

Parts Manual

M60F Series

Bent-axial Piston Fixed
Displacement Motor

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Note: “*” indicates under production.

1 General information

This manual lists parts related information for the full range of M60F bent-axial piston fixed displacement motor. The main purpose of this manual is to better serve our customers by enabling them to quickly locate parts and find Hengli Genuine Parts.

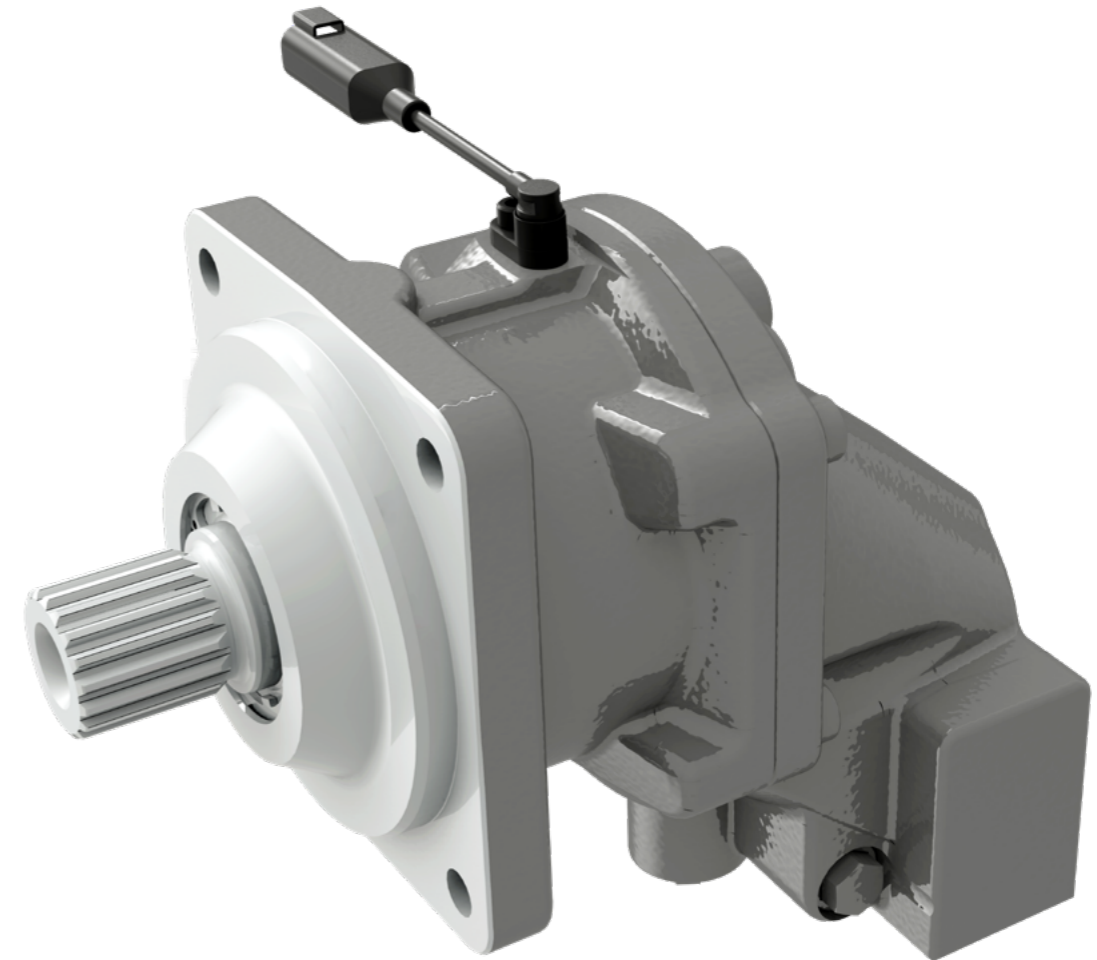
If you require more detailed information on parts, please contact
Jiangsu Hengli Hydraulic Co.,Ltd.
www.henglihydraulics.com
or consult with the relevant sales engineer.

2 Functional Description

- Based on the information on the nameplate attached to the motor, the basic configuration of the motor can be determined, e.g.: M60F90NWVN4D1BNSD
For specific information, please refer to the Hengli catalogue selection to find the corresponding parts.
- With the nameplate information, you can quickly find information such as shaft, housing, bearing and other component material numbers in this manual.

3 M60F90 Product Parts

3.8 M60F90

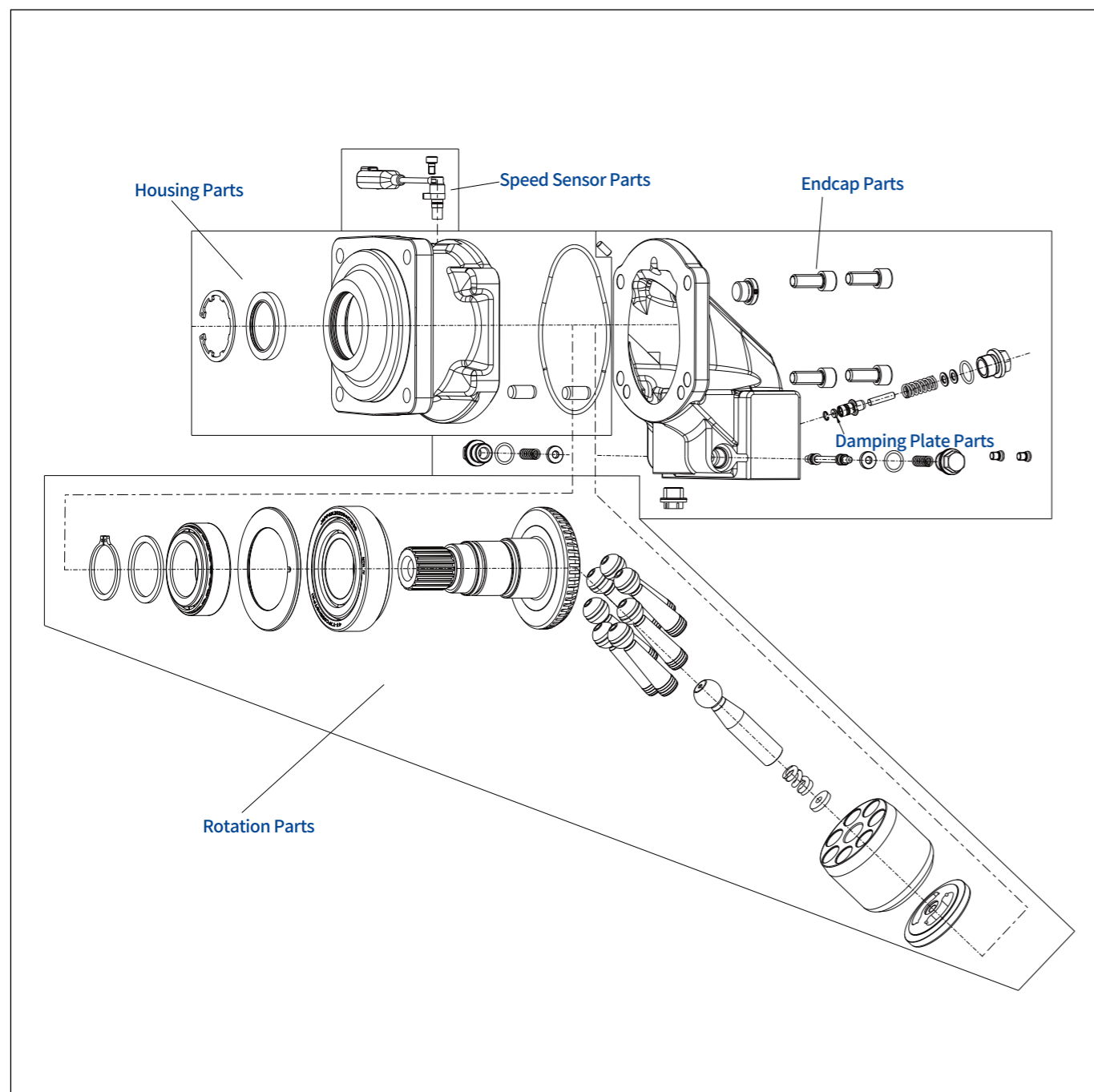


M60F-90

3.8 M60F90

•Take N4 with mount flange 140-4 ISO 3019-2 as an example.

M60F90 Integral Parts



3.8 M60F90

M60F90 Parts Catalogue

3.8.1 Housing Parts

Mount flange selection N4	06-07
Mount flange selection N6	08-09

3.8.2 Rotation Parts

Shaft selection D1	10-11
Shaft selection D2	12-15
Shaft selection D5	16-17
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3.8.3 Endcap Parts

Rear port selection B with flushing valve(A-K)	20-21
Rear port selection B without flushing valve(N)	22-23
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Side port selection A with flushing valve(A-K)	26-27
Side port selection A without flushing valve(N)	28-29

