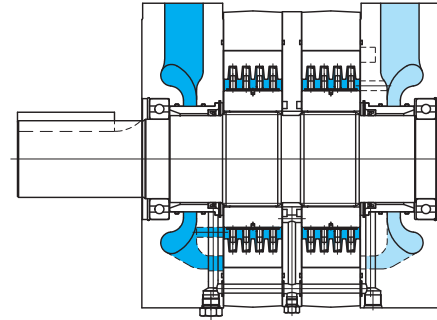
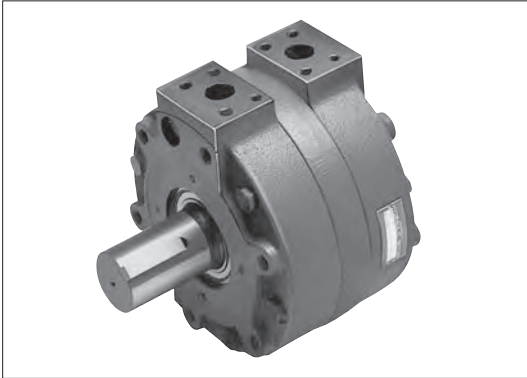
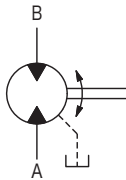


High torque low speed vane motors MHT



Functional Symbol



- Balanced type vane motor provides wide range of speeds and torques.
- Compact with large torque output.
- Smooth, stable low speeds even at 10 rpm.
- Compact design which eliminates need for gear boxes and reduction gears.

Model Code

MHT24-R1-12-JA-(S12)

1 2 3 4 5

- 1 Low speed high torque vane motor
 2 Torque displacements
 Refer to "Specifications".
 3 Shaft
 R1: Parallel shaft with square key
 4 Design no.
 12: MHT24, 32, 70, 90

- 30: MHT50
 35: MHT150, 190, 250, 380, 500, 750, 1000
 5 Special feature
 Omit: bi-directional rotation motor (MHT24 to 90)
 S12: unidirectional right (CW) rotation (MHT150 and larger)
 Note: Consult Tokyo Keiki for unidirectional left (CCW) rotation motor.

Specifications

Model Code	Displacement cm ³ /rev	Max. Working Pressure MPa	Theoretical Torque (Pressure Diff. 0.7 MPa) N·m	Speed min ⁻¹		Weight kg
				Minimum	Maximum	
MHT24	298	14	33	10	400	55
MHT32	398		44		400	55
MHT50	620		69		350	95
MHT70	868		97		300	110
MHT90	1116		124		300	110
MHT150	1860		207		250	165
MHT190	2360		263		200	240
MHT250	3100		346		200	240
MHT380	4720		526		200	335
MHT500	6200		691		200	335
MHT750	9300		1036		100	420
MHT1000	12400		1381		75	505

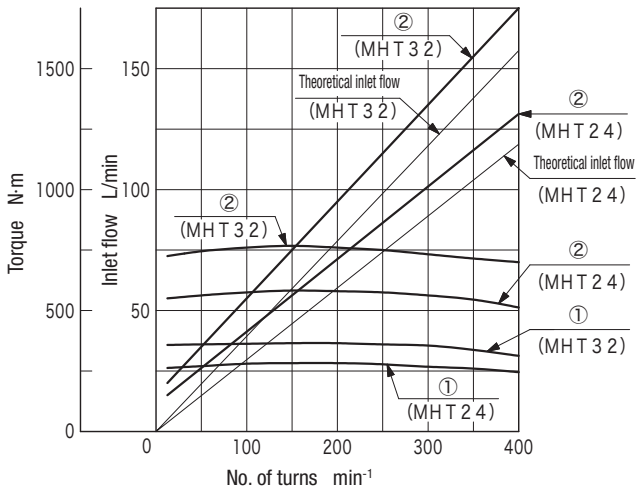
N
2-1

Motors (Vane)

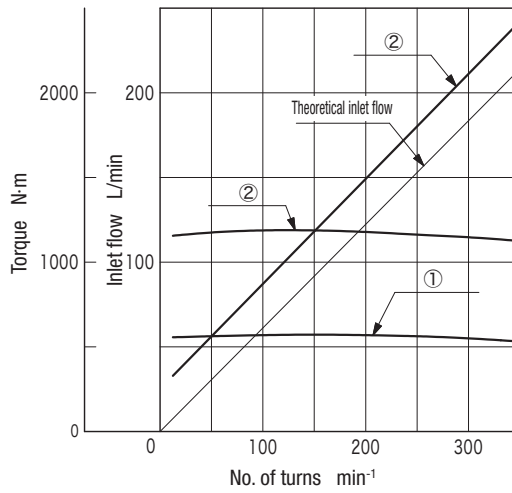
Characteristics Curves (at 25 mm²/s) (typical examples)

