



Revision View

| Date | Page | Changed | Revision |
|----------|------|---|----------|
| Jan 2008 | all | Changed from Danfoss to Sauer Danfoss lay out | AA |
| Mar 2008 | 13 | Service toll numbers are corrected | AB |
| Apr 2010 | 16 | Japan location | AD |
| Sep 2010 | 16 | New back cover | AE |

Safety Precautions

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.

Unintended Machine Movement

▲ Warning

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.

Flammable Cleaning Solvents

▲ Warning

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.

Fluid Under Pressure

▲ Warning

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.

Personal Safety

▲ Warning

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

Contents

Special Versions..... 3
 Cost-Free Repairs..... 3
 Exploded View OML 4
 Spare Part List for OML 5
 Dismantling OML 6
 Assembly OML..... 7
 Exploded View for OMM 8
 Spare Part List for OMM 9
 Dismantling OMM..... 11
 Assembly OMM 12
 Special Tools..... 13

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 Frontpage: F301 211, F301212, Drawing 151-1837

Special Versions

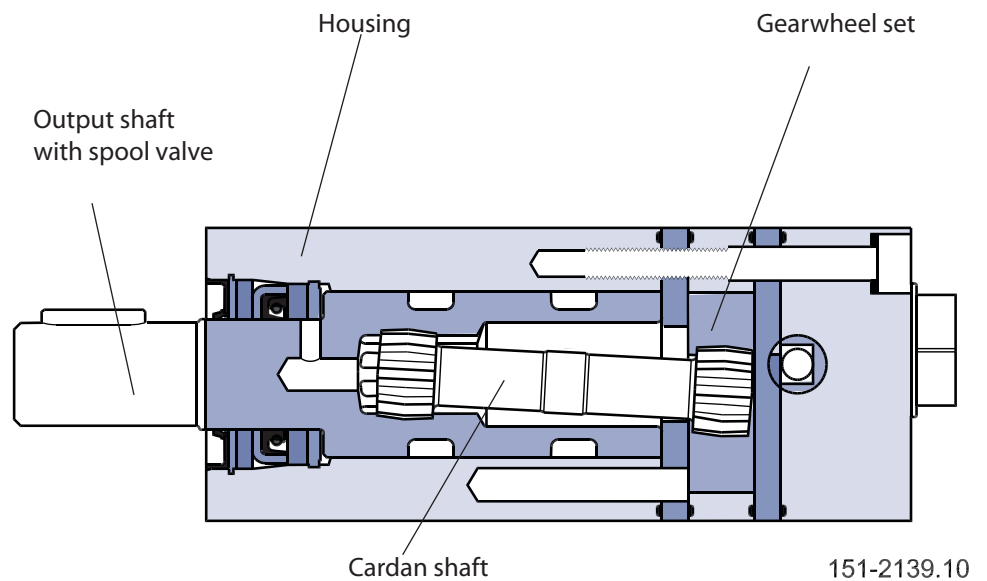
The list of spare parts cannot be used when ordering parts for special OML/OMM versions.

In this respect, please contact the sales organisation for Sauer-Danfoss.