3.8.4 Speed Sensor Parts

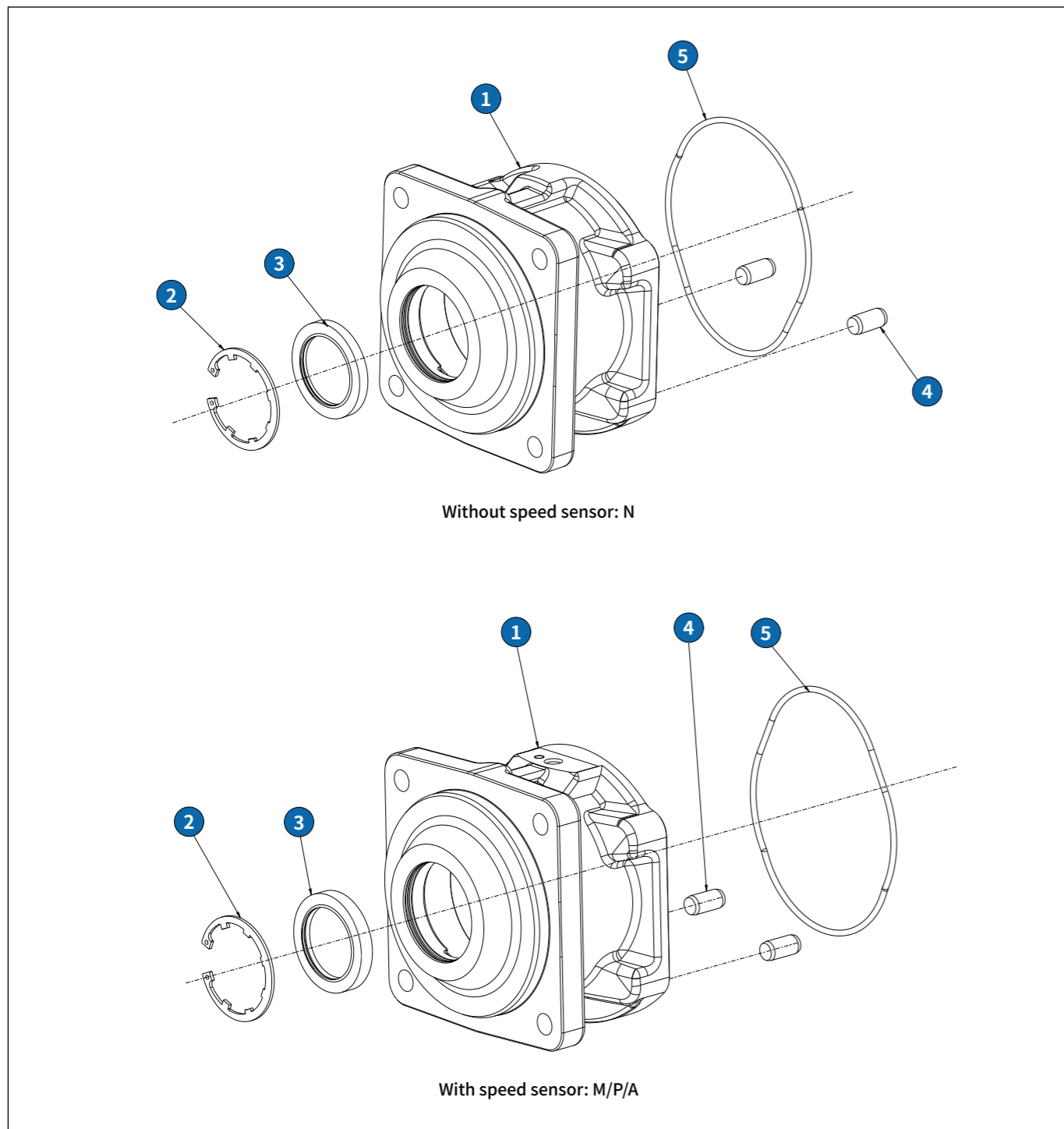
Speed sensor selection A/N	30
Speed sensor selection M/P	31

3.8.5 Damping Plate Parts

Damping plate parts	32-33
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3.8.1 M60F90 Housing Parts

Order code N4: 140-4 ISO 3019-2



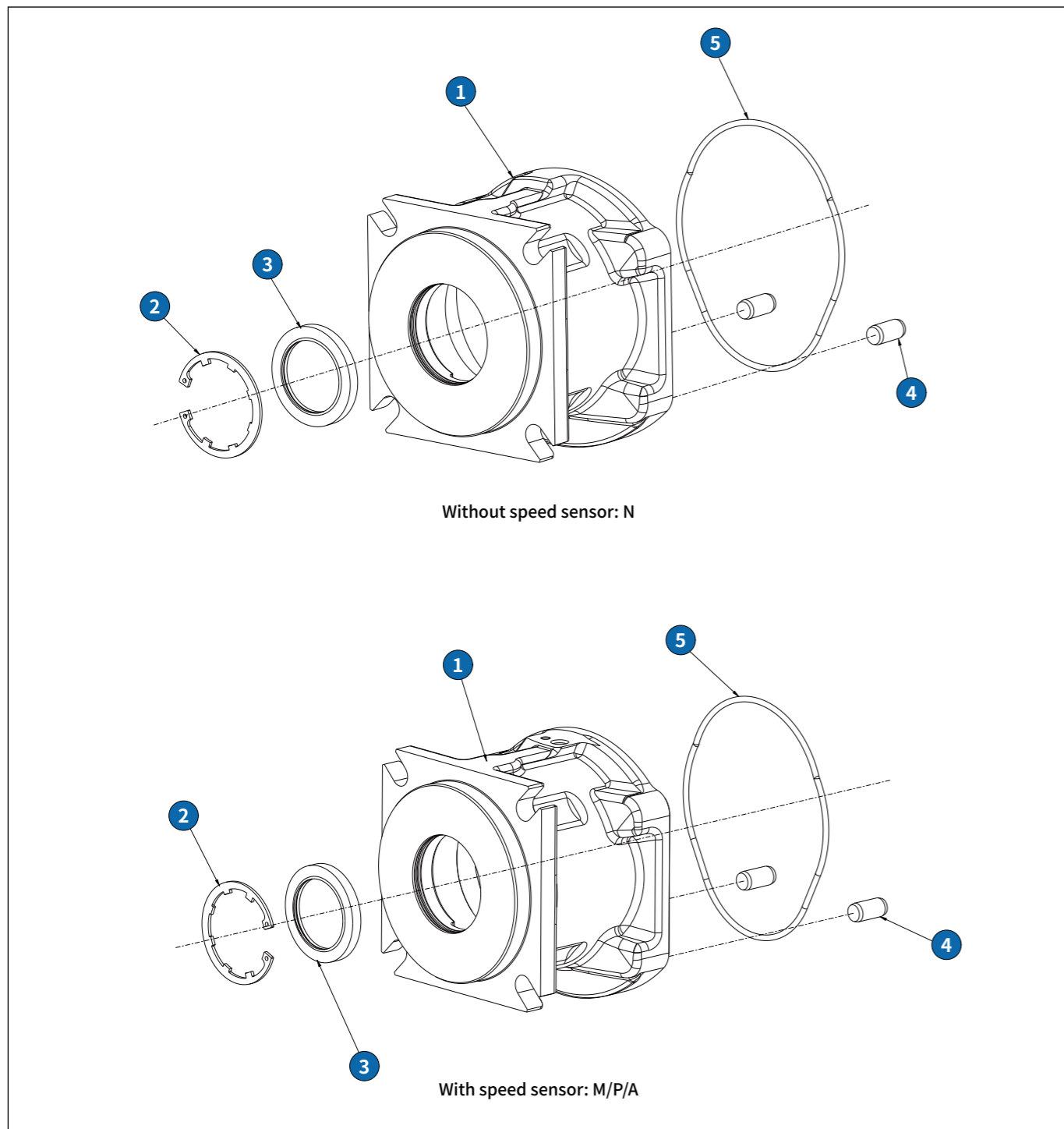
3.8.1 M60F90 Housing Parts

Order code: N4

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	N: Housing	HM2F90-000002-B	210000685423	1	HM2F90-000002-B
	M/P/A: Housing	HM2F90-000002	210000438073	1	HM2F90-000002
2	Retaining ring for perforated holes	φ62	210000436007	1	DIN 984
3	Shaft dust seal	TCZφ45*φ62*9/10.3	110000132906	1	YY-25-11-010-165-A
4	Locating pin	HM6V200-000006	210000303604	1	HM6V200-000006
5	Sealing ring	HM2F90-000004	110000057053	1	HM2F90-000004

3.8.1 M60F90 Housing Parts

Order code N6: 127-4 SAE J744



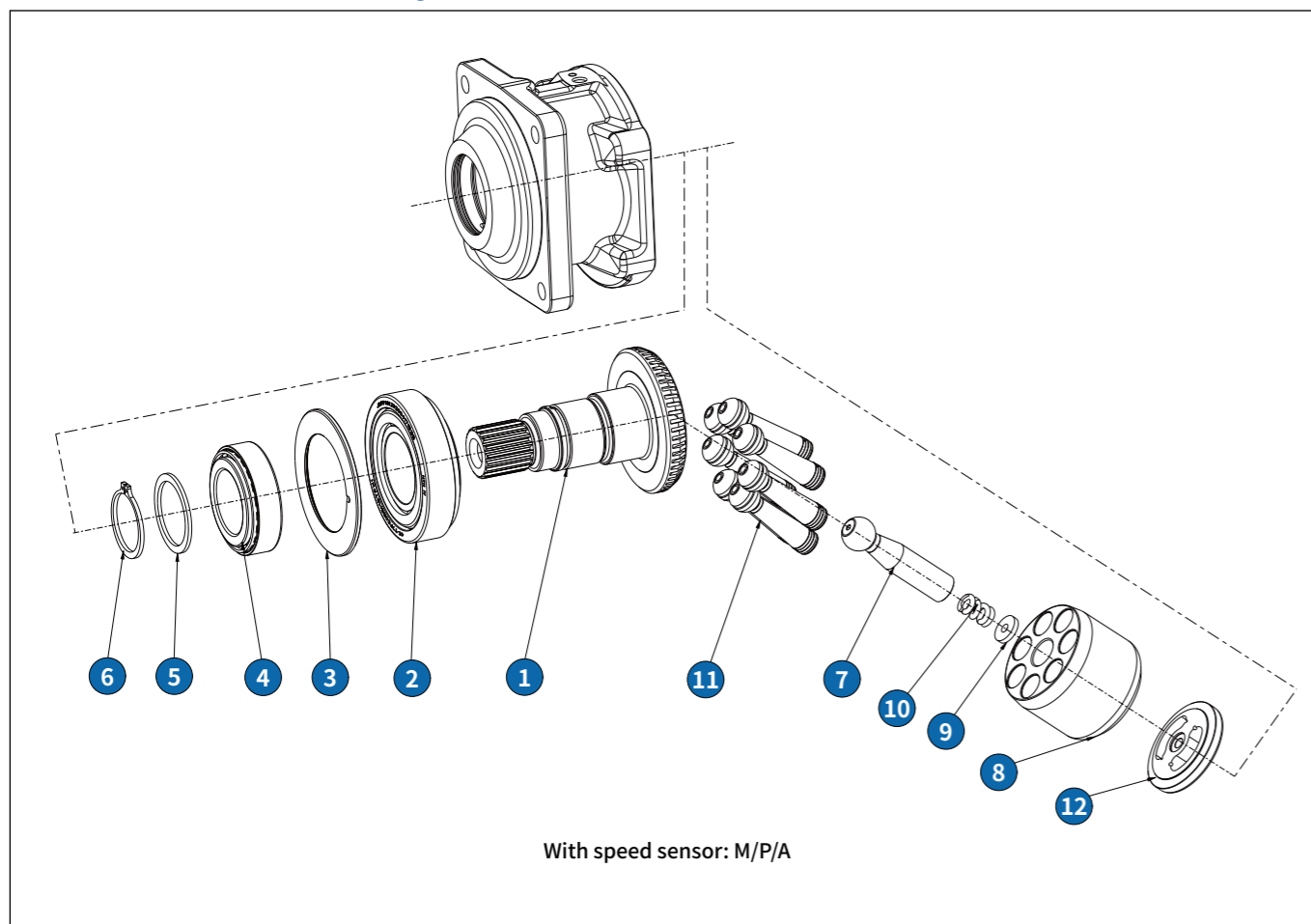
3.8.1 M60F90 Housing Parts

Order code: N6

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	N: Housing	M60F90-0410HSN-01	210000911337	1	M60F90-0410HSN-01
	M/P/A: Housing	HM2F90-000002-SAE	210000612167	1	HM2F90-000002-SAE
2	Retaining ring for perforated holes	φ62	210000436007	1	DIN 984
3	Shaft dust seal	TCZφ45*φ62*9/10.3	110000132906	1	YY-25-11-010-165-A
4	Locating pin	HM6V200-000006	210000303604	1	HM6V200-000006
5	Sealing ring	HM2F90-000004	110000057053	1	HM2F90-000004