Characteristics Curves (1): 7 MPa (2): 14 MPa

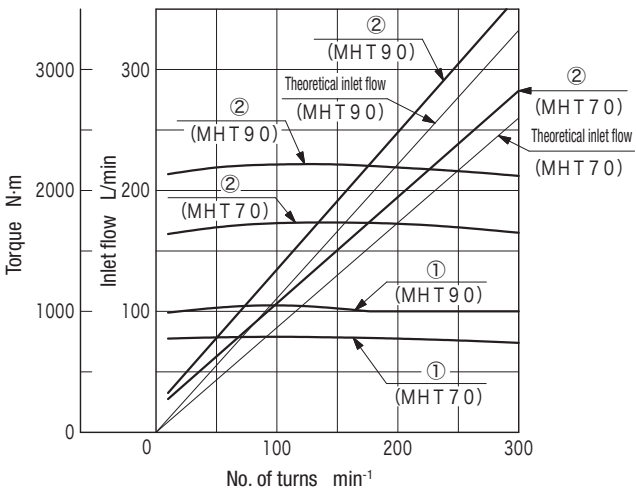
MHT 24/MHT 32



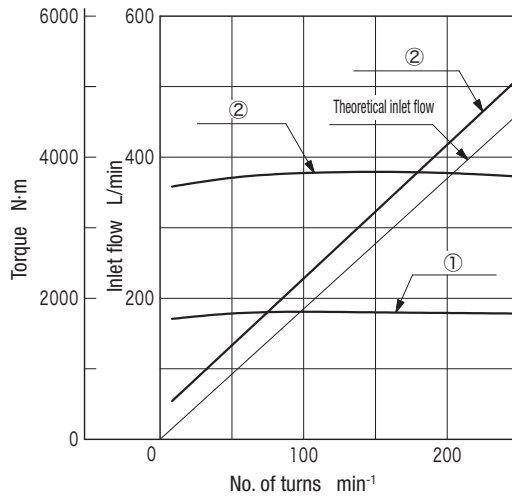
MHT 50



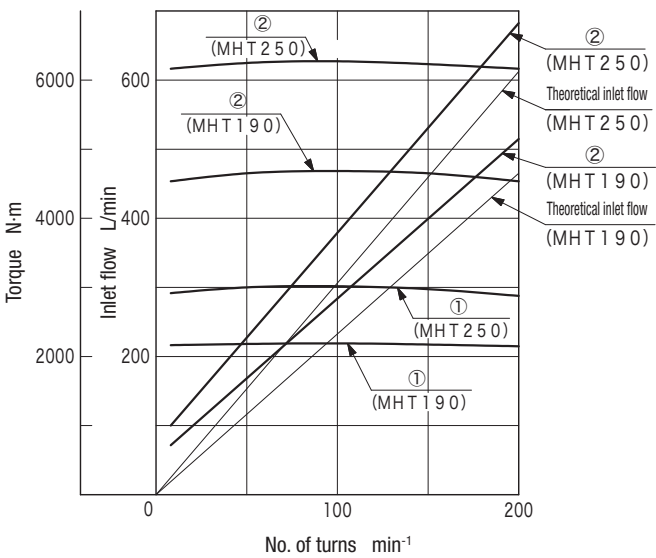
MHT 70/MHT 90



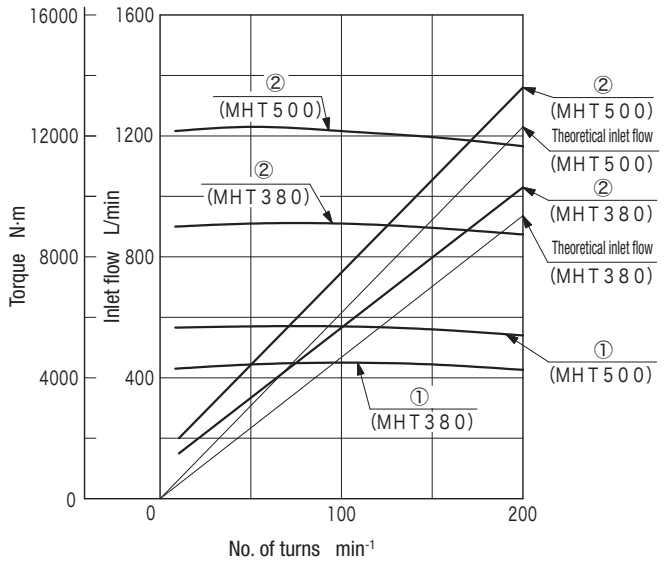
MHT 150



MHT 190/MHT 250



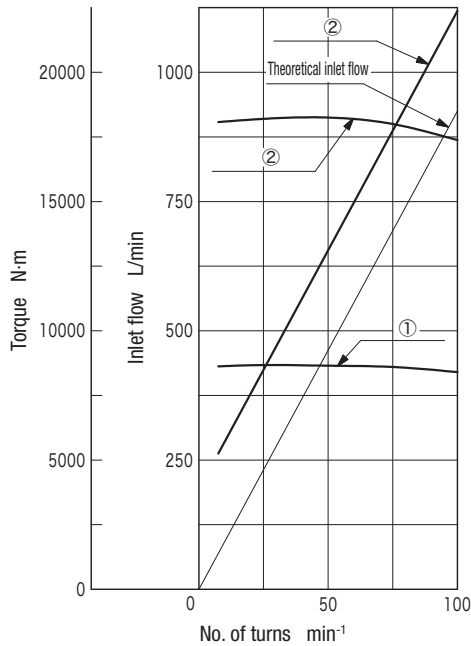
MHT 380/MHT 500



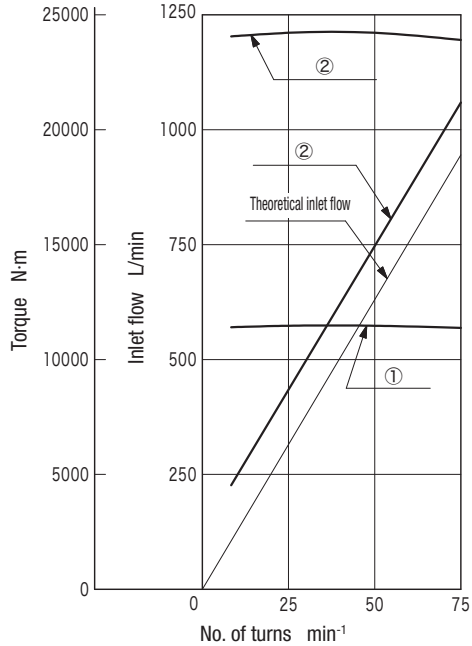
Characteristics Curves (at 25 mm²/s) (typical examples)

Characteristics Curves (1): 7 MPa (2): 14 MPa

MHT 750



MHT 1000



Notes on Operation

- **Mounting**
Motor is mounted using the six bolt holes on the body. See dimensions for information on bolt tightening torque.
- **Rotation direction**
MHT24~90 can be operated in either direction. Motor models MHT150 and larger are uni-directional with right (CW) rotation (viewed from shaft end) standard. (Consult Tokyo Keiki for left (CCW) rotation.) Rotation direction and port inlet/outlet relationship is as follows.

Model Code	Right (CW) Rotation		Left (CCW) Rotation	
	Inlet Port	Outlet Port	Inlet Port	Outlet Port
MHT24	B port	A port	A port	B port
MHT32				
MHT50	A port	B port	B port	A port
MHT70				
MHT90				
MHT150	A port	B port	—	—
MHT190				
MHT250				
MHT380				
MHT500				
MHT750				
MHT1000				

- Motor cannot be used as brake (pump).
- **Drain**
Drain should be piped directly to tank. Drain line allowable back pressure is 0.17 MPa.
- When motor is used at 3.5 MPa and under, or 50 rpm and over, confirm that drain flow is above values given in the table below. If drain flow is low, raise back pressure on motor outlet and increase drain flow.

Model Code	Drain cm ³ /min	Model Code	Drain cm ³ /min
MHT24	200	MHT190	200
MHT32		MHT250	
MHT50		380	
MHT70			
MHT90			570
MHT150			

- Temperature difference between motor and oil must be kept below 28°C. In any case motor is cool and oil temperature is high, run motor free from load at low speed (50min⁻¹ or under) until the temperature difference drops within the 28°C range.
- For initial startup, fill oil from each port and operate after motor is completely filled with oil.
- See Vane Motor Notes on Operation (page N0-1).

