

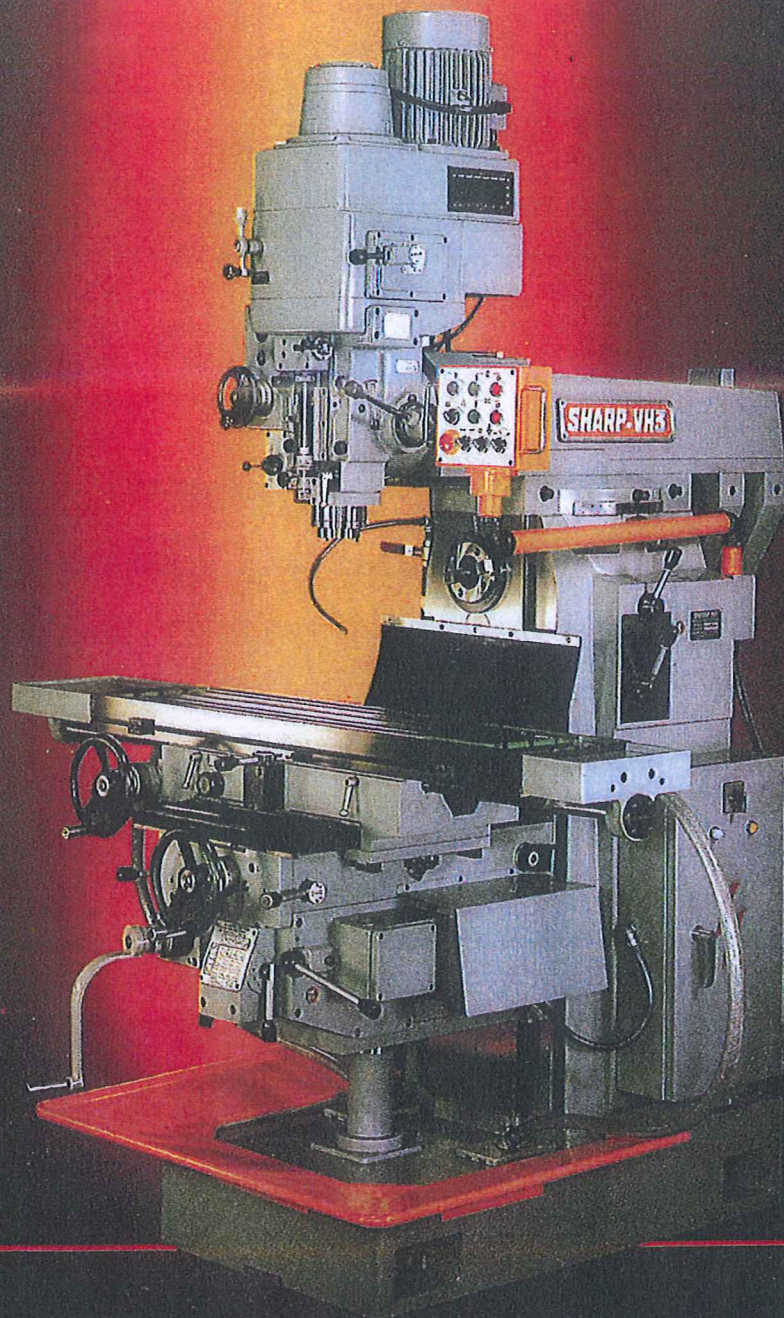
SHARP

PRECISION MACHINE TOOLS

CAT 113E2 9002 3000

VERTICAL & HORIZONTAL MILLING MACHINE

VH3 MILL



Vertical spindle head (5HP) (1)

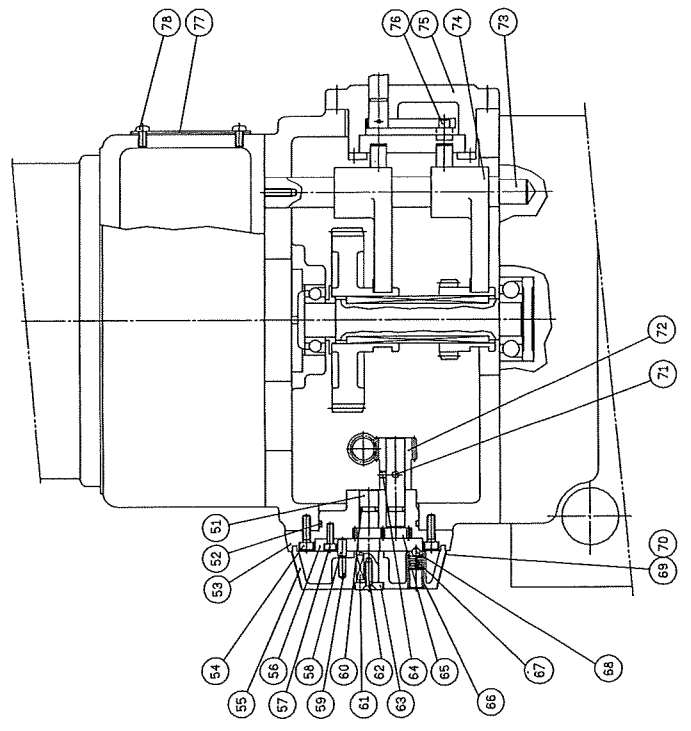
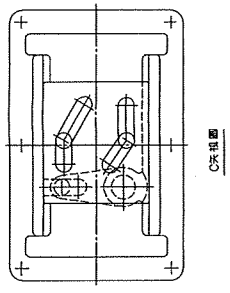
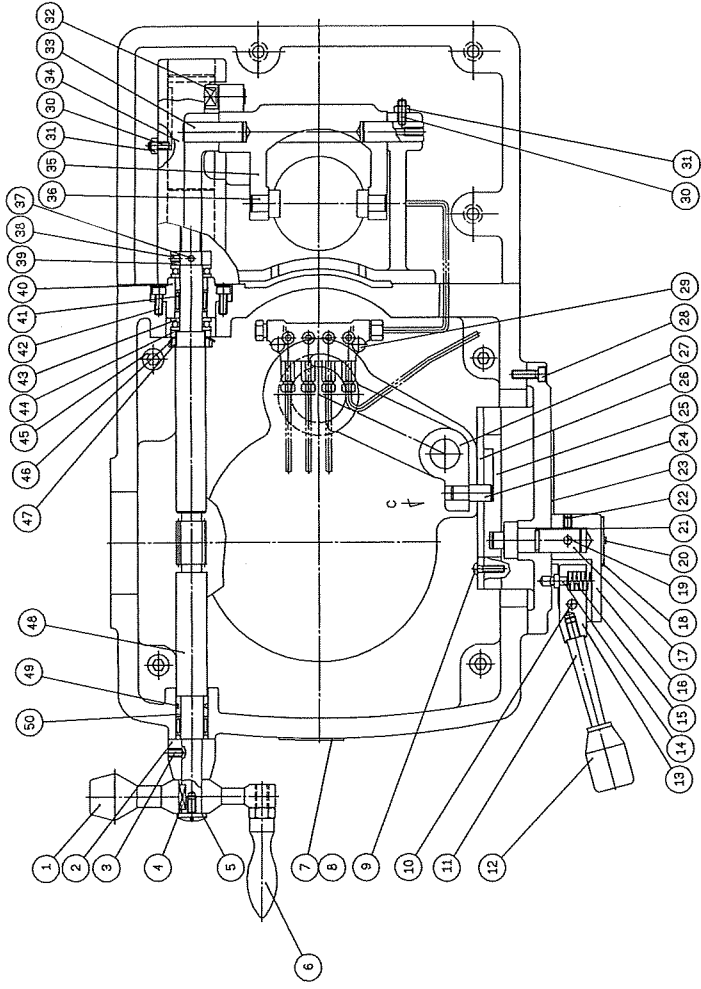
Item	Parts No.	Parts Name	Q'ty	Remark
1	H-921	Handle lever	1	
2	H-920	Collar	1	
3		Hex. socket set screw	1	M6x1Px8L
4		Parallel key	1	5x5x18L
5	H-922	Lock bolt	1	
6	H-242	Handle	1	
7	H-2819	Name plate	1	ENGLISH
8	H-2339	Name plate	1	CHINESE
9		Round head screw	6	M5x0.8Px12L
10		Taper pin	1	#3x32L
11	H-1118	Handle lever	1	
12	H-149	Handle knob	1	
13	H-1115	Handle seat	1	
14	H-1116	Locating pin	1	
15	H-1117	Compression spring	1	
16	H-1107	Shaft seat	1	
17	H-1106	Swing arm shaft	1	
18	H-1147	Indicator plate	1	
19		Taper pin	1	#4x38L
20		Rivet	6	ϕ 2x5L
21		O ring	1	P14
22		Hex. socket set screw	1	M6x1Px8L
23	H-1146	Name plate	1	
24	H-1112	Change speed fork pin	2	
25	H-1109	Slide plate	1	
26	H-1110	Clamping plate	2	
27	H-1114	Change speed fork	1	
28		Hex. socket screw	6	M6x1Px20L

