

Broad heading number: 113161

***HHF-1300/1600
TRIPLEX MUD PUMP***

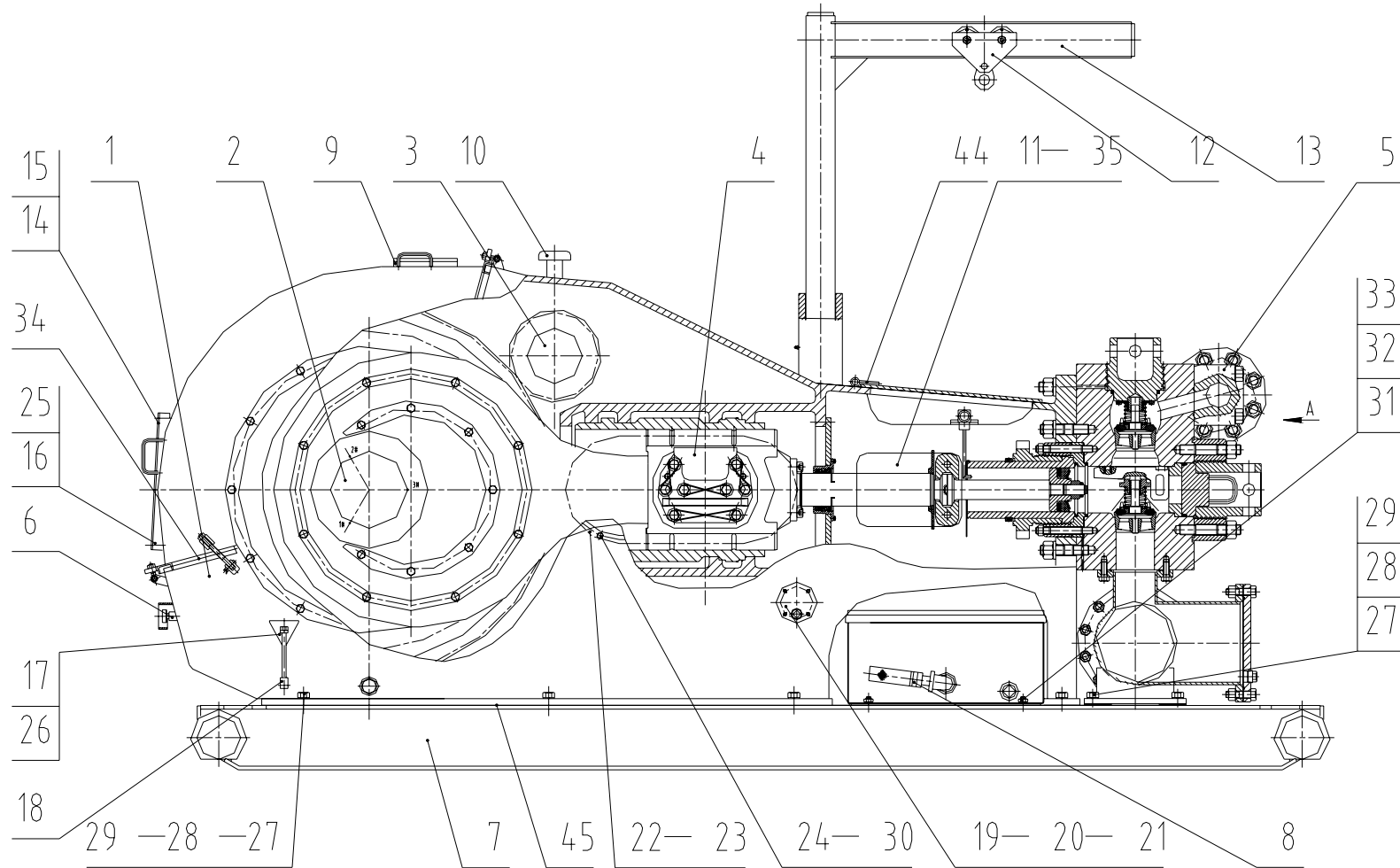
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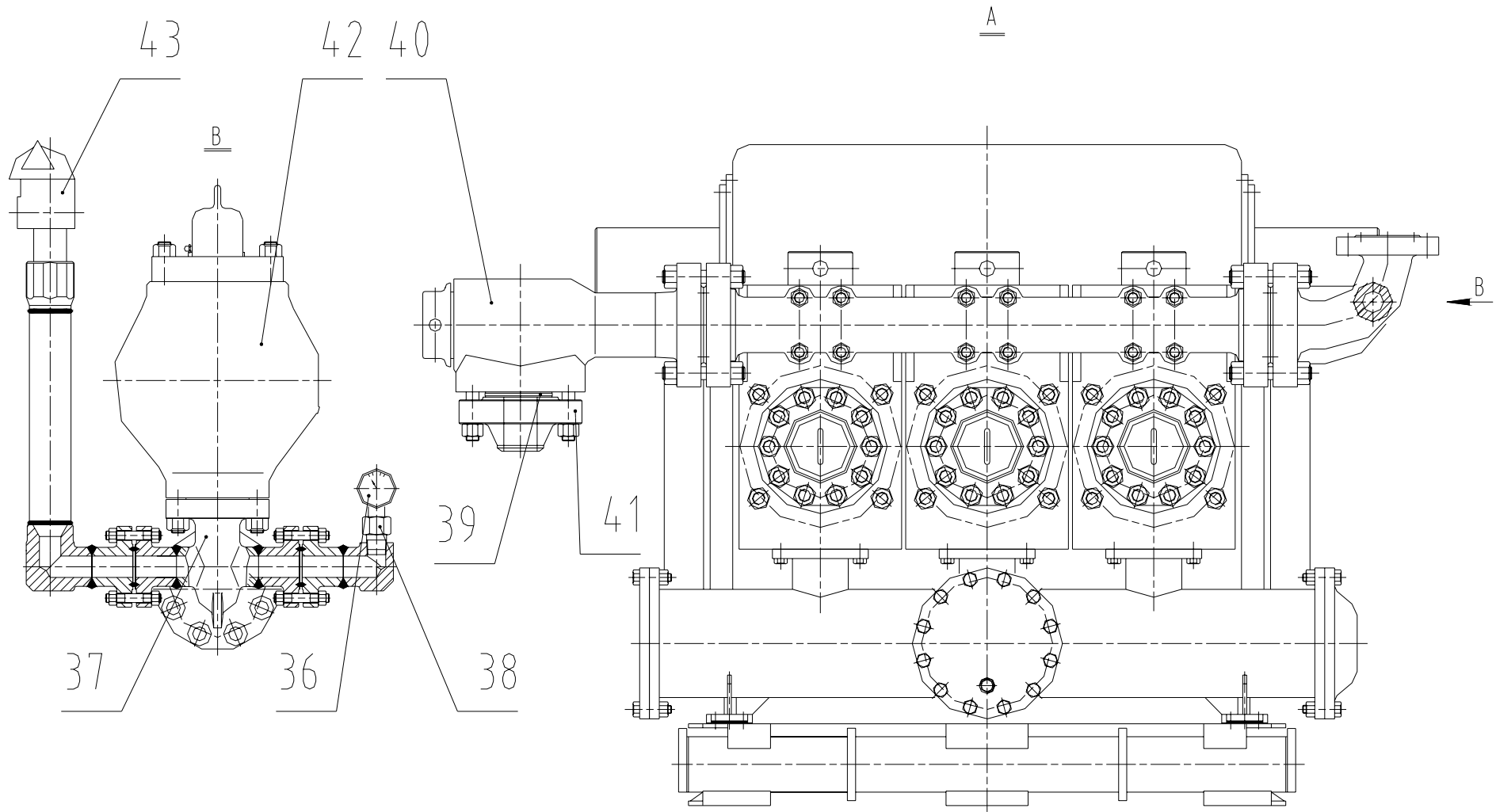


HONGHUA

CHUANYOU GUANGHAN HONGHUA CO., Ltd

HHF—1300/1600 General Assembly Drawing

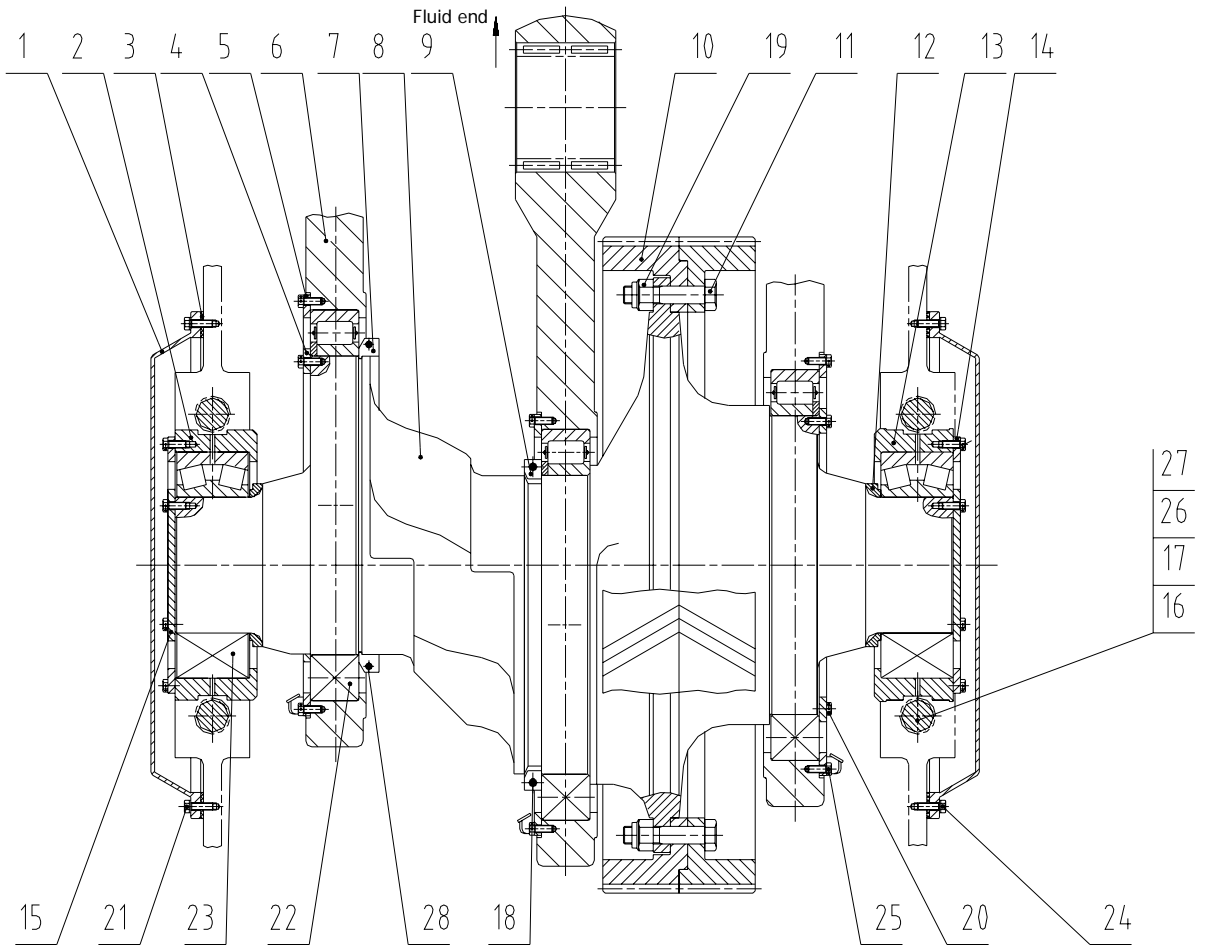




No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-0100	Frame assembly	1
2	11-3161-0200	Crankshaft assembly	1
3	11-3161-0300	Pinion shaft assembly	1
4	11-3161-0400	Crosshead assembly	3
5	11-3161-0500	Fluid end assembly	1
6	11-3161-0600	Power end lubrication assembly	1
7	11-3161-0700	Skid	1
8	11-3161-0800	Liner spraying assembly	1
9	11-3161-09	Inspection cover	2
10	11-3161-1000	Breather cap	1
11	11-3161-11	Nameplate	2
12	11-3161-1200	Trolley	1
13	11-3161-1300	Crane frame	1
14	11-3161-1400	Cover plate	1
15	11-3161-15	Gasket	1
16	11-3161-1501	Bolt, 1/2-13UNC-2A*30	14
17	11-3161-16	Plate	2
18	11-3161-1700	Oil level gauge	2
19	11-3161-1800	Clean out cover	2
20	11-3161-19	Gasket	2
21	11-3161-1502	Bolt, 1/2-13UNC-2A*35	8
22	11-3161-20	Cover, crosshead hole	2
23	11-3161-21	Gasket	2
24	11-3161-1503	Bolt, 5/8-11UNC-2A*45	28
25	B0848-14-32	Flat washer 14	22

26	B0827-003-10-73	Rivet, 3*10	6
27	11-3161-1504	Bolt, 1-8UNC-2A*90	16
28	11-3161-1505	Nut, 1-8UNC-2B (SPL)	16
29	B0093-27-59	Spring washer, 27	16
30	B0848-16-32	Flat washer 16	28
31	11-3161-1506	Bolt, 5/8-11UNC-2A*60	4
32	11-3161-1507	Nut , 5/8-11UNC-2B (SPL)	4
33	B0093-16-59	Spring washer, 16	4
34	11-3161-1508	Rubber, 40*10*5800	1
35	11-3161-1509	Screw, 8 (0.164) -32UNC-2A*16	8
36	11-3161-1510	Pressure gauge, 0~60MPa(0~8700psi)	1
37	11-3161-2200	Elbow assembly	1
38	11-3161-1511	Pipe plug, R1 1/2	1
39	11-3161-23	Gasket, R44	3
40	11-3161-2400	Draining filter assembly	1
41	11-3161-25	Flange 5 1/8*35	1
42	11-3161-2700	Surge damper KB-75	1
43	11-3161-2800	Relieve valve JA-3	1
44	11-3161-3000	Cover plate assembly	1
45	11-3161-31	Shim	1

