		1			
OMR 160	L = 115.0 mm	11087574		1		1	1	1
OMR 160	L = 98.3 mm	151-2656	1		1			
OMR 200	L = 122.0 mm	151-1817		1		1	1	1
OMR 200	L = 105.3 mm	11046282	1		1			
OMR 250	L = 131.0 mm	151-1818		1		1	1	1
OMR 250	L = 114.0 mm	151-2658	1		1			
						<u> </u> .		1
OMR 315	L = 142.0 mm	151-1819		1		1	1	1
OMR 315 OMR 315	L = 142.0 mm L = 125.4 mm	151-1819 151-2659	1	1	1	1	1	Ĩ
	35 mm tapered shaft 28.5 mm tapered shaft 35 mm tapered shaft 35 mm tapered shaft Washer 28.5 and 35 mm tapered shaft Parallel key for Ø25 mm shaft for Ø25 mm shaft for Ø1" shaft for Ø32 mm shaft for Ø32 mm shaft for Ø32 mm shaft Smm tapered shaft ØMR 50 OMR 50 OMR 50 OMR 80 OMR 80 OMR 100 OMR 125 OMR 125 OMR 160 OMR 250 OMR 250 OMR 250 OMR 250	Ø32 mm shaft52.0 • 35.0 • 3.5 mm35 mm tapered shaftAxial needle bearingØ25 mm, Ø1", 1" spl. shaft45.6 • 28.7 • 3.0 mmØ25 mm, Ø1", 1" spl. shaft45.6 • 28.7 • 3.0 mmØ32 mm shaft35 mm tapered shaftØ32 mm shaft52.0 • 35.0 • 3.5 mm35 mm tapered shaft52.0 • 35.0 • 3.5 mmØ32 mm shaft52.0 • 35.0 • 3.5 mm35 mm tapered shaftM20 • 1.5Ø32 mm shaftM20 • 1.5Stam tapered shaftM20 • 1.5Washer28.5 mm tapered shaftM20 • 1.5Washerfor Ø25 mm shaftA8 • 7 • 32 mm, DIN6885for Ø25 mm shaftA8 • 7 • 32 mm, DIN6885for Ø32 mm shaftA8 • 7 • 32 mm, DIN6885for Ø32 mm shaftS • 5 • 14 mm, DIN6885for Ø32 mm shaftB5 • 5 • 14 mm, DIN6885for Ø32 mm shaftL = 96.6 mmOMR 50L = 79.7 mmOMR 50L = 101.0 mmOMR 50L = 101.0 mmOMR 100L = 84.4 mmOMR 100L = 87.8 mmOMR 100L = 109.0 mmOMR 125L = 109.0 mmOMR 126L = 92.2 mmOMR 160L = 92.2 mmOMR 160L = 115.0 mmOMR 200L = 112.0 mmOMR 200L = 112.0 mmOMR 200L = 110.3 mmOMR 250L = 114.0 mm	Ø32 mm shaft52.0 • 35.0 • 3.5 mm1044596135 mm tapered shaftIIØ25 mm, Ø1", 1" spl. shaft45.6 • 28.7 • 3.0 mmIØ25 mm, Ø1", 1" spl. shaft45.6 • 28.7 • 3.0 mmIØ32 mm shaftIIØ32 mm shaftIIØ32 mm shaftIIØ32 mm shaft52.0 • 35.0 • 3.5 mmIØ32 mm shaft52.0 • 35.0 • 3.5 mmIØ32 mm shaft52.0 • 35.0 • 3.5 mmIØ32 mm shaftSIØ35 mm tapered shaftM20 • 1.5681X8202Ø5 mm tapered shaftM20 • 1.5681X8202Ø5 mm tapered shaftM20 • 1.5682X8032WasherI684X803682X8032Parallel keyA8 • 7 • 32 mm, DIN6885682L8036for Ø25 mm shaftA8 • 7 • 33 mm682L8036for Ø25 mm shaftS • 5 • 5 • 14 mm, DIN6885682L8036for Ø32 mm shaftE5 • 5 • 14 mm, DIN6885682L8036for Ø32 mm shaftB5 • 5 • 20 mm, DIN6885682L8036for Ø32 mm shaftII • 192.0MussoftLI • 194.2OMR 50LI • 194.2OMR 50LI • 194.2OMR 80LI • 194.2OMR 80LI • 194.2OMR 100LI • 194.2 <t< td=""><td>Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 11045961 35 mm tapered shaft 11043825 1 Ø25 mm, Ø1", 1" spl. shaft 45.6 • 28.7 • 3.0 mm 151-1458 1 Ø25 mm, Ø1", 1" spl. shaft 45.6 • 28.7 • 3.0 mm 151-1458 1 Ø32 mm shaft 45.6 • 28.7 • 3.0 mm 151-1458 1 1 Ø32 mm shaft 45.6 • 28.7 • 3.0 mm 151-1458 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø35 mm tapered shaft M20 • 1.5 68118202 1 1 Ø455 mm shaft A80 • 7 • 21 mm, DIN6885 682.18036 1 1 for Ø25 mm shaft A80 • 7 • 22 mm, DIN6885 682.18016 1 1</td><td>Ø 32 mm shaft 52.0 • 35.0 • 3.5 mm 11045901 I 35 mm tapered