Vertical spindle head (5HP) (1)

Item	Parts No.	Parts Name	Q'ty	Remark
29		Hex. socket screw	2	M6x1Px25L
30		Hex. socket set screw	2	M6x1Px16L
31		Hex. nut	2	M6
32	H-935	Swing arm fork	1	
33	H-936	Shaft of swing arm	2	
34	H-933	Adjust nut	1	
35	H-934	Swing arm	1	
36	H-937	Swing arm fork	2	
37		Spring pin	1	ϕ 5x30L
38		Hex. socket set screw	1	M5x0.8Px6L
39	H-919	Space ring	1	
40	H-918	Bearing cover	1	
41		Needle bearing	2	TA1715
42		Hex. socket screw	4	M6x1Px16L
43		Thrust bearing	2	51103
44	H-917	Spacing ring	1	
45		Hex. socket screw	4	M10x1.5Px40L
46		Lock washer	1	AW04
47	H-791	Lock nut	1	AN04
48	H-916	Worm shaft	1	
49		O ring	1	P20
50	H-2541	Spacing ring	1	
51	H-925	Spur gear	1	
52		O ring	1	G70
53	H-926	Gear seat	1	
54		Hex. socket screw	1	
55	H-1299	Change speed disk	1	
56	H-927	Change speed disk	1	

Vertical spindle head (5HP) (1)

Item	Parts No.	Parts Name	Q'ty	Remark
57		Hex. socket screw	2	M5x0.8Px16L
58	H-928	Straight pin	1	
59		Spring pin	1	ϕ 5x14L
60		O ring	2	P10A
61		Parallel key	1	5x5x18L
62		Machine screw	1	M5x0.8Px16L
63	H-930	Washer	1	
64		Hex. socket set screw	1	
65	H-924	Spur gear	1	
66		Hex. socket set screw	1	
67	H-931	Compression spring	1	
68		Steel ball	1	ϕ 8
69	H-1359	Name plate	1	50HZ
70	H-1361	Name plate	1	60HZ
71		Spring pin	1	ϕ 5x25L
72	H-923	Worm wheel	1	
73	H-1119	Shaft of change speed	1	
74	H-1113	Change speed fork	1	
75	H-1105	Right side cover	1	
76	H-1111	Swing arm shaft	1	
77	H-948	Side cover	2	
78		Machine screw	12	M6x1Px12L



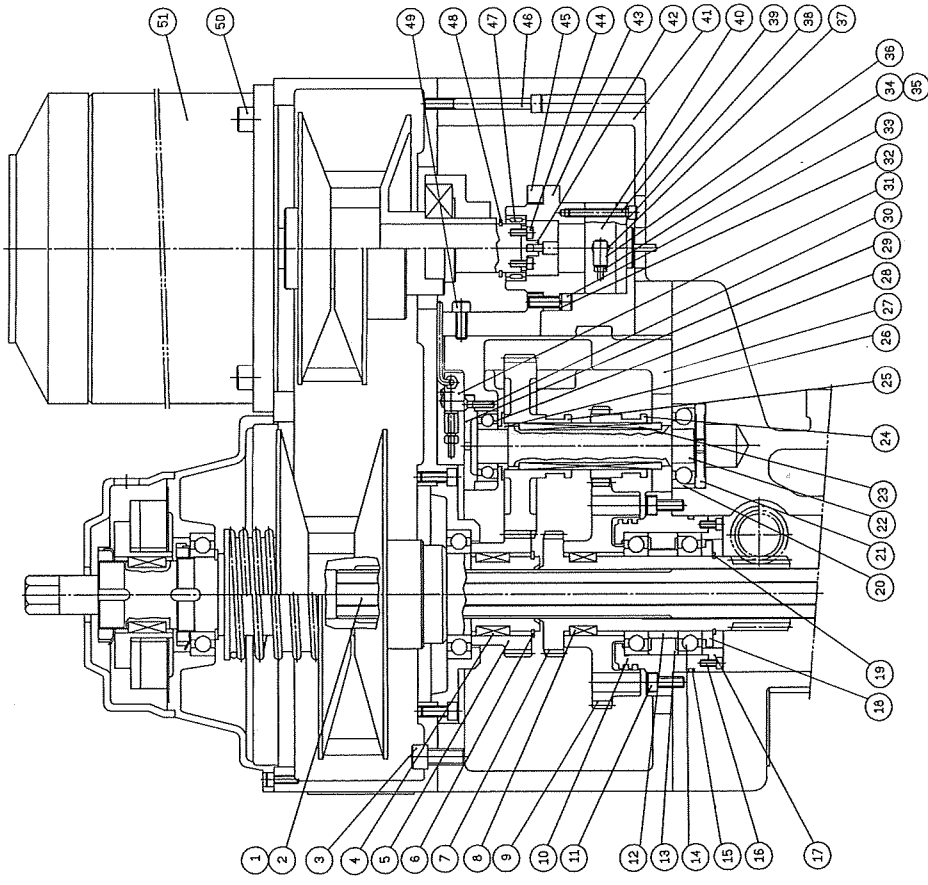
VERTICAL SPINDLE HEAD (1)

Vertical spindle head (5HP) (2)

Item	Parts No.	Parts Name	Q'ty	Remark
1	H-1173	Draw bar	1	INCH
2	H-2540	Draw bar	1	MM
3		Hex. socket screw	4	M12x1.75Px30L
4		Parallel key	2	7x7x25L
5	H-1088	Spur gear	1	
6		C snap ring	1	S55
7	H-1186	Gear shaft	1	
8		Parallel key	2	7x7x20L
9	H-1176	Spur gear	1	
10	H-1177	Bearing seat	1	
11		Hex. socket screw	4	M8x1.25Px25L
12	H-1179	Sleeve	1	
13	H-1178	Collar	1	
14		Angular ball bearing	2	7011E/P4
15		O ring	1	G110
16		Hex. socket screw	4	M5x0.8Px12L
17	H-1094	Set ring	1	
18	H-1180	Spacing ring	1	
19		C snap ring	1	S55
20		Angular ball bearing	1	7305P5
21	H-1395	Washer	1	
22	H-1122	Shaft	1	
23		Parallel key	2	5x5x106L
24	H-1100	Spur gear	1	
25	H-1099	Spur gear	1	
26	H-1098	Space ring	1	
27	H-1103	Connect seat	1	
28		Angular ball bearing	1	7205P5

Vertical spindle head (5HP) (2)

Item	Parts No.	Parts Name	Q'ty	Remark
29	H-1097	Bearing cover	1	
30		Machine screw	4	M5x0.8Px20L
31		A type distributor	1	DB6
32		Spring washer	4	M8
33		Hex. socket screw	4	M8x1.25Px25L
34		Thimble nut	2	PA4
35		Thimble	2	PB4
36		Elbow joint	2	PH401
37		Straight joint	2	PD602
38		Spring washer	3	M6
39		Hex. socket screw	3	M6x1Px45L
40		Pump	1	AM2A
41	H-1104	Cover	1	
42	H-1174	Connector seat	1	
43	H-1205	Bearing seat	1	
44		Hex. socket screw	3	M5x0.8Px12L
45	H-932	Bracket	1	
46		Hex. socket screw	3	M8x1.25Px80L
47		Needle bearing	1	TA3815
48		C snap ring	1	S38
49		Hex. socket screw	4	M8x1.25Px20L
50		Hex. socket screw	4	M12x1.75Px30L
51		Motor	1	3.7kW-4P