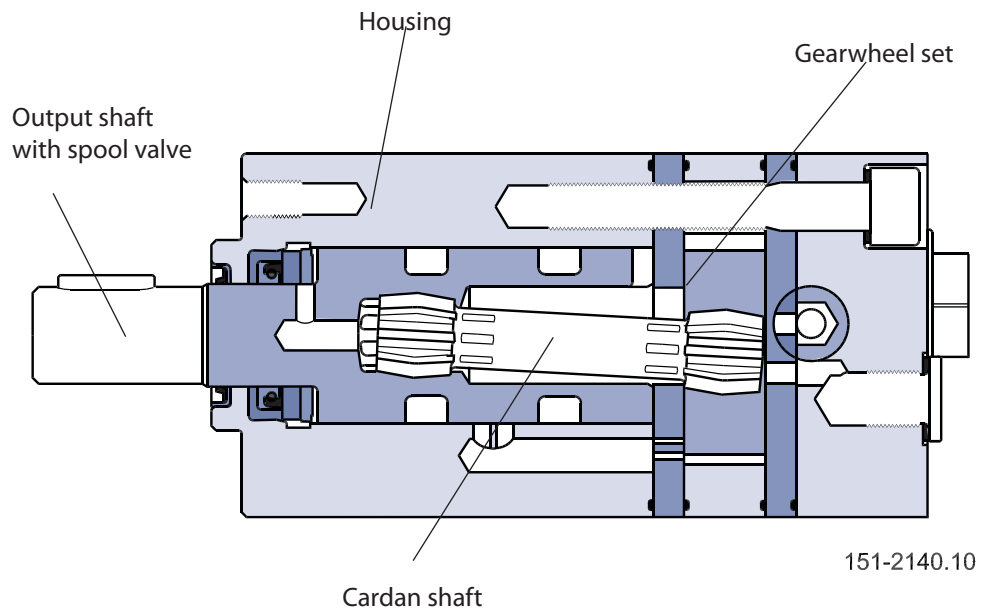
Cost-Free Repairs

We would point out that cost-free repairs as mentioned in Sauer-Danfoss General Conditions of Sale, are carried out only at Sauer-Danfoss Nordborg or at service shops authorised by Sauer-Danfoss.