Piping Flanges (Compliant to SAE J 518c Standard Pressure)

Motor Model	Size	Flange Model	
		Threaded	Welded
MHT24	1-1/4	FL1-10-10P-10-JA-S4-J	FL1-10-10W-10-JA
MHT32			
MHT50			
MHT70	1-1/2	FL1-12-12P-10-JA-S4-J	FL1-12-12W-10-JA
MHT90			
MHT150	2	FL1-16-16P-10-JA-S4-J	FL1-16-16W-10-JA
MHT190	2-1/2	FL1-20-20P-10-JA-S4-J	FL1-20-20W-10-JA
MHT250			
MHT380			
MHT500			
MHT750			
MHT1000			

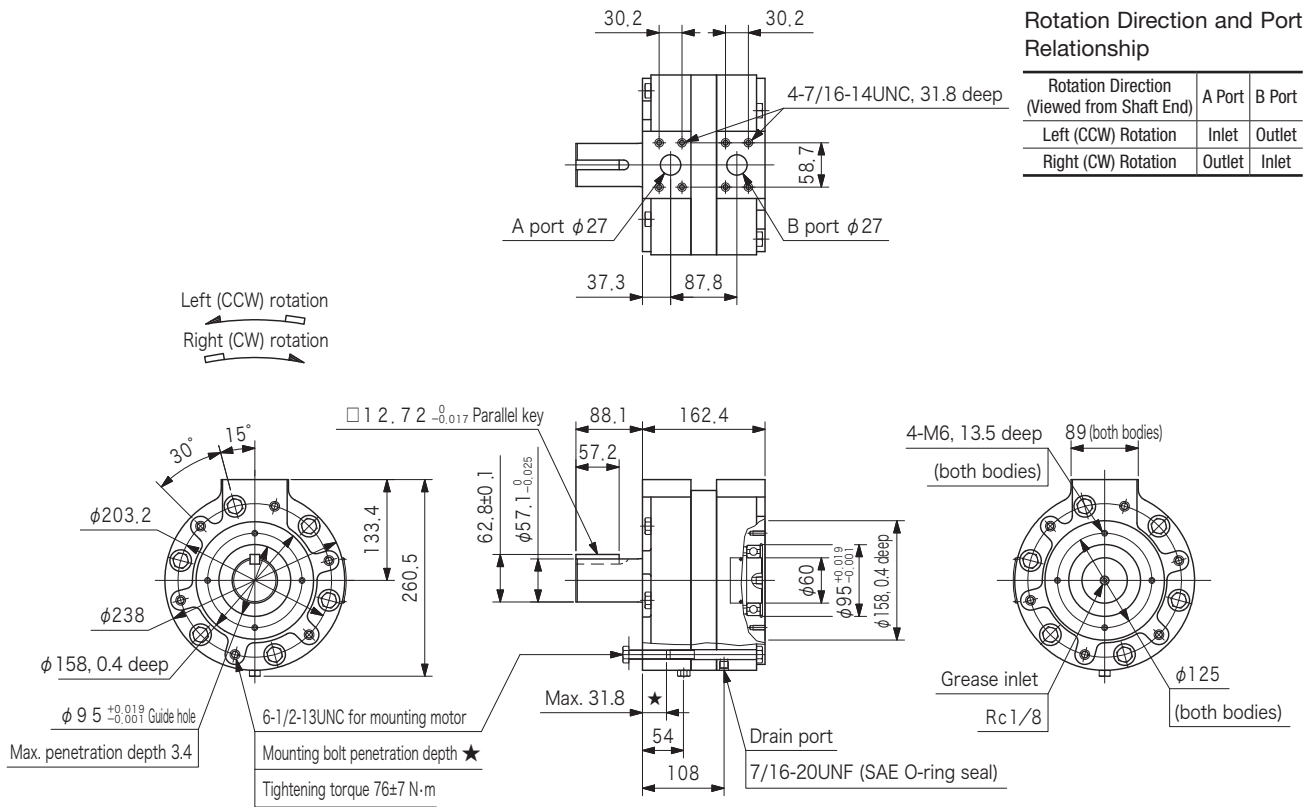
- Flanges must be ordered separately.
- Hex socket bolt, spring washers, O-rings included.
- See page R7-1 for dimensions.

N
2-3

Motors (Vane)

Dimensions

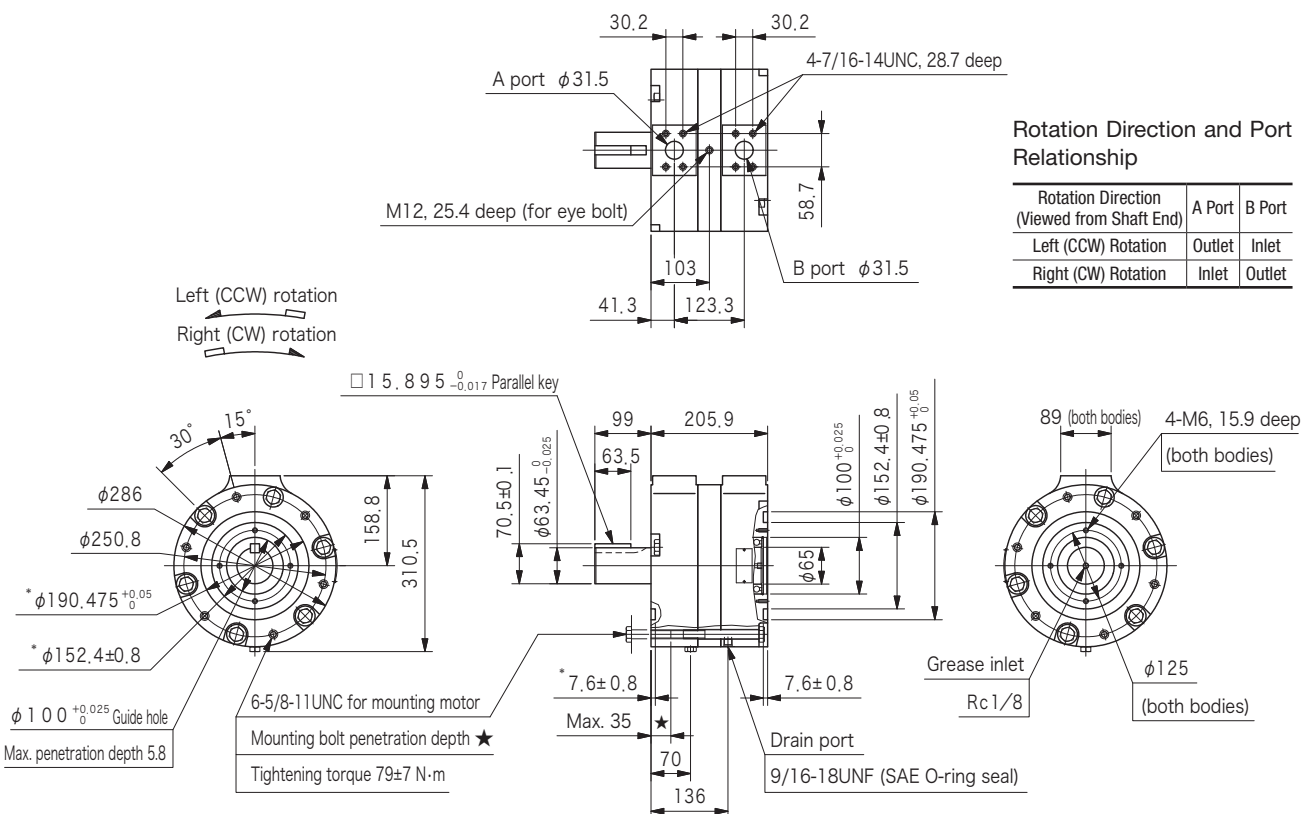
MHT24-R1-12-JA
MHT32-R1-12-JA



Rotation Direction and Port Relationship

Rotation Direction (Viewed from Shaft End)	A Port	B Port
Left (CCW) Rotation	Inlet	Outlet
Right (CW) Rotation	Outlet	Inlet