shaft I I I Ø 25 mm, Ø 1", 1" spl. shaft 11043825 1 I Ø 25 mm, Ø 1", 1" spl. shaft I I I I Ø 35 mm tapered shaft I I I I Ø 32 mm shaft I I I I Ø 32 mm shaft I I I I Ø 32 mm shaft 52.0 • 35.0 • 3.5 mm 11045961 I I Ø 32 mm shaft S2.0 • 35.0 • 3.5 mm 11045961 I I Ø 35 mm tapered shaft S2.0 • 35.0 • 3.5 mm 11045961 I I Ø 35 mm tapered shaft M20 • 1.5 68118202 I I Ø 35 mm tapered shaft M20 • 1.5 68118202 I I Ø 44.0 • 20.5 • 4.0 mm 68412635 I I I Ø 70 Ø 1" shaft A6 • 7 • 32 mm, DN6885 68218035 I I I Ø of Ø 25 mm shaft A6 • 7</td><td>Q 22 mm shaft S2.0 • 35.0 • 3.5 mm 11045961 I. I. 35 mm tapered shaft III 04325 I I. III Q 25 mm, Q'1', 1'' spl. shaft 45.6 • 28.7 • 3.0 mm ISI 1438 III III Q 25 mm, Q'1', 1'' spl. shaft 45.6 • 28.7 • 3.0 mm ISI 1438 III III Q 32 mm shaft IIII IIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII</td><td>Q32 mm shaft S2.0 + 35.0 + 3.5 mm 11045961 I I I 35 mm tapered shaft I I I I I I Q25 mm, Q1", 1" spl. shaft 45.6 + 28.7 + 3.0 mm ISI-1458 I I I I I Q25 mm, Q1", 1" spl. shaft 45.6 + 28.7 + 3.0 mm ISI-1458 I</td></t<> <td>Ö32 nm shaft52.0 • 35.0 • 3.5 nm1104956IIIIIAsia needle bearingÖ25 nm, Ö1', 1' spl. shaft45.6 • 28.7 • 3.0 m15.1458III<td< td=""></td<></td>	Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 11045961 35 mm tapered shaft 11043825 1 Ø25 mm, Ø1", 1" spl. shaft 45.6 • 28.7 • 3.0 mm 151-1458 1 Ø25 mm, Ø1", 1" spl. shaft 45.6 • 28.7 • 3.0 mm 151-1458 1 Ø32 mm shaft 45.6 • 28.7 • 3.0 mm 151-1458 1 1 Ø32 mm shaft 45.6 • 28.7 • 3.0 mm 151-1458 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø32 mm shaft 52.0 • 35.0 • 3.5 mm 10045961 1 1 Ø35 mm tapered shaft M20 • 1.5 68118202 1 1 Ø455 mm shaft A80 • 7 • 21 mm, DIN6885 682.18036 1 1 for Ø25 mm shaft A80 • 7 • 22 mm, DIN6885 682.18016 1 1	Ø 32 mm shaft 52.0 • 35.0 • 3.5 mm 11045901 I 35 mm tapered shaft I I I Ø 25 mm, Ø 1", 1" spl. shaft 11043825 1 I Ø 25 mm, Ø 1", 1" spl. shaft I I I I Ø 35 mm tapered shaft I I I I Ø 32 mm shaft I I I I Ø 32 mm shaft I I I I Ø 32 mm shaft 52.0 • 35.0 • 3.5 mm 11045961 I I Ø 32 mm shaft S2.0 • 35.0 • 3.5 mm 11045961 I I Ø 35 mm tapered shaft S2.0 • 35.0 • 3.5 mm 11045961 I I Ø 35 mm tapered shaft M20 • 1.5 68118202 I I Ø 35 mm tapered shaft M20 • 1.5 68118202 I I Ø 44.0 • 20.5 • 4.0 mm 68412635 I I I Ø 70 Ø 1" shaft A6 • 7 • 32 mm, DN6885 68218035 I I I Ø of Ø 25 mm shaft A6 • 7	Q 22 mm shaft S2.0 • 35.0 • 3.5 mm 11045961 I. I. 35 mm tapered shaft III 04325 I I. III Q 25 mm, Q'1', 1'' spl. shaft 45.6 • 28.7 • 3.0 mm ISI 1438 III III Q 25 mm, Q'1', 1'' spl. shaft 45.6 • 28.7 • 3.0 mm ISI 1438 III III Q 32 mm shaft IIII IIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Q32 mm shaft S2.0 + 35.0 + 3.5 mm 11045961 I I I 35 mm tapered shaft I I I I I I Q25 mm, Q1", 1" spl. shaft 45.6 + 28.7 + 3.0 mm ISI-1458 I I I I I Q25 mm, Q1", 1" spl. shaft 45.6 + 28.7 + 3.0 mm ISI-1458 I	Ö32 nm shaft52.0 • 35.0 • 3.5 nm1104956IIIIIAsia needle bearingÖ25 nm, Ö1', 1' spl. shaft45.6 • 28.7 • 3.0 m15.1458III <td< td=""></td<>