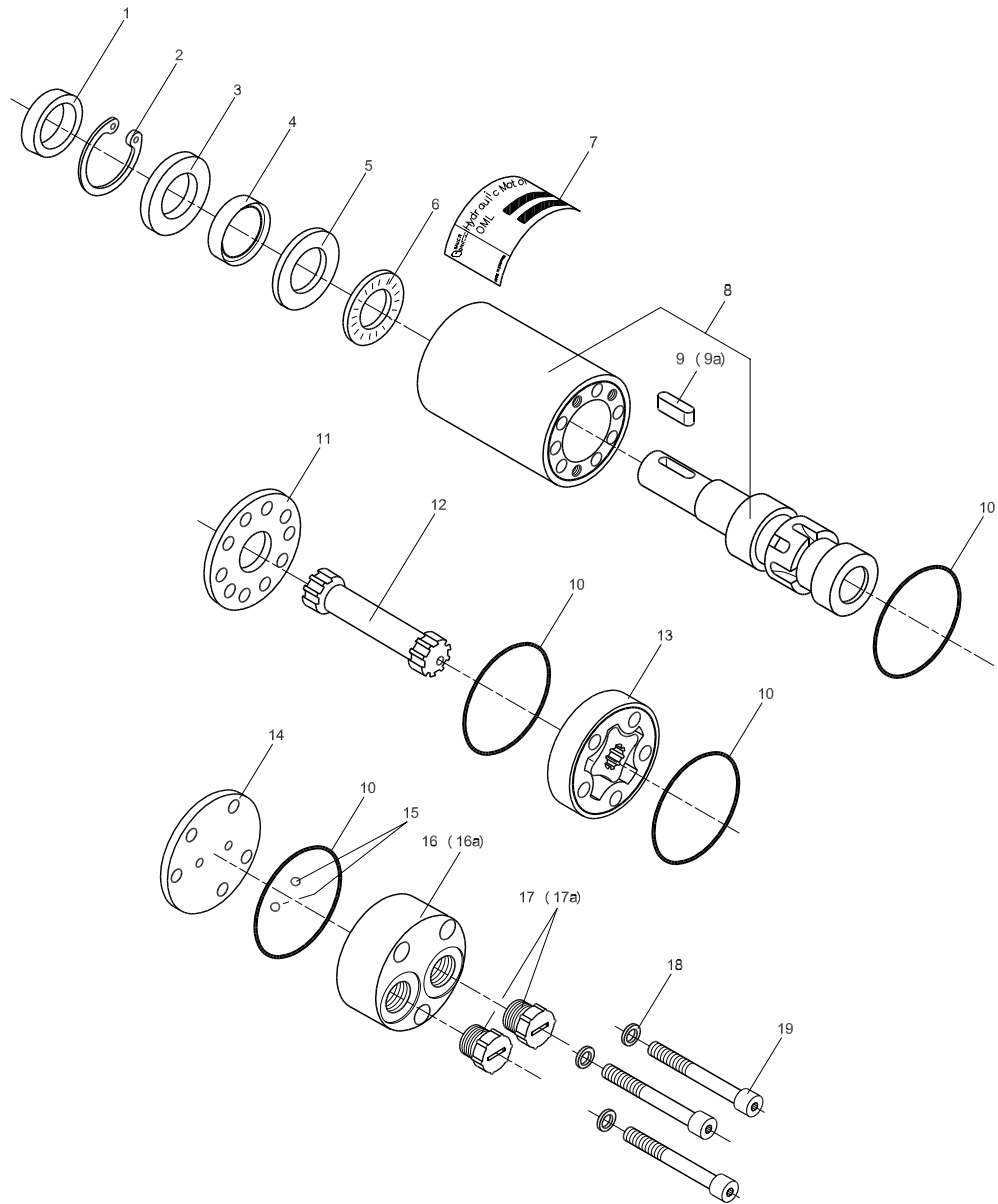
OML



OMM



Exploded View OML



Tightening torque: item 19
7.5 - 9.5 N•m [66 - 84 lbf•in]

151-1323.10






Spare Part List OML

| Item | Spare Part | Dimensions | Code no. | Number per motor |
|------|-----------------------------|--------------------------------|----------|------------------|
| 1* | Dust seal ring | 29 • 17 • 3.2 mm | 633B3398 | 1 |
| 2 | Retaining ring | 29 • 1.2 mm | 682L4213 | 1 |
| 3 | Support ring | 28.8 • 17.35 • 2.45 mm | | 1 |
| 4* | Shaft seal BAKHD NBR | 28 • 17 • 5.5 mm | 633B3208 | 1 |
| 4 | Shaft seal BAHD FPM | 28 • 17 • 5.5 mm | 633B3390 | 1 |
| 5 | Bearing race | 27.8 • 17.1 • 3.0 mm | 151G0307 | 1 |
| 6 | Needle bearing | 27.9 • 17.1 • 2.0 mm | 151G2300 | 1 |
| 7 | Label | | | |
| 8 | Housing and output shaft | not sold separately | | |
| 9 | Parallel key metric version | 16 • 5.0 • 5.0 mm DIN 6885 | 682L8026 | 1 |
| 9a | Parallel key SAE version | 3/16 • 3/16 • 3/4 inch B.S. 46 | 682L8031 | 1 |
| 10* | O-ring | 42 • 1.0 mm | 633B1027 | 4 |
| 11 | Distributor plate | 45 • 14.6 • 4.0 | 151G2303 | 1 |
| 12 | Cardan shaft OML 8 | l = 51.5 mm | 151G2314 | 1 |
| | Cardan shaft OML 12.5 | l = 53.8 mm | 151G2315 | 1 |
| | Cardan shaft OML 20 | l = 57.6 mm | 151G2316 | 1 |
| | Cardan shaft OML 32 | l = 63.7 mm | 151G2317 | 1 |
| 13 | Gearwheel set OML 8 | w = 4.1 mm | 151G2101 | 1 |
| | Gearwheel set OML 12.5 | w = 6.4 mm | 151G2102 | 1 |
| | Gearwheel set OML 20 | w = 10.2 mm | 151G2103 | 1 |
| | Gearwheel set OML 32 | w = 16.3 mm | 151G2104 | 1 |
| 14 | Intermediate plate | 45 • 4.0 mm | 151G2305 | 1 |
| 15 | Check valve | 4.76 | 689X1005 | 2 |
| 16 | End cover, metric version | G 1/4 in ports | 151G2331 | 1 |
| 16a | End cover, SAE version | 7/16 - 20 UNF | 151G2333 | 1 |
| 17 | Seal plug metric version | G 1/4 in ports | 633X0028 | 2 |
| 17a | Seal plug SAE version | 7/16 - 20 UNF | 633X7026 | 2 |
| 18* | Washer | 8.82 • 5.39 • 1.0 mm | 684X2012 | 3 |
| 19 | Screw M5 | OML 8/12.5 l = 40 mm | 681X1511 | 3 |
| | Screw M5 | OML 20 l = 45 mm | 681X1512 | 3 |
| | Screw M5 | OML 32 l = 50 mm | 681X1702 | 3 |