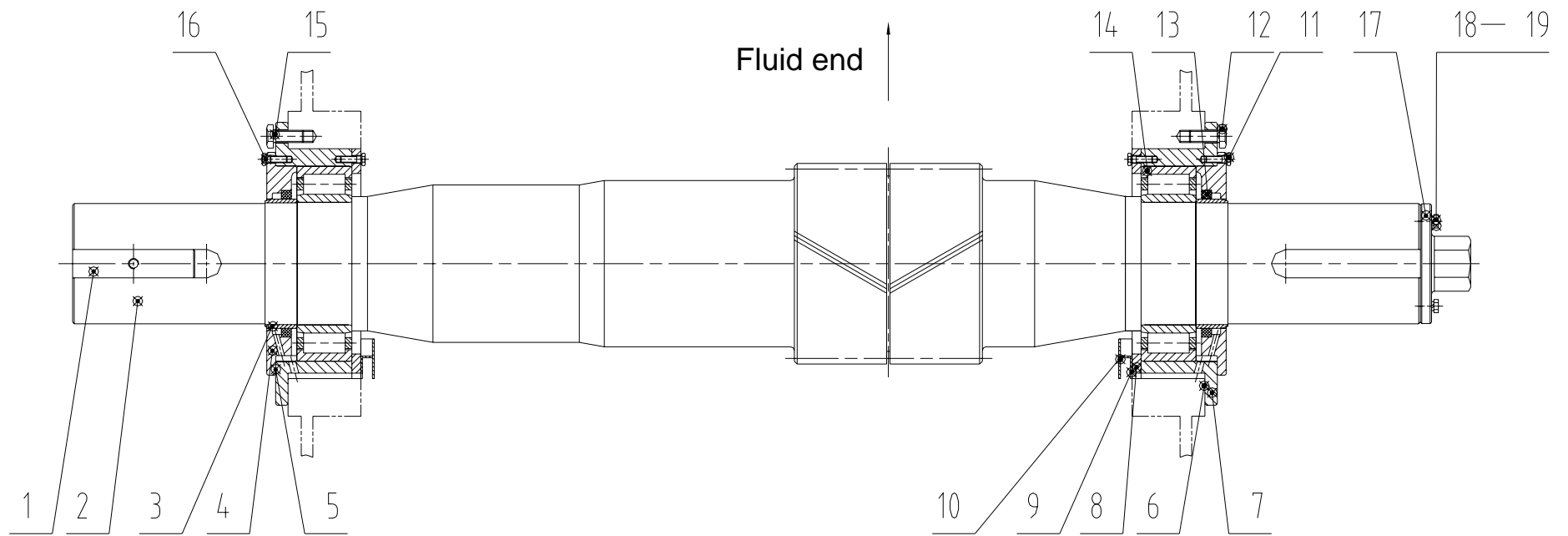
HHF—1300/1600 Crankshaft Assembly



No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3131-0201-00	Cover, main bearing	2
	11-3161-0201-00	Cover, main bearing	2
2	11-3131-0202	Sleeve, main bearing (right)	1
	11-3161-0202	Sleeve, main bearing (right)	1
3	11-3161-0203	Gasket	2
4	11-3161-0204	Insider retainer	2
5	11-3131-0205-00	Outside retainer	3
	11-3161-0205-00	Outside retainer	3
6	11-3131-0206	Eccentric strap	3
	11-3161-0206	Eccentric strap	3

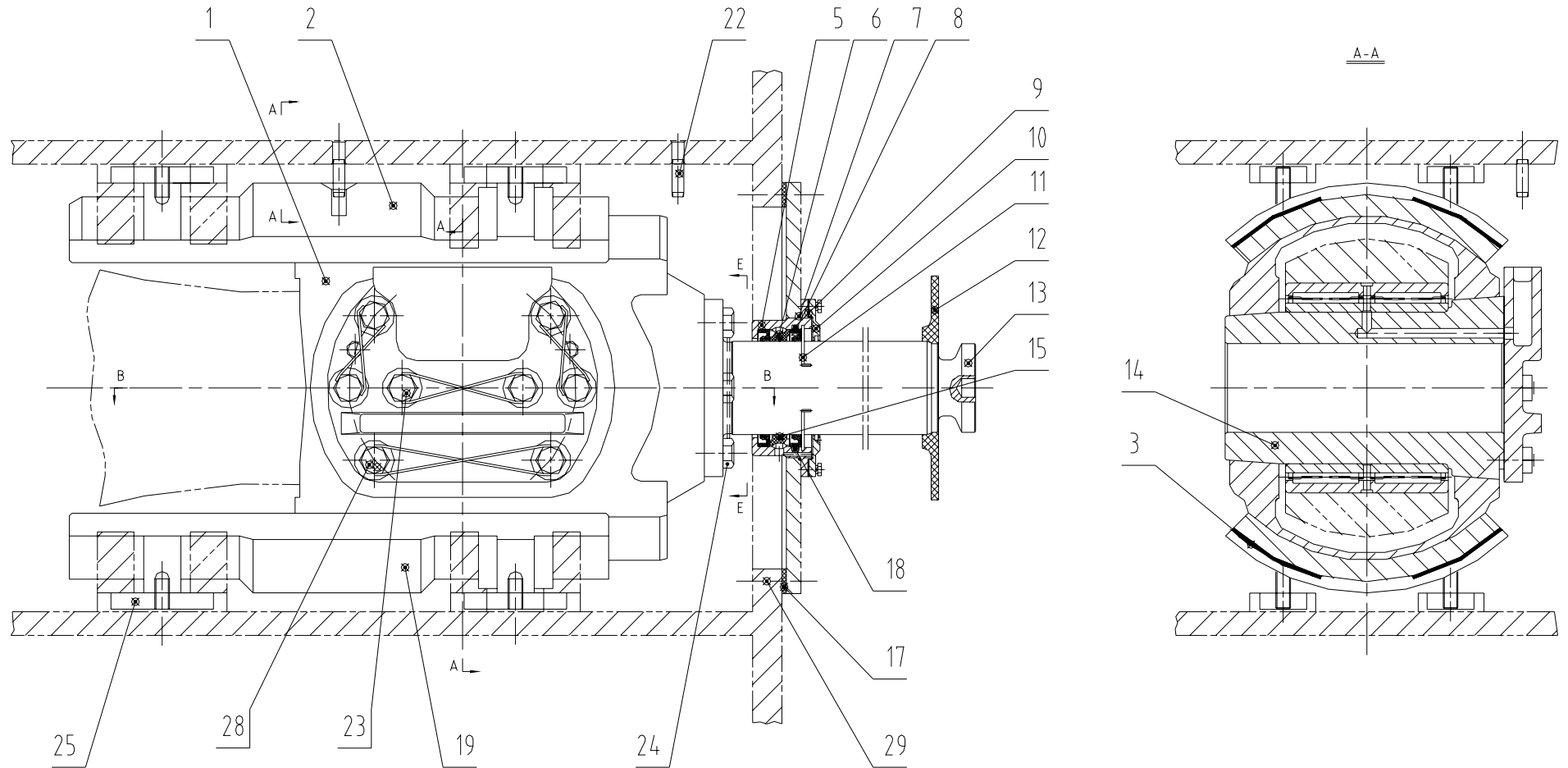
7	11-3161-0207	Positioning ring (I)	1
8	11-3161-0208-00	Crankshaft	1
9	11-3161-0209	Positioning ring (II)	1
10	11-3131-0210	Bull gear	1
	11-3161-0210	Bull gear	1
11	11-3131-0211-1	Bolt, 1 1/2-8UN-2A*130	12
	11-3161-0211-2	Bolt, 1 1/2-8UN-2A*170	
12	11-3161-0212	Spacer ring	2
13	11-3131-0213	Sleeve, main bearing (left)	1
	11-3161-0213	Sleeve, main bearing (left)	1
14	11-3131-0214	Retainer ring	2
	11-3161-0214	Retainer ring	2
15	11-3161-0215	Baffle	2
16	11-3161-0216	Bolt, main bearing, 3-8UN-3A	4
17	11-3161-0217	Shims	As required
18	11-3161-0218	Screw, 5/8-11UNC-2A*120	2
19	11-3161-0219-00	Locking nut, 1 1/2-8UN-2B	12
20	11-3161-0220	Bolt, 5/8-11UNC-2A*40	70
21	11-3161-0227	Bolt, 5/8-11UNC-2A*50	28
22	11-3131-0221-1	Bearing, eccentric strap, 928/660.4QU	3
	11-3161-0221-2	Bearing, eccentric strap, 929/660.4QU	
23	11-3131-0222-1	Main bearing, 3G4053160H	2
	11-3161-0222-2	Main bearing, 3G3003760HY	
24	B0848-16-32	Flat washer, 16	28
25	11-3161-0224	Locking wire, SZ-1.50	40m
26	11-3161-0225	Locking wire, SZ-3.00	3m
27	11-3161-0226	Sealant	90ml
28	11-3161-0223	Screw, 5/8-11UNC-2A*100	2

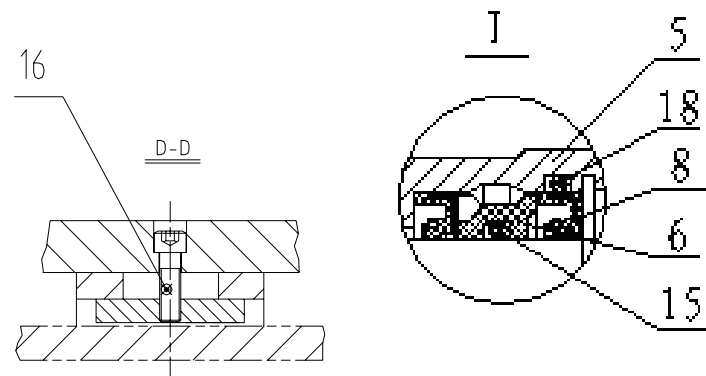
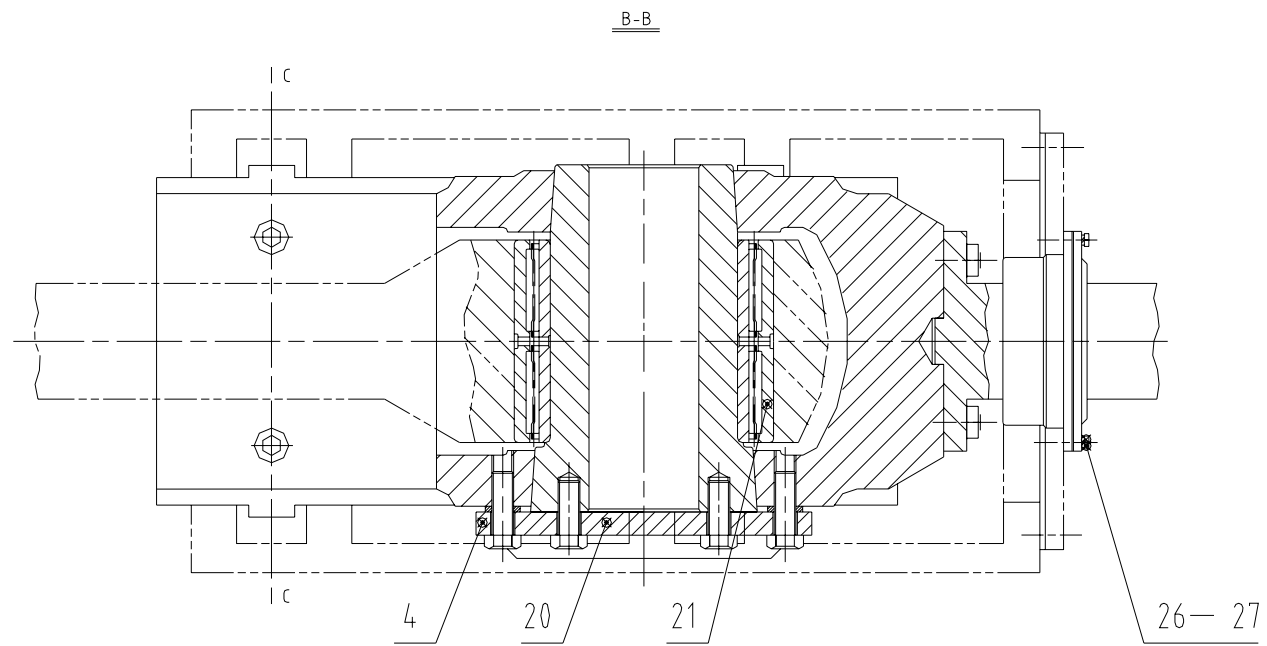
HHF—1300/1600 Pinion Shaft Assembly