MHT50-R1-30-JA



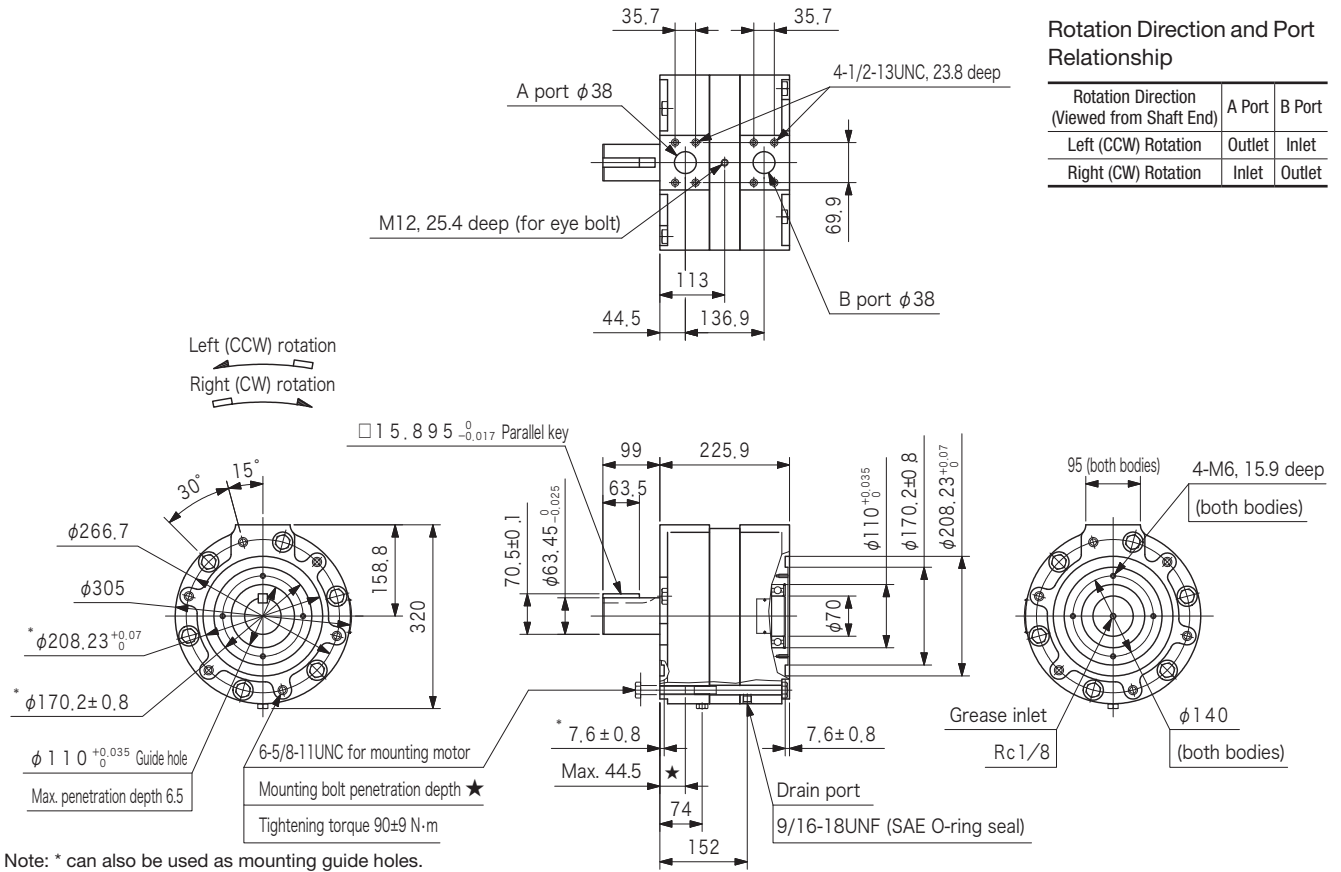
Rotation Direction and Port Relationship

Rotation Direction (Viewed from Shaft End)	A Port	B Port
Left (CCW) Rotation	Outlet	Inlet
Right (CW) Rotation	Inlet	Outlet

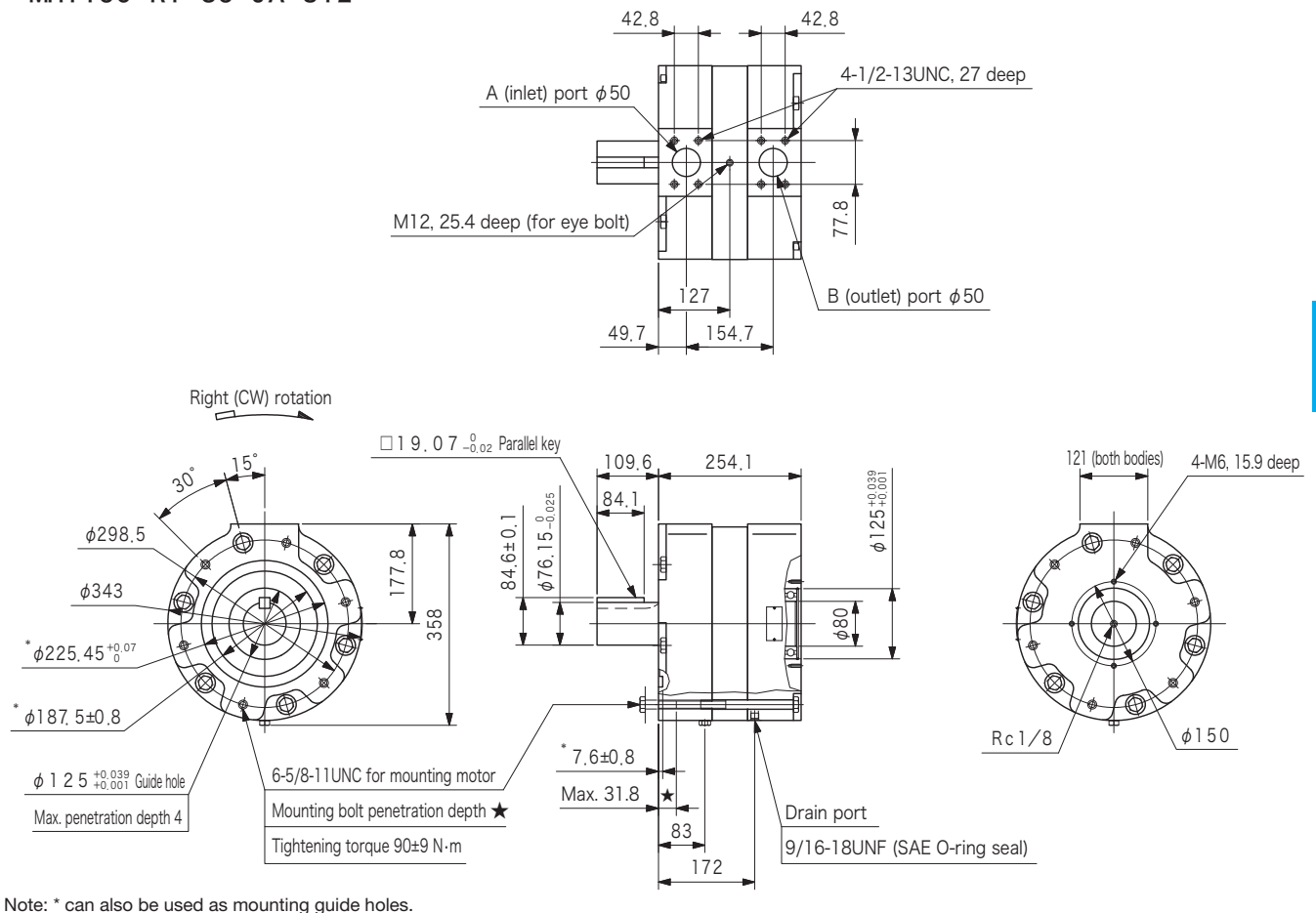
Note: * can also be used as mounting guide holes.

