



OPERATOR'S MANUAL

Metal Working



VARIABLE SPEED RADIAL DRILL MODEL: RD-1600H-VS

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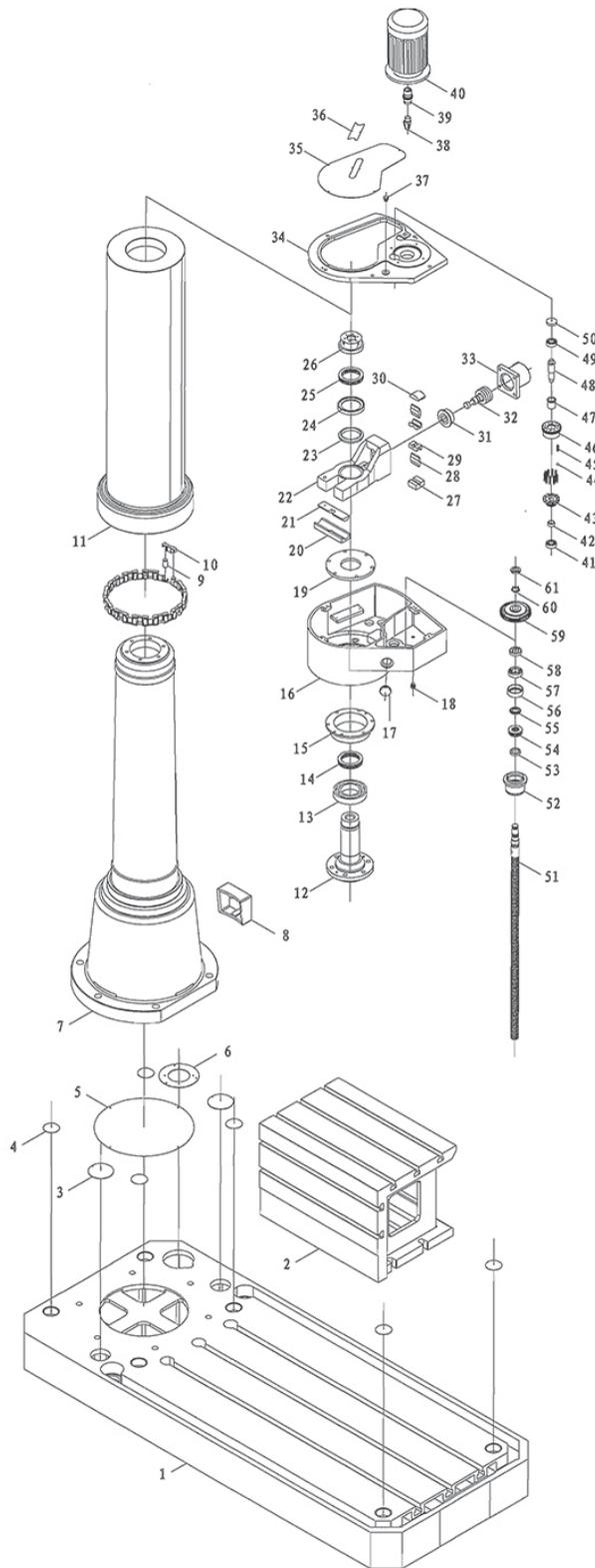


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BASE MACHINE PARTS DIAGRAM A





Base Machine Parts List A

Item	Description	Item	Description
1	Base	32	Piston
2	Worktable	33	Oil cylinder
3	Cover (2 Req.)	34	Cover
4	Cover (6 Req.)	35	Cover
5	Cover	36	Cover
6	Installation board	37	Oil plug
7	Inner column	38	Splash
8	Incoming packet	39	Gear
9	Rolling ball (24 Req.)	40	Motor
10	Shelf (24 Req.)	41	Bearing
11	Outer column	42	Washer
12	Trabeation	43	Clutch
13	Bearing	44	Steel ball (10 Req.)
14	Bearing	45	Spring (10 Req.)
15	Sleeve	46	Gear
16	End cap	47	Sleeve
17	Oil window	48	Shaft
18	Hexagon oil plug	49	Bearing
19	Spring	50	Plug
20	Cushion block	51	Leadscrew
21	Slider	52	Bearing seat
22	Lever	53	Washer
23	Washer	54	Bearing
24	Washer	55	Washer
25	Bearing	56	Bearing sleeve
26	Nut	57	Bearing
27	Pressing block	58	Nut
28	Lozenge block (2 Req.)	59	Gear
29	Pressing block (2 Req.)	60	Washer
30	Half-round block	61	Nut
31	Sleeve		