No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-0301	Key, 2"*2"*241.3	1
2	11-3131-0302/11-3161-0302	Pinion Shaft	1
3	11-3161-0303	Sleeve, Seal	2
4	11-3161-0304	End Cover	2
5	11-3161-0305	Gasket, End cover	2
6	11-3161-0306	Gasket, Bearing housing	2
7	11-3161-0307	Bearing Housing	2
8	11-3161-0308	Retainer Ring	2
9	11-3161-0309	Gasket, Oil trough	2
10	11-3161-0310-00	Oil trough	2
11	11-3161-0314	Bolt, 1/2-13UNC-2A*35	24
12	11-3161-0315	Bolt, 7/8-9UNC-2A*52	16
13	11-3161-0311	Oil Seal, 9.125"*10.375"*0.625"	2
14	11-3161-0312	Bearing, 4G32844H	2
15	B0093-22-59	Spring Washer, 22	16
16	B0093-14-59	Spring Washer, 14	24
17	11-3161-0313	Flange	1
18	11-3161-0316	Bolt, 5/8-11UNC-2A*50	3
19	B0093-16-59	Spring Washer, 16	3

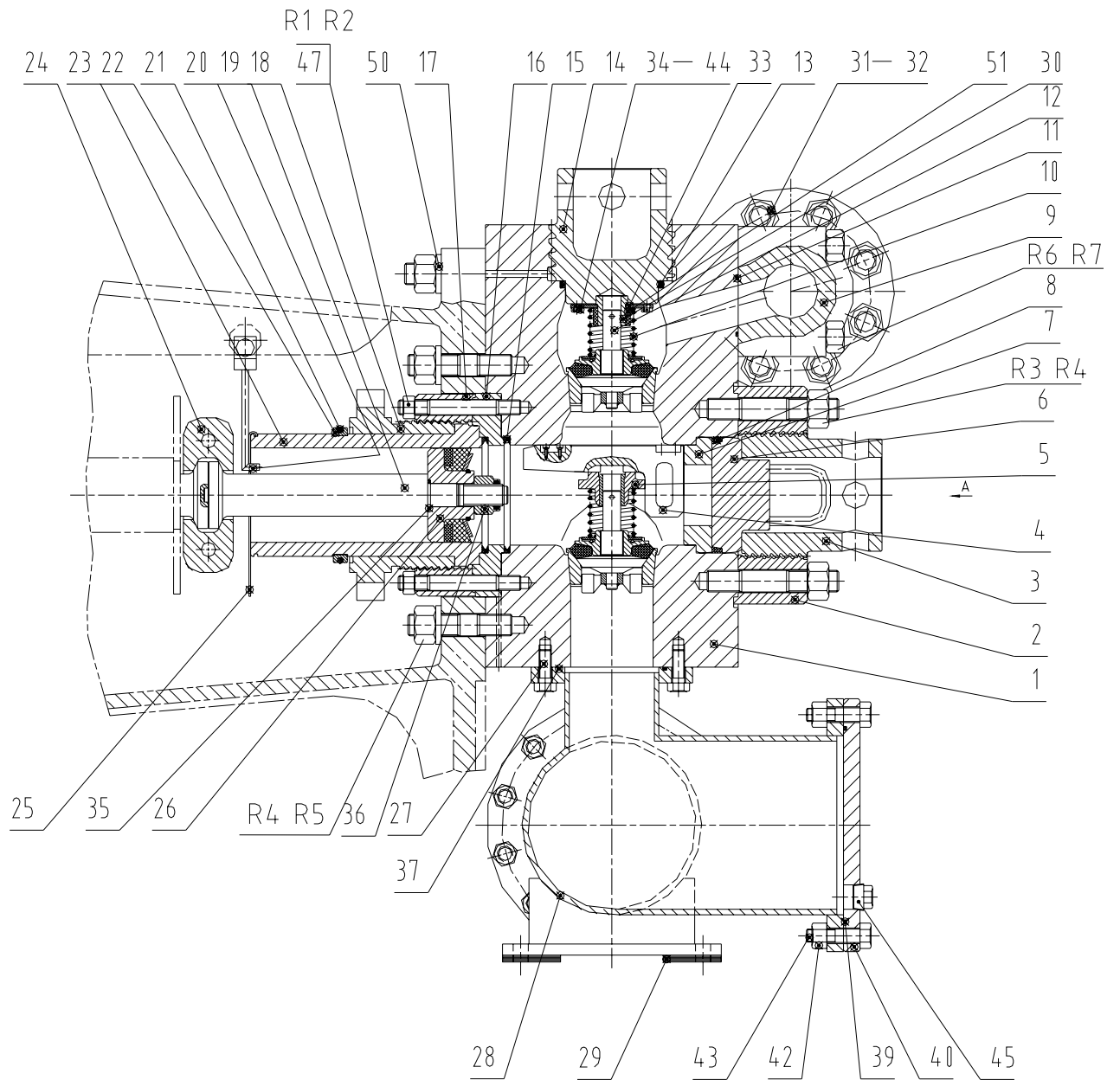
HHF—1300/1600 Crosshead Assembly

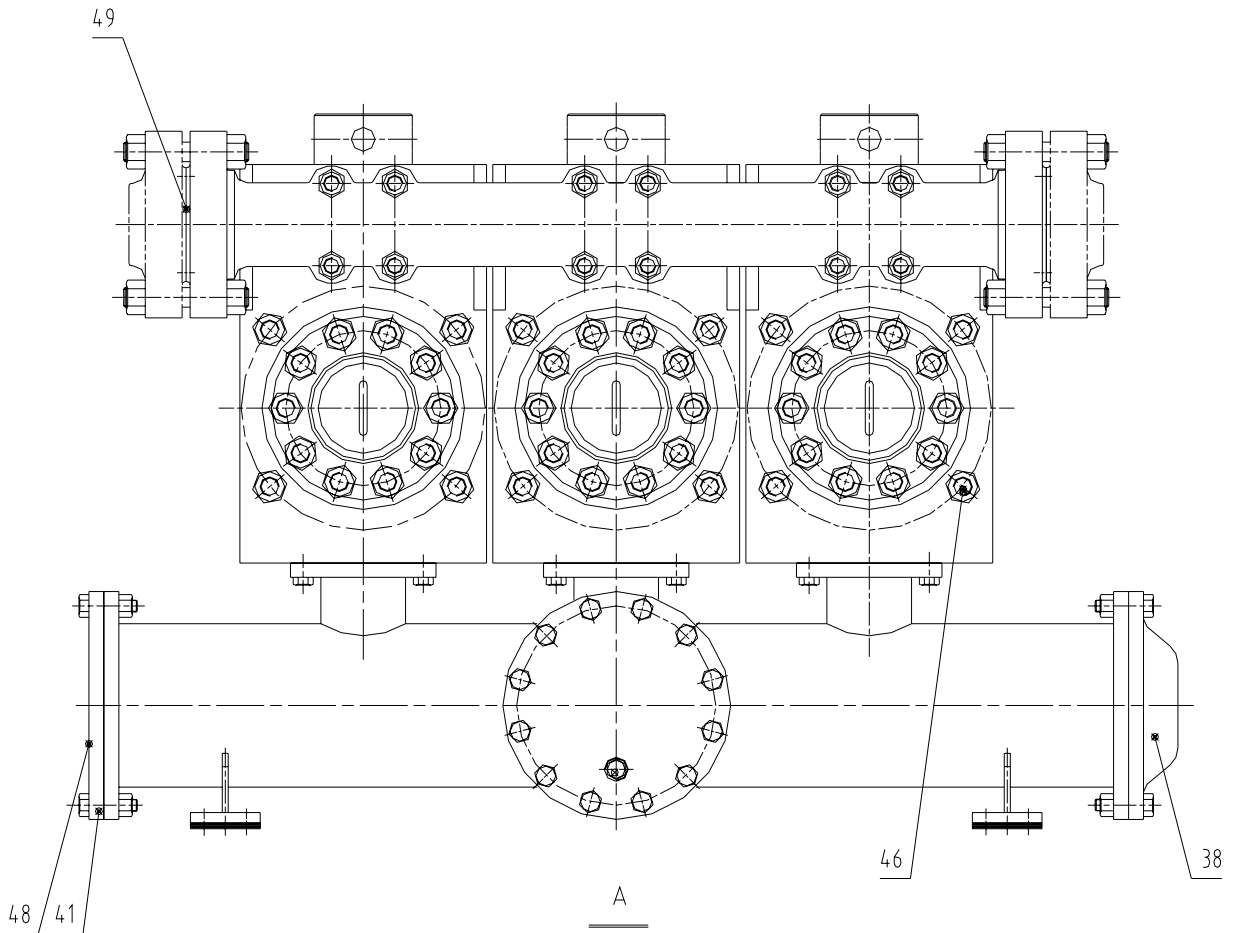




No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-0401	Crosshead	1
2	11-3161-0402	Slide, Upper	1
3	11-3161-0403-00	Shim	8
4	11-3161-0404	Shim	2
5	11-3161-0405	Stuffing Box	1
6	11-3161-0406	Oil Seal	1
7	B34521-190-355-69	O Ring, 190*3.55G	1
8	11-3161-0407	Oil Seal, 5"*6.25"*0.625"	2
9	11-3161-0408	Gasket	1
10	11-3161-0409	End Cover	1
11	11-3161-0410	Locking Spring	1
12	11-3161-0411	Baffle	1
13	11-3161-0412	Crosshead extension rod	1
14	11-3161-0413	Crosshead Pin	1
15	B34521-125-700-69	O Ring, 125*7.0G	1
16	11-3161-0420	Screw, 3/4-10UNC-2A*65	8
17	11-3161-0414	Gasket	1
18	B34521-160-700-69	O Ring,160*7.0G	1
19	11-3161-0415	Slide, Lower	1
20	11-3161-0416	Crosshead Pin Cap	1
21	11-3161-0417	Crosshead Bearing, 254941QU	1
22	11-3161-0418	Pipe Joint, NPT3/8*50.8	2
23	11-3161-0421	Bolt, 1-8UNC-2A*60	2
24	11-3161-0422	Bolt, 1-8UNC-2A*70	14
25	11-3161-0419	Slide retainer plate	8
26	11-3161-0423	Bolt, 3/8-16UNC-2A×40	4
27	B0093-10-59	Spring Washer, 10	4
28	11-3161-0424	Steel Wire Φ1.6	As required
29	11-3161-0425	Lock-fife	25ml

HHF—1300/1600 Fluid End



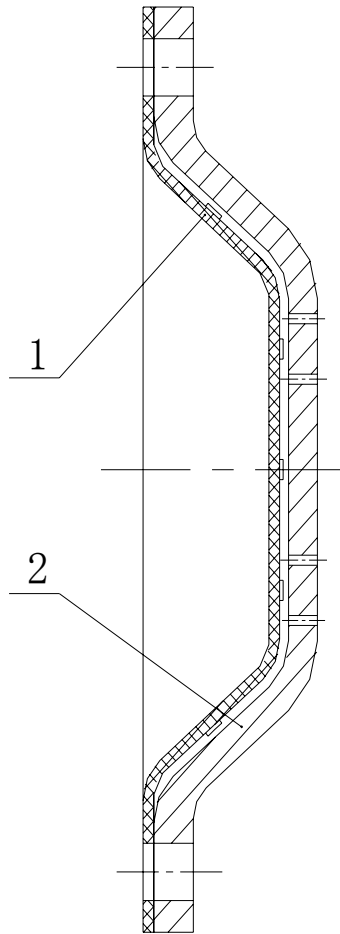


No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-0501-00	Cylinder assembly	3
2	11-3161-0502	Cylinder Cover, Threaded ring	3
3	11-3161-0503	Cylinder Cover, Threaded ring	3
4	11-3161-0504-00	Spacer assembly	3
5	11-3161-0505-00	Guide, valve lower	3
6	11-3161-0506-00	Plug, cylinder cover	3
7	11-3161-0507	Positioning panel	3
8	11-3161-0508	Seal ring, cylinder cover	3
9	11-3161-0509	Discharge manifold	1
10	11-3161-0510	Valve spring	6
11	B34521-095-530-69	O ring, 95*5.3 G	3
12	11-3161-0511-00	Valve assembly	6

13	11-3161-0512	Seal ring, valve cover	3
14	11-3161-0513	Valve cover	3
15	11-3161-0514	Seal ring, liner	6
16	11-3161-0515	Liner wear ring	3
17	11-3161-0516	Liner retainer ring	3
18	11-3161-0517-00	Liner retainer screw	3
19	11-3161-0518	Piston rod	3
20	11-3161-0519-00	Spraying pipe assembly	1
21	B34521-200-700-69	O ring, 200*7.0 G	3
22	11-3161-0520	Locking Ring, Liner Retainer screw	3
23	11-3161-0521-21	Bi-metal liner 5	3
	11-3161-0521-22	Bi-metal liner 5 1/2	
	11-3161-0521-23	Bi-metal liner 6	
	11-3161-0521-24	Bi-metal liner 6 1/4	
	11-3161-0521-25	Bi-metal liner 6 1/2	
	11-3161-0521-26	Bi-metal liner 6 3/4	
	11-3161-0521-11	Ordinary liner 5	
	11-3161-0521-12	Ordinary liner 5 1/2	
	11-3161-0521-13	Ordinary liner 6	
	11-3161-0521-14	Ordinary liner 6 1/4	
	11-3161-0521-15	Ordinary liner 6 1/2	
	11-3161-0521-16	Ordinary liner 6 3/4	
	11-3161-0521-17	Ordinary liner 7	3
24	11-3161-0522-00	Clamp assembly, piston rod	3
25	11-3161-0523	Splash Shield, liner	3
26	11-3161-0524-00	Piston	3
27	11-3161-0542	Bolt, 7/8-9UNC-2A*60	18
28	11-3161-0525-00	Suction manifold	1
29	11-3161-0526-00	Shim	4