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	OMR 375	L = 135.6 mm	151-2660	1		1			
16	O-ring	90 • 2.0 mm, NBR	633B1301	3	3	3	3	3	3
17	Distributor plate		151-1702	1	1	1	1	1	1
18	Gear wheel set								
	OMR 50	W = 9.0 mm	151-1182	1	1	1	1	1	1
	OMR 80	W = 14.0 mm	151-1138	1	1	1	1	1	1
	OMR 100	W = 17.4 mm	151-1139	1	1	1	1	1	1
	OMR 125	W = 21.8 mm	151-1140	1	1	1	1	1	1
	OMR 160	W = 27.4 mm	151-1141	1	1	1	1	1	1
	OMR 200	W = 34.8	151-1189	1	1	1	1	1	1
	OMR 250	W = 43.5 mm	151-1190	1	1	1	1	1	1
	OMR 315	W = 54.8 mm	151-1191	1	1	1	1	1	1
	OMR 375	W = 65.0 mm	151-1192	1	1	1	1	1	1
19	End cover		L						
	Side port without drain		151-5568	1					
	Side port motor		151-1659		1	1	1		1
	End port motor		151-1833		1			1	
20	Washer		•						
	Side port motor	15.2 • 8.2 • 1.0 mm	684X0115	7	7	7	7		7
	End port motor				5			5	
21	Screw Side port motor	M8 • 1.25							
	OMR 50	l = 40 mm	681X0180	7	7	7	7		7
	OMR 80	l = 45 mm	681X0181	7	7	7	7		7
	OMR 100	l = 45 mm	681X0181	7	7	7	7		7
	OMR 125	l = 50 mm	681X0182	7	7	7	7		7
	OMR 160	l = 55 mm	681X0183	7	7	7	7		7
	OMR 160	l = 60 mm	681X0184	7	7	7	7		7
	OMR 200	l = 65 mm	681X0185	7	7	7	7		7
	OMR 250	l = 70 mm	681X0187	7	7	7	7		7
	OMR 315	l = 85 mm	681X0189	7	7	7	7		7
	OMR 375	l = 95 mm	681X0190	7	7	7	7		7
	Screw End port motor	M8 • 1.25							
	OMR 50	l = 40 mm	681X0181		5			5	
	OMR 80	l = 50 mm	681X0182		5			5	
22	Name plate					1	1	1	1
	Side port motor				1	1	1		1
	End port motor				1			1	
24	Washer	17.5 • 13.5 • 1.5 mm	684 X2120		1	1	1	1	1
25	Drain plug		151-1524		1	1	1	1	1
26	Check valve incl. item 27		151-1076		2	2	2	2	
			151-1995						2
27	O-ring	5.0 • 1.5 mm, NBR	633B1324		4	4	4	4	4
28	Plug								