VERTICAL SPINDLE HEAD (2)

Spindle (1)

Item	Parts No.	Parts Name	Q'ty	Remark
1	H-847	Spindle head	1	
2	H-1182	Spindle	1	
3	H-1126	Lock nut	1	
4		Hex. socket set screw	2	M10x1.5Px8L
5	H-875	Preload collar	1	
6		Ball bearing	2	6209Z
7		Hex. socket screw	4	M10x1.5Px18L
8	H-1195	Worm wheel	1	
9		O ring	1	G115
10		Hex. socket set screw	2	M10x1.5Px18L
11	H-876	Nut	1	
12		Taper roller bearing	2	32011XJ
13	H-877	Collar	1	
14	H-878	Quill	1	
15	H-874	Lock nut	1	
16	H-277	Drive key	2	
17		Hex. socket screw	2	M6x1Px14L
18	H-294	Feed index seat	1	
19	H-296	Collar	1	
20	H-295	Set screw	1	
21	H-1202	Index shaft nut	1	INCH
22	H-293	Index shaft nut	1	MM
23	H-1201	Feed adjust nut	1	INCH
24	H-292	Feed adjust nut	1	MM
25	H-888	Feed slide plate	1	
26	H-2291	Slide block	1	
27		Hex. socket screw	1	M6x1Px30L
28		Hex. socket screw	1	M6x1Px25L

Spindle (1)

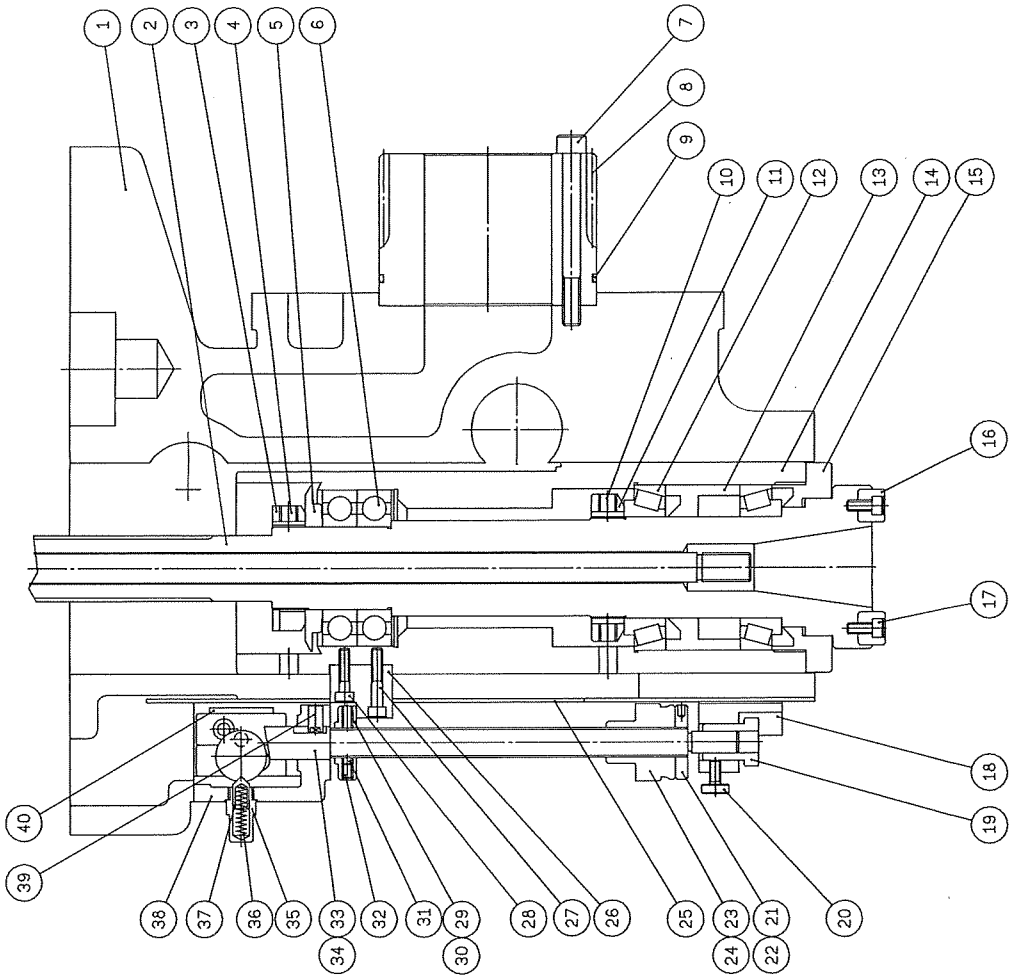
Item	Parts No.	Parts Name	Q'ty	Remark
29	H-1200	Index shaft nut	1	INCH
30	H-289	Index shaft nut	1	MM
31	H-290	Bush	4	
32		Hex. socket set screw	4	M6x1Px8L
33	H-1198	Index shaft	1	INCH
34	H-886	Index shaft	1	MM
35	H-283	Set nut	1	
36	H-311	Spring	1	
37	H-310	Locating pin	1	
38	H-884	Cover	1	
39	H-288	Locating pin	1	
40	H-345	Fixed plate	1	
41		Machine screw	1	M5x0.8Px6L
42	H-793	Set screw	1	
43	H-241	Nut	1	
44		Parallel key	1	4x4x40L
45	H-240	Hand wheel	1	
46	H-239	Collar	1	
47	H-1193	Graduated ring	1	MM
48	H-1197	Graduated ring	1	INCH
49	H-238	Lock nut	1	
50	H-238	Bearing seat	1	
51		Hex. socket screw	4	M6x1Px16L
52	H-349	Washer	1	
53		Angular bearing	2	7202B
54		C snap ring	1	S15
55	H-339	Lock handle	1	
56	H-340	Fixed seat	1	

Spindle (1)