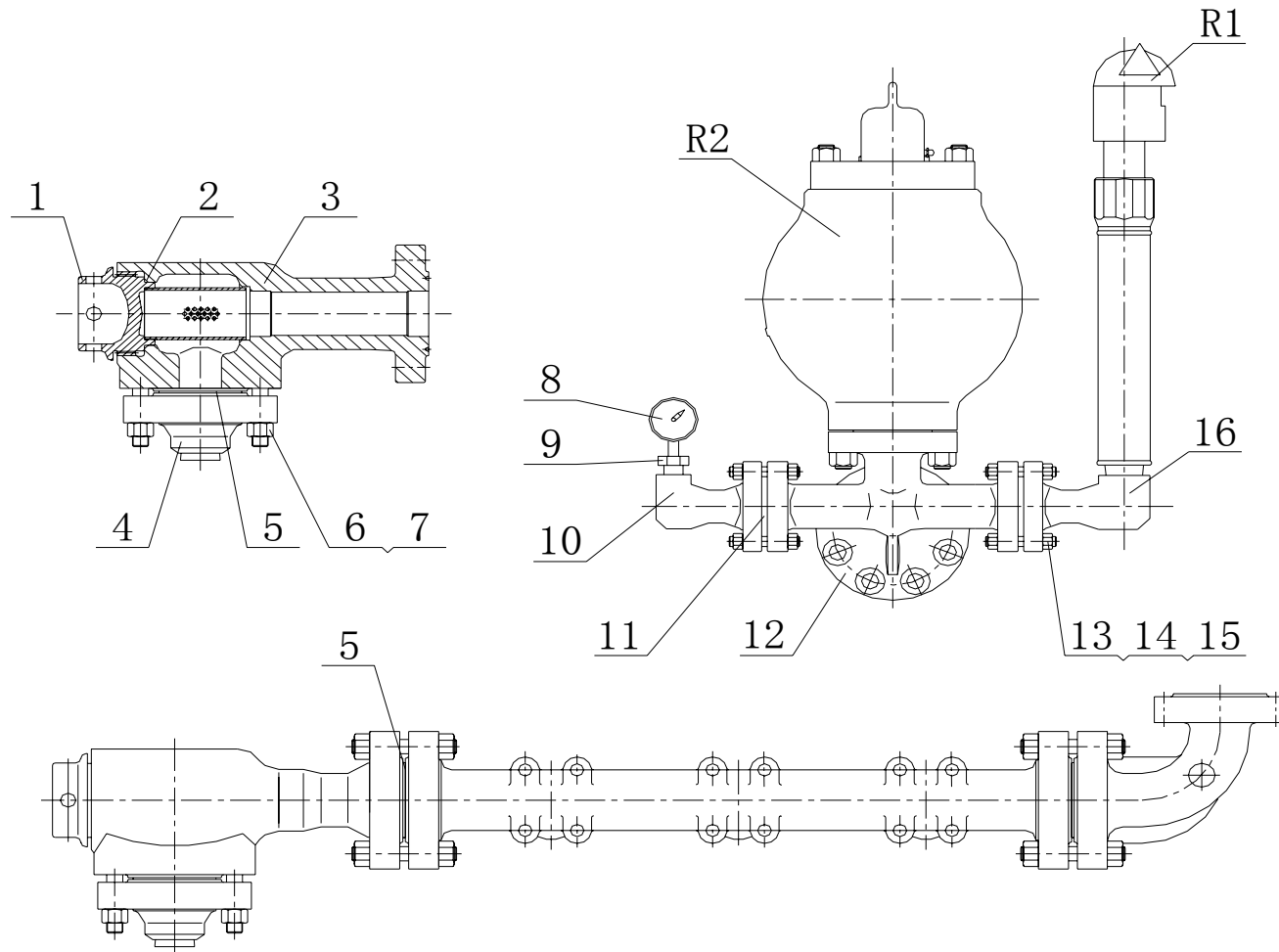
30	11-3161-0527	Guide, valve (upper)	3
31	11-3161-0528	Stud, 1 1/2-8UN-2A*265	16
32	11-3161-0501-06	Nut, 1 1/2-8UN-2B (SPL)	44
33	11-3161-0529	Baffle	3
34	11-3161-0530	Bolt, 3/8-16UNC-2A*20	12
35	11-3161-0531	Seal ring, piston	3
36	11-3161-0532-00	Nut, piston	3
37	B34521-190-700-69	O ring, 190*7.0 G	3
38	11-3161-0533-00	Suction damper	1
39	B34521-345-700-69	O ring, 345*7.0 G	3
40	11-3161-0534	Suction flange (I)	1
41	11-3161-0535	Suction flange (II)	1
42	11-3161-0543	Nut, 1 1/16-8UN-2B (SPL)	36
43	11-3161-0544	Bolt 1 1/16-8UN-2A*90	36
44	11-3161-0545	Steel wire, Φ 1.60 (L=1830)	1
45	11-3161-0536	Screw plug, NPT1 1/2	1
46	11-3161-0537	Bolt, 1 1/2	12
47	11-3161-0546	Sealant:	As required
48	11-3161-0538	Plug, suction let, 12"	1
49	11-3161-0539	Closure plate, discharge let, 5 1/8"	1
50	11-3161-0540	Washer, 39	30
51	11-3161-0541-00	Spring guide	3
R1	11-3161-0501-02	Stud, 1-8UNC (14UNS) -2A*185	36
R2	11-3161-0501-03	Nut, 1-8UNC-2B (SPL)	36
R3	11-3161-0501-04	Stud, 1 1/2-8UN (12UNF) -2A*170	30
R4	11-3161-0501-06	Nut, 1 1/2-8UN-2B (SPL)	60
R5	11-3161-0501-05	Stud, 1 1/2-8UN (12UNF) -2A*120	30
R6	11-3161-0501-07	Stud, 1 1/4-8UN (12UNF) -2A*195	12
R7	11-3161-0501-08	Nut, 1 1/4-8UN-2B (SPL)	12

HHF—1300/1600 Suction Damper



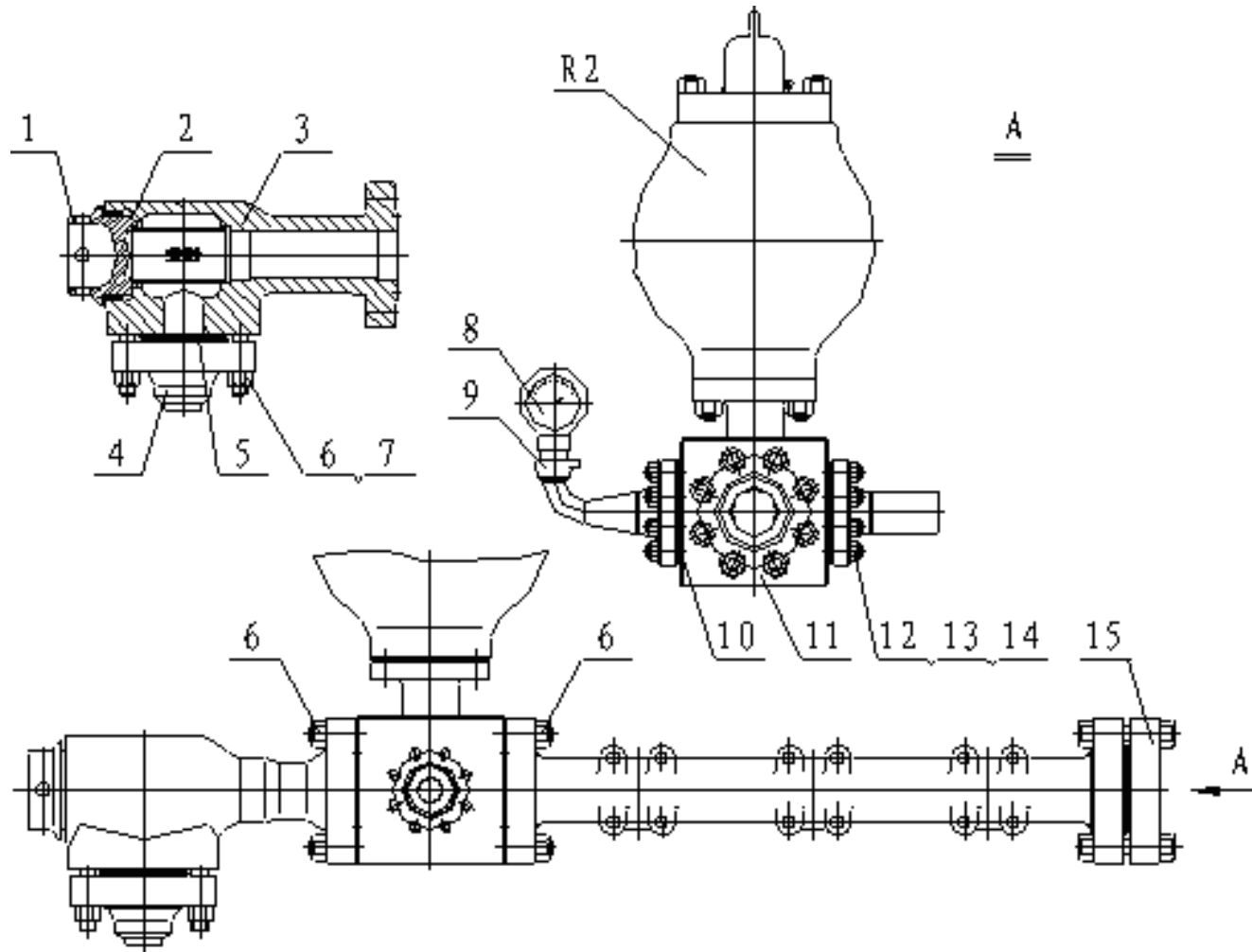
No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-0533-01	Diaphragm	1
2	11-3161-0533-02	End cover	1

HHF—1300/1600 Discharge Filter Screen and Assistant Pipe (1)



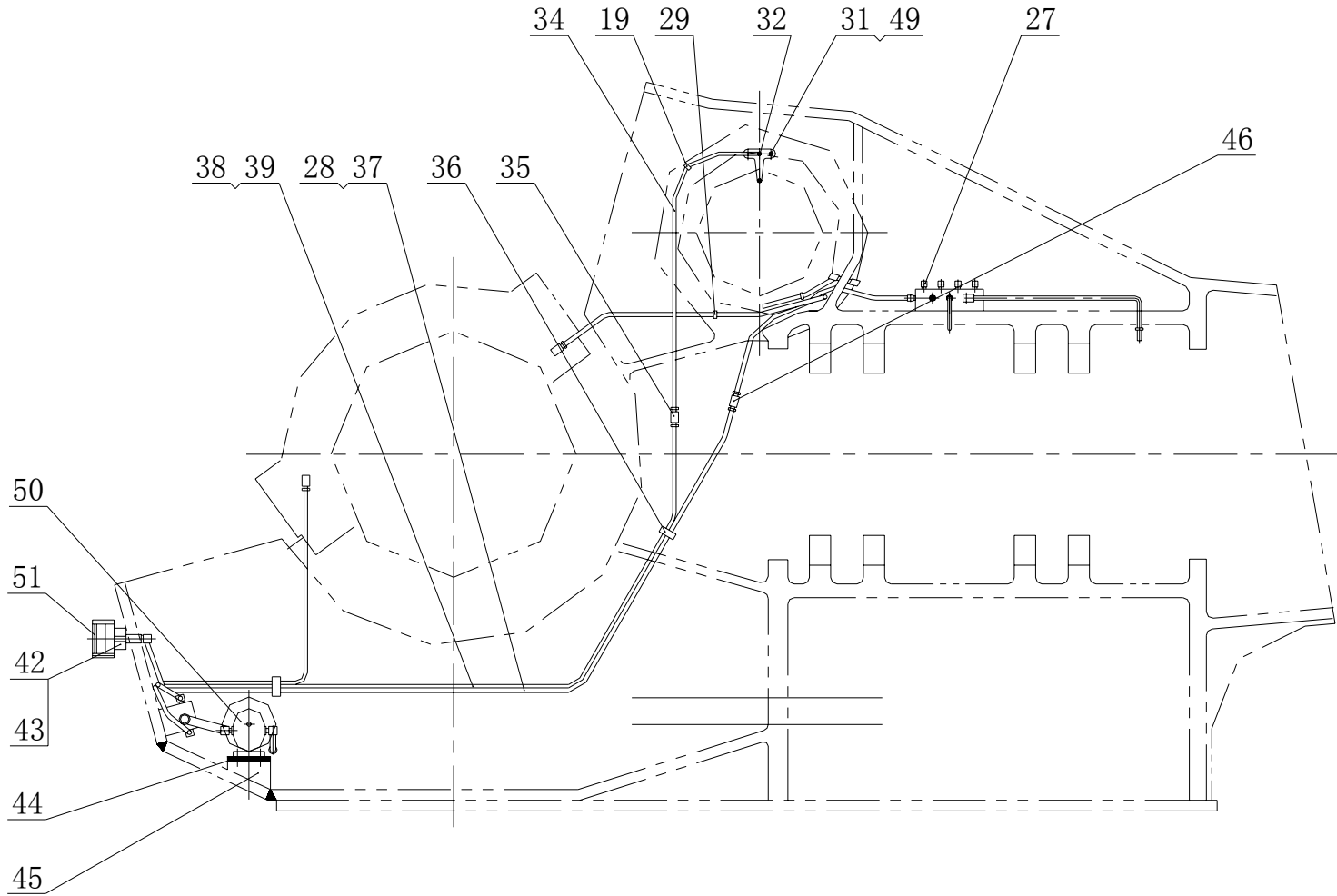
No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-2401-00	Filter screen assembly	1
2	B34521-165-700-69	O ring, 165*7.0G	1
3	11-3161-2402	Discharge Elbow	1
4	11-3161-25	Flange 5 1/8*35	1
5	11-3161-23	Gasket, R44	3
6	11-3161-2403	Stud Bolt, 1 1/2-8UN(12UNF)-2A*128	8
7	11-3161-2404	Nut, 1 1/2-8UN-2B (SPL)	8
8	11-3161-1510	Pressure gauge, 0~60MPa(0~8700PSi)	1
9	11-3161-2201-03	Bushing	1
10	11-3161-2201-00	Seat, pressure gauge	1
11	11-3161-2206	Gasket, R27	2
12	11-3161-2203-00	Discharging cross	1
13	11-3161-0546	Sealant	15ml
14	11-3161-2204	Stud Bolt, 1 1/16-8UN-2A*170	16
15	11-3161-2205	Nut, 1 1/16-8UN-2B (SPL)	32
16	11-3161-2202-00	Pipe, relief valve	1
R1	11-3161-2800	Relieve valve JA-3	1
R2	11-3161-2700	KB-75 damper	1