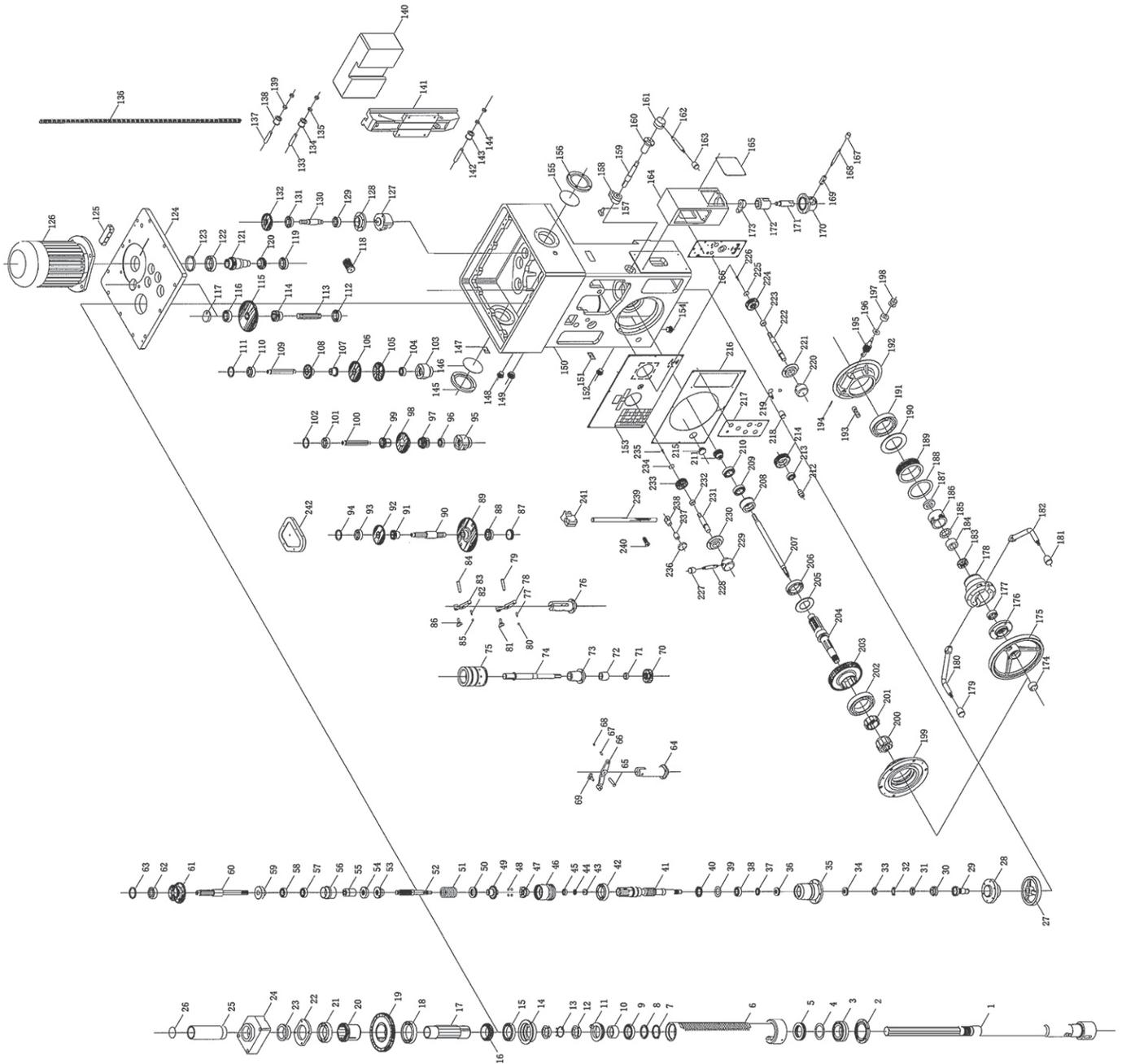


Radial Arm and Clamp Parts List B

Item	Description	Item	Description
1	Plug (2 Req.)	21	Pin
2	Hexagon bolt (4 Req.)	22	Nut
3	Washer (4 Req.)	23	Nut
4	Hexagon nut (4 Req.)	24	Steel ball (17 Req.)
5	Lever (4 Req.)	25	Cover
6	Pin (4 Req.)	26	Limited block
7	Clamping lever (2 Req.)	27	Sleeve
8	Oil cylinder	28	Lever
9	Piston	29	Sleeve
10	Sleeve	30	Washer
11	Block	31	Spring (2 Req.)
12	Lozenge block (2 Req.)	32	Screw bolt
13	Pressing block (2 Req.)	33	Plug
14	Oil cylinder shaft	34	Oil window
15	Pressing block	35	Cover
16	Installation board	36	Door of electric box
17	Cover	37	Radial
18	Cast iron ring (4 Req.)	38	Damping block (2 Req.)
19	Rubber ring (2 Req.)	39	Limited block (2 Req.)
20	Guideway block	40	Gear rack (3 Req.)



SPINDLE ASSEMBLY PARTS DIAGRAM C





Spindle Assembly Parts List C

Item	Description	Item	Description
1	Spindle	34	Bearing
2	Bearing cover	35	Bearing seat
3	Bearing	36	Bearing
4	Washer	37	Washer
5	Bearing	38	Bearing
6	Spindle sleeve	39	Washer
7	Bearing	40	Washer
8	Washer	41	Worm shaft
9	Bearing	42	Bearing
10	Sleeve	43	Bearing
11	Chain installation block	44	Washer
12	Nut (2 Req.)	45	Bearing
13	Washer	46	Sleeve
14	Bearing seat	47	Clutch (Downside)
15	Bearing	48	Steel ball (4 Req.)
16	Feed gear	49	Clutch (upside)
17	Spline quill	50	Bearing
18	Bearing	51	Spring