Set of Seals

| | | | | |
|---|--|--|----------|--|
| * | Seal kit OML incl. items 1, 4, 10 and 18 | | 151G2201 | |
|---|--|--|----------|--|

Dismantling

| Item | Part to Remove | Comments |
|--------|--------------------|--|
| 9 | Parallel key | Remove parallel key |
| 17 | Seal plugs | Put the motor in a holding tool with the output shaft lowest and remove the seal plugs. |
| 18, 19 | Screws | Use a 4 mm Allan key. |
| 16 | End cover | |
| 10 | O-ring | Remove end cover sideways. Beware of the two check valve. Remove O-ring.  |
| 15 | Balls | |
| 14 | Intermediate plate | Remove intermediate plate. |
| 13 | Gearwheel set | Hold fingers under the gearwheel set to prevent the gear from dropping out. |
| 10 | O-rings |  |
| 12 | Cardan shaft | Remove cardan shaft. |
| 13 | Distributor plate | Remove distributor plate. |
| 12 | O-ring |  |
| | Output shaft | Take output shaft out of housing and turn motor. |
| 1 | Dust ring | Remove dust seal by means of a screwdriver.  |
| 2 | Snap ring | Remove retaining ring by means of pair of pliers. |
| 3 | Support ring | Remove support ring. |
| 4 | Shaft seal | Press shaft seal  bearing race and needle bearing through shaft end of housing by means of the output shaft, possibly using the cardan shaft. |
| 5 | Bearing race | |
| 6 | Needle bearing | |

Cleaning

Cleaning








Clean all parts carefully with low aromatic kerosene.

Inspection and replacement

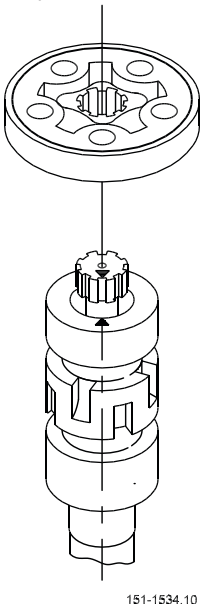


Check all parts carefully and replace if necessary.