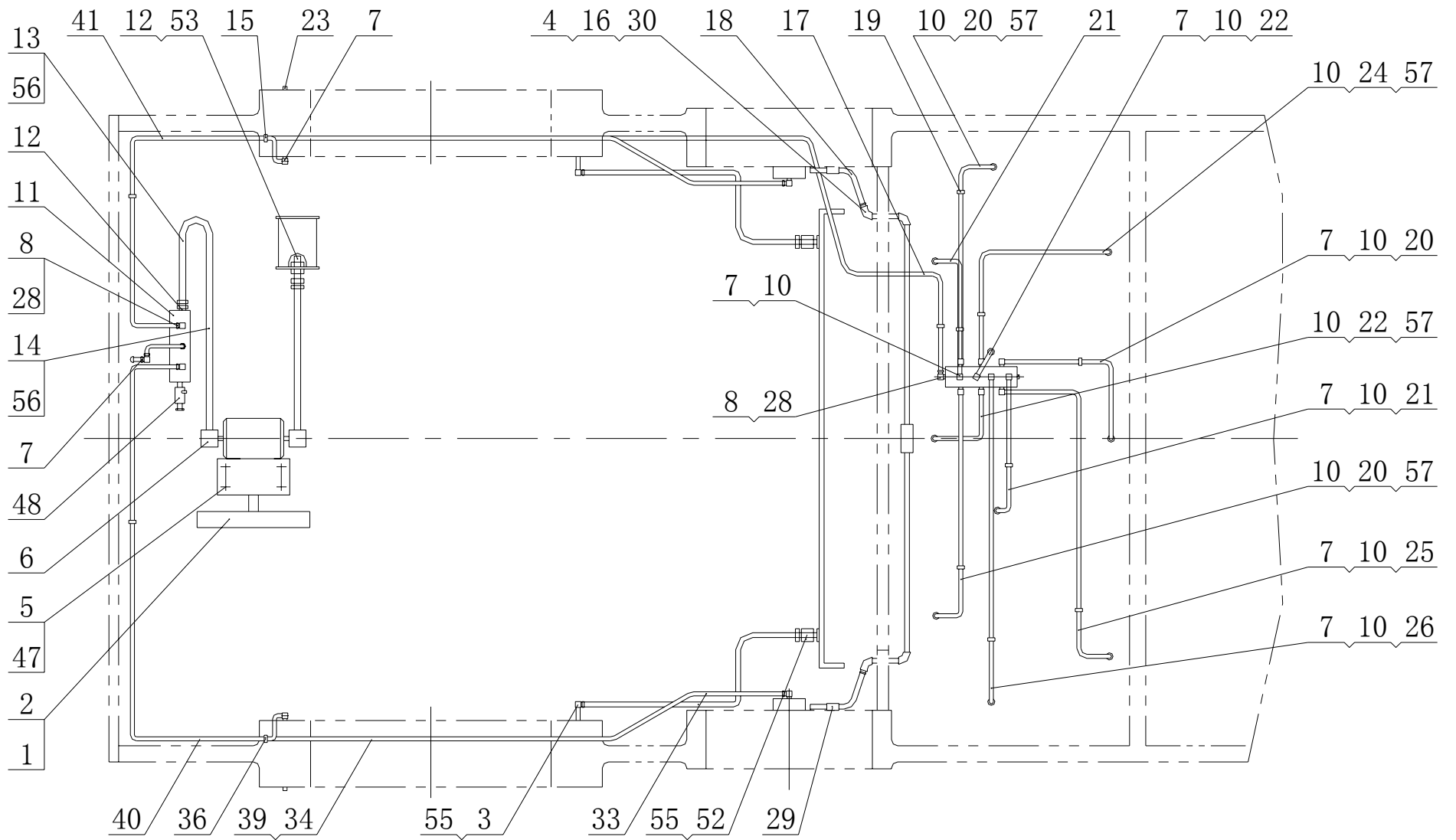
HHF—1300/1600 Discharge Filter Screen and Assistant Pipe (2)

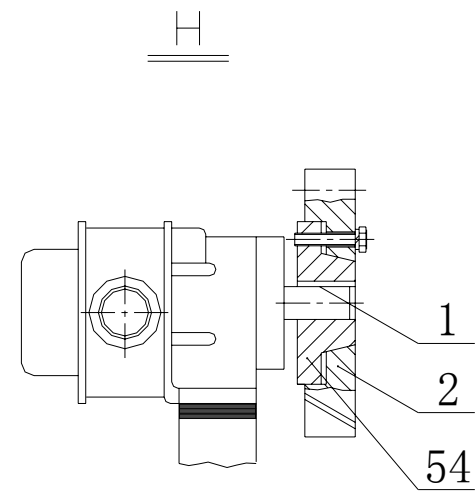
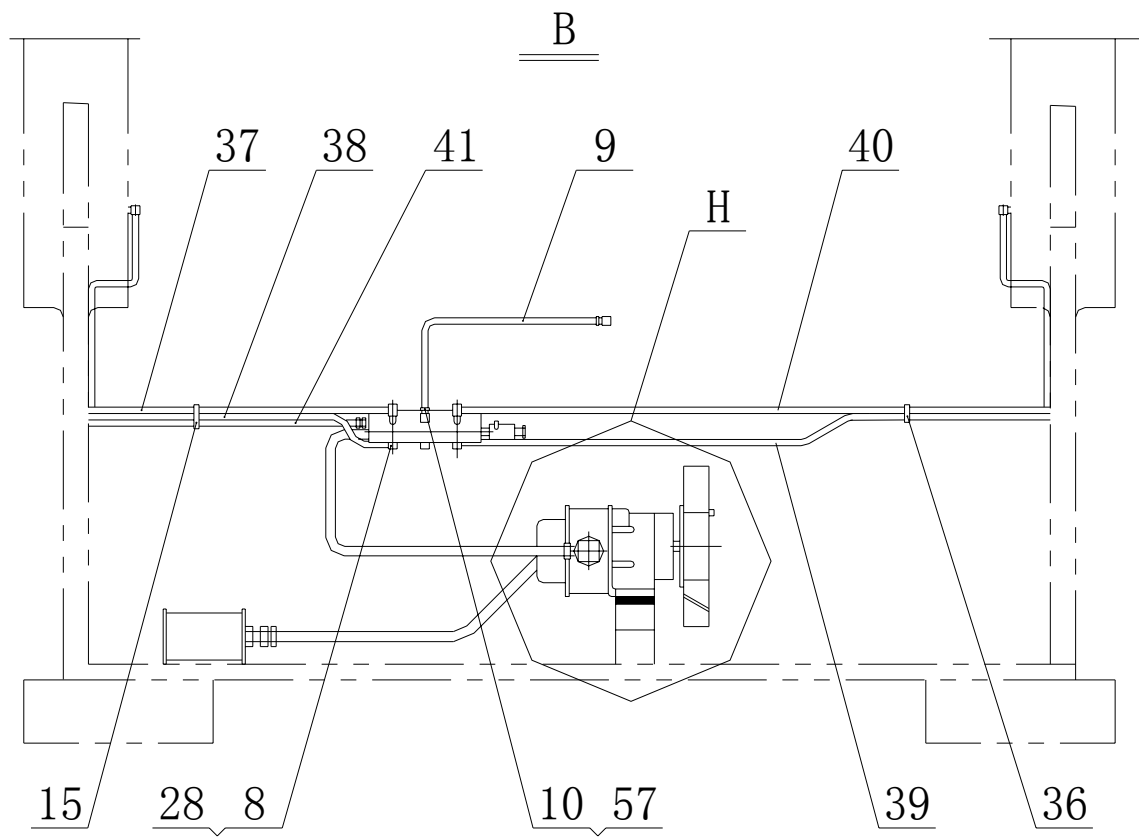


No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-2401-00	Filter screen assembly	1
2	B34521-165-700-69	O ring 165*7.0G	1
3	11-3161-2402	Discharge elbow	1
4	11-3161-25	Flange, 5 1/8*35	1
5	11-3161-23	Gasket R44	3
6	11-3161-2403	Stud Bolt, 1 1/2-8UN(12UNF)-2A*128	24
7	11-3161-2404	Nut, 1 1/2-8UN-2B (SPL)	8
8	11-3161-2501	Pressure gauge, union type, 0~6000PSi	1
9	11-3161-2202-1	Seat, pressure gauge	1
10	11-3161-2204-1	Gasket, R35	2
11	11-3161-2203-1	Discharge cross	1
12	11-3161-2502	Sealant	15ml
13	11-3161-2205-1	Stud Bolt, 1 1/8-8UN(12UNF)-2A*90	16
14	11-3161-2206-1	Nut, 1 1/8-8UN-2B (SPL)	16
15	11-3161-32-1	Flange, blind, 5 1/8*35	1
R2	11-3161-2700	KB-75 damper	1