Dimensions

MHT70-R1-12-JA
MHT90-R1-12-JA

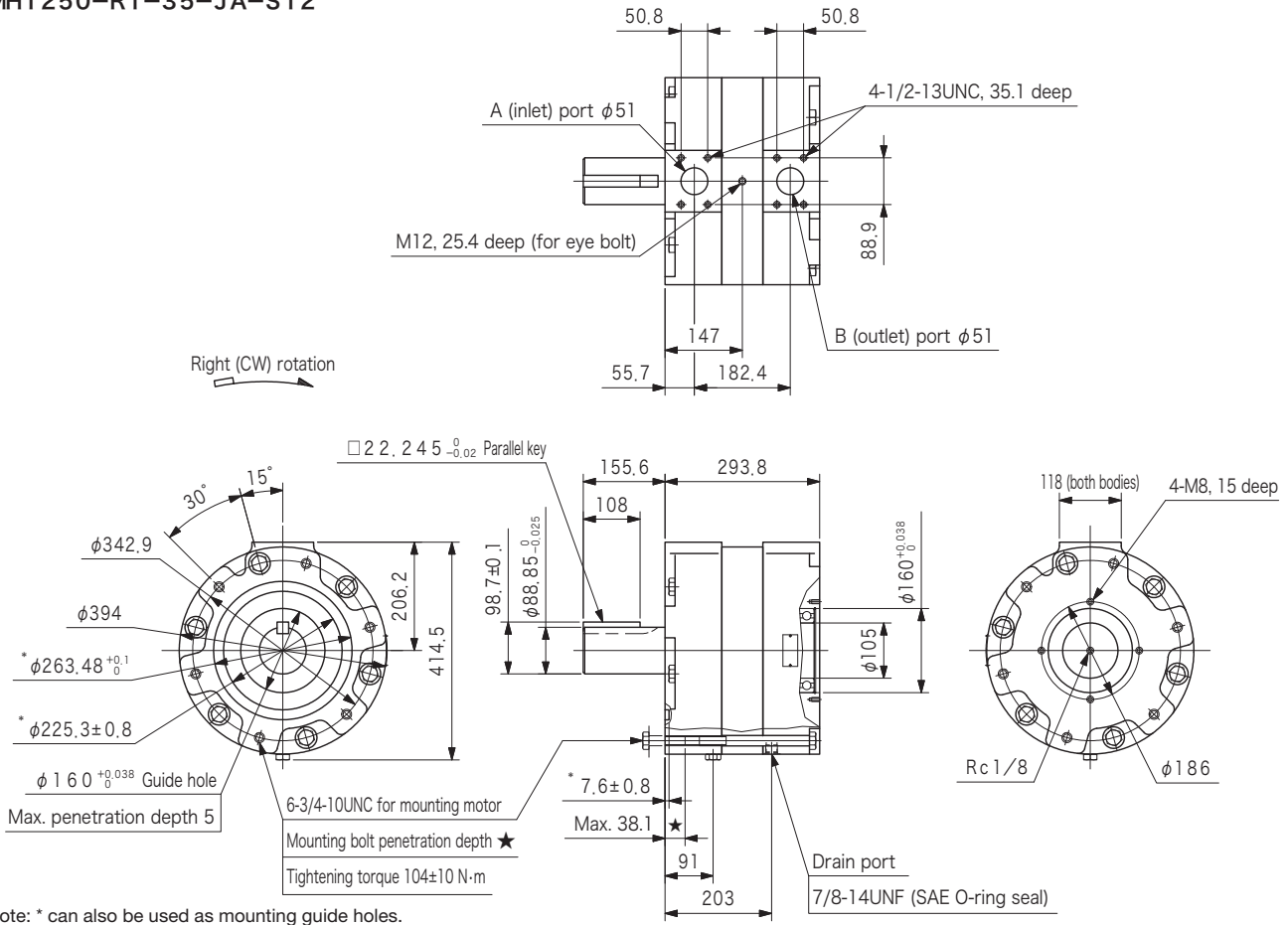


MHT150-R1-35-JA-S12



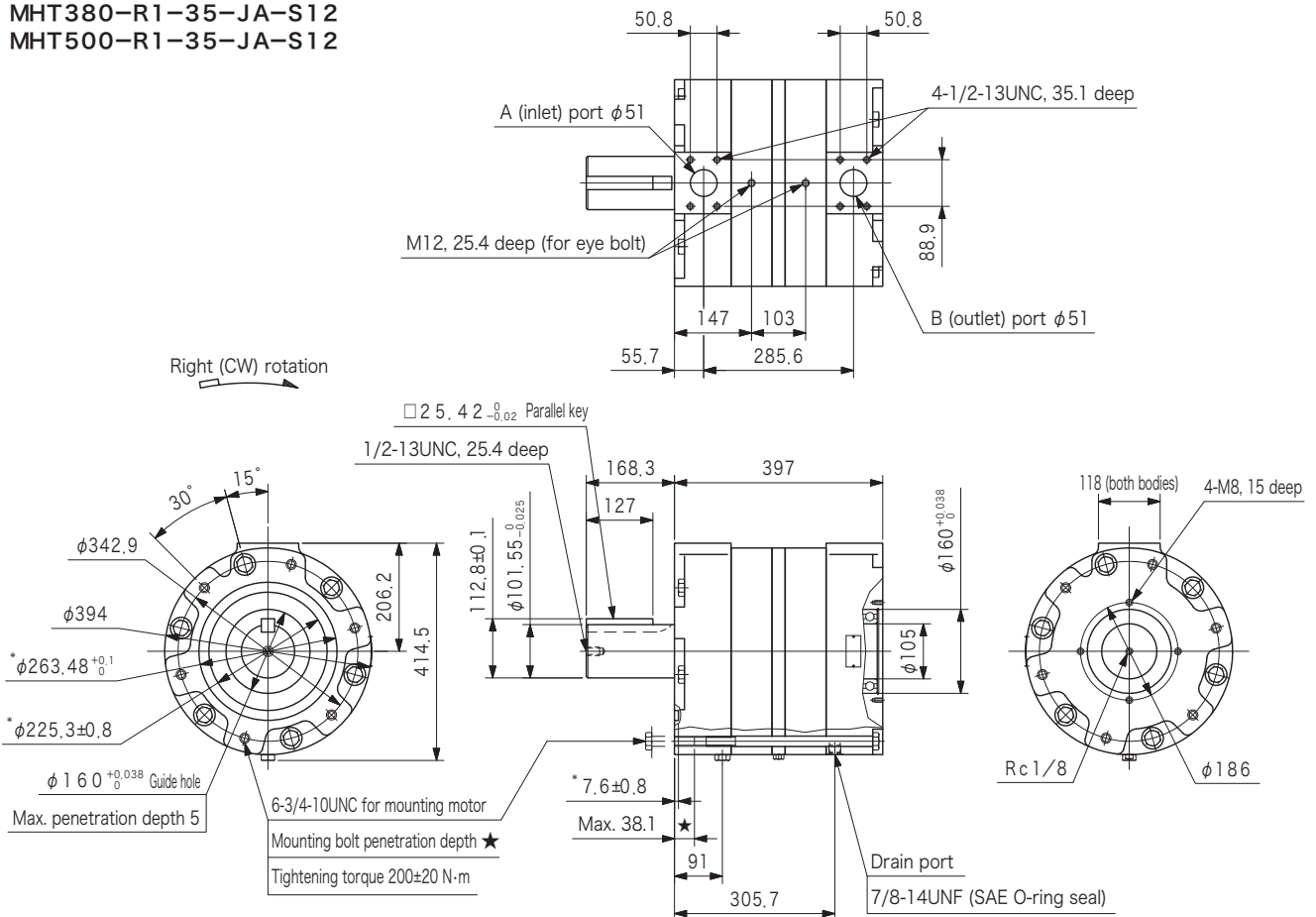
Dimensions

MHT190-R1-35-JA-S12
MHT250-R1-35-JA-S12