19	Gear	52	Shaft
20	Gear	53	Nut
21	Bearing	54	Nut
22	Bearing cover	55	Feed gear
23	Signal tray	56	Bearing seat
24	Cover	57	Bearing
25	Sleeve	58	Bearing
26	Cover	59	Sleeve
27	Handwheel	60	Spline shaft
28	Worm cover	61	Feed gear
29	Micro clutch	62	Bearing
30	Micro clutch	63	Washer
31	Nut	64	Fork shaft
32	Washer	65	Pin
33	Nut	66	Lever (C)



Spindle Assembly Parts List C (continued)

Item	Description	Item	Description
67	Ball shaft	100	Spline shaft
68	Rolling ball	101	Bearing
69	Pressing block (C)	102	Washer
70	Screw gear	103	Bearing seat
71	Sleeve	104	Bearing
72	Sleeve	105	Feed gear
73	Sleeve	106	Feed gear
74	Shaft	107	Feed gear
75	Cam	108	Feed gear
76	Pressing block shaft	109	Spline shaft
77	Ball shaft	110	Bearing
78	Lever (A)	111	Washer
79	Pin	112	Bearing
80	Rolling ball	113	Spline shaft
81	Pressing block (A, B)	114	Gear
82	Ball shaft	115	Gear
83	Lever (B)	116	Bearing
84	Pin	117	Cover
85	Rolling ball	118	Oil screen
86	Lever (A, B)	119	Bearing
87	Plug	120	Gear
88	Bearing	121	Shaft
89	Feed gear	122	Bearing
90	Spline shaft	123	Washer
91	Feed gear	124	Cover
92	Feed gear	125	Ported device
93	Bearing	126	Motor
94	Washer	127	Oil pump
95	Bearing seat	128	Oil pump seat
96	Bearing	129	Bearing
97	Feed gear	130	Spline shaft
98	Feed gear	131	Bearing
99	Feed gear	132	Gear



Spindle Assembly Parts List C (continued)