3.8.2 M60F90 Rotation Parts

Order code D1: W40×2×18×9g DIN 5480



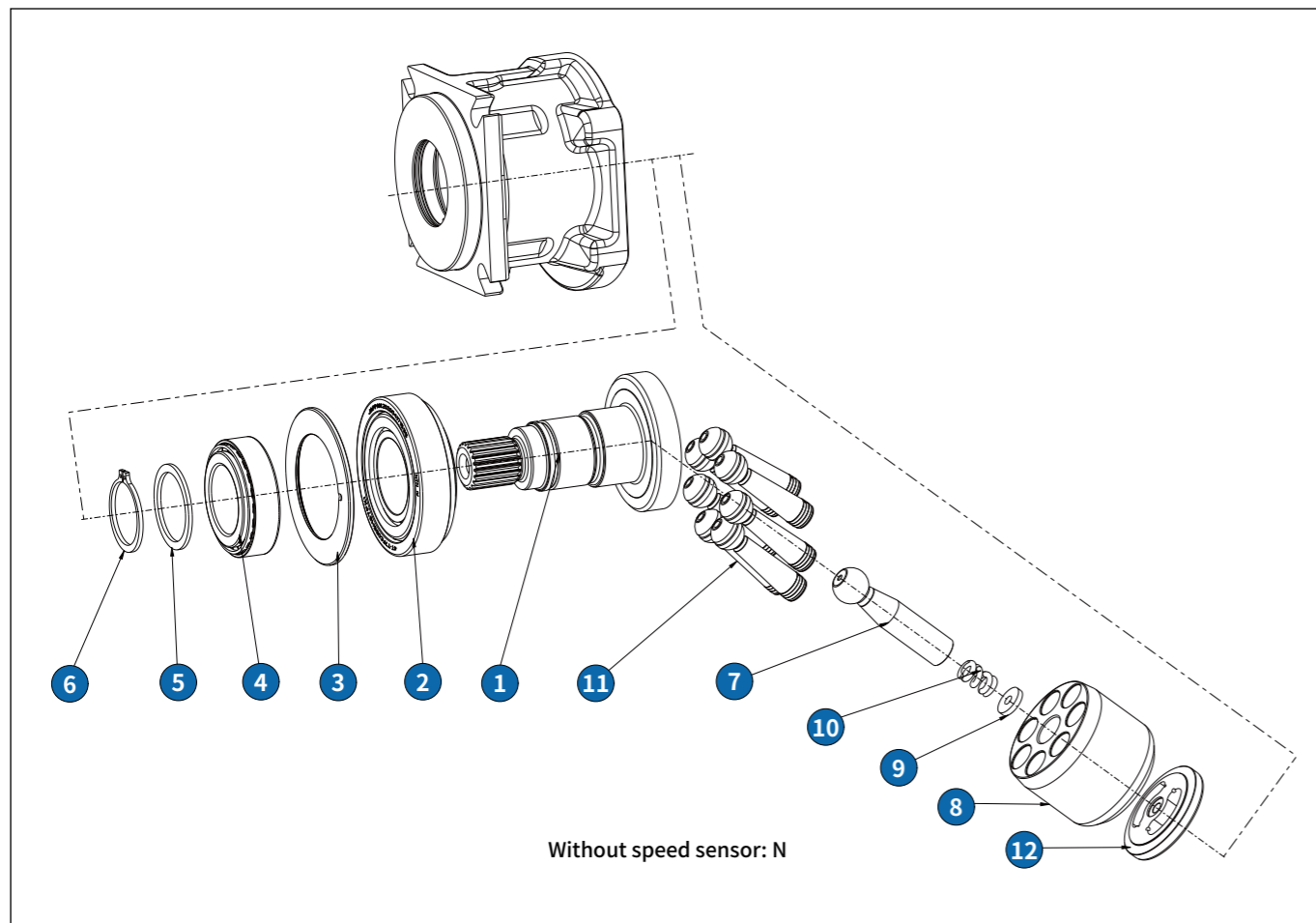
3.8.2 M60F90 Rotation Parts

Order code: D1

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	M/P/A: Shaft	HM2F90-011001-A	210000685421	1	HM2F90-011001-A
2	Tapered roller bearings	φ55*φ115*34	210000698463	1	T7FC055
3	Gasket	φ113.6*φ83*3.9	210000439290	1	HM6V60-011002
4	Tapered roller bearings	φ50*φ85*26	210000698464	1	33110
5	Gasket	φ61.7*φ50.3*2.8	210000438189	1	HM2F90-011003
6	Flexible retaining rings for shafts	φ50*3	210000349893	1	DIN 471
7	Centre rod	HM2F90-010004	210000438071	1	HM2F90-010004
8	Cylinder block	HM2F90-010001	210000438074	1	HM2F90-010001
9	Gasket	φ21.7*φ7*3.9	210000438191	1	HM2F90-010003
10	Springs	12/4*26.9/3.5	210000437198	1	HM2F90-010002
11	Piston	HM2F90-012000	210000438076+ 210000544099	7	HM2F90-012000
12	Valve plate	HM2F90-010005	210000438072	1	HM2F90-010005

3.8.2 M60F90 Rotation Parts

Order code D2: ANSI B92.1 21T-16/32DP



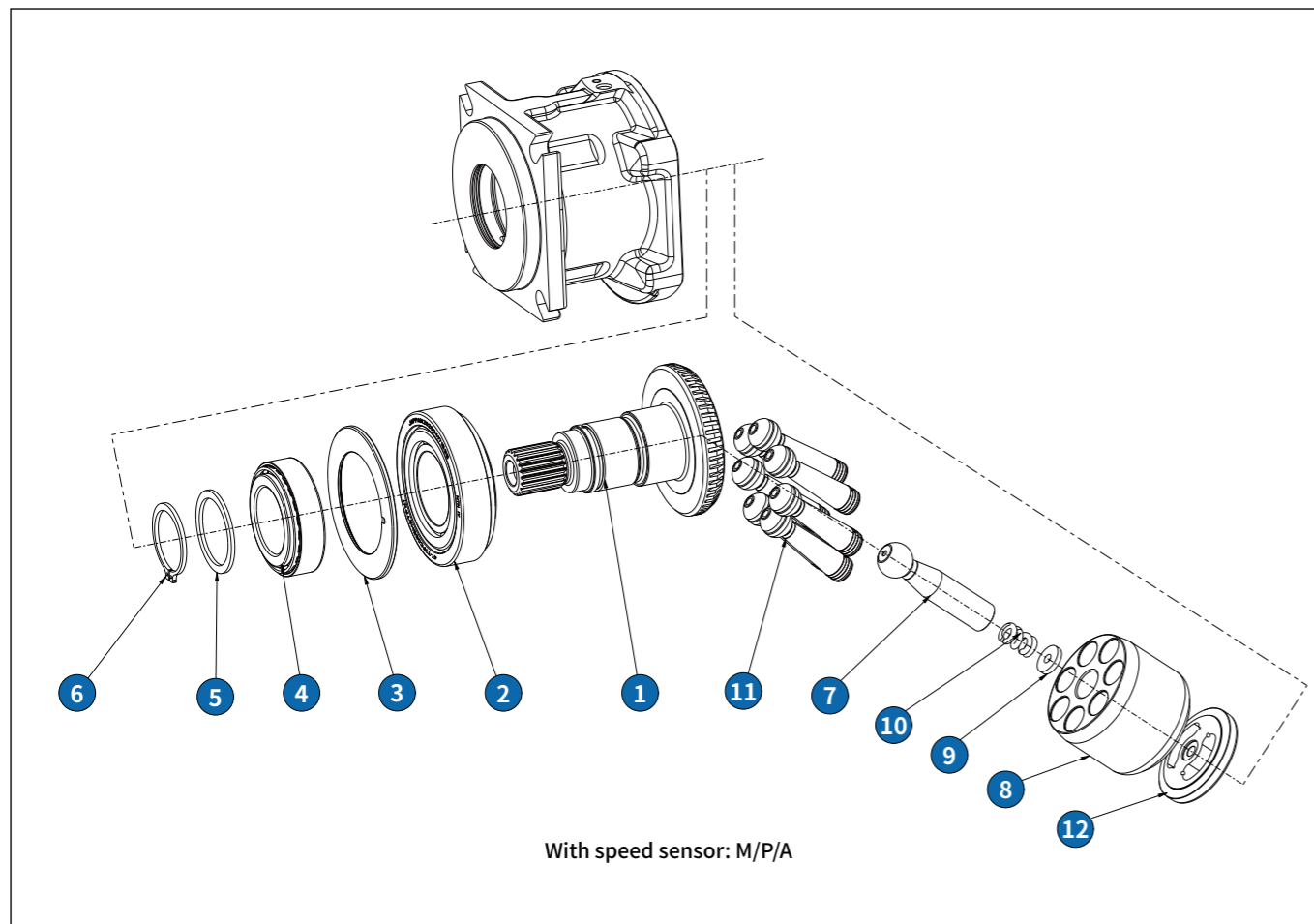
3.8.2 M60F90 Rotation Parts

Order code: D2

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	M/P/A: Shaft	HM2F90-011001-21T	210000612126	1	HM2F90-011001-21T
2	Tapered roller bearings	$\phi 55 * \phi 115 * 34$	210000698463	1	T7FC055
3	Gasket	$\phi 113.6 * \phi 83 * 3.9$	210000439290	1	HM6V60-011002
4	Tapered roller bearings	$\phi 50 * \phi 85 * 26$	210000698464	1	33110
5	Gasket	$\phi 61.7 * \phi 50.3 * 2.8$	210000438189	1	HM2F90-011003
6	Flexible retaining rings for shafts	$\phi 50 * 3$	210000349893	1	DIN 471
7	Centre rod	HM2F90-010004	210000438071	1	HM2F90-010004
8	Cylinder block	HM2F90-010001	210000438074	1	HM2F90-010001
9	Gasket	$\phi 21.7 * \phi 7 * 3.9$	210000438191	1	HM2F90-010003
10	Springs	12/4*26.9/3.5	210000437198	1	HM2F90-010002
11	Piston	HM2F90-012000	210000438076+ 210000544099	7	HM2F90-012000
12	Valve plate	HM2F90-010005	210000438072	1	HM2F90-010005