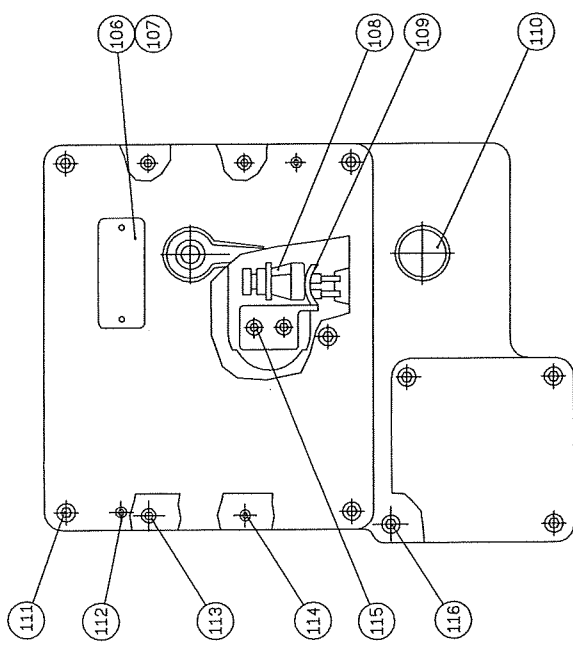
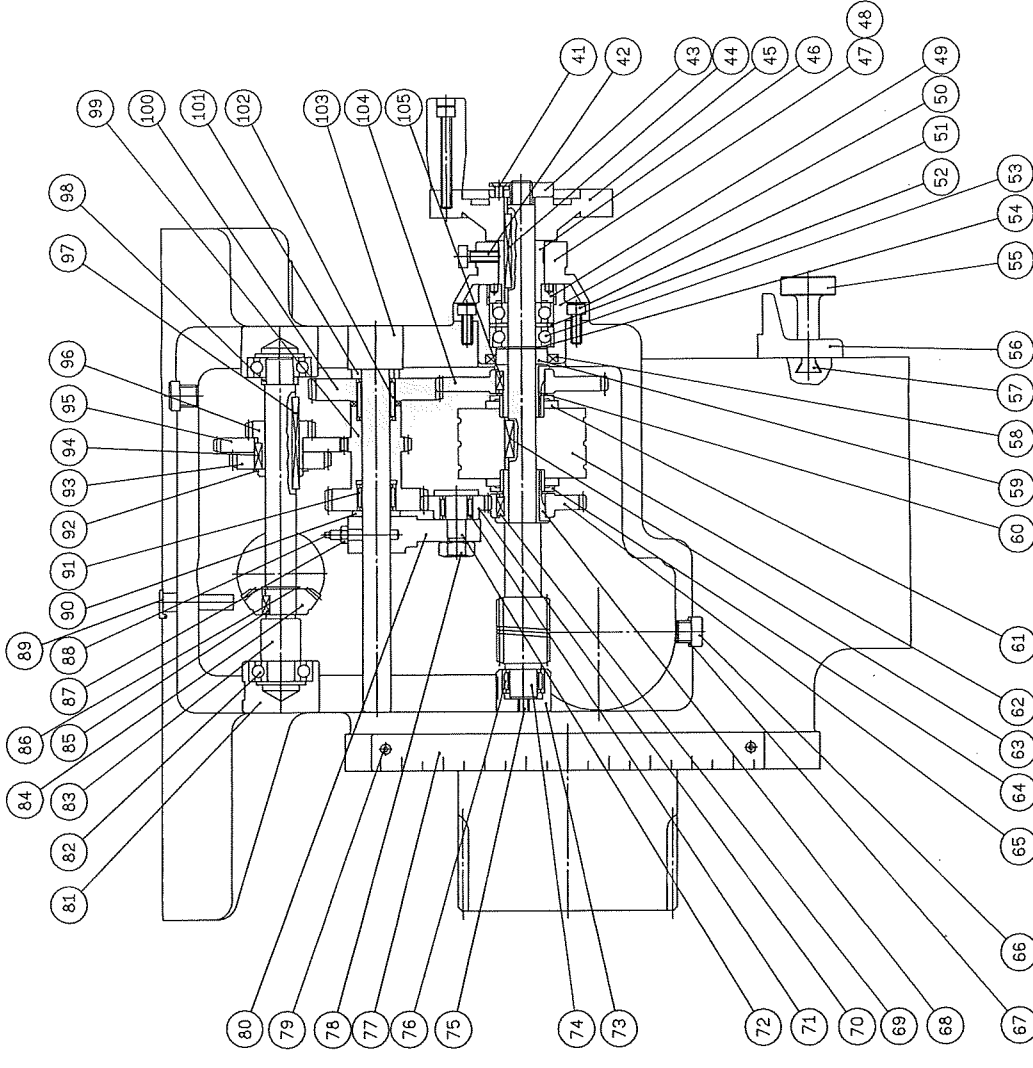
Item	Parts No.	Parts Name	Q'ty	Remark
57	H-344	Set bolt	1	
58		Oil seal	1	SC28405
59	H-236	Collar	1	
60		C snap ring	2	S24
61		Magnetic disk	2	
62		Magnetic clutch	1	
63		Parallel key	1	5x5x20L
64	H-231	Collar	2	
65	H-868	Spur gear	1	
66	H-194	Bolt	2	
67	H-299	Washer	1	
68	H-234	Bush	2	
69		Key	2	4x4x10L
70	H-866	Idle gear	1	
71		Needle bearing	1	TLA1212
72	H-228	Idle gear shaft	1	
73	H-244	D-shaft fixed seat	1	
74	H-867	D-shaft	1	
75		Hex. socket set screw	1	M6x1Px6L
76		Needle bearing	1	TLA1516
77	H-887	Name plate	1	
78		Hex. nut	1	M10x1.5P
79		Rivet	2	ϕ 2x5L
80	H-865	Idle gear fixed seat	1	
81	H-217	Bearing seat	2	
82		Ball bearing	2	6202
83	H-858	Shaft	1	
84	H-215	Bevel gear	1	

Spindle (1)

Item	Parts No.	Parts Name	Q'ty	Remark
85		Parallel key	1	4x4x10L
86		C snap ring	2	S15
87		Hex. nut	1	M5x0.8P
88	H-225	Taper pin	1	
89		Oil cup	1	1/8"
90	H-226	Collar	1	
91		Needle bearing	1	TLA1516
92		C snap ring	1	S25
93	H-859	Spur gear	1	
94		Parallel key	1	4x4x14L
95	H-860	Spur gear	1	
96	H-861	Spur gear	1	
97		Parallel key	1	4x4x50L
98	H-346	Washer	1	
99	H-864	Spur gear	1	
100	H-863	Spur gear	1	
101	H-222	Collar	1	
102		Needle bearing	1	TLA1516
103	H-862	Shaft	1	
104	H-869	Spur gear	1	
105		Parallel key	2	4x4x10L
106	H-2359	Name plate	1	MM
107	H-2901	Name plate	1	INCH
108		Brush	2	
109	H-327	Brush seat	1	
110		Oil level gage	1	ϕ 26x ϕ 30
111		Hex. socket screw	5	M6x1Px16L
112		Hex. socket set screw	2	M6x1Px8L



SPINDLE (1)



Spindle (2)

Item	Parts No.	Parts Name	Q'ty	Remark
1	H-285	Spring	1	
2		Hex. socket set screw	1	M10x1.5Px10L
3	H-347	Name plate	1	CHINESE
4	H-1227	Name plate	1	ENGLISH
5		Rivet	4	ϕ 4x5L
6		Machine screw	2	M3x0.5Px6L
7	H-321	Index	1	
8	H-316	Fixed bolt	1	
9	H-318	Set bolt	1	
10		Oil cup	1	PT1/8
11	H-1196	Fixed scale	1	INCH
12	H-893	Fixed scale	1	MM
13		Machine screw	3	M5x0.8Px12L
14		Hex. socket screw	2	M8x1.25Px20L
15	H-342	Graduated disk seat	1	
16		Machine screw	2	M4x0.7Px10L
17	R-73	Set bolt	3	
18	R-88	Nut	4	
19		Hex. socket screw	1	M5x0.8Px70L
20	H-1965	Switch seat	1	
21		Hex. socket screw	3	M5x0.8Px70L
22	H-1963	Name plate	1	
23		Hex. socket screw	4	M6x1Px16L
24		Round head screw	4	M5x0.8Px10L
25	H-890	Cover	1	
26		Hex. socket set screw	1	M6x1Px6L
27	H-306	Steering shaft	1	
28		Spring pin	2	ϕ 5x14L

Spindle (2)