HHF—1300/1600 Power End Lubricating Assembly



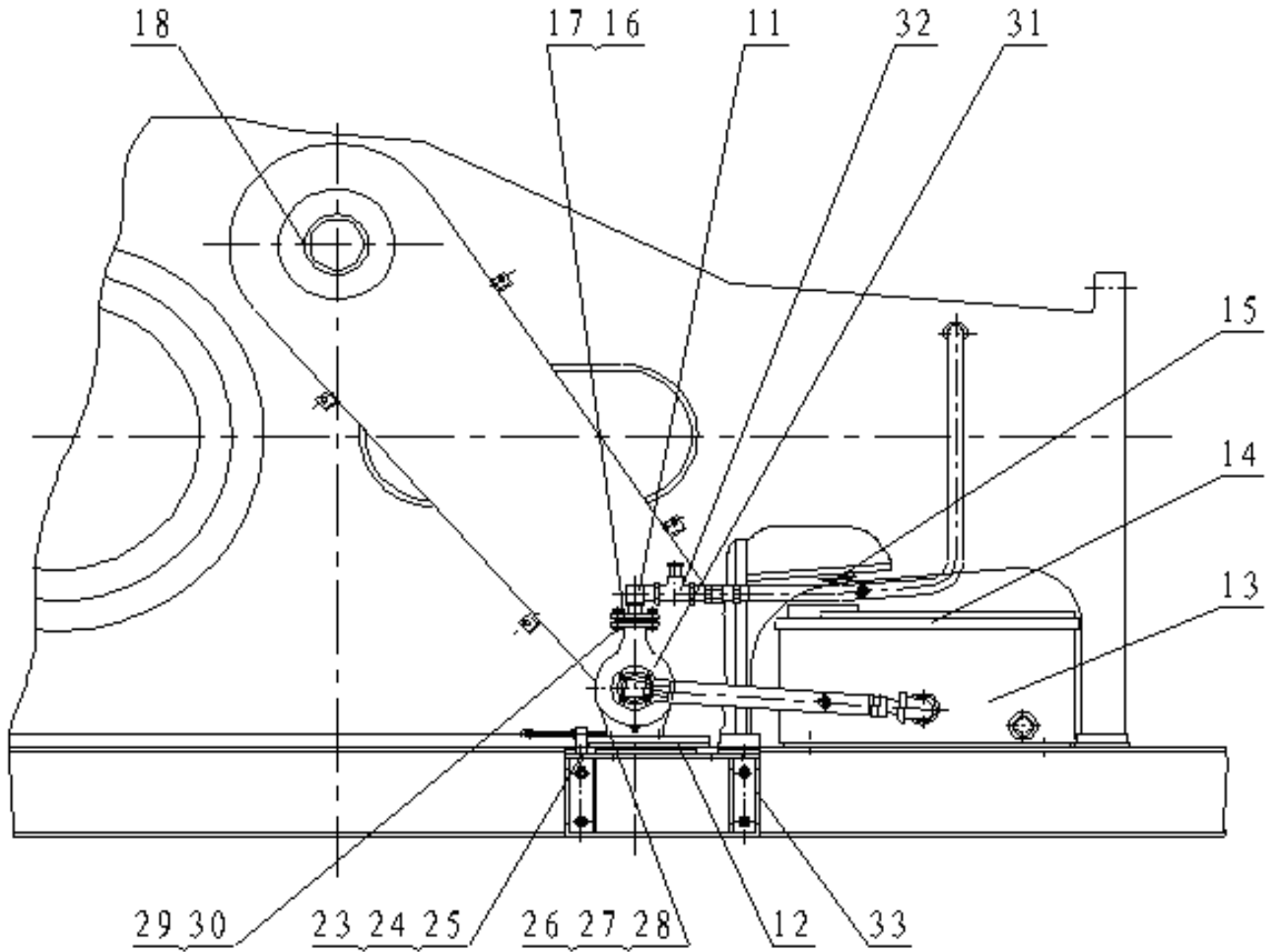


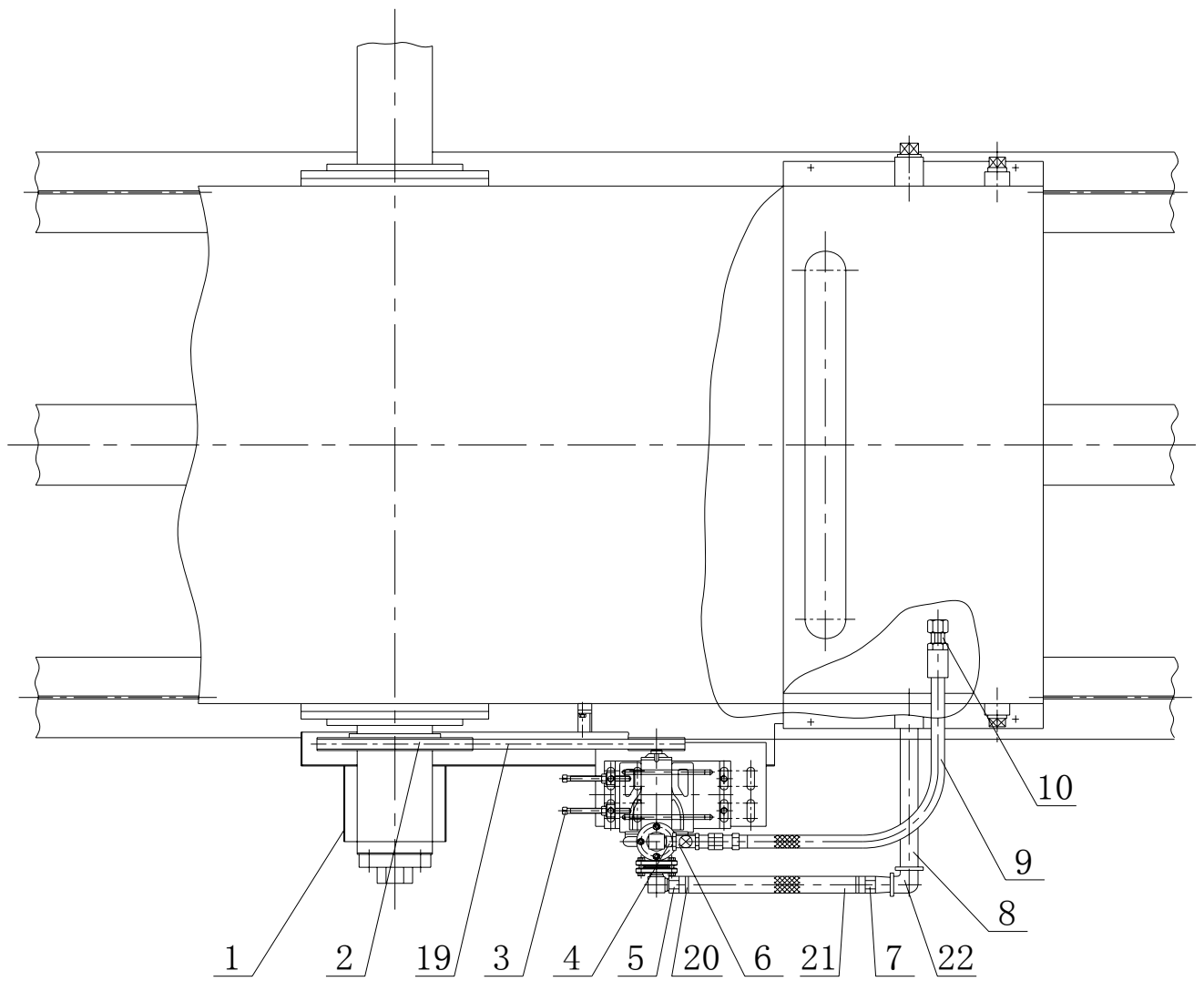


No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-0601	Key, 3/16*3/16*25.4	1
2	11-3161-0602-00	Gear oil pump	1
3	11-3161-0603	Pipe joint, 90° 11/16-16UN-2A-NPT1/4	2
4	11-3161-0604	Bolt, hollow	2
5	11-3161-0632	Screw, 5/16-18UNC-2A*40	4
6	11-3161-0605	Pipe joint, 90° 15/16-16UN-2A-NPT1/2	2
7	11-3161-0606	Pipe joint, 90° 1/2-20UNF-2A-NPT1/4	15
8	11-3161-0607	Pipe joint, 90° 5/8-16UN-2A-NPT1/4	2
9	B1527-08-00-0305	Pipe, copper Φ 8*305	1
10	11-3161-0608	Nut, 1/2-20UNF-2B	24
11	11-3161-0609	Seat (II)	1
12	11-3161-0610	Straight pipe 15/16-16UN-2A-NPT1/2	2
13	B1527-16-00-0686	Pipe, copper Φ 16*686	1
14	B1527-16-00-0331	Pipe, copper Φ 16*331	1
15	11-3161-0611-00	Pipe clamp (I)	2
16	11-3161-0612	Pipe joint, 45°	2
17	B1527-10-00-0838	Pipe, copper Φ 10*838	1
18	B1527-12-00-0305	Pipe, copper Φ 12*305	2
19	11-3161-0613-00	Pipe clamp Φ 8	10
20	B1527-08-00-0762	Pipe, copper Φ 8*762	3
21	B1527-08-00-0508	Pipe, copper Φ 8*508	2
22	B1527-08-00-0762	Pipe, copper Φ 8*229	2
23	11-3161-0614	Pipe plug, NPT 1/4	5
24	B1527-08-00-0915	Pipe, copper Φ 8*915	1
25	B1527-08-00-1194	Pipe, copper Φ 8*1194	1
26	B1527-08-00-1016	Pipe, copper Φ 8*1016	1
27	11-3161-0615	Seat (I)	1
28	11-3161-0616	Nut, 5/8-16UN-2B	4
29	11-3161-0617-00	Pipe clamp Φ 12	2

30	11-3161-0618	Gasket	2
31	11-3161-0633	Bolt, 1/4-20UNC-2A*20	4
32	11-3161-0619	Nozzle	2
33	B1527-12-00-0610	Pipe, copper Φ 12*610	2
34	B1527-08-00-0813	Pipe, copper Φ 8*813	2
35	11-3161-0620	Straight pipe 1/2-20UNF-2A	2
36	11-3161-0621-00	Double pipe clamp Φ 8	3
37	B1527-10-00-1956	Pipe, copper Φ 10*1956	1
38	B1527-08-00-1956	Pipe, copper Φ 8*1956	1
39	B1527-08-00-2311	Pipe, copper Φ 8*2311	1
40	B1527-08-00-1600	Pipe, copper Φ 8*1600	1
41	B1527-08-00-1245	Pipe, copper Φ 8*1245	1
42	11-3161-0622	Pipe joint NPT1/4-9/16-16UN-2B	1
43	11-3161-0623	Washer	1
44	11-3161-0624-00	Shim set	1
45	11-3161-0625-00	Seat	1
46	11-3161-0626	Straight joint 5/8-16UN-2A	1
47	B0093-08-59	Washer 8	4
48	11-3161-0634	Overflow valve	1
49	B0093-06-59	Washer 6	4
50	11-3161-0635	Gear oil pump, 2S	1
51	11-3161-0636	Pressure, gauge 0~1.6MPa(0~230PSi)	1
52	11-3161-0627	Straight joint, 11/16-16UN-2A-NPT3/8	2
53	11-3161-0628-00	Oil filter	1
54	11-3161-0637	Sealant	As required
55	11-3161-0629	Nut, 11/16-16UN-2B	4
56	11-3161-0630	Nut, 15/16-16UN-2B	4
57	11-3161-0631	Straight joint, 1/2-20UNF-2A-NPT1/4	5

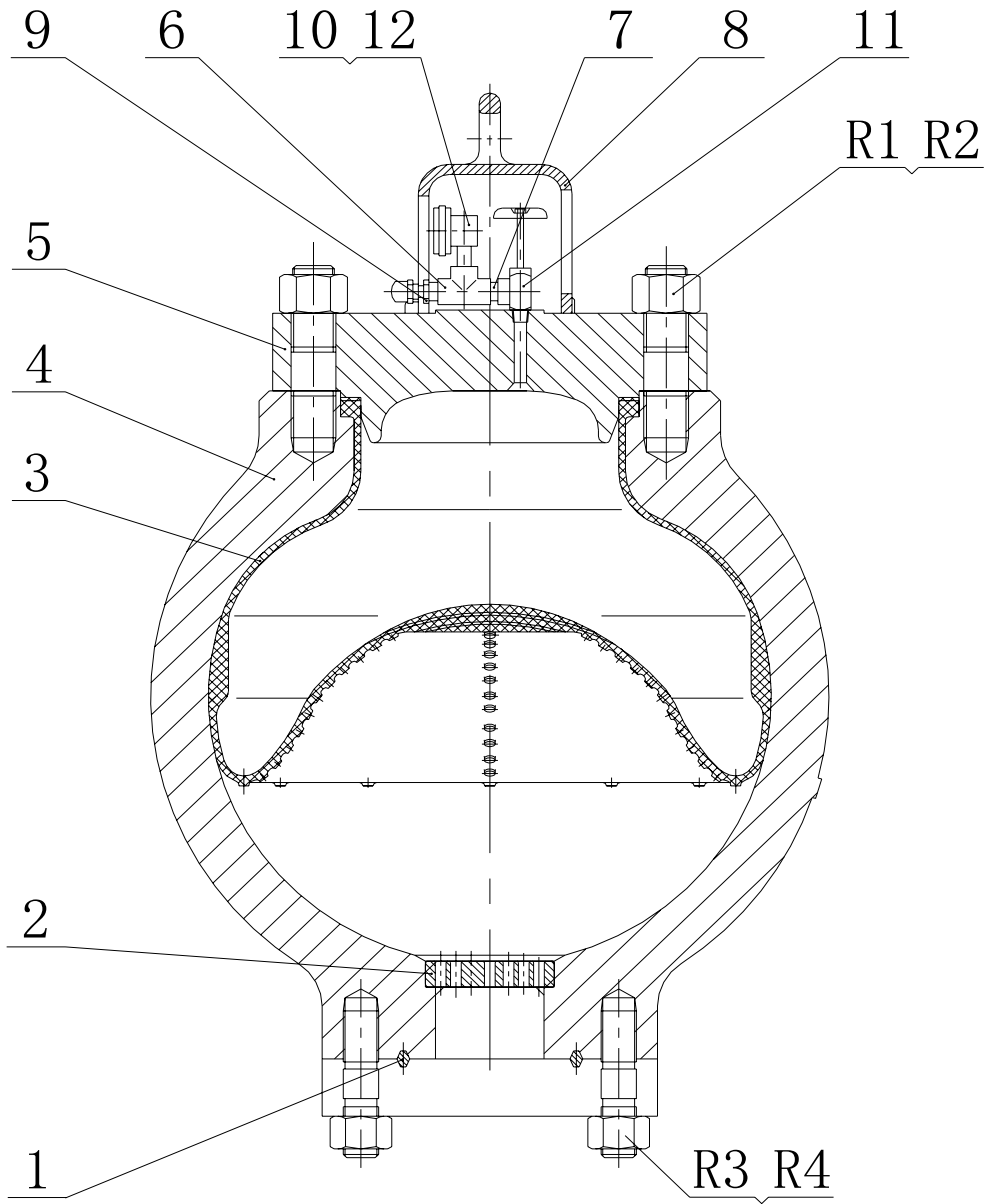
HHF—1300/1600 Liner Wash Pump Assembly





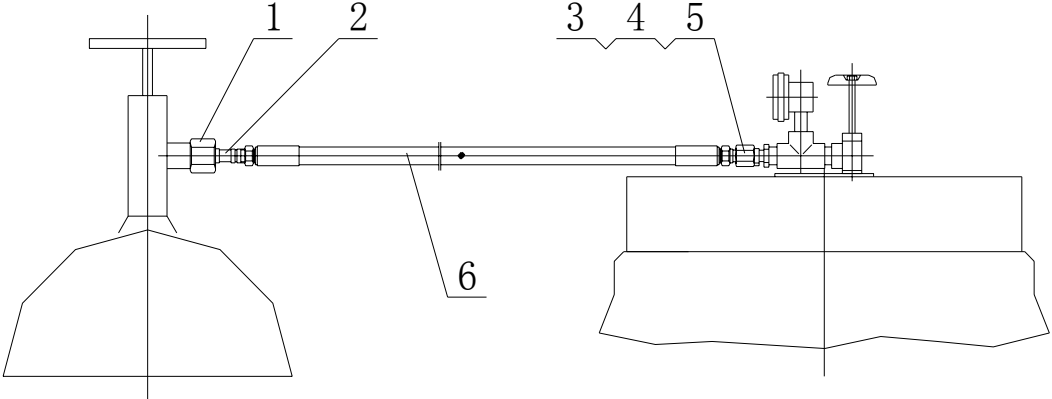
No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-0801-00-1	Guard	1
	11-3161-0801-00-2	Guard	1
2	11-3161-0802	Belt pulley	1
3	11-3161-0803-00	Seat assembly	1
4	11-3161-0804	Joint, short, NPT1-1-11 1/2NPSC	1
5	11-3161-0805	Joint, NPT1	1
6	11-3161-0806	Joint, 1-11 1/2NPSC -1 1/4-12UNF-2A	1
7	11-3161-0807	Joint, NPT2 1/2	1
8	11-3161-0808	Joint, short, NPT2 1/2	1
9	11-3161-0818	Hose, L=1500	1
10	11-3161-0809-00	Hose joint, $\Phi 22 \times \Phi 37$	2
11	11-3161-0810	Elbow, 90°, NPT1	2
12	11-3161-0811	Connecting board	2
13	11-3161-0812-00	Water case	1
14	11-3161-0813-00	Case cover	1
15	11-3161-0814	Pipe plug, NPT2 1/2	1
16	11-3161-0815	Shim	2
17	11-3161-0816	Flange, NPT1	2
18	11-3161-0819	Screw, 5/16-18UNC-2A*25	2
19	B1171-A3708	V belt, A3708	2
20	11-3161-0820	Pipe clamp, No:3	2
21	11-3161-0821	Hose, L=750	1
22	11-3161-0822	Elbow 90°, NPT2 1/2	1
23	11-3161-0823	Bolt, 5/8-11UNC-2A*50	4
24	B0848-16-32	Flat washer, 16	8
25	B0093-16-59	Spring washer, 16	4
26	11-3161-0824	Bolt 1/2-13UNC-2A*40	4
27	B0093-14-59	Spring washer, 14	12
28	B0096-14-59	Washer, 14	4
29	11-3161-0825	Bolt, 1/2-13UNC-2A*60	8
30	11-3161-0826	Nut, 1/2-13UNC-2B	8
31	11-3161-0827	Spraying pump	1
32	11-3161-0828	Ball valve, 1-11 1/2NPSC	1
33	11-3161-0817-00	Support	1