Note: * can also be used as mounting guide holes.

MHT380-R1-35-JA-S12
MHT500-R1-35-JA-S12



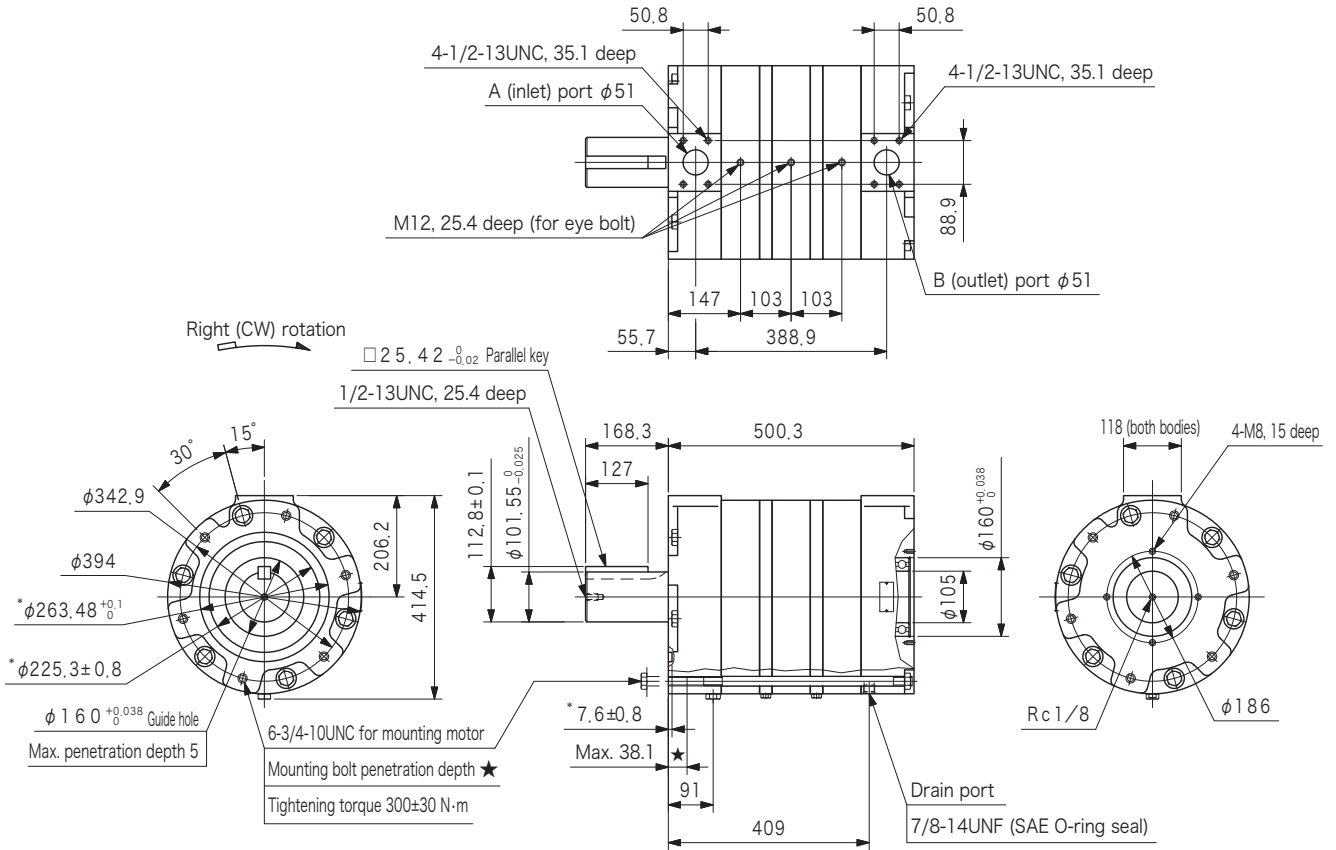
Note: * can also be used as mounting guide holes.