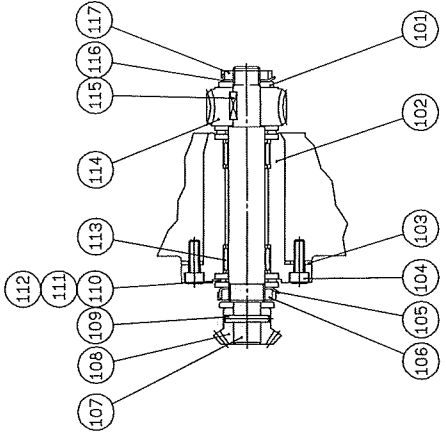
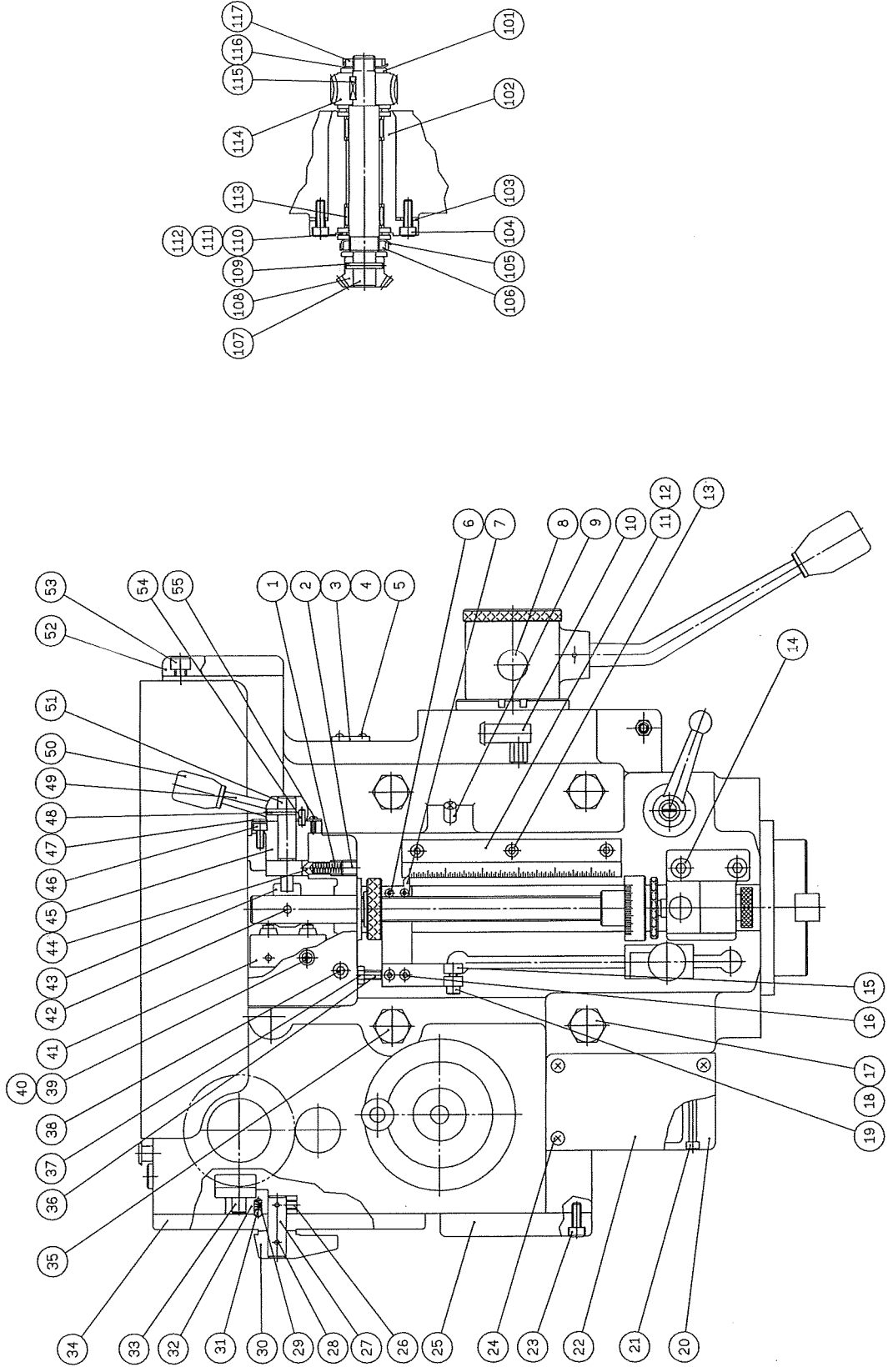
Item	Parts No.	Parts Name	Q'ty	Remark
29	H-305	Spring	2	
30	H-307	Handle lever	1	
31		Steel ball	1	$\phi 6$
32	H-304	Swing arm	1	
33	H-1121	Shift fork	1	
34	H-889	Cover	1	
35	R-72	Set bolt	1	
36		Hex. socket set screw	1	M6x1Px25L
37		Hex. nut	1	M16
38		Hex. socket screw	3	M6x1Px55L
39		Machine screw	2	M4x0.7Px48L
40	H-1397	Washer	2	
41		Micro switch	2	TM1306
42		Spring pin	1	$\phi 5 \times 14L$
43	H-312	Feed changer	1	
44	H-284	Locating pin	1	
45	H-891	Fixed seat	1	
46		Hex. socket screw	3	M5x0.8Px10L
47	H-329	Name plate	1	
48		Spring pin	1	$\phi 5 \times 14L$
49	H-309	Handle lever	1	
50	H-302	Handle knob	1	
51	H-885	Cam shaft	1	
52	H-1194	Side cover	1	
53		Hex. bolt	4	M8x1.25Px20L
54		Spring pin	1	$\phi 4 \times 10L$
55		Machine screw	2	M3x0.5Px8L
56		Hex. socket set screw	1	M6x1Px12L

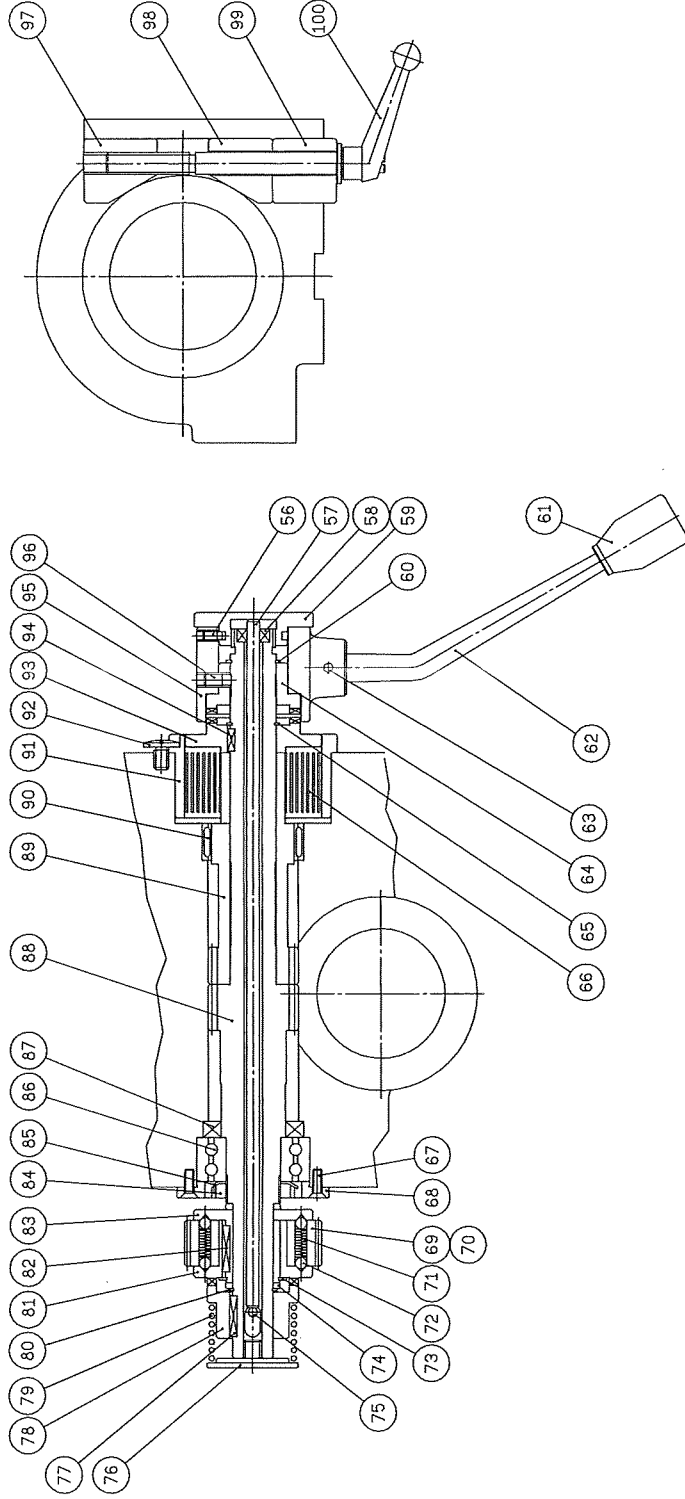
Spindle (2)