Lubrication

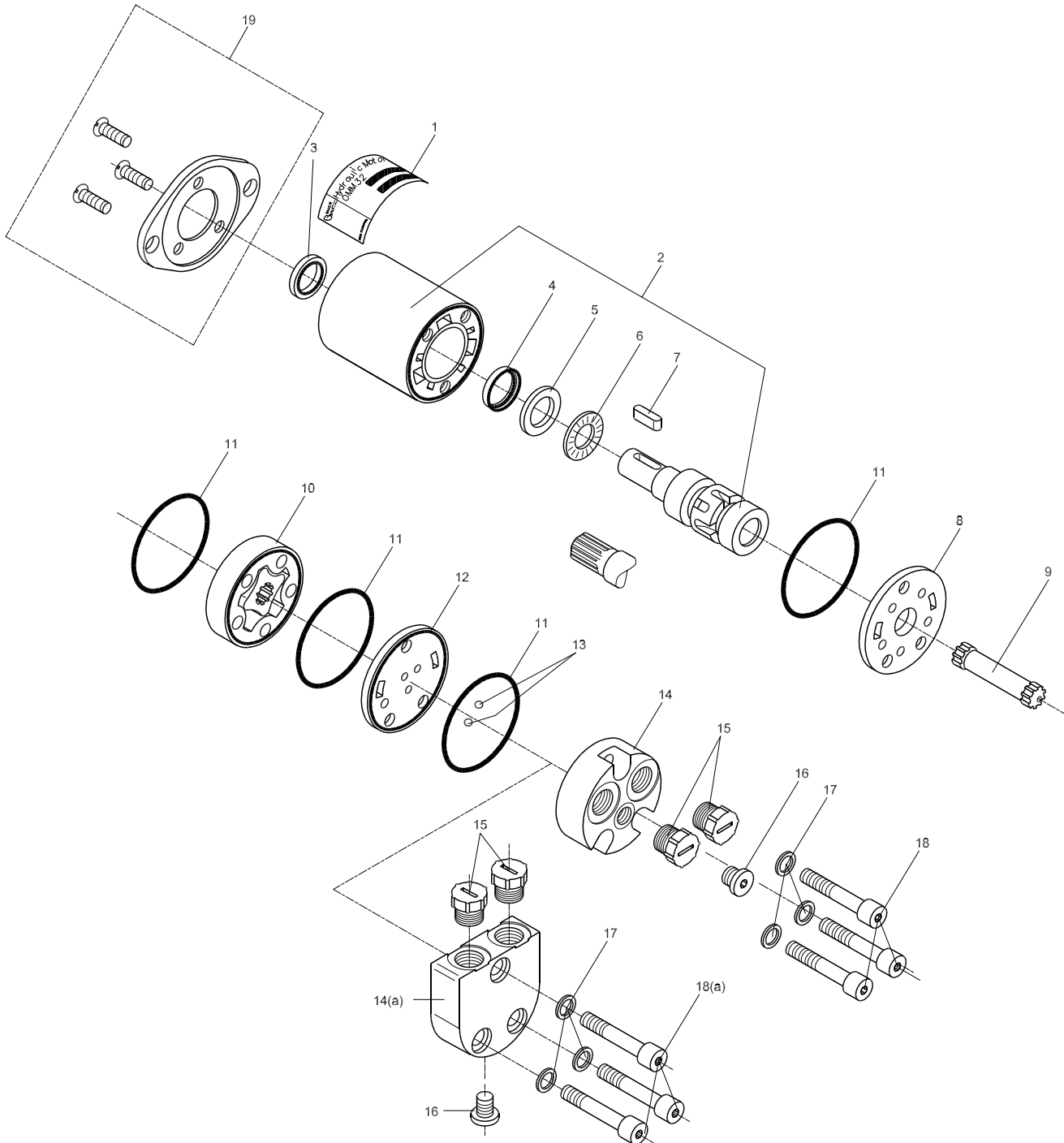
Before assembly, lubricate all parts with hydraulic oil and grease rubber parts with vaseline.

-  = Pull out with tool - press fit
-  = Non removable part, use a new part
-  = Internal hex head
-  = Mark orientation for reinstallation
-  = Press in - press fit
-  = Torque specification
-  = Note correct orientation