3.8.2 M60F90 Rotation Parts

Order code D2: ANSI B92.1 21T-16/32DP



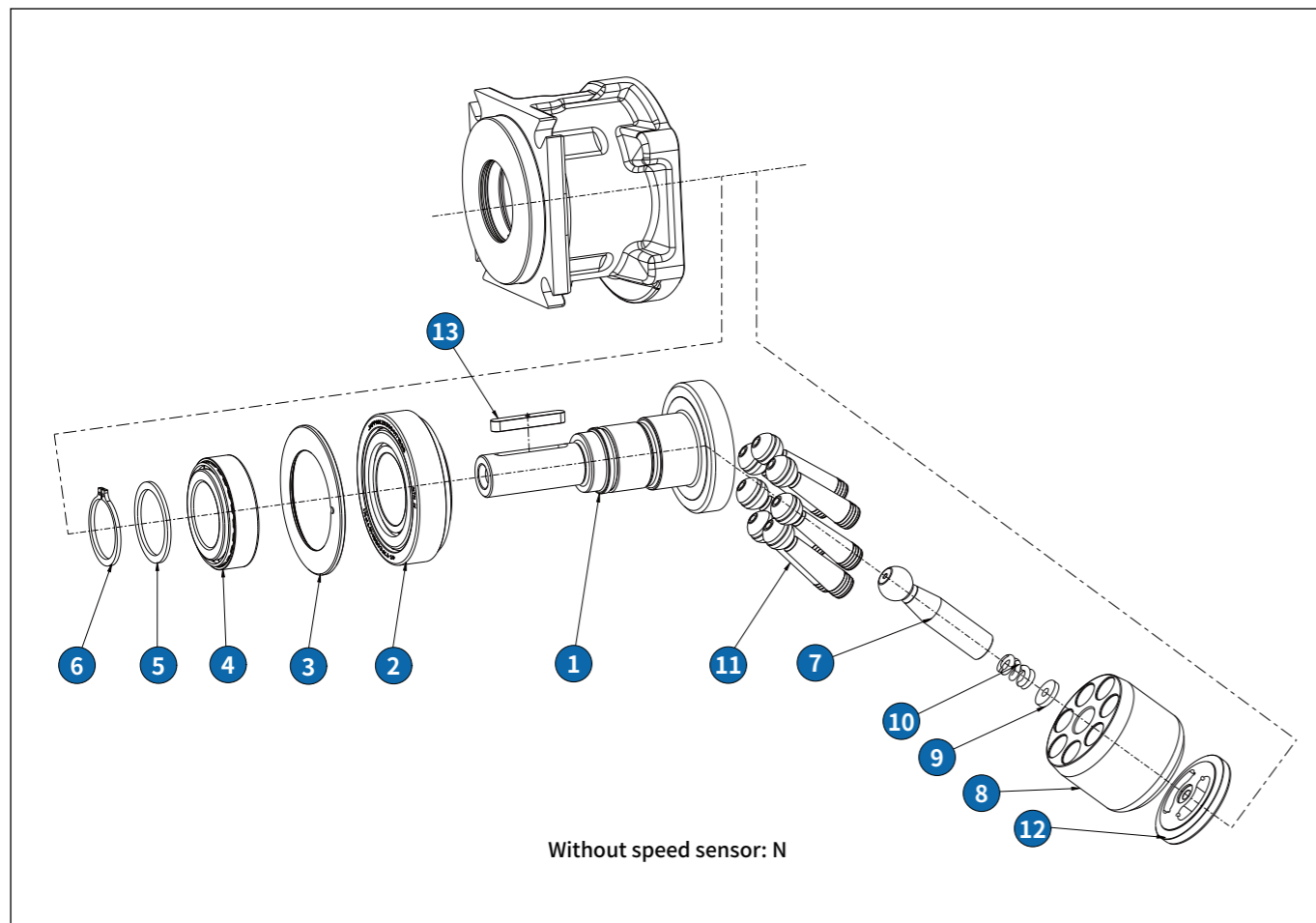
3.8.2 M60F90 Rotation Parts

Order code: D2

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	M/P/A: Shaft	M60F90-0110DSF-A21	210000911338	1	M60F90-0110DSF-A21
2	Tapered roller bearings	$\phi 55 * \phi 115 * 34$	210000698463	1	T7FC055
3	Gasket	$\phi 113.6 * \phi 83 * 3.9$	210000439290	1	HM6V60-011002
4	Tapered roller bearings	$\phi 50 * \phi 85 * 26$	210000698464	1	33110
5	Gasket	$\phi 61.7 * \phi 50.3 * 2.8$	210000438189	1	HM2F90-011003
6	Flexible retaining rings for shafts	$\phi 50 * 3$	210000349893	1	DIN 471
7	Centre rod	HM2F90-010004	210000438071	1	HM2F90-010004
8	Cylinder block	HM2F90-010001	210000438074	1	HM2F90-010001
9	Gasket	$\phi 21.7 * \phi 7 * 3.9$	210000438191	1	HM2F90-010003
10	Springs	12/4*26.9/3.5	210000437198	1	HM2F90-010002
11	Piston	HM2F90-012000	210000438076+ 210000544099	7	HM2F90-012000
12	Valve plate	HM2F90-010005	210000438072	1	HM2F90-010005

3.8.2 M60F90 Rotation Parts

· Order code D5: Flat key $\phi 32 10 \times 8 \times 60$



3.8.2 M60F90 Rotation Parts

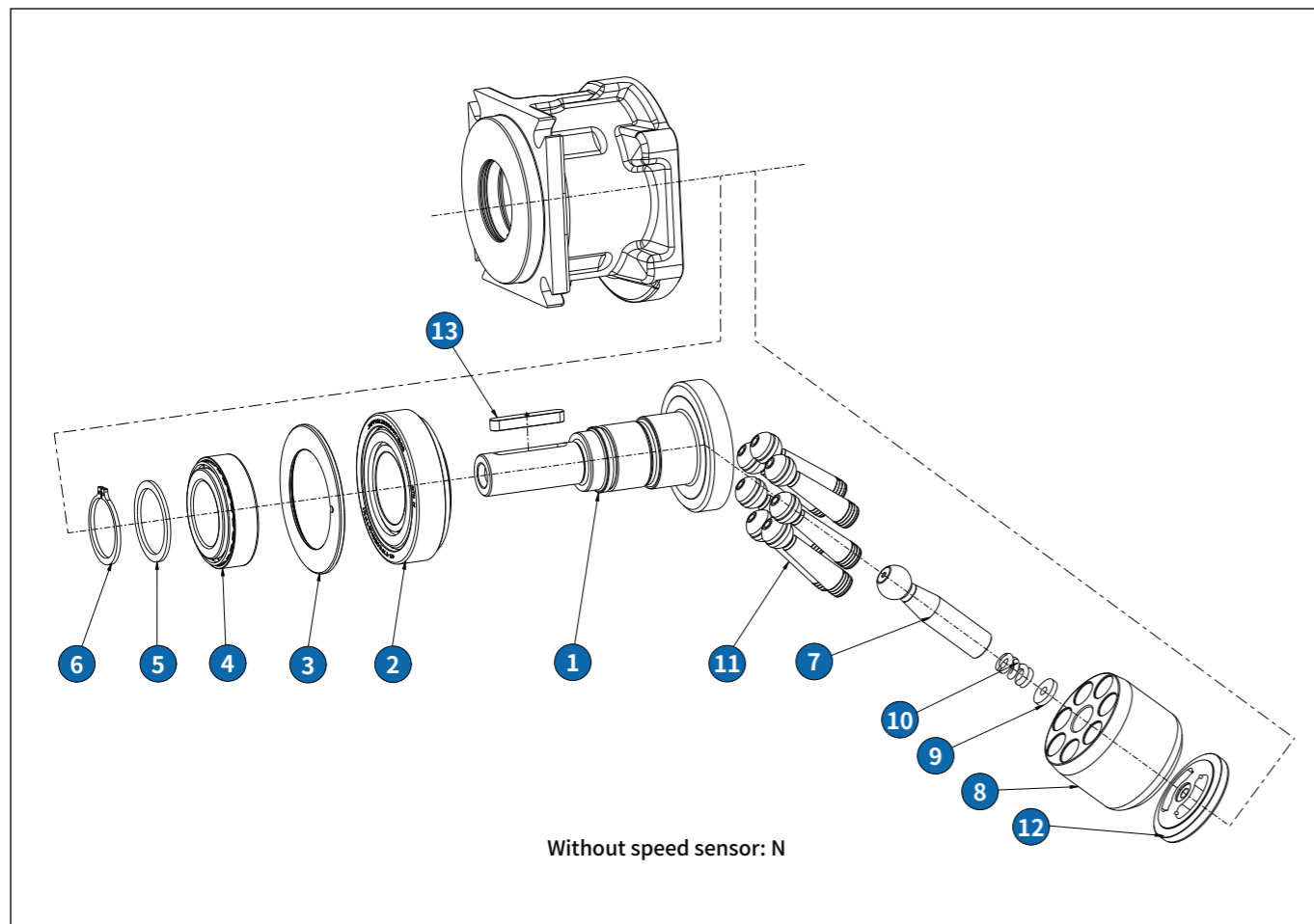
Order code: D5

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	M/P/A: Shaft	M60F90-0110DSF-K32	210000876413	1	M60F90-0110DSF-K32
2	Tapered roller bearings	$\phi 55 * \phi 115 * 34$	210000698463	1	T7FC055
3	Gasket	$\phi 113.6 * \phi 83 * 3.9$	210000439290	1	HM6V60-011002
4	Tapered roller bearings	$\phi 50 * \phi 85 * 26$	210000698464	1	33110
5	Gasket	$\phi 61.7 * \phi 50.3 * 2.8$	210000438189	1	HM2F90-011003
6	Flexible retaining rings for shafts	$\phi 50 * 3$	210000349893	1	DIN 471
7	Centre rod	HM2F90-010004	210000438071	1	HM2F90-010004
8	Cylinder block	HM2F90-010001	210000438074	1	HM2F90-010001
9	Gasket	$\phi 21.7 * \phi 7 * 3.9$	210000438191	1	HM2F90-010003
10	Springs	12/4*26.9/3.5	210000437198	1	HM2F90-010002
11	Piston	HM2F90-012000	210000438076+ 210000544099	7	HM2F90-012000
12	Valve plate	HM2F90-010005	210000438072	1	HM2F90-010005
13	Flat key	M60F90-0100002	210000876521	1	M60F90-0100002

Note: The "D5" axis is a non-standard customized version. If you need to select, please contact Hengli.