HHF-1300/1600 KB-75 Damper Assembly



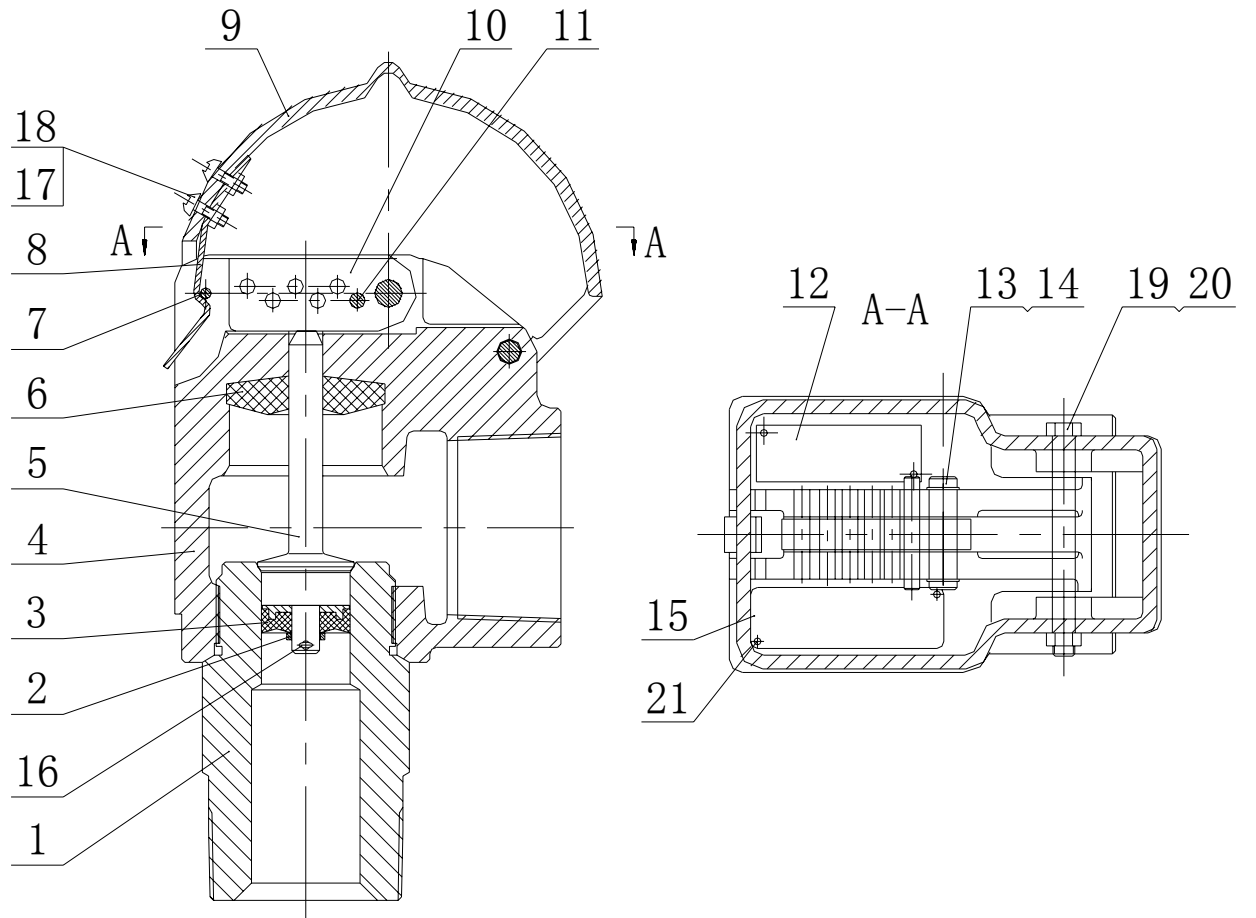
No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-2701	Ring gasket, R39	1
2	11-3161-2702	Plug	1
3	11-3161-2703-00	Diaphragm (bladder)	1
4	11-3161-2704-00	Dampener body	1
5	11-3161-2705	Cover	1
6	11-3161-2706	Tee, NPT1/4	1
7	11-3161-2707	Joint, NPT1/4	1
8	11-3161-2708-00	Guard, pressure gauge	1
9	11-3161-2709-00	Bleeder valve	1
10	11-3161-2710-01	Pressure, gauge, 0~25MPa(0~3630PSi)	1
11	11-3161-2710-02	Check valve	1
12	11-3161-2710	Washer	1
R1	11-3161-2704-02	Stud bolt, 1 1/2-8UN(12UNF)-2A*120	12
R2	11-3161-2704-03	Nut, 1 1/2-8UN-2B (SPL)	12
R3	11-3161-2704-04	Stud bolt, 1 1/4-8UN(12UNF)-2A*100	8
R4	11-3161-2704-05	Nut, 1 1/4-8UN-2B (SPL)	8

HHF-1300/1600 Charging Hose of Damper



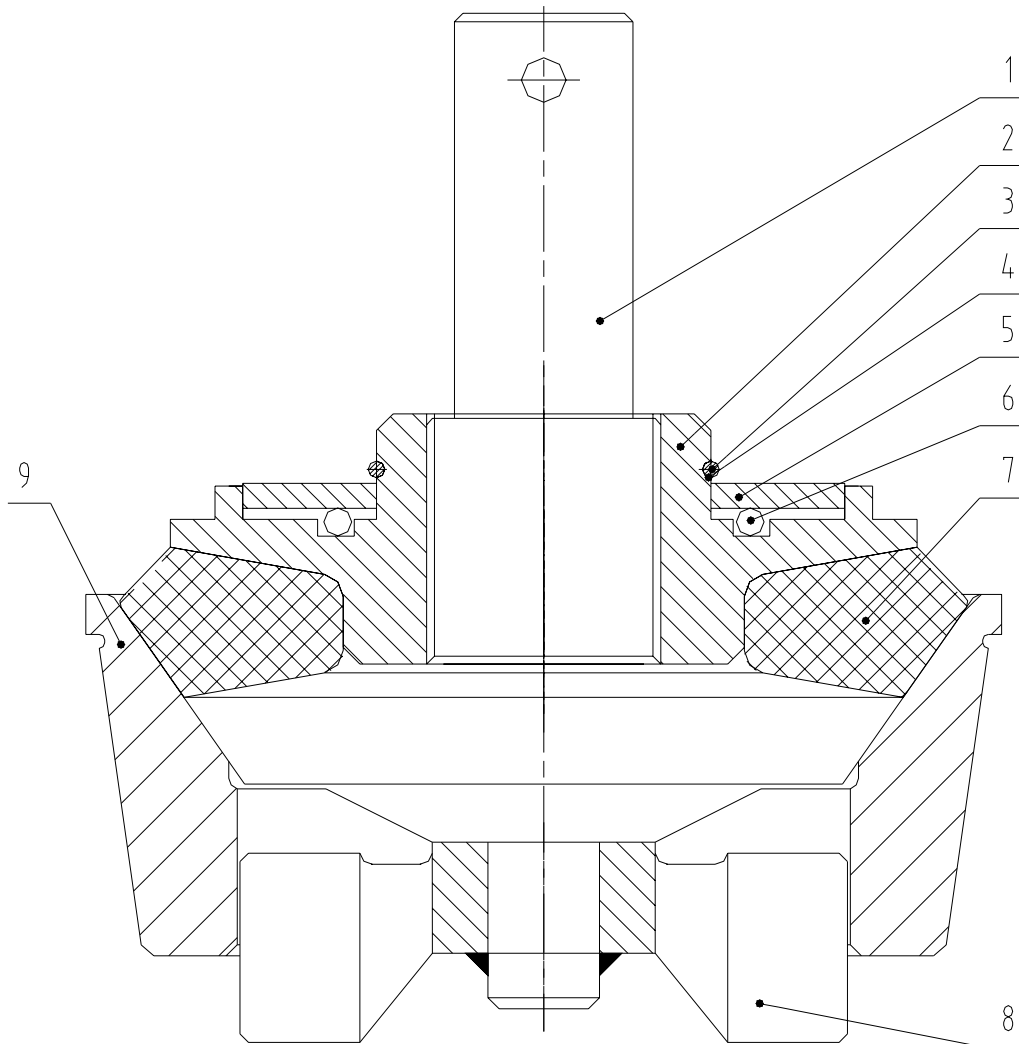
No.	P/N(HHF-1300/1600)	Description	Qty
	11-3161-2711-00	Charging hose of damper	
1	11-3161-2711-01	Nut, 3/4-16UNF-2B	1
2	11-3161-2711-02	Inlet adapter	1
3	11-3161-2711-03	Adapter fitting	1
4	11-3161-2711-04	Seal washer	1
5	11-3161-2711-05	Pipe collar	1
6	11-3161-2711-06	Rubber pipe, 6l-2500	1

HHF-1300/1600 JA—3 Relief Valve



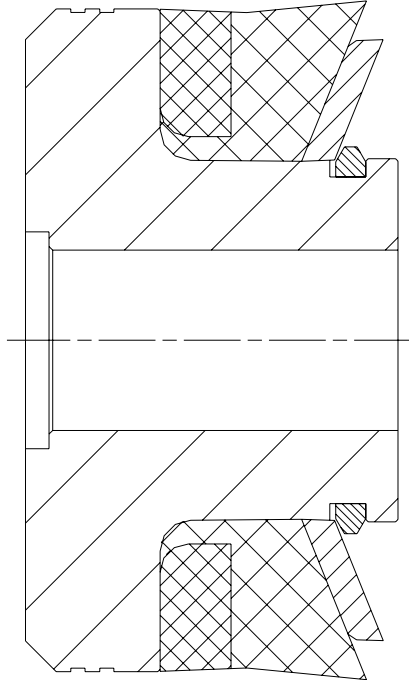
No.	P/N(HHF-1300/1600)	Description	Qty
1	11-3161-2801	Joint	1
2	11-3161-2802	Retainer ring	1
3	11-3161-2803-00	Piston assembly	1
4	11-3161-2804	Valve	1
5	11-3161-2805	Piston rod	1
6	11-3161-2806	Cushion	1
7	11-3161-2807	Elastic straight pin	1
8	11-3161-2808	Locking spring	1
9	11-3161-2809	Safety guard	1
10	11-3161-2810	Plate, shear pin	1
11	11-3161-2811	Shear pin	1
12	11-3161-2812	Warning plate	1
13	11-3161-2813	Pin	1
14	11-3161-2814	Retainer ring, steel wire	2
15	11-3161-2815	Nameplate	1
16	11-3161-2816	Pin, 4*26	1
17	11-3161-2817	Screw, 8 (0.164) -32UNC-2A*16	2
18	11-3161-2818	Nut, 8 (0.164) -32UNC-2B	2
19	11-3161-2819	Bolt, 3/8-16UNC-2A*105	1
20	11-3161-2820	Nut, 3/8-16UNC-2B (SPL)	1
21	11-3161-2821	Screw, 5 (0.125) -40UNC-2A*8	4

HHF-1300/1600 Valve Assembly



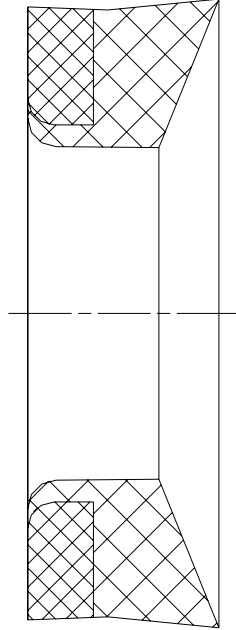
No.	Part No. (HHF-1300/1600)	Part Name	Qty.
1	11-3161-0511-01	Valve Body	1
2	11-3161-0511-02	Valve Nut	1
3	11-3161-0511-03	Circlip	1
4	262	Sealant: 262	1
5	11-3161-0511-04	Gland	1
6	B0308-005	Steel Ball: $\phi 5$	46
7	11-3161-0511-05	Valve Rubber	1
8	11-3161-0511-07	Valve Guide	1
9	11-3161-0511-06	Valve Cup	1
10	11-3161-0511-01-00	Valve Body Complete (Remark: this item includes the part from item1~8)	