Assembly

| Item | Part to Install | Comments |
|------|---|--|
| 5 | Needle bearing | Fit needle bearing in shaft end of motor housing. Put thrust bearing race without chamfering on top and needle bearing. |
| 6 | Bearing race | |
| 8 | Output shaft | |
| 4 | Shaft seal | Fit shaft seal in motor housing by means of mandrel and plastiv hammer. |
| 3 | Support ring | Install support ring with chamfering in motor housing. Turn chamfering against shaft seal. |
| 2 | Snap ring | Install snap ring in motor housing by means of a pair of pliers. |
| 1 | Dust seal | Knock dust seal into position in motor housing using a plastic hammer. |
| | Output shaft  151-1534.10 | Mark output shaft at middle of two commutating grooves. Install shaft in motor housing.  See drawing 151 - 1534.10 |
| 9 | Key | Fit key in output shaft. Place motor housing with shaft in holding tool. |
| 10 | O-ring | Grease the O-ring and put in the O-ring groove of the housing. |
| 12 | Cardan shaft | Guide the cardan shaft down into the output shaft. Place the fork (tool) under the upper cardan shaft teeth. Transfer the mark from output shaft to cardan shaft. The drawing 151-1534.10 |
| 11 | Distributor plate | Turn the distributor plate so that the holes line up. |
| 10 | O-ring | Place O-ring (greased) in O-rings grooves of gear rim. |
| 13 | Gearwheel set | Place gearwheel set on cardan shaft so that the mark on the cardan shaft is opposite a tooth peak on the external tothing of the gearwheel- Turn the tooth rim till holes for screws line up- See drawing 151-1534.10. |
| 14 | Intermediate plate | Fit intermediate plate on gearwheel set so that three holes for tightening screws are opposite threaded holes in motor housing. |
| 15 | Check valve balls | Grease check valve balls wit vaseline and place one in each of the two holes. |
| 16 | End cover | Turn the end cover so that the holes line up. (Beware of the check valve balls). Use a 4 mm Allan key. |
| 18 | Washer | |
| 19 | Screws | Fit loosely the three screws with new washers. Tight the screws.  Tightening torque: 7.5 - 9.5 N•m [66 - 84 lbf•in] |
| 17 | Seal plugs | Fit in seal plugs. |

Exploded View OMM



Tightening torque:

item 16 10 - 15 N•m [88 - 133 lbf•in]

item 18 22 - 28 N•m [195 - 248 lbf•in]

151-1007.19 .17

Spare Parts OMM

| Item | Spare Part | Dimensions | Code no. | Number per motor |
|------|----------------------------------|--------------------------------|----------|------------------|
| 1 | Label | | | |
| 2 | Housing and output shaft | not sold separately | | |
| 3* | Dust seal ring | 17 • 23 • 5.0 mm | 633B3373 | 1 |
| 4* | Shaft seal BAKHD NBR | 28 • 17 • 5.5 mm | 633B3208 | 1 |
| 4 | Shaft seal BAHD FPM | 28 • 17 • 5.5 mm | 633B3390 | 1 |
| 5 | Bearing race | 27.8 • 17.1 • 3.0 mm | 151G0307 | 1 |
| 6 | Needle bearing | 28.3 • 17.1 • 2.0 mm | 981X3172 | 1 |
| 7 | Parallel key, metric version | 16 • 5.0 • 5.0 mm DIN 6885 | 682L8026 | 1 |
| | Parallel key, SAE version | 3/16 • 3/16 • 3/4 inch B.S. 46 | 682L8031 | 1 |
| 8 | Distributor plate | 60 • 16 • 5.0 | 151G0314 | 1 |
| 9 | Cardan shaft OMM 8/10 | l = 54.0 mm | 151G0369 | 1 |
| | Cardan shaft OMM 12.5 | l = 56.0 mm | 151G0309 | 1 |
| | Cardan shaft OMM 20 | l = 59.0 mm | 151G0310 | 1 |
| | Cardan shaft OMM 32/50 | l = 64.0 mm | 151G0311 | 1 |
| | Cardan shaft OMM 70 | l = 80.2 mm | 151G0483 | 1 |
| 10 | Gearwheel set OMM 8 | w = 3.5 mm | 151G0119 | 1 |
| | Gearwheel set OMM 10 | w = 4.2 mm | 151G0135 | 1 |
| | Gearwheel set OMM 12.5 | w = 5.52 mm | 151G0101 | 1 |
| | Gearwheel set OMM 20 | w = 8.5 mm | 151G0102 | 1 |
| | Gearwheel set OMM 32 | W = 13.5 mm | 151G0103 | 1 |
| | Gearwheel set OMM 50 | W = 21.5 mm | 151G0117 | 1 |
| | Gearwheel set OMM 70 | w = 29.9 mm | 151G0136 | 1 |
| 11* | O-ring | 54 • 1.5 mm | 633B1487 | 4 |
| 12 | Intermediate plate | 60 • 5.0 mm | 151G0332 | 1 |
| 13 | Check valve | 4.76 | 689X1005 | 2 |
| 14 | End cover, metric version | end port G 3/8 in ports | 151G0113 | 1 |
| | End cover, SAE version | end port 9/16 - 18 UNF | 151G0114 | 1 |
| 14a | End cover, metric version | side port G 3/8 in ports | 151G0109 | 1 |
| | End cover, SAE version | side port 9/16 - 18 UNF | 151G0110 | 1 |
| 15 | Seal plug, metric version | G 3/8 in | 633X7009 | 2 |
| | Seal plug, SAE version | 9/16 - 18 UNF | 633X7023 | 2 |
| 16 | Drain plug, metric version | G 1/8 in | 631X2053 | 1 |
| | Drain plug, SAE version | 3/8 - 24 UNF | 151G0111 | 1 |
| 17* | Washer | 8.2 • 11.9 • 1.0 mm | 684X2481 | 3 |
| 18 | Screw M8 • 1.25 - end port motor | | | |
| | OMM 8/10 and 12.5 | l = 40 mm | 681X0358 | 3 |
| | OMM 20 | l = 45 mm | 681X0359 | 3 |
| | OMM 32 | l = 50 mm | 681X0360 | 3 |
| | OMM 50 | l = 55 mm | 681X0324 | 3 |