N
2-6

Motors (Vane)

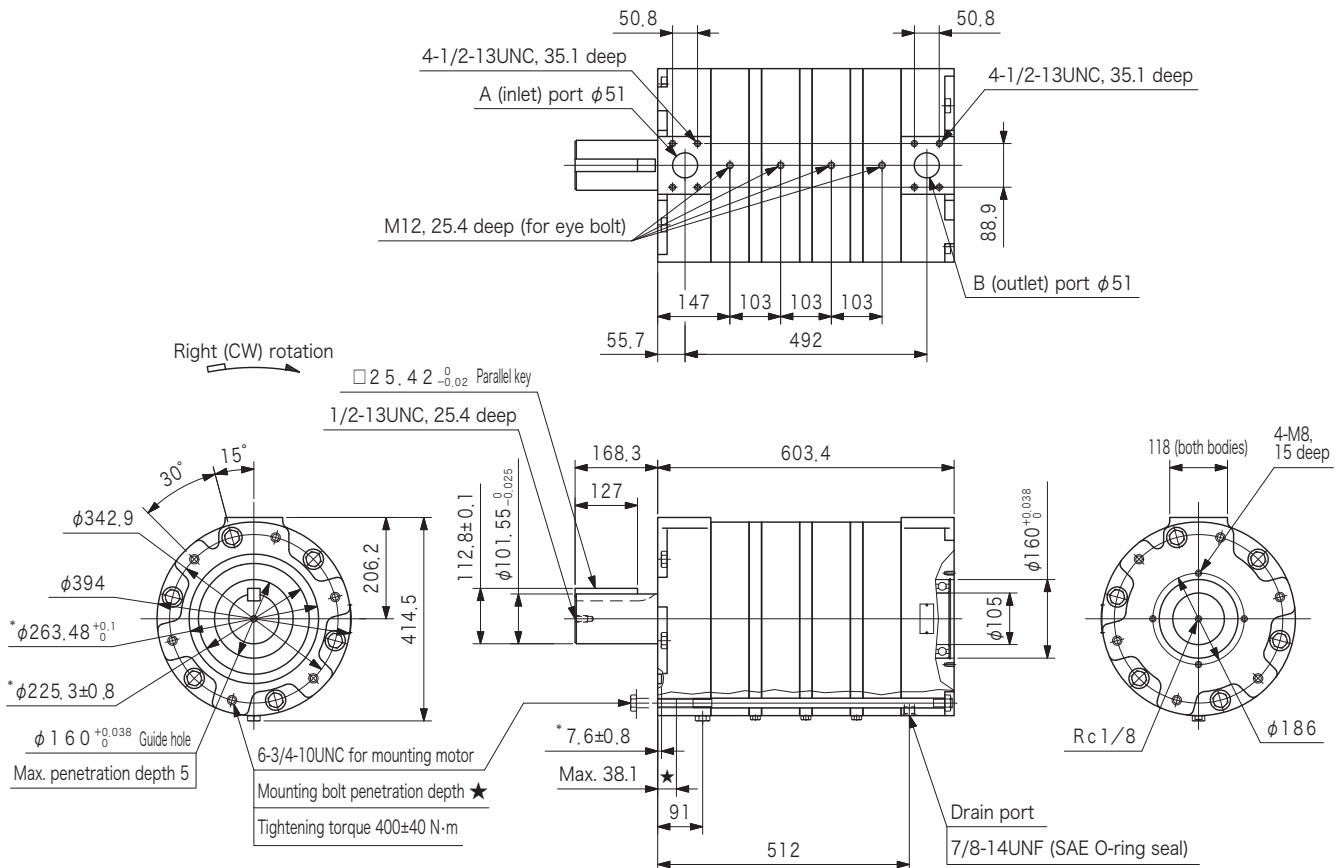
Dimensions

MHT750-R1-35-JA-S12



Note: * can also be used as mounting guide holes.

MHT1000-R1-35-JA-S12



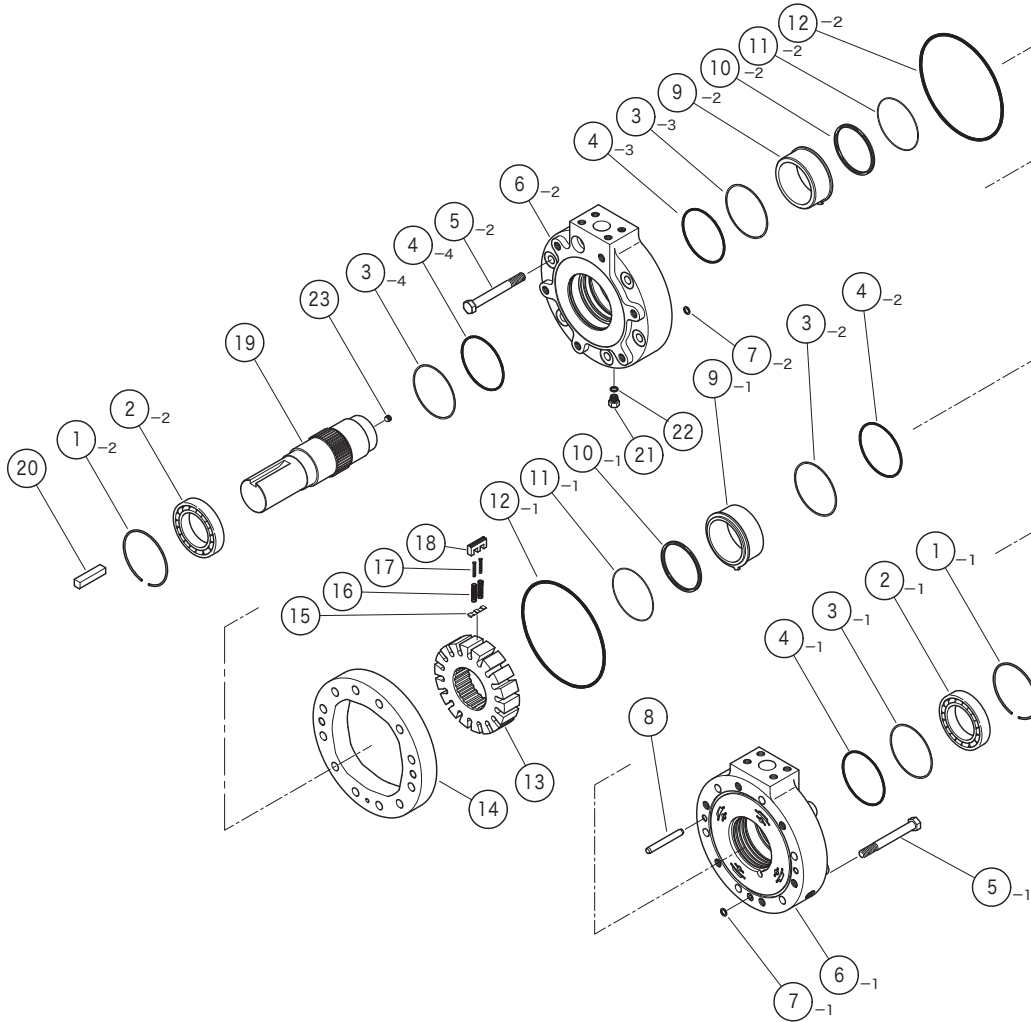
Note: * can also be used as mounting guide holes.