Item	Description	Item	Description
133	Pin	166	Switch cover
134	Roller	167	Hand lever sleeve
135	Washer (2 Req.)	168	Hand lever
136	Chain	169	Lever
137	Roller shaft	170	Washer
138	Roller	171	Shaft
139	Washer (2 Req.)	172	Sleeve
140	Matching block	173	Lever
141	Matching shelf	174	Locked nut
142	Shaft	175	Handwheel
143	Roller	176	Cap
144	Washer (2 Req.)	177	Bearing
145	Pressing ring	178	Support sleeve
146	Cover	179	Hand lever sleeve
147	Oiling brand	180	Hand lever
148	Hexagon oil plug	181	Hand lever sleeve
149	Oil windows	182	Hand lever
150	Spindle box	183	Locked nut
151	Oiling brand	184	Sleeve
152	Hexagon oil plug	185	Steel ball (11 Req.)
153	Cover	186	sleeve
154	Hexagon plug	187	Washer
155	Cover	188	Washer
156	Pressing ring	189	Worm wheel
157	Block	190	Washer
158	Fork	191	Bearing
159	Shaft	192	Dial
160	Sleeve	193	Shaft
161	Hand lever seat	194	Pin
162	Hand lever	195	Worm gear
163	Hand lever sleeve	196	Washer
164	Switch box	197	Support sleeve
165	Cover	198	Knob

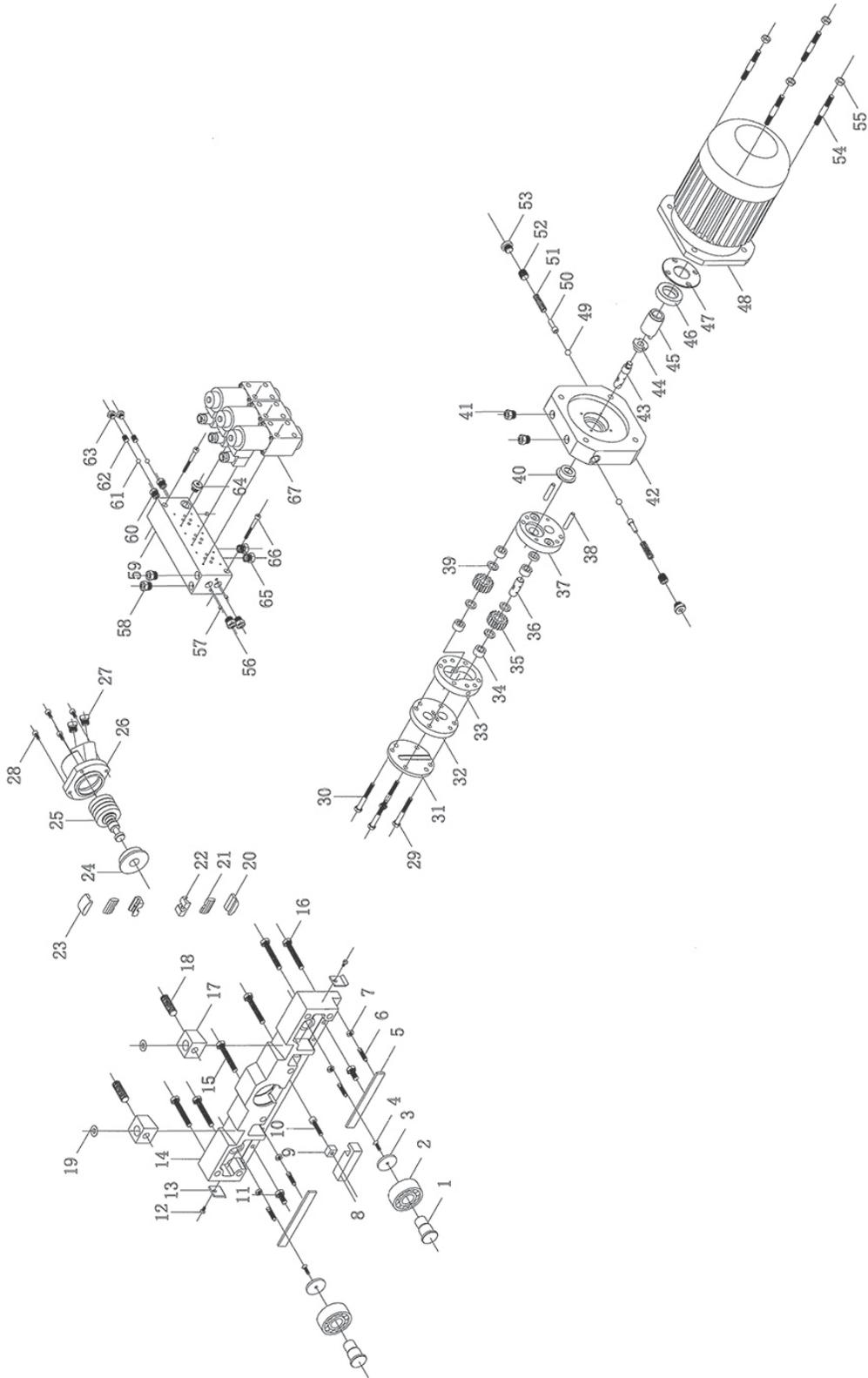


Spindle Assembly Parts Diagram C (continued)