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	Side port motor-plastic plug	633X0074		2				
	End port motor- steel plug	631X9706	2	2	2	2	2	2
	End port motor- plastic plug	633X0074		2			2	
3, 5, 16, 20, 24	Spare parts bag for motors with HPS and $ into 25$ mm, $ into 1$ ", 1" spl. shaft (Series 6)	151-1286	1					
3, 5,	Spare parts bag for motors with							
	Spare parts bag for motors with standard shaft seal and $Ø25 \text{ mm}$, $\emptyset1^{"}$, 1" spl. shaft (Series 5)	151-1277		1	1**	1	1	1
	standard shaft seal and Ø25 mm,	151-1277		1	1**	1	1	1

Table 1 Spare part list

NBR: (Buna N, Perbunan)

FPM Viton (ISO 1629)

HPS: High-pressure shaft seal

*Series 6 wih integrated spigot flange

**Excl.dust seal ring 633B0010

Tightening torque

Item	Code number	Torque			
nem	Code Humber	N∙m	lbf∙in		
1	681X1989	5 - 8	45 - 70		
	681X0247	5 - 8	45 - 70		
	681X1961	5 - 10	45 - 90		
	681X1454	12 - 15	110 - 130		
10	681X8202	90 - 110	800 - 975		
	681X8232	190 - 210	1680 - 1860		
21	-	30 - 35	270 - 315		
25	-	38 - 44	340 - 390		
28	631X9706	20 - 23	175 - 200		

Table 2 Tightening torque

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Chapter 4 Special tools

Topics:

• Special tools

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Special tools



Figure 6 Main holding tool (horse hole): Code No.: SJ 151-9000-1.

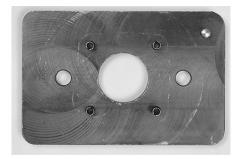


Figure 7 SJ 151-9000-12.

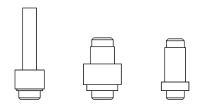


Figure 9 Mandrel: Code No.: SJ 151-0414 Mandrel: Code No.: SJ 151-9000-7 or SJ 151F9000-7



Figure 8 Holding tool for motor with square mounting flange: Code No.: SJ 151-9000-12.

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Chapter 5 Dismantling / Cleaning

Topics:

- Dismantling
- Cleaning

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Dismantling

ltem	Part to remove	Comments
10	Castellated nut	
11	Washer	
12	Parallel key	
28	Seal plugs	Put the motor in a holding tool, with the output shaft downward.
		For end port version use 10 mm hexagon socket spanner.
25, 24	Drain plug, washer (if present)	Use a 17 mm spanner socket.
21, 20	Screws, washers	Use a 13 mm spanner socket.
19	End cover	Remove end cover sideways.
18, 16	Gear wheel set O-rings (2 off)	Keep fingers under the gearwheel set to prevent the parts from falling out.
14	Cardan shaft	
17, 16	Distributor plate O-ring	
13	Output shaft	Motors with integrated spigot flange:
		Place the motor housing on the work bench and press the shaft out of the motor housing.
		Shaft and bearings should normally not be removed from OMRW N.
		However, if necessary for inspection and cleaning, remove the shaft from the housing front end. The rear bearing can thus remain in the housing.
		After this, turn the motor.
1	Screws (6 off)	Use Torx-spanner type T30, 9 mm screwdriver or 4 mm hexagon socket spanner.
2	Washer	Only OMRW N
4	Spigot flange	
6, 7	O-ring, bearing race	• Motors with integrated spigot flange:
		Remove bearing and bearing race from the motor housing.
		• Motors with separate spigot flange:
		Use a 2 mm screwdriver
8	Needle bearing	
L		

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WHITE 20

5, 3	Shaft seal, Dust seal	Motors with integrated spigot flange:
		With mandrel and plastic hammer, carefully knock out the shaft seal.
		Motors with separate spigot flange:
		Knock out the shaft seal / dust seal with a plastic hammer.
		Use mandrel SJ 151-9000-7 or SJ 151F9000-7
9	Bearing race	Only OMR/OMRW N with ø32 mm/28.5 mm tapered shaft.
	-	Use a 2 mm screwdriver.
26	Check valves (2 off)	Only OMR with check valves.
		Pull the check valve out with, for example, a ground (shortened) 3.5 mm screw tap.