3.8.2 M60F90 Rotation Parts

Order code K4: ANSI B92.1 21T-16/32DP



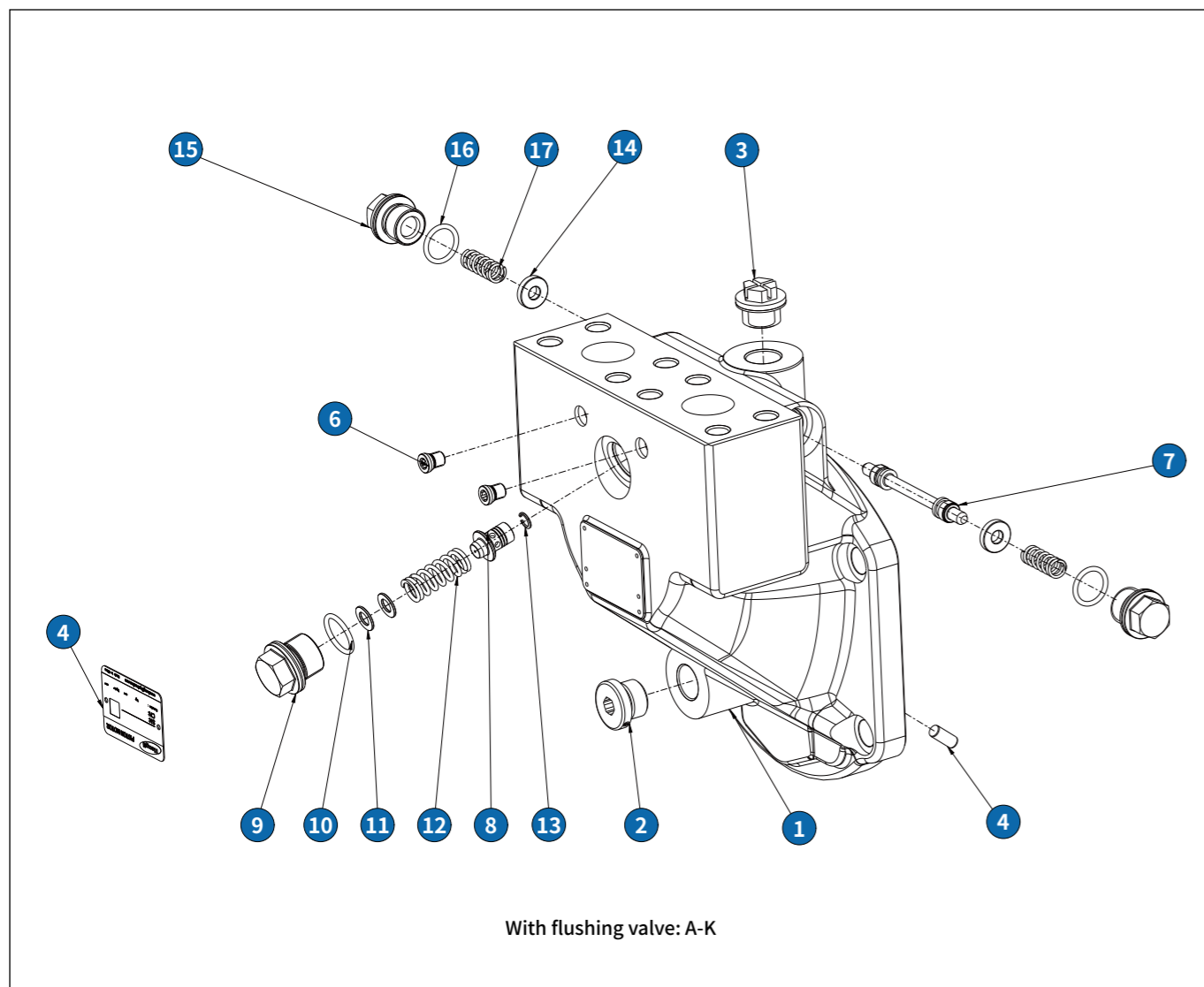
3.8.2 M60F90 Rotation Parts

Order code: K4

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	M/P/A: Shaft	M60F80-0110DSF-K31.75	210000965229	1	M60F80-0110DSF-K31.75
2	Tapered roller bearings	$\phi 55 * \phi 115 * 34$	210000698463	1	T7FC055
3	Gasket	$\phi 113.6 * \phi 83 * 3.9$	210000439290	1	HM6V60-011002
4	Tapered roller bearings	$\phi 50 * \phi 85 * 26$	210000698464	1	33110
5	Gasket	$\phi 61.7 * \phi 50.3 * 2.8$	210000438189	1	HM2F90-011003
6	Flexible retaining rings for shafts	$\phi 50 * 3$	210000349893	1	DIN 471
7	Centre rod	HM2F90-010004	210000438071	1	HM2F90-010004
8	Cylinder block	HM2F90-010001	210000438074	1	HM2F90-010001
9	Gasket	$\phi 21.7 * \phi 7 * 3.9$	210000438191	1	HM2F90-010003
10	Springs	12/4*26.9/3.5	210000437198	1	HM2F90-010002
11	Piston	HM2F90-012000	210000438076+ 210000544099	7	HM2F90-012000
12	Valve plate	HM2F90-010005	210000438072	1	HM2F90-010005
13	Flat key	M60F80-0100002	210000966188	1	M60F80-0100002

3.8.3 M60F90 Endcap Parts

Order code B: Rear port



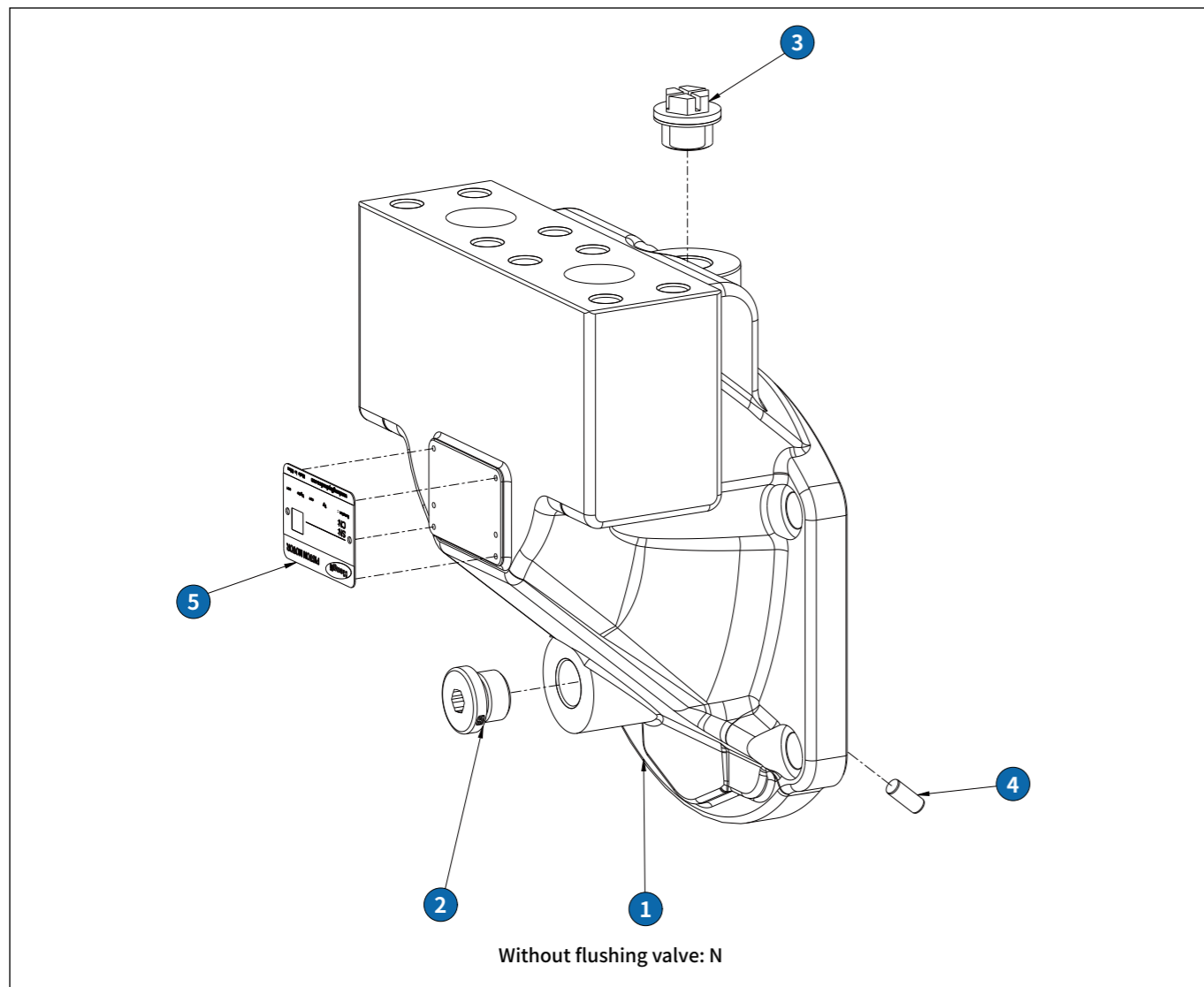
3.8.3 M60F90 Endcap Parts

Order code: B

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	Endcap	HM2F90-000001-B	210000585087	1	HM2F90-000001-B
2	Hexagon socket plug	M18*1.5	210000293557	1	ISO 9974-4
3	Outer plug (cross with gasket)	M18*1.5	110000065139	1	YY-22-13-030-020-002-A
4	Locating pin	φ6*14	210000299777	1	HLPV75-030002
5	Label	50*35*0.6	210000528899	1	MOTOR-BP-HL
6	Plug	M7*0.75	210000292750	2	V30G205-000008
7	Valve spool	HME6V85-022002	210000443819	1	HME6V85-022002
8	Valve spool	M60F90-06D1SPL-04	210000990894	1	M60F90-06D1SPL-04
9	Screw bushings	M60F90-06D0001	210000991147	1	M60F90-06D0001
10	O-ring	φ17.3*2.2	110000051087	1	OR12201730
11	Gasket	φ12.8*φ7*1	210000439283	2	HM6V60-022007
12	Springs	11/1.8*32.4/6.75	210000438082	1	HM6V60-022008
13	Circlip for C-Shaft	CE-IN 08	210000293315	1	JIS B 2804
14	Gasket	φ15.7*φ6.3*3.4	210000440667	2	HM6V60-022005
15	Screw bushings	HM6V60-022003	210000439291	2	HM6V60-022003
16	O-ring	φ15.3*2.2	110000051093	2	OR2201530
17	Springs	8.2/1.27*25/6	210000438080	2	HM6V60-022004