Item	Parts No.	Parts Name	Q'ty	Remark
57	H-872	Clutch shaft	1	
58		Oil seal	1	SC7187
59	H-260	Lock nut	1	
60		C snap ring	1	S25
61	H-149	Handle knob	1	
62	H-261	Feed handle lever	1	
63		Spring pin	1	ϕ 5x30L
64	H-259	Ratchet clutch	1	
65		C snap ring	1	S25
66	H-848	Spring	1	
67		Machine screw	4	M5x0.8Px12L
68	H-873	Fixed disk	1	
69	H-2721	Worm gear	1	MM
70	H-246	Worm gear	1	INCH
71	H-247	Spring	12	
72		Steel ball	24	ϕ 6
73		C snap ring	1	S30
74	H-248	Washer	2	
75		Taper pin	1	#5x38L
76	H-249	Set bolt	1	
77		Parallel key	2	4x4x22L
78	H-251	Clutch	1	
79	H-250	Spring	1	
80		C snap ring	1	S22
81	H-252	Clutch	1	
82		Parallel key	1	4x4x25L
83	H-253	Collar	1	
84	K-144	Lock nut	1	AN06

Spindle (2)

Item	Parts No.	Parts Name	Q'ty	Remark
85		Lock washer	1	AW06
86		Ball bearing	1	5206
87		Oil seal	1	TC35558
88	H-870	Shaft	1	
89	H-871	Collar	1	
90		Needle bearing	1	TA4520
91	H-256	E-shaft fixed seat	1	
92	H-258	Set screw	1	
93	H-257	Ratchet clutch	1	
94		Parallel key	1	4x4x12L
95	H-262	Handle connect seat	1	
96		Hex. socket set screw	1	M8x1.25Px15L
97	H-881	Quill lock block	1	
98	H-882	Quill lock block	1	
99	H-883	Eccentric collar	1	
100	H-279	Steering shaft	1	
101	R-380	Washer	2	
102	H-857	Eccentric collar	1	
103	H-213	Washer	1	
104		Hex. socket screw	4	M6x1Px18L
105		Lock washer	1	AW04
106	H-791	Lock nut	1	AN04
107	H-856	Shaft	1	
108	H-214	Bevel gear	1	
109		Taper pin	1	#3x25L
110		Needle thrust bearing	2	NTB2035
111		Thrust nearing washer	2	WS2035
112		Thrust nearing washer	2	GS2035





Table, Saddle

Item	Parts No.	Parts Name	Q'ty	Remark
1	S-105	Handle sleeve	1	
2	S-104	Handle screw	1	
3	T-688	Handle wheel	1	
4		C snap ring	1	S19
5		Needle bearing	1	TA1920
6	T-145	Spring	1	
7	T-12	Locating screw	1	
8		Parallel key	1	6x6x25L
9		Hex. socket screw	3	M6x1Px20L
10	K-623	Clutch	1	
11	T-831	Graduated ring	1	
12	T-130	Hand wheel clutch	1	
13		Hex. socket set screw	1	M6x1Px6L
14	T-830	Graduated ring	1	
15		Ball bearing	2	6205Z
16		Hex. socket screw	4	M8x1.25Px35L
17	T-531	Shaft	1	
18	T-527	Spiral gear	1	
19		Lock washer	1	AW03
20	K-11	Lock nut	1	AN03
21	T-530	Bearing case	1	
22		Oil seal	1	SC35477
23		Needle bearing	1	TLA3512
24	S-561	Gear	1	
25		Hex. bolt	3	M6x1Px25L
26		Ball bearing	1	6007Z
27		C snap ring	1	S35
28	S-562	Key	1	

Table, Saddle

Item	Parts No.	Parts Name	Q'ty	Remark
29	S-559	Bearing cover	1	
30	S-557	Washer	1	
31		Hex. socket screw	1	M6x1Px20L
32	S-797	Nut	1	
33		Hex. socket screw	3	M5x0.8Px25L
34		Lock washer	1	AW08
35	H-377	Lock nut	1	AN08
36	S-568	Gear	1	
37	S-558	Washer	1	
38	S-564	Gear shaft	1	
39		Needle bearing	2	KT202612
40	S-600	Wiper	1	
41	S-602	Plug block	2	
42		Round head screw	2	M6x1Px10L
43	S-598	Wiper	1	
44	T-747	Name plate	1	
45		Taper pin	1	#3x25L
46	T-473	Shaft sleeve	1	
47	T-470	Spacing ring	2	
48		Hex. socket screw	4	M6x1Px16L
49	T-475	Adjusting shaft seat	1	
50	T-468	Screw seat	1	
51	T-472	Adjusting screw	1	
52	T-471	Rack	1	
53	T-466	Spring	2	
54		C snap ring	2	S16
55		Hex. socket set screw	1	M6x1Px6L
56	T-469	Shaft seat	1	

Table, Saddle

Item	Parts No.	Parts Name	Q'ty	Remark
57	T-464	Connector seat	2	
58	T-465	Oil filter	2	
59	S-553	Steering fork	1	
60	T-467	Gib	1	
61	S-551	Steering shaft	1	
62	T-484	Copper block	1	
63	T-572	Copper block	1	
64	S-576	Washer	1	
65		Parallel key	2	5x5x10L
66	S-545	Bevel gear	2	
67	S-548	Spring	2	
68		Steel ball	2	$\varphi 8$
69	S-550	Name plate	1	
70		Round head screw	2	M4x0.7Px10L
71	S-552	Steering seat	1	
72	S-549	Handle rod	1	
73	H-149	Handle	1	
74	S-554	Gear seat	1	
75	S-547	Gear shaft	1	
76	S-546	Spacing ring	1	
77		Hex. socket screw	3	M8x1.25Px60L
78	S-544	Plug ring	1	
79	S-987	Cover	1	
80		Round head screw	5	M6x1Px10L
81	T-784	Rubber sheet	1	
82		C snap ring	1	S25
83	T-63	Spacing ring	1	
84	T-533	Table side cover	1	