Table 3 Dismantling

Cleaning

Cleaning

Clean all parts carefully with low aromatic kerosine.

Inspection and replacement

Check all parts carefully and replace them if necessary.

Lubrication

Before assembly, lubricate all parts with hydraulic oil and grease rubber parts with vaseline.

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Chapter 6 Assembly

Topics:

• Assembly

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Assembly

ltem	Part to install	Comments
		Place the motor housing in the holding tool with the flange upwards.
26	Check valves (2 off)	Only OMR with check valves
		Grease the check valves (fitted with new O-rings) and fit them in their bores with light blows using plastic hammer.
9	Bearing race	Only OMR/OMRW N with ø32 mm / 28.5 mm tapered shaft.
5	Shaft seal	• Motors with integrated spigot flange:
		Lubricate the shaft seal on the outside with hydraulic oil. Fit the shaft seal correctly onto mandrel SJ 151-0414 and carefully press the shaft seal into position in the motor housing.
		Motors with separate spigot flange:
		Knock the seal into position in the spigot flange. Check that the seal lies against the cover recess. Use mandrel SJ 151-9000-7 or SJ 151F9000-7
3	Dust seal ring	Place the dust seal ring in the spigot flange and knock it into position with a plastic hammer and appropriate mandrel.
		SJ 151-9000-7 or SJ 151F9000-7
7,6	Bearing race, O-ring	• Motors with integrated spigot flange:
		Fit bearing and bearing race onto the shaft and mount together with the shaft.
		Motors with separate spigot flange:
		Grease the O-ring with vaseline and fit the bearing race and O-ring into the spigot flange.
8	Needle bearing	
4	Spigot flange	Turn so that the holes line up.
2	Washer	Only OMRW N
1	Screws (6 off)	Tightening torque
		Torx screws M6: 5-8 Nm [45-70 lbf• in]
		Slotted screws M6: 5-8 Nm [45-70 lbf ∙in]
		Hexagon socket screws M5: 5-10 Nm [45-70 lbf• in]

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		Hexagon socket screws M5: 12-15 Nm [45-70 lbf ∙in]
		After this, turn the motor.
13	Output shaft	Grease the journals with hydraulic oil.
		The rear shaft end must be marked before fitted. The mark must be positioned vertically above a commutation slot leading up to the front annular channel. For OMRW N, guide the shaft into the motor housing back with the
		rear needle bearing fitted on the shaft. Bring the shaft in line with the back of the motor by gently tapping the shaft with a plastic hammer. Check that the shaft rotates easily
16	O-ring	Grease the O-ring and put it in the O-ring groove of the housing.
17	Distributor plate	Turn the distributor plate so that the holes line up.
14	Cardan shaft	Guide the cardan shaft down into the motor housing.
		In case of different splines lengths turn the cardan shaft to ensure the long splines end is fitted in the output shaft.
		Transfer marking from output shaft to cardan shaft.
18, 16	Gearwheel set	Place the O-rings (greased) in the O-ring grooves of the gearwheel.
		In gearwheels with non through splines place the gearwheel with the recess in the spline hole facing down towards the housing.
		Place the gearwheel set on the cardan shaft so that the top of a tooth in the external teeth of the gearwheel is vertically above the mark on the cardan shaft.
		Turn the gearwheel counter clockwise until the cardan shaft and the gearwheel start to mesh (15°). Turn the gearwheel rim so that the holes made for the screws line up.
19	End cover	Turn the end cover so that the holes line up.
20, 21	Washer, screws	Use a 17 mm spanner socket
		Tightening torque: 30 - 35 N∙m [265-310 lbf∙in].

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24, 25	Washer, drain plug	Use a 17 mm spanner socket. Tightening torque: 30 - 60 N•m [270-315 lbf•in].
28	Seal plugs, Threaded plug (if present)	End port version: Screw plastic plugs into end ports. Screw in the side port plugs using 10 mm hexagon socket spanner. Tightening torque: 50 - 70 Nm [445-620 lbf•in]. Side port version: Screw in plastic plugs.
12	Parallel key	To be secured with tape or plastic ring
11	Washer	
10	Castellated nut	

Table 4 Assembly

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