Item	Description	Item	Description
199	Support sleeve	221	Indicator dial
200	Gear	222	Shaft
201	Gear	223	Washer for adjusting
202	Bearing	224	Gear
203	Worm wheel	225	Washer
204	Shaft	226	Hexagon screw
205	Washer	227	Hand lever sleeve
206	Bearing	228	Hand lever
207	Shaft	229	Hand lever seat
208	Sleeve	230	Indicator dial
209	Bearing	231	Hand lever shaft
210	Bearing	232	Washer for adjusting
211	Gear	233	Gear
212	Sleeve	234	Washer
213	Bearing	235	Hexagon screw
214	Gear	236	Positioning plate
215	Oil window	237	Positioning shaft
216	Cover	238	Positioning shaft
217	Switch cover	239	Rack
218	Hand lever sleeve	240	Nut sleeve
219	Hand lever	241	Fork
220	Hand lever	242	Cover



HYDRAULIC ASSEMBLY PARTS DIAGRAM D



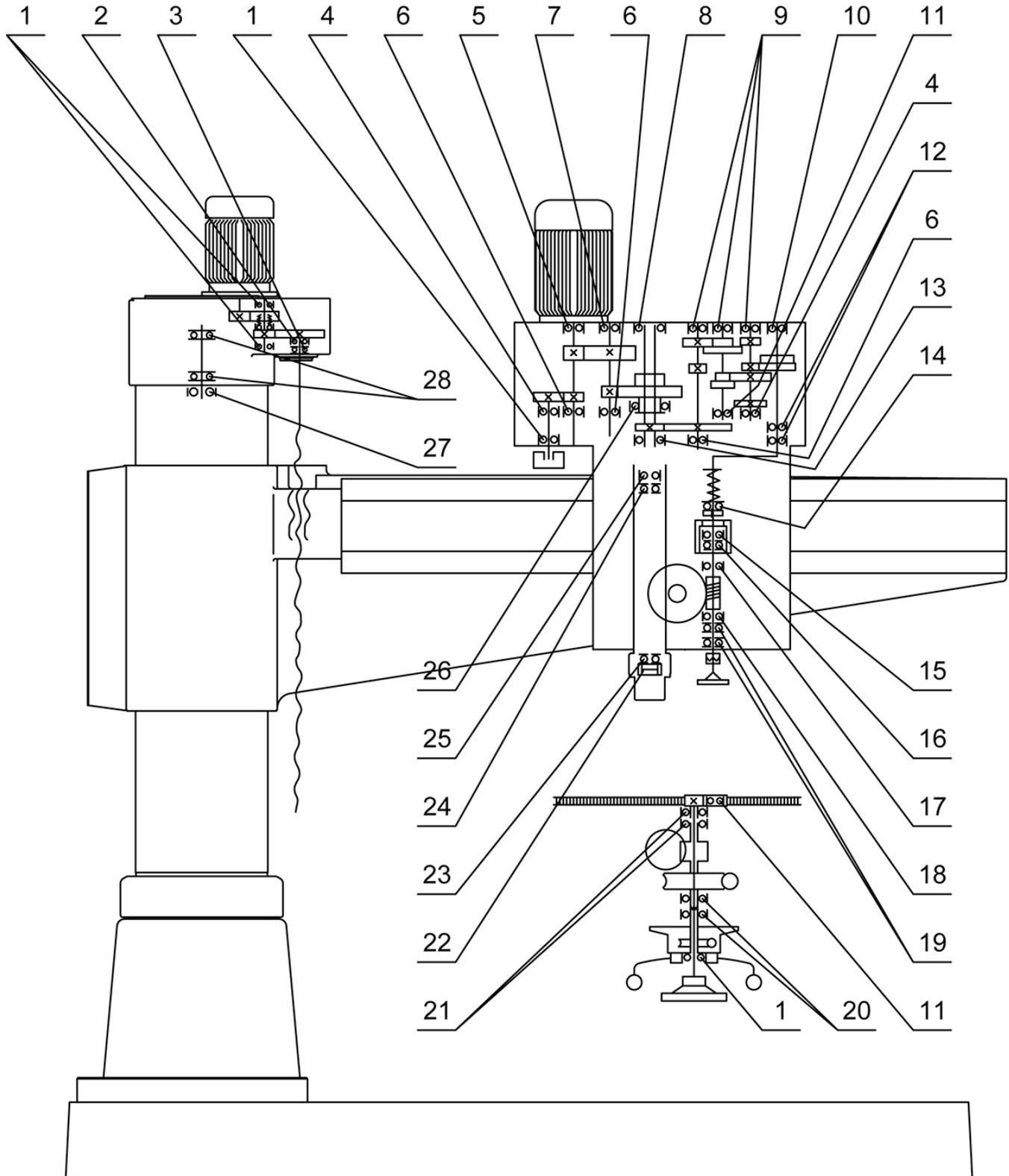


Hydraulic Assembly Parts List D

Item	Description	Item	Description
1	Support shaft (2 Req.)	35	Gear (2 Req.)
2	Bearing (2 Req.)	36	Shaft
3	Washer (2 Req.)	37	Oil pump device
4	Screw (2 Req.)	38	Pin
5	Washer (2 Req.)	39	Washer
6	Screw (4 Req.)	40	Sleeve
7	Hexagon nut (4 Req.)	41	Pipe joint
8	Pressing block	42	Oil pump seat
9	Tightening block	43	Shaft
10	Hexagon socket screw	44	Sleeve
11	Hexagon screw (2 Req.)	45	Sleeve
12	Screw (2 Req.)	46	Seal ring
13	Protecting board (2 Req.)	47	Cover
14	Braking shelf	48	Oil pump motor
15	Hexagon screw (2 Req.)	49	Steel ball (2 Req.)
16	Hexagon screw (4 Req.)	50	Shaft (2 Req.)
17	Adjusting wedge (2 Req.)	51	Spring (2 Req.)
18	Hexagon socket screw (2 Req.)	52	Hexagon socket screw (2 Req.)
19	Washer (2 Req.)	53	Hexagon plug
20	Pressing block	54	Double end screw
21	Lozenge block (2 Req.)	55	Hexagon nut
22	Block (2 Req.)	56	Pipe joint (2 Req.)