Table, Saddle

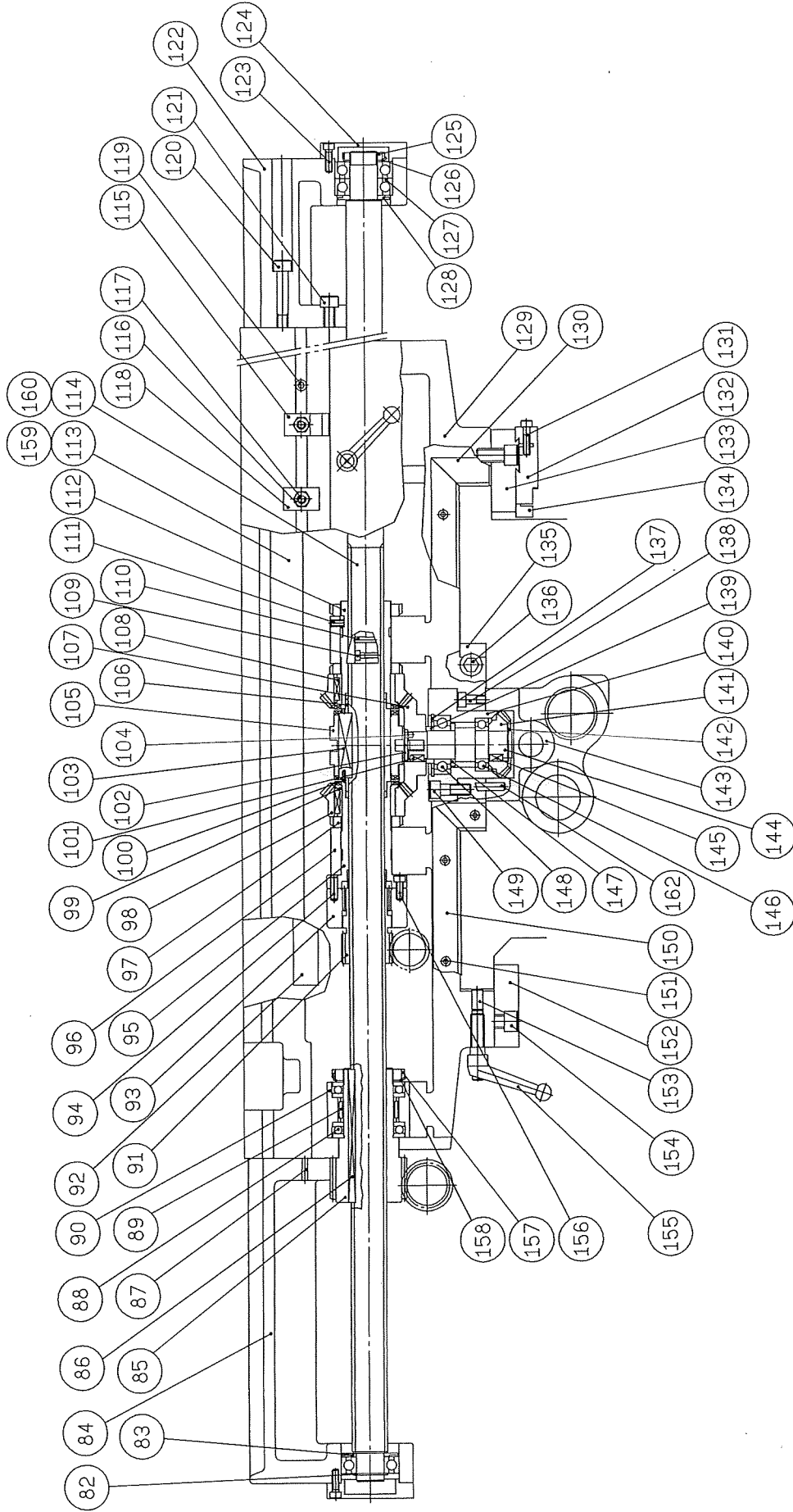
Item	Parts No.	Parts Name	Q'ty	Remark
85	T-526	Spiral gear	1	
86		Parallel key	1	6x6x60L
87		Taper pin	4	#4x32L
88		Thrust bearing	2	51109
89		Needle bearing	1	TA4520
90	T-529	Bearing cover	1	
91	T-482	Adjusting nut	1	
92	T-501	Name plate	1	
93	T-480	Nut	1	
94		Spring pin	2	ϕ 5x20L
95	T-481	Nut	1	
96	S-595	Gear cover	2	
97	T-479	Nut	3	
98	T-489	Bevel gear	2	
99	T-487	Clutch	2	
100		Spring pin	2	ϕ 2x12L
101		Parallel key	1	6x6x12L
102	S-555	Bolt	1	
103	T-490	Key	1	
104		Hex. socket set screw	1	M5x0.8Px12L
105	T-486	Clutch	1	
106	T-478	Bush	1	
107	T-488	Bevel gear	1	
108		Parallel key	2	5x5x20L
109		Hex. socket screw	12	M5x0.8Px20L
110		Taper pin	6	#3x25L
111		Hex. socket set screw	2	M6x1Px10L
112	T-483	Sleeve	1	

Table, Saddle

Item	Parts No.	Parts Name	Q'ty	Remark
113	T-463	Table	1	
114	T-532	Bolt	1	
115	T-477	Locating block	2	
116		Hexagon nut	4	M8x1.25P
117	T-485	Set bolt	4	
118	T-476	Stop block	2	
119		Hex. socket screw	2	M6x1Px10L
120		Hex. socket screw	2	M10x1.5Px65L
121		Hex. socket screw	6	M10x1.5Px25L
122	T-491	Table side cover	1	
123		Hex. socket screw	4	M6x1Px20L
124	T-525	Cover	2	
125	K-105	Lock nut	1	AN05
126		Lock washer	1	AW05
127		Angular ball bearing	2	7025B
128	T-57	Spacing ring	1	
129	S-641	Saddle	1	
130	S-579	Wiper	1	
131		Hex. socket screw	2	M6x1Px25L
132	S-571	Adjusting block	1	
133	S-597	Back plate	1	
134	S-570	Adjusting block	1	
135	S-542	Gib	1	
136	R-158	Adjusting bolt	4	
137		C snap ring	1	R52
138		Hex. socket screw	4	M10x1.25Px35L
139	S-543	Spacing ring	1	
140	S-591	Bearing case	1	

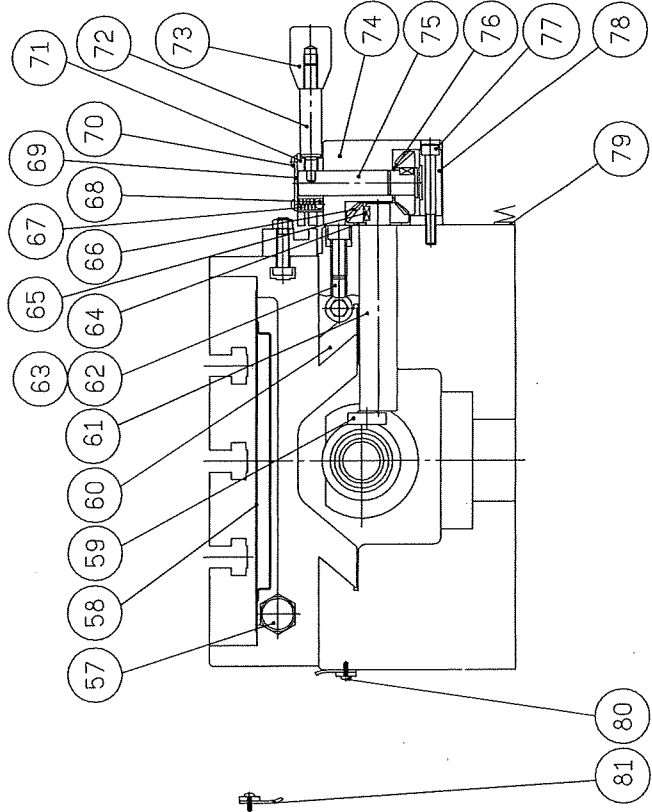
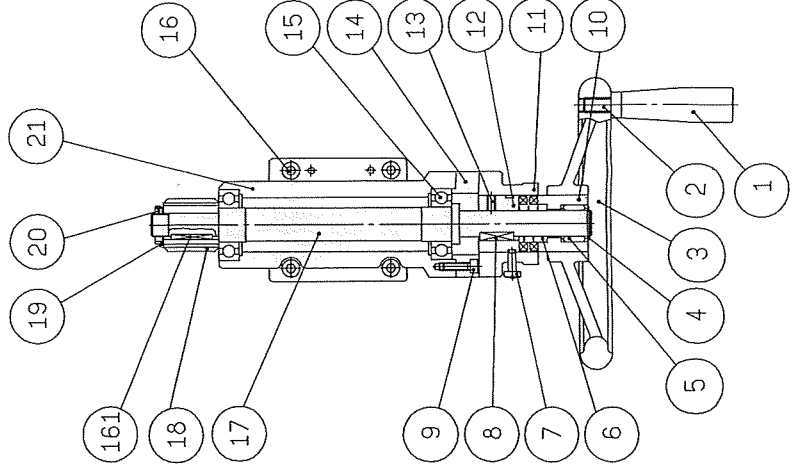
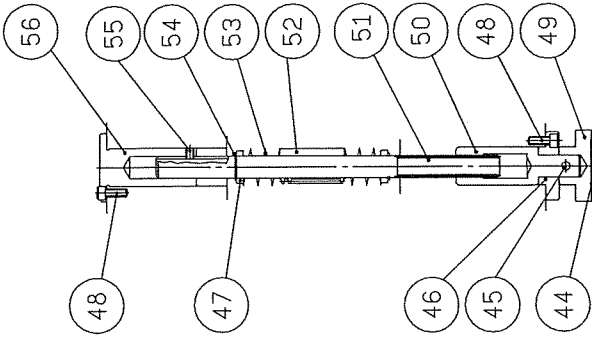
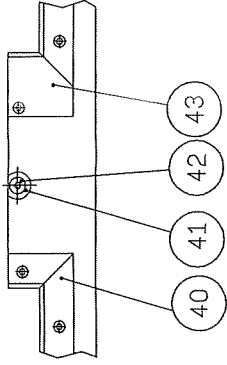
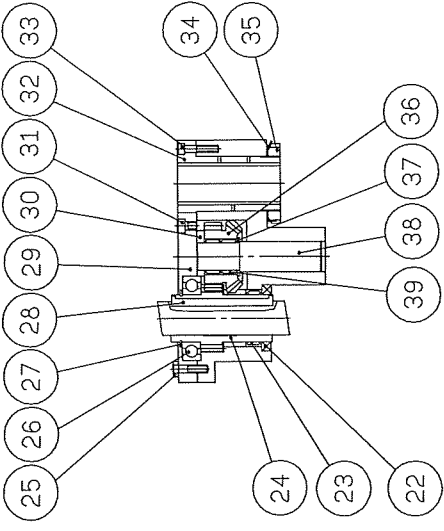
Table, Saddle