3.8.3 M60F90 Endcap Parts

Order code B: Rear port



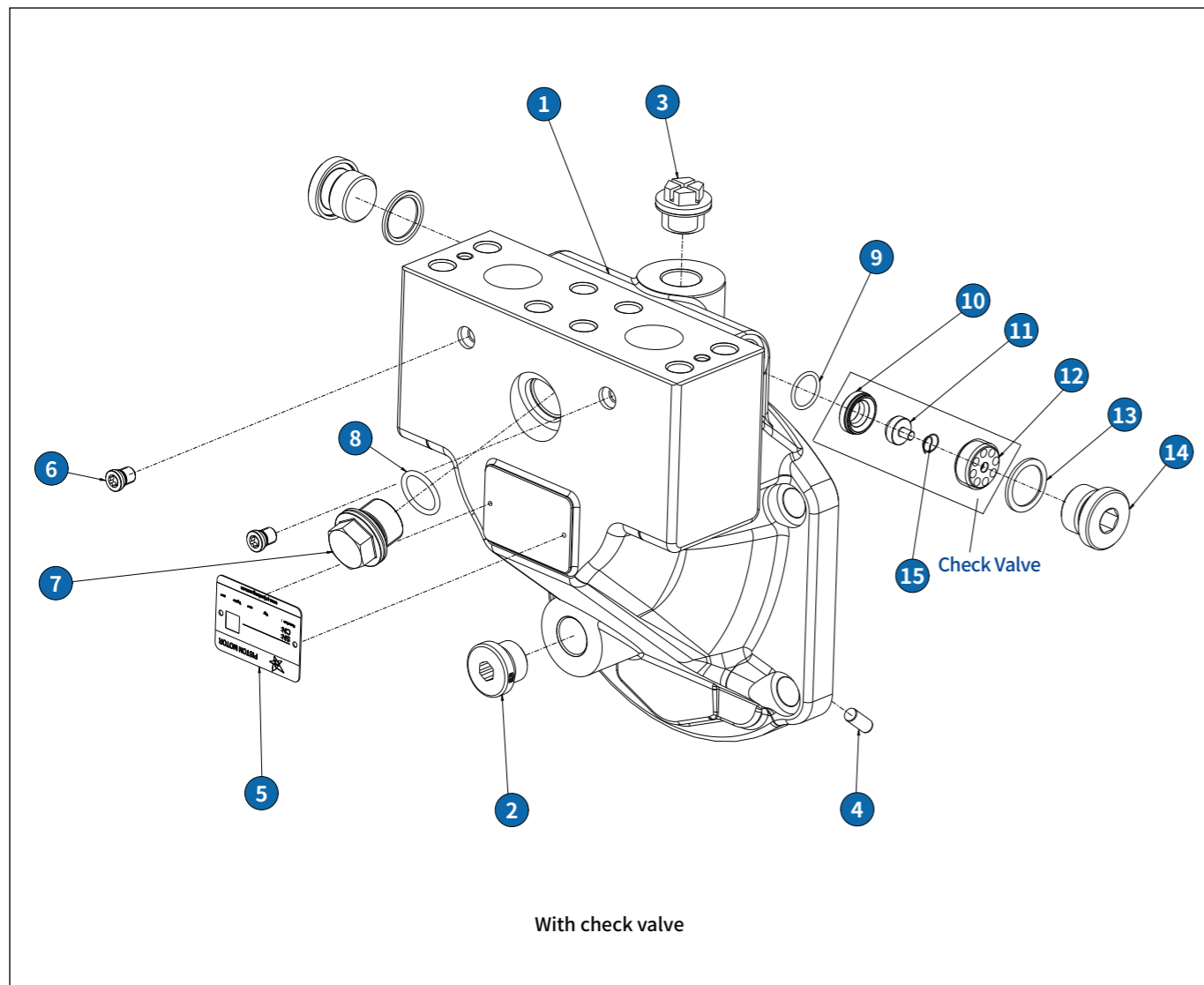
3.8.3 M60F90 Endcap Parts

Order code: B

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	Endcap	HM2F90-000001	210000438075	1	HM2F90-000001
2	Hexagon socket plug	M18*1.5	210000293557	1	ISO 9974-4
3	Outer plug (cross with gasket)	M18*1.5	110000065139	1	YY-22-13-030-020-002-A
4	Locating pin	φ6*14	210000299777	1	HLPV75-030002
5	Label	50*35*0.6	210000528899	1	MOTOR-BP-HL

3.8.3 M60F90 Endcap Parts

Order code B: Rear port



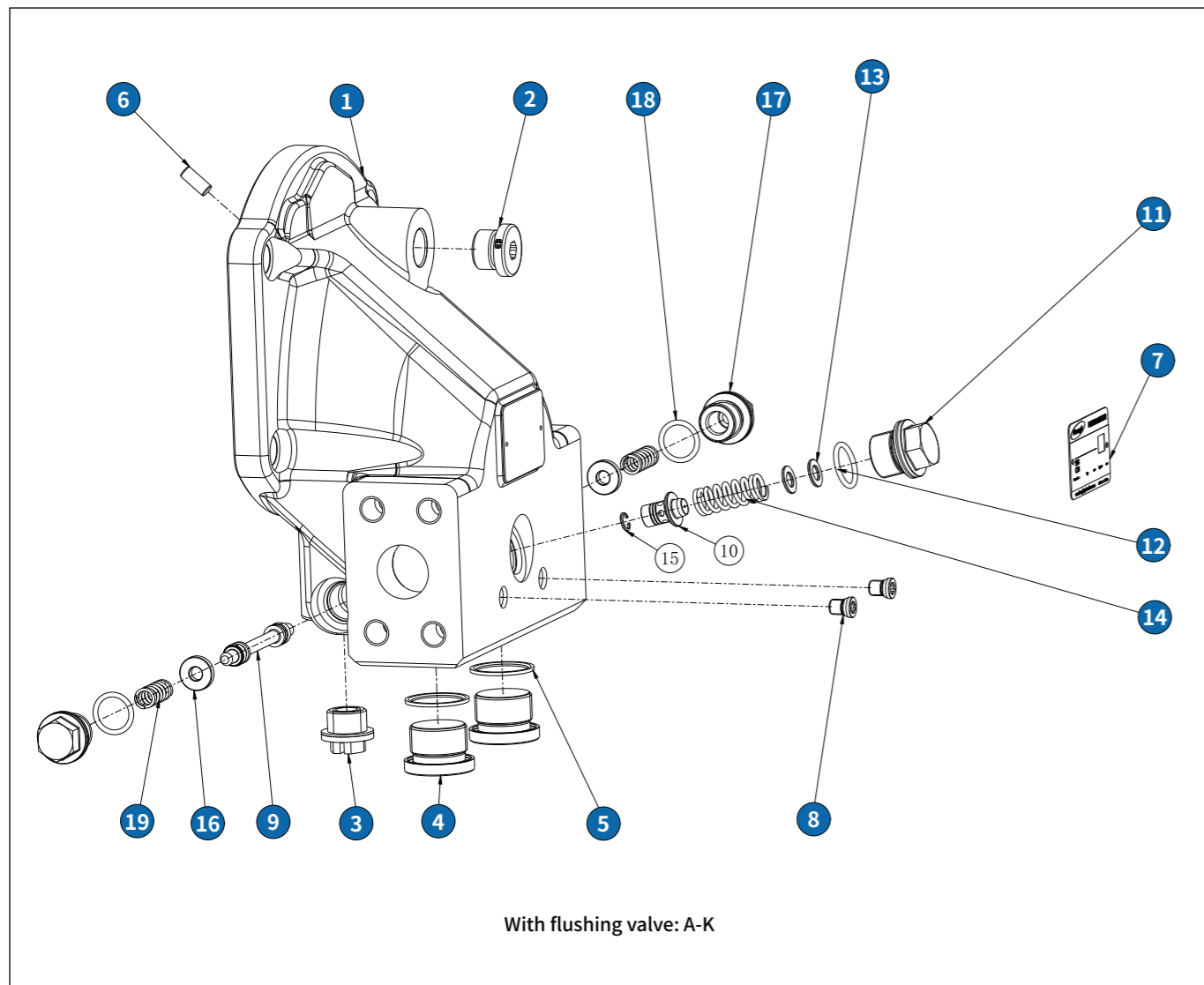
3.8.3 M60F90 Endcap Parts

Order code: B

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	Endcap	M60F90-0510RFG-06	210000103686	1	M60F90-0510RFG-06
2	Hexagon socket plug	M18*1.5	210000293557	1	ISO 9974-4
3	Outer plug (cross with gasket)	M18*1.5	110000065139	1	YY-22-13-030-020-002-A
4	Locating pin	φ6*14	210000299777	1	HLPV75-030002
5	Label	50*35*0.6	210001095693	1	MOTOR-BP-YTJX
6	Plug	M7*0.75	210000292750	2	V30G205-000008
7	Screw bushings	HM6V60-022006	210000439289	1	HM6V60-022006
8	O-ring	φ17.3*2.2	110000051087	1	OR12201730
9	O-ring	φ13.5*1.5	210000293388	1	S14
10	Valve sleeve	HLCVD0-00000N	210000513486	1	HLCVD0-00000N
11	Valve spool	HLCVD0-00000P	210000513484	1	HLCVD0-00000P
12	Valve seat	HLCVD0-00000Q	210000513485	1	HLCVD0-00000Q
13	E-ring	G1/2A	210000293553	2	ISO 1179-2
14	Hexagon socket plug	G1/2A	210000293470	2	ISO 1179
15	Conical spring	9.3-5.4/0.4-6/2.5	210000513885	1	HLCVD0-00000R