Spare Parts OMM

| Item | Spare Part | Dimensions | Code no. | Number per motor |
|------|--|------------|----------|------------------|
| 18a | Screw M8 • 1.25 - side port motor | | | |
| | OMM 8/10/ and 12.5 | l = 45 mm | 681X0359 | 3 |
| | OMM 20 | l = 50 mm | 681X0360 | 3 |
| | OMM 32 | l = 55 mm | 681X0324 | 3 |
| | OMM 50 | l = 60 mm | 681X0098 | 3 |
| | OMM 70 | l = 70 mm | 681X1523 | 3 |
| 19 | Mounting flange with screws, metric version only | | 151G0211 | 1 |

Set of Seals

| | | |
|---|----------|--|
| Seal kit OMM incl.- items 3, 4, 11 and 17 | 151G0202 | |
|---|----------|--|

Dismantling

| Item | Part to Remove | Comments |
|------|--------------------|---|
| 7 | Parallel key | Remove parallel key |
| 15 | Seal plugs | Put the motor in a holding tool with the output shaft lowest and remove the seal plugs. |
| 19 | Drain plug | Use a 5 mm Allan key. |
| 18 | Screws | Use a 6 mm Allan key. |
| 14 | End cover | |
| 13 | Balls | Remove end cover sideways. Beware of the two check valve. |
| 11 | O-ring | Remove intermediate plate + O-ring.  |
| 12 | Intermediate plate | |
| 10 | Gearwheel set | Hold fingers under the gearwheel set to prevent the gear from dropping out. |
| 11 | O-rings |  |
| 9 | Cardan shaft | Remove cardan shaft. |
| 8 | Distributor plate | Remove distributor plate. |
| 11 | O-ring |  |
| | Output shaft | Take output shaft out of housing. |
| 5 | Bearing race | |
| 6 | Needle bearing | Remove needle bearing and bearing race. |
| 3 | Dust ring | Remove dust seal by means of a screwdriver.  |
| 4 | Shaft seal | Remove shaft seal by means of a screwdriver  |

Cleaning

Cleaning

Clean all parts carefully with low aromatic kerosine.


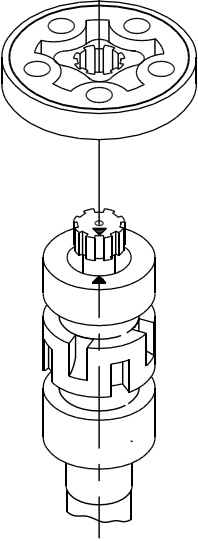


Inspection and replacement

Check all parts carefully and replace if necessary.