HHF-1300/1600 Piston



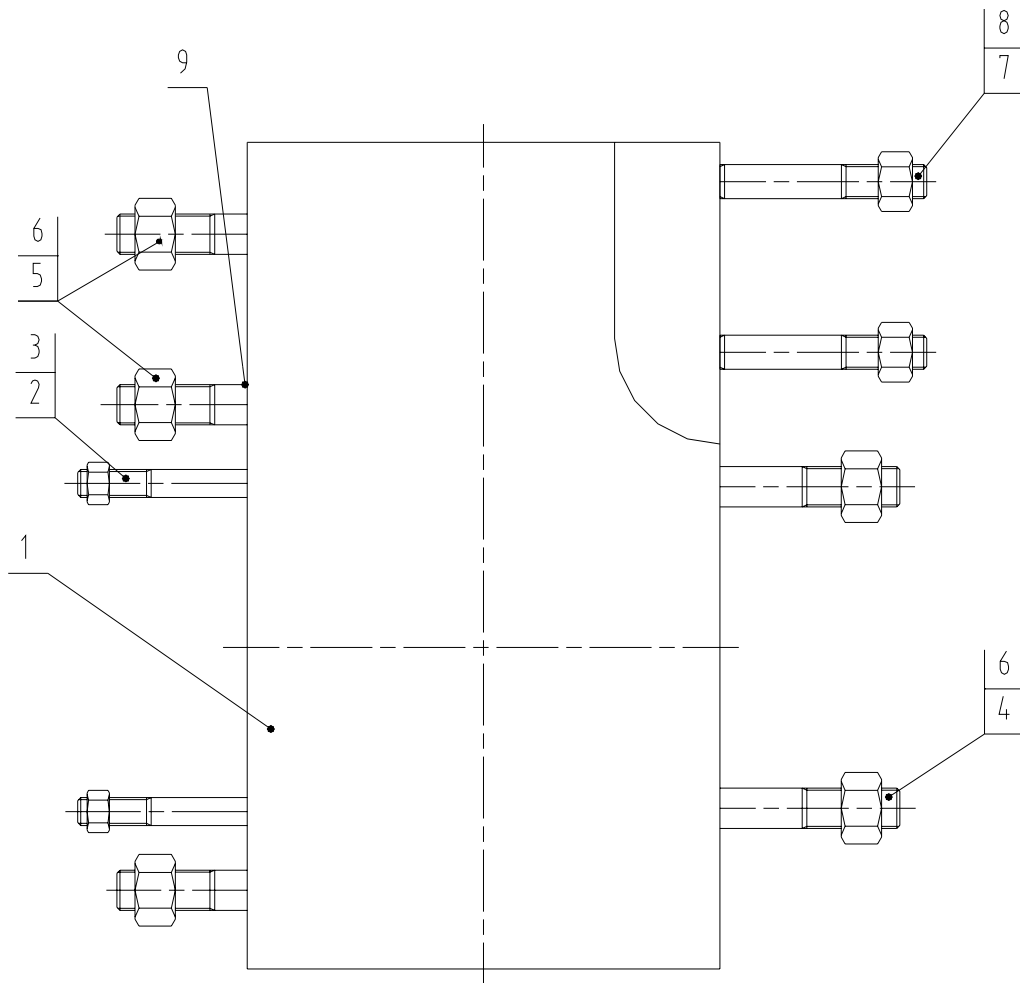
No.	Part No. (HHF-1300/1600)	Part Name	Qty.
1	11-3161-0524-0100	Piston: 5 1/2	1
2	11-3161-0524-0200	Piston: 6	1
3	11-3161-0524-0300	Piston: 6 1/4	1
4	11-3161-0524-0400	Piston 6 1/2	1
5	11-3161-0524-0500	Piston: 6 3/4	1
6	11-3161-0524-0600	Piston: 7	1

HHF-1300/1600 Piston Rubber



No.	Part No. (HHF-1300/1600)	Part Name	Qty.
1	11-3161-0524-0102-00	Rubber : 5 1/2	1
2	11-3161-0524-0202-00	Rubber : 6	1
3	11-3161-0524-0302-00	Rubber : 6 1/4	1
4	11-3161-0524-0402-00	Rubber 6 1/2	1
5	11-3161-0524-0502-00	Rubber : 6 3/4	1
6	11-3161-0524-0602-00	Rubber : 7	1

HHF-1300/1600 Cylinder (block) assembly



No.	Part No. (HHF-1300/1600)	Part Name	Qty.
1	11-3161-0501-01	Fluid end (not nickel plating)	1
2	11-3161-0501-02	Stud bolt: 1-8UNC (14UNS) -2A*185	12
3	11-3161-0501-03	Nut: 1-8UNC-2B (SPL)	12
4	11-3161-0501-04	Stud bolt: 1 1/2-8UN (12UNF) -2A*170	10
5	11-3161-0501-05	Stud bolt: 1 1/2-8UN (12UNF) -2A*120	10
6	11-3161-0501-06	Nut: 1 1/2-8UN-2B (SPL)	20
7	11-3161-0501-07	Stud bolt: 1 1/4-8UN (12UNF) -2A*195	4
8	11-3161-0501-08	Nut: 1 1/4-8UN-2B (SPL)	4
9	11-3161-0501-09	Anaerobic fluid sealant 277	1

Special Tools List For HHF—1300 / 1600 Mud Pump

No.	P/N(HHF-1300/1600)	Description	Qty
	11-3161-2600	Special tools	1
1	11-3161-2601-00	Stick, liner cover	1
2	11-3161-2602-00	Hosting tool for liner	1
3	11-3161-2603	Socket spanner, 2 3/8"	1
4	11-3161-2604	Socket spanner, 2"	1
5	11-3161-2605	Socket spanner, 3 5/8"	1
5	11-3161-2606	Socket spanner, 1 1/2"	1
7	11-3161-2607	Socket spanner, 1 5/8"	1
8	11-3161-2608	Extension rod, 19 5/8"	1
9	11-3161-2609	Extension rod, 8"	1
10	11-3161-2610	connector, 1"	1
11	11-3161-2611	Extension rod, 24"	1
12	11-3161-2611-01	Chain block, SH1/2	1
13	11-3161-2611-02	Manual oil pump, 0 ~ 63 MPa (0 ~ 9150psi)	1
14	11-3161-2612-00	Hydraulic puller	1
15	11-3161-2613	Intermediate taper sleeve	1
16	11-3161-2614	Pressing sleeve	1
17	11-3161-2615-00	Socket spanner, long	1
18	11-3161-2616	Bolt, 1-8UNC-2A×160	1
19	11-3161-2611-03	Allen wrench, 5/8"	1
20	11-3161-2617-00	Insert plate puller	1
21	11-3161-2618	Socket spanner, 1 11/16"	1
22	11-3161-2711-00	Charging hose of dampener	1

Interchangeable parts between HHF-1300 and FB-1300 mud pump

No	P/N ---HHF-1300	Name/Desc.	Drawing Code.	P/N ---FB-1300	Qty	Note
		HHF-1300 Crankshaft assembly	GH3131-02.00			
1	11-3131-0206	Connecting rod	GH3131-02.06	6317-0026-00	3	
2	11-3131-0221-1	Bearing , eccentric strap 928/660.4QU	GH3131-02.21	7602-0212-69	3	
3	11-3131-0222-1	Main bearing, 3G4053160H	GH3131-02.22	7602-0201-38	2	
4	11-3161-0208-00	Crankshaft, hollow	GH3161-02.08.00	6316-0021-00	1	
Note: The gear pairs of HHF-1300/1600 and FB-1300/1600 mud pump are interchangeable by pair						

Interchangeable parts between HHF-1600 and FB-1600 mud pump

No	P/N---HHF-1600	Name/Desc.	Drawing Code	P/N---FB-1600	Qty	Note
		HHF-1600 Crankshaft Assembly	GH3161-02.00			
1	11-3161-0206	Connecting rod	GH3161-02.06	6316-0023-00	3	
2	11-3161-0208-00	Crankshaft, hollow	GH3161-02.08.00	6316-0021-00	1	
3	11-3161-0221-2	Bearing, eccentric strap 929/660.4QU	GH3161-02.21	7602-0212-68	3	
4	11-3161-0222-2	Main bearing, 3G3003760HY	GH3161-02.22	7602-0201-37	2	

Interchangeable part list between HHF-1300/1600 and FB-1300/1600 mud pump

No	P/N---HHF-1300/1600	Name/Desc.	Drawing Code	P/N---FB-1300/1600	Qty	Note
		Crosshead Assembly	GH3161-04.00			
1	11-3161-0401	crosshead	GH3161-04.01	6316-0022-00	3	
2	11-3161-0402	Slide(guide), upper	GH3161-04.02	6316-0687-00	3	
3	11-3161-0405	Stuffing box	GH3161-04.05	6397-0544-00	3	
4	B34521-190-355-69	O-ring190x3.55G	GB/T3452.1-1992	7601-1610-22	3	
5	11-3161-0407	Oil seal, double-lip, 5"x6.25"x0.625"	GH3161-04.07	7602-2132-76	6	
6	11-3161-0410	Locking spring	GH3161-04.10	6397-0546-00	3	
7	11-3161-0411	Baffle	GH3161-04.11	6317-0093-00	3	
8	11-3161-0412	Crosshead extension rod	GH3161-04.12	6316-0028-00	3	
9	11-3161-0413	Pin, crosshead	GH3161-04.13	6316-0087-00	3	
10	B34521-160-700-69	O-ring, 160x7.0G	GB/T3452.1-1992	7602-1600-39	3	
11	11-3161-0415	Slide (guide), lower	GH3161-04.15	6316-0688-00	3	
12	11-3161-0417	Crosshead bearing, 254941QU	GH3161-04.17	6301-0038-00	3	
		Pinion shaft assembly				
1	11-3161-0312	Bearing, 4G32844H	GH3161-03.12	7602-0212-67	2	

		Fluid end assembly	GH3161-05.00			
1	11-3161-0501-00	Cylinder (block) assembly	GH3161-05.01.00	6316-0357-00	3	
2	11-3161-0501-01	Fluid end	GH3161-05.01.01	6316-0356-00	3	
3	11-3161-0502	Cylinder cover	GH3161-05.02	6316-0361-00	3	
4	11-3161-0503	Cylinder Cover, Threaded ring	GH3161-05.03	6316-0362-00	3	
5	11-3161-0508	Seal ring, cylinder cover	GH3161-05.08	6316-0369-00	3	
6	11-3161-0509	Discharge manifold	GH3161-05.09	6316-0043-00	1	
7	11-3161-0510	Valve spring	GH3161-05.10		3	
8	B34521-095-530-69	O-ring95x5.3G	GB/T3452.1-1992	7602-1600-25	3	
9	11-3161-0511-00	Valve assembly	GH3161-05.11.00		6	
10	11-3161-0512	Seal ring, valve cover	GH3161-05.12	6316-0092-00	3	
11	11-3161-0513	Valve cover	GH3161-05.13	6316-0039-00	3	
12	11-3161-0514	Seal ring, liner	GH3161-05.14	6316-0373-00	6	
13	11-3161-0515	Liner wear ring	GH3161-05.15	6316-0365-00	3	
14	11-3161-0520	Locking Ring, Liner Retainer screw	GH3161-05.20	6316-0333-00	3	
15	11-3161-0521-21	Bi-metal liner 5	GH3161-05.21	6316-0368-00	3	
	11-3161-0521-22	Bi-metal liner 5 1/2				
	11-3161-0521-23	Bi-metal liner 6				
	11-3161-0521-24	Bi-metal liner 6 1/4				
	11-3161-0521-25	Bi-metal liner 6 1/2				
	11-3161-0521-26	Bi-metal liner 6 3/4				
16	11-3161-0517-00	Liner retainer screw	GH3161-05.17.00	6316-0367-00	3	
17	11-3161-0516	Liner retainer ring	GH3161-05.16	6316-0366-00	3	
18	11-3161-0518	Piston rod	GH3161-05.18	6316-0359-00	3	

19	B34521-200-700-69	O-ring200×7.0G	GB/T3452.1-1992	7602-1600-44	3	
20	11-3161-0522-00	Clamp assembly, piston rod	GH3161-05.22.00	6316-0107-11	3	
21	11-3161-0524-00	Piston	GH3161-05.24.00		3	
22	11-3161-0527	Guide, valve (upper)	GH3161-05.27	6397-0575-00	3	
23	11-3161-0531	Seal ring, piston	GH3161-05.31		3	
24	11-3161-0532-00	Nut, piston	GH3161-05.32.00	7601-0720-58	3	
25	B34521-190-700-69	O-ring, 190×7.0G	GB/T3452.1-1992	7602-1600-61	3	
26	B34521-345-700-69	O-ring, 345×7.0G	GB/T3452.1-1992	7602-1600-52	3	

Note: 1 The cylinder (block) (fluid end) of HHF-1300/1600 and FB-1300/1600 can be interchanged, but the start place of screw hole of 12×1-14UNS-2B is different (place for wear ring connection).

2 The clamp assembly of piston rod of FB-1300/1600mud pump can be used for HHF-1300/1600mud pump, contrarily, The clamp assembly of piston rod of HHF-1300/1600 mud pump can not be used for FB-1300/1600mud pump. (because the clamp assembly of HHF-1300/1600 has no thread to connect spray line