23	Block	57	Plug (3 Req.)
24	Sleeve	58	Pipe joint (2 Req.)
25	Piston	59	Connection plate
26	Clamp oil cylinder	60	Pipe joint (2 Req.)
27	Pipe joint	61	Steel ball (2 Req.)
28	Hexagon socket screw	62	Hexagon socket screw (2 Req.)
29	Hexagon screw (2 Req.)	63	Inner hexagonal plug (2 Req.)
30	Hexagon screw (2 Req.)	64	Inner hexagonal plug
31	Oil pump device	65	Pipe joint (2 Req.)
32	Oil pump device	66	Hexagon socket screw (2 Req.)
33	Oil pump device	67	Electromagnetic valve (3 Req.)
34	Bearing		



ROLLER BEARING PARTS DIAGRAM E





Roller Bearing Parts List E

Item	Description	Type	Item	Description	Type
1	Deep slot ball bearing (4 Req.)	6204	15	Deep slot ball bearing	6101
2	Deep slot ball bearing	6206	16	Thrust ball bearing	51101
3	Thrust ball bearing	51207	17	Deep slot ball bearing	6109
4	Deep slot ball bearing (2 Req.)	6204N	18	Deep slot ball bearing	6104
5	Deep slot ball bearing	6108	19	Thrust ball bearing (2 Req.)	51104
6	Deep slot ball bearing (3 Req.)	6205N	20	Deep slot ball bearing (2 Req.)	6116
7	Deep slot ball bearing	6205	21	Deep slot ball bearing (2 Req.)	6106
8	Deep slot ball bearing	6111	22	Double roller bearing	NN3011/ W33
9	Deep slot ball bearing (3 Req.)	6303	23	Thrust ball bearing	51111
10	Deep slot ball bearing	6304	24	Thrust ball bearing	51109
11	Deep slot ball bearing (2 Req.)	6203	25	Deep slot ball bearing	61909
12	Deep slot ball bearing (2 Req.)	6104	26	Deep slot ball bearing	61914
13	Deep slot ball bearing	61911	27	Deep slot ball bearing	6217
14	Thrust ball bearing	51106	28	Thrust ball bearing (2 Req.)	51117

NOTES



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