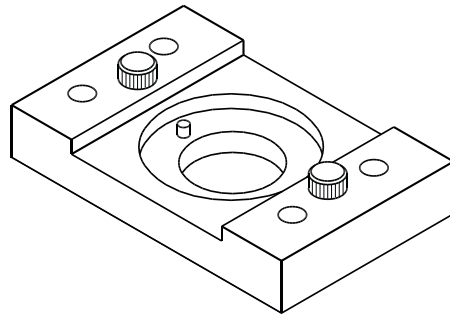
Lubrication

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

Assembly OMM

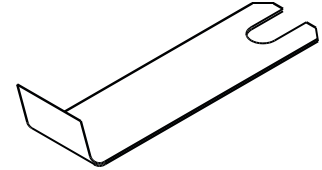
| Item | Part to Install | Comments |
|------|---|--|
| 4 | Shaft seal | Fit shaft seal in motor housing by means of mandrel and plastiv hammer. |
| 3 | Dust seal | Fit dust seal in motor housing by means of mandrel and plastiv hammer. |
| 5 | Bearing race | Fit needle bearing and bearing race to shaft. |
| 6 | Needle bearing | |
| | Output shaft | Mark output shaft at middle of two commutating grooves. Install shaft in motor housing.  See drawing 151-1534.10 |
| |  151-1534.10 | |
| 7 | Key | Fit key in output shaft. Place motor housing with shaft in holding tool. |
| 11 | O-ring | Grease the O-ring and put in the O-ring groove of the housing. |
| 9 | Cardan shaft | Guide the cardan shaft down into the output shaft. Place the forc (tool) under the upper cardan shaft teeth. Transfer the mark from output shaft to cardan shaft. See drawing 151-1534.10 |
| 11 | O-ring | Grease the O-ring and put in the O-ring groove of the housing. |
| 8 | Distributor plate | Turn the distributor plate so that the holes line up. |
| 10 | Gearwheel set rim | Place gearwheel set on cardan shaft so that the mark on the cardan shaft is opposite a tooth peak on the external tothing of the gearwheel. Turn the tooth rim till holes for screws line up- See drawing 151-1534.10. |
| 11 | O-ring | Grease the O-ring and put in the O-ring groove of the housing. |
| 12 | Intermediate plate | Place the intermediate plate on gearwheel set so that three holes for tightening screws line up. |
| 13 | Check valve balls | Lubricat the check valve balls and place them in the holes in the intermediate plate. |
| 14 | End cover | Turn the end cover so that the holes line up. (Beware of the check valve balls). |
| 17 | Washer | |
| 18 | Screws | Fit loosely the three screws with new washers. Tight the screws.  Tightening torque: 22 - 28 Nm. [195 • 248 lbf•in] |
| 15 | Seal plugs | Fit in seal plugs. |
| 16 | Drain plug | Fit in drain plug and tight it.  Tightening torque: 10 - 15 Nm. [88 - 133 lbf•in] |

Tools



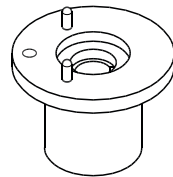
151-1537.10

Main holding tool:
Code number: SJ150-9000-2



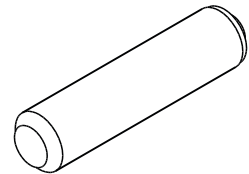
151-1538.10

Fork. For use when fitting OMM cardan shaft.
Code number: SJ151G9000-1



151-1539.10

Bush for use with main holding tool:
Code number: SJ151G9000-2



151-1540.10

Mandrel for fitting shaft seal:
Code number: SJ151G9000-5



Orbital Motors OML and OMM
Repair Instructions
Notes



Notes



Orbital Motors OML and OMM
Repair Instructions
Notes



Notes



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