3.8.3 M60F90 Endcap Parts

Order code A: Side port



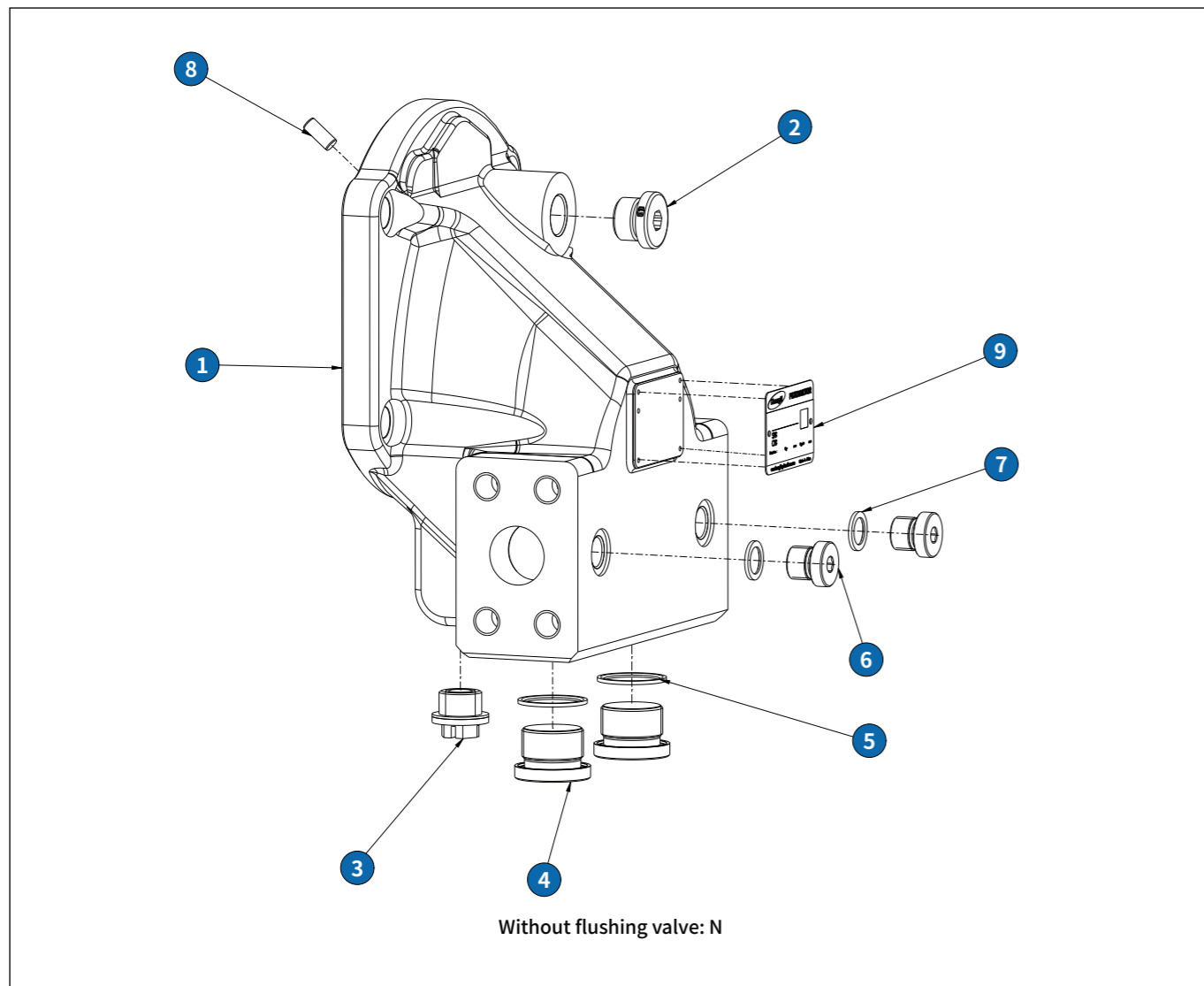
3.8.3 M60F90 Endcap Parts

Order code: A

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	Endcap	M60F80-0510RFG-01	M60F80-0510RFG-01	1	M60F80-0510RFG-01
2	Hexagon socket plug	M18*1.5	210000293557	1	ISO 9974-4
3	Outer plug (cross with gasket)	M18*1.5	110000065139	1	YY-22-13-030-020-002-A
4	Plug	M26*1.5	210000353817	2	HLPV140I-010001
5	E-ring	G3/4A	210000294334	2	ISO 1179-2
6	Locating pin	φ6*14	210000299777	1	HLPV75-030002
7	Label	50*35*0.6	210000528899	1	MOTOR-BP-HL
8	Plug	M7*0.75	210000292750	2	V30G205-000008
9	Valve spool	HME6V85-022002	210000443819	1	HME6V85-022002
10	Valve spool	HME6V85-022009	210000443821	1	HME6V85-022009
11	Screw bushings	HM6V60-022006	210000439289	1	HM6V60-022006
12	O-ring	φ17.3*2.2	110000051087	1	OR12201730
13	Gasket	φ12.8*φ7*1	210000439283	2	HM6V60-022007
14	Springs	11/1.8*32.4/6.75	210000438082	1	HM6V60-022008
15	Circlip for C-Shaft	CE-IN 08	210000293315	1	JIS B 2804
16	Gasket	φ15.7*φ6.3*3.4	210000440667	2	HM6V60-022005
17	Screw bushings	HM6V60-022003	210000439291	2	HM6V60-022003
18	O-ring	φ15.3*2.2	110000051093	2	OR2201530
19	Springs	8.2/1.27*25/6	210000438080	2	HM6V60-022004

3.8.3 M60F90 Endcap Parts

Order code A: Side port



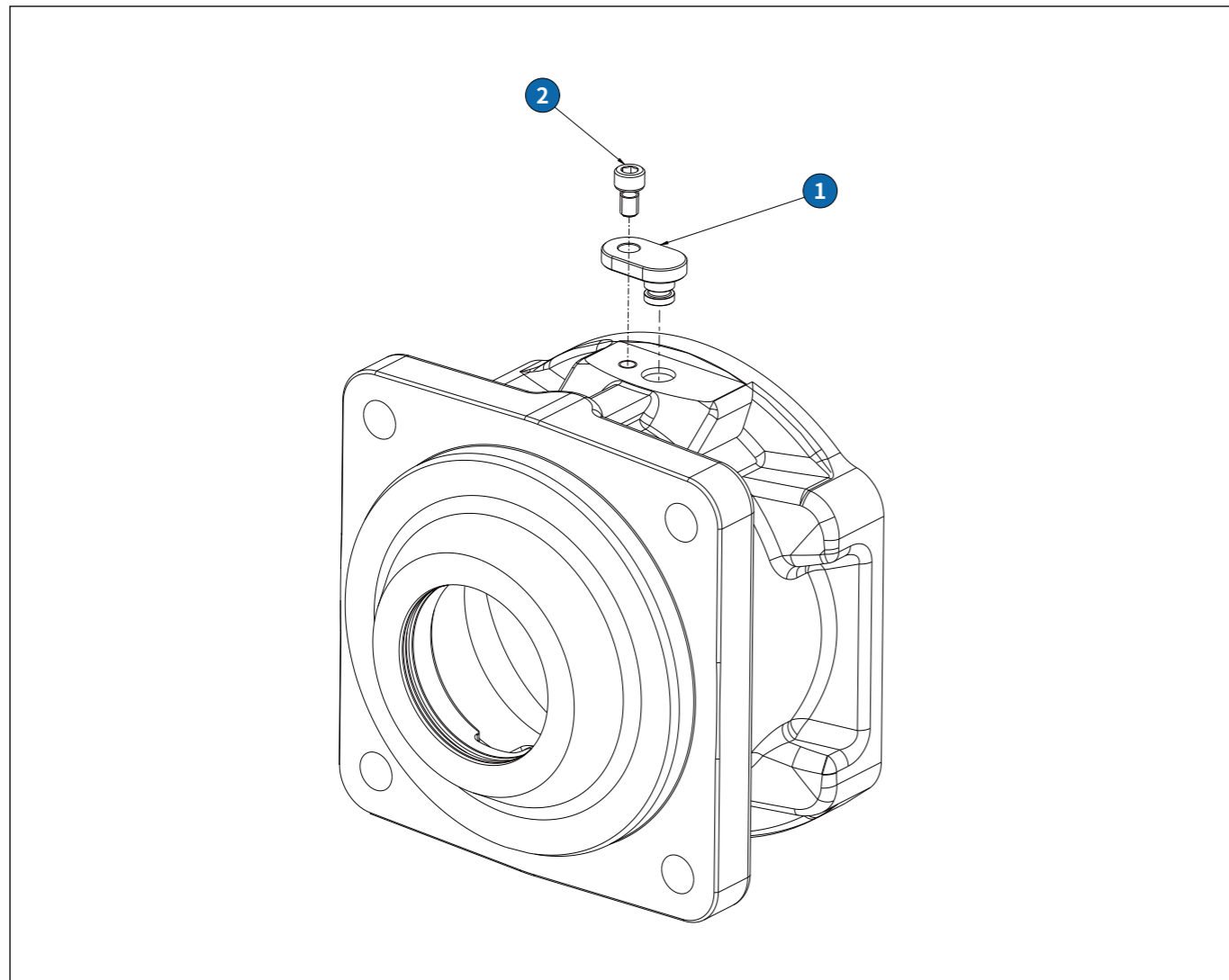
3.8.3 M60F90 Endcap Parts

Order code: A

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	Endcap	HM2F90A-000001	HM2F90A-000001	1	HM2F90A-000001
2	Hexagon socket plug	M18*1.5	210000293557	1	ISO 9974-4
3	Outer plug (cross with gasket)	M18*1.5	110000065139	1	YY-22-13-030-020-002-A
4	Plug	M26*1.5	210000353817	2	HLPV140I-010001
5	E-ring	G3/4A	210000294334	2	ISO 1179-2
6	Plug	M14*1.5	210000294369	2	HLPV140I-020002
7	E-ring	G1/4A	210000293574	2	ISO 1179-2
8	Locating pin	φ6*14	210000299777	1	HLPV75-030002
9	Label	50*35*0.6	210000528899	1	MOTOR-BP-HL