Construction

MHT24 to MHT90

MHT24 MHT32 (Seal Kit No.: 40088879)

No.	Name	Part No.	Standard	Qty
2	Bearing	40012193	JIS B 1521 6012ZZ	2
3	Backup ring	VA15590	—	4
4	O-ring	007915319	AS568-153 (NBR, Hs90)	4
7	O-ring	007901219	AS568-012 (NBR, Hs90)	2
10	X ring	VP429290	—	2
12	O-ring	007926219	AS568-262 (NBR, Hs90)	2
22	O-ring	007990419	AS568-904 (NBR, Hs90)	1



Note:
•Schematics show MHT24-R1-12-JA.

MHT50 (Seal Kit No.: 40078577)

No.	Name	Part No.	Standard	Qty
2	Bearing	40012194	JIS B 1521 6013ZZ	2
3	Backup ring	VA15596	—	4
4	O-ring	007923919	AS568-239 (NBR, Hs90)	4
7	O-ring	007911219	AS568-112 (NBR, Hs90)	2
10	X ring	VP427689	—	2
12	O-ring	007926819	AS568-268 (NBR, Hs90)	2
22	O-ring	007990619	AS568-906 (NBR, Hs90)	1

MHT70 MHT90 (Seal Kit No.: 40078578)

No.	Name	Part No.	Standard	Qty
2	Bearing	40012195	JIS B 1521 6014ZZ	2
3	Backup ring	VA15591	—	4
4	O-ring	007924119	AS568-241 (NBR, Hs90)	4
7	O-ring	007911219	AS568-112 (NBR, Hs90)	2
10	X ring	VP429291	—	2
12	O-ring	007927119	AS568-271 (NBR, Hs90)	2
22	O-ring	007990619	AS568-906 (NBR, Hs90)	1

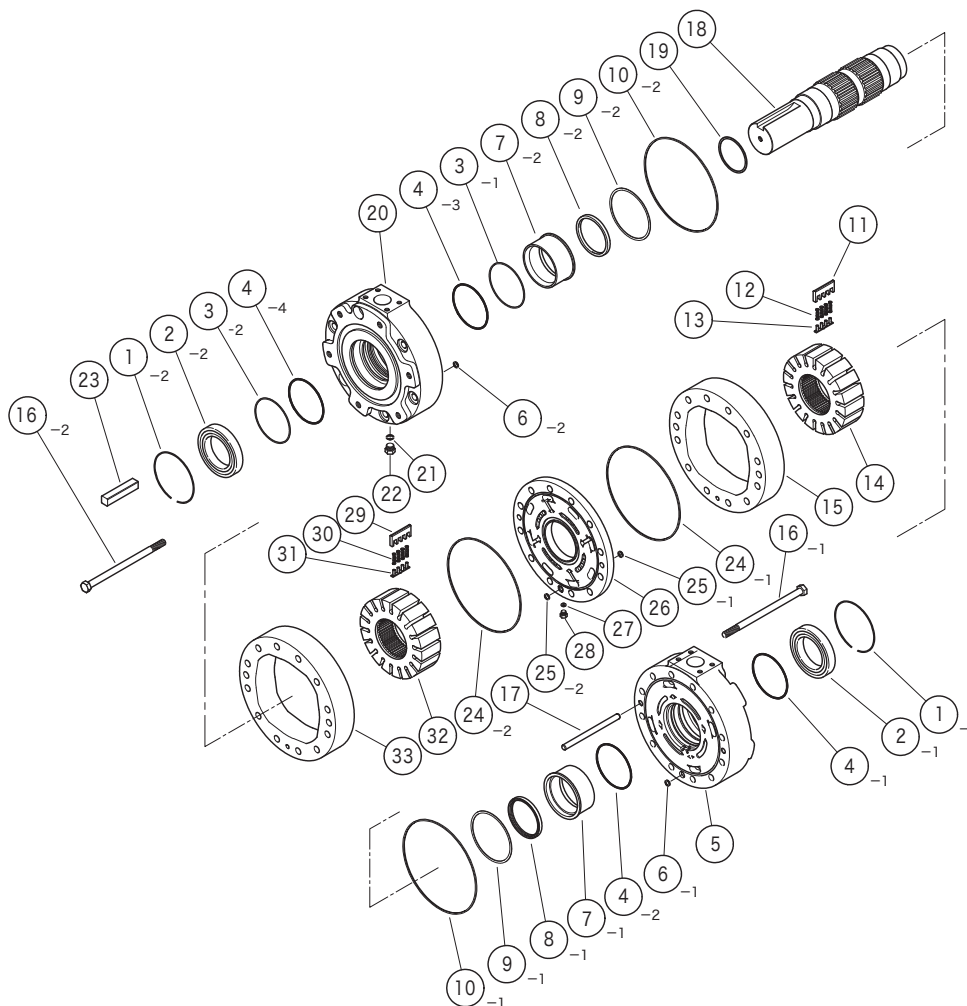
N
2-8

Motors (Vane)

MHT150 to MHT1000-S12

MHT150 (Seal Kit No.: 40068415)

No.	Name	Part No.	Standard	Qty
2	Bearing	40012196	JIS B 1521 6016ZZ	2
3	Backup ring	VA15593	—	2
4	O-ring	007924619	AS568-246 (NBR, Hs90)	4
6	O-ring	007911219	AS568-112 (NBR, Hs90)	2
8	Shaft seal	VA31071	—	2
10	Seal ring	40012879	—	2
21	O-ring	007990619	AS568-906 (NBR, Hs90)	1



Note:

- Schematics show MHT380/500-R1-35-JA-S12.
- For MHT150 to MHT250, parts ②④ to ③③ are not used.
- For MHT750, two sets of parts ②④ to ③③ are used.
- For MHT1000, three sets of parts ②④ to ③③ are used.

MHT190
MHT250 (Seal Kit No.: 40098039)

MHT380
MHT500 (Seal Kit No.: 40098041)

MHT750 (Seal Kit No.: 40098045)

MHT1000 (Seal Kit No.: 40098047)

No.	Name	Part No.	Standard	Qty			
				MHT190 MHT250	MHT380 MHT500	MHT750	MHT1000
2	Bearing	40012197	JIS B 1521 6021ZZ	2	2	2	2
3	Backup ring	VA15595	—	2	2	2	2
4	O-ring	007925419	AS568-254 (NBR, Hs90)	4	4	4	4
6	O-ring	007911419	AS568-114 (NBR, Hs90)	2	2	2	2
8	Shaft seal	VA30972	—	2	2	2	2
10	Seal ring	40012880	—	2	2	2	2
21	O-ring	007991019	AS568-910 (NBR, Hs90)	1	1	1	1
24	Seal ring	40012880	—	—	2	4	6
25	O-ring	007911419	AS568-114 (NBR, Hs90)	—	2	4	6
27	O-ring	007990619	AS568-906 (NBR, Hs90)	—	1	2	3