3.8.4 M60F90 Speed Sensor Parts

· Order code A/N: Without speed sensor/Installation of reserved speed sensor

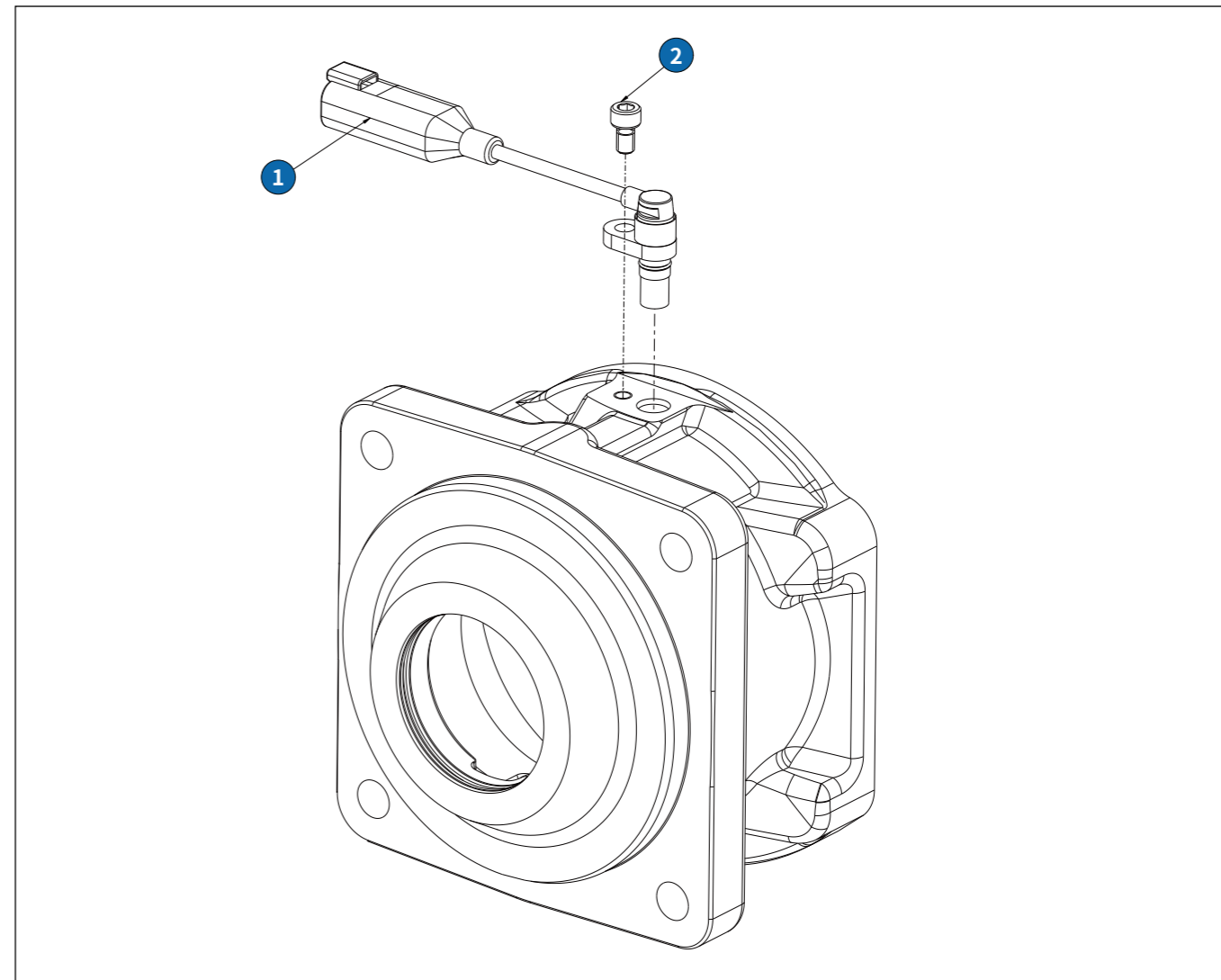


Order code: A/N

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	A/N: Cover plate	HM6V170-000006	210000497442	1	HM6V170-000006
2	Hexagon socket cheese head screws	M6*10	210000206172	1	GB/T 70.1

3.8.4 M60F90 Speed Sensor Parts

· Order code M/P: With speed sensor(supply voltage 4.5~8VDC)/(supply voltage 8~32VDC)

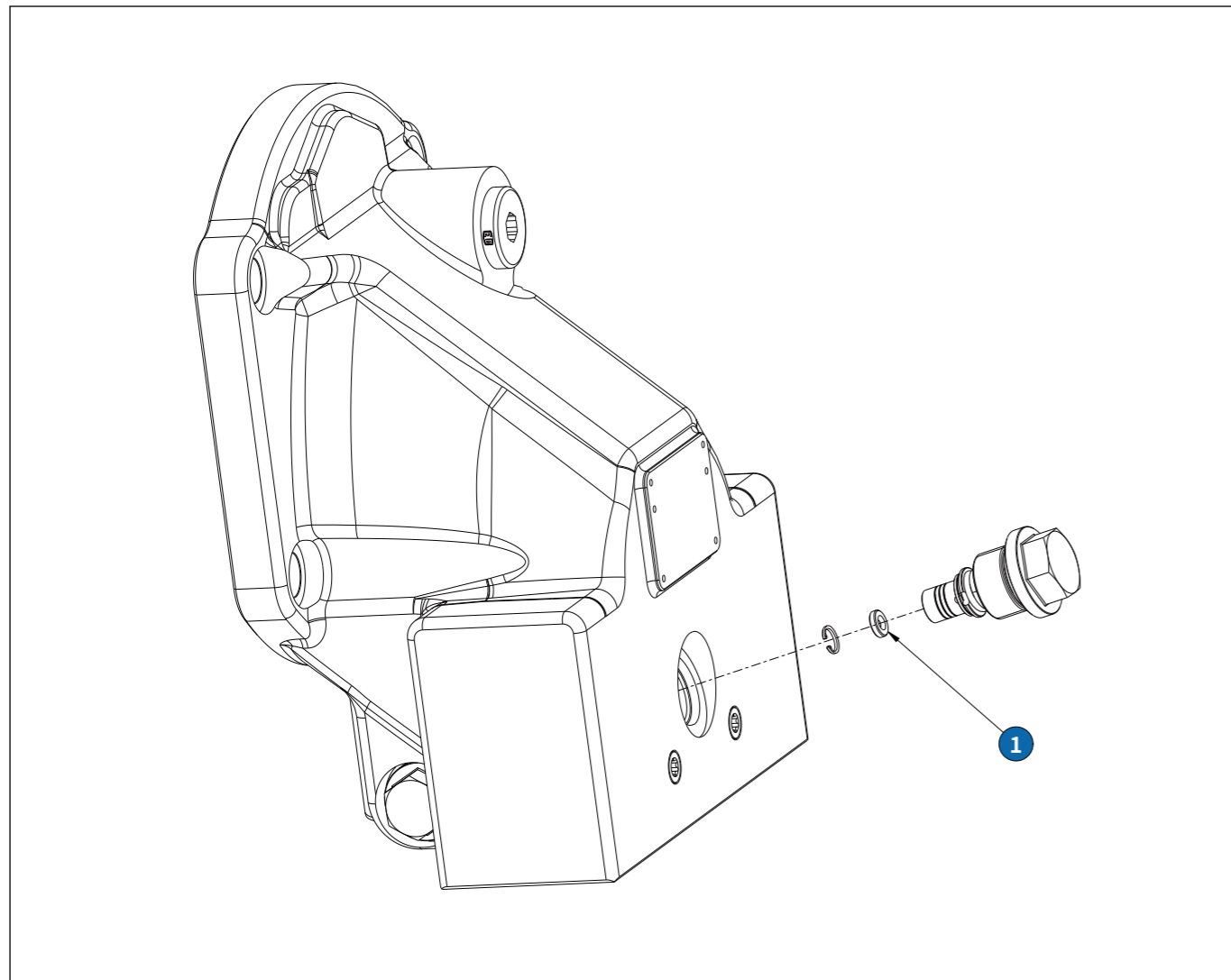


Order code: M/P

Serial No.	Part Name	Specification	Order No.	QTY.per kit	Drawing No.
1	M: Speed sensor	H168-G	210000541113	1	H168-G
	P: Speed sensor	H1018FOA1.5DT04	210000504396	1	H1018FOA1.5DT04
2	Hexagon socket cheese head screws	M6*10	210000206172	1	GB/T 70.1

3.8.5 M60F90 Damping Plate Parts

Order code: Damping plate parts are not subject to selection



3.8.5 M60F90 Damping Plate Parts

Order code: Damping plate parts are not subject to selection

Serial No.	Part Name	Flushing Flow	Specification	Order No.	QTY.per kit	Drawing No.
1	Damping plate parts	Flushing flow 3.5 A	HM6V60-02200A-1.2-3.5	210000535080	1	HM6V60-02200A-1.2-3.5
		Flushing flow 5 B	HM6V60-02200A	210000439284	1	HM6V60-02200A
		Flushing flow 8 C	HM6V60-02200A-1.8-8	210000492996	1	HM6V60-02200A-1.8-8
		Flushing flow 10 D	HM6V60-02200A-2-10	210000398249	1	HM6V60-02200A-2-10
		Flushing flow 14 E	HM6V170-02200A-2.2	210000643110	1	HM6V170-02200A-2.2
		Flushing flow 17 F	HM6V170-02200A-2.5-17	210000458778	1	HM6V170-02200A-2.5-17
		Flushing flow 20 G	HM6V170-02200A-2.8-20	210000458783	1	HM6V170-02200A-2.8-20
		Flushing flow 25 H	HM6V170-02200A-3.1-25	210000458784	1	HM6V170-02200A-3.1-25
		Flushing flow 30 M	HM6V170-02200A-3.5-30	210000458782	1	HM6V170-02200A-3.5-30
		Flushing flow 35 J	HM6V170-02200A-3.9	210000557961	1	HM6V170-02200A-3.9
		Flushing flow 40 K	HM6V170-02200A-5-40	210000458779	1	HM6V170-02200A-5-40



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