Item	Parts No.	Parts Name	Q'ty	Remark
141	S-569	Bevel gear	1	
142		C snap ring	1	S24
143	S-566	Nut seat	1	
144	S-590	Shaft	1	
145		Parallel key	1	6x6x12L
146		Ball bearing	1	6005ZZ
147	S-563	Washer	1	
148		Ball bearing	1	6205ZZ
149		Hex. socket screw	4	M10x1.5Px35L
150	S-581	Wiper	1	
151		Round head screw	16	M6x1Px12L
152	S-596	Back plate	1	
153	S-565	Copper block	2	
154		Hex. socket screw	10	M12x1.75Px25L
155	T-408	Lock bolt	1	
156		Hex. socket screw	3	M6x1Px16L
157	C-56	Lock nut	1	AN09
158		Lock washer	1	AW09
159	T-700	Table	1	
160	T-701	Bolt	1	
161		Parallel key	1	4x4x30L
162	G-784	Taper pin	2	



TABLE,SADDLE

Model: CS-G450B



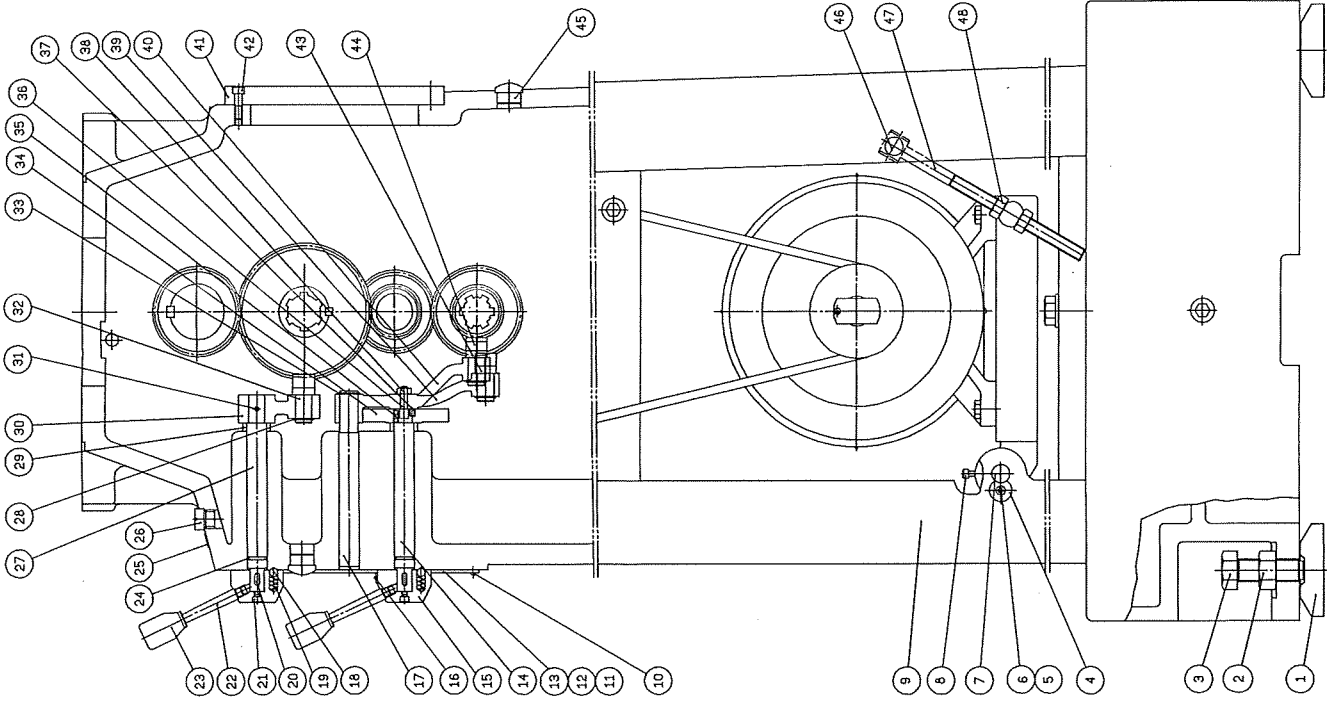
TABLE, SADDLE

Column, Base (1)

Item	Parts No.	Parts Name	Q'ty	Remark
1	B-51	Foot pad	4	
2	B-94	Hex. nut	4	
3	B-145	Level bolt	4	M24x2P
4	C-509	Washer	1	
5		Spring washer	1	M6
6		Hex. socket screw	1	M6x1Px16L
7	C-508	Fixed shaft	1	
8		Hex. socket screw	2	M6x1Px25L
9	C-976	Column	1	
10		Rivet	4	ϕ 2x5L
11	C-781	Name plate	1	60HZ
12	C-780	Name plate	1	50HZ
13	C-677	Name plate	1	SHARP
14	C-543	Cam shaft	1	
15	C-556	Handle seat	2	
16	H-483	Name plate	1	
17	C-545	Shaft	2	
18		Steel ball	4	ϕ 8
19	C-552	Spring	4	
20		Parallel key	2	5x5x14L
21		Hex. socket screw	2	M6x1Px20L
22	H-480	Handle rod	2	
23	H-149	Handle	2	
24		O ring	2	P18
25	C-526	Name plate	1	
26	C-529	Cock	1	
27	C-544	Shift shaft	1	
28		C snap ring	3	S18

Column, Base (1)

Item	Parts No.	Parts Name	Q'ty	Remark
29	C-553	Spacing ring	2	
30	C-550	Rocking arm	1	
31		Spring pin	1	ϕ 5x40L
32	C-547	Shift fork	1	
33		C snap ring	2	S20
34	C-540	Cam	1	
35		Parallel key	1	5x5x12L
36	C-546	Clutch pin	2	
37		Hex. socket set screw	1	M5x0.8Px8L
38		Hexagon nut	2	M8x1.25P
39	C-542	Rocking arm	1	
40	C-541	Rocking arm	1	
41	C-564	Column side cover	1	
42		Hex. socket screw	6	M8x1.25Px20L
43	C-548	Shift fork	1	
44	C-549	Shift fork	1	
45		Oil level gage	2	ϕ 26x ϕ 30
46	C-511	Shaft	1	
47	C-512	Adjusting bolt	1	
48		Nut	2	M4x2P



Column, Base (2)

Item	Parts No.	Parts Name	Q'ty	Remark
1	B-89	Oil dish	1	
2	B-73	Oil filter	2	
3	B-72	Hose connector	2	
4		Hex. socket screw	2	M5x0.8Px6L
5	B-74	Cover	2	
6		Hex. socket screw	4	M6x1Px16L
7	C-532	Stop block	1	
8	C-533	T-nut	2	
9		Hex. socket screw	2	M6x1Px20L
10	C-531	Stop block	1	
11		Hex. socket screw	2	M6x1Px16L
12	C-670	Gear	1	
13		Hex. socket set screw	3	M6x1Px10L
14		Hex. socket set screw	3	M6x1Px10L
15	C-476	Gear	1	
16		Ball bearing	3	6306
17	C-479	Shaft	1	
18	C-520	Oil seal cover	1	
19		Parallel key	1	10x8x20L
20	C-475	Gear	1	
21	C-477	Shaft	1	
22		Parallel key	4	8x8x35L
23	C-555	Spacing ring	1	
24	C-560	Sleeve	1	
25	C-520	Oil seal cover	2	
26		Hex. socket set screw	2	M6x1Px8L
27		Lock washer	2	AW08
28		O ring	3	P62

Column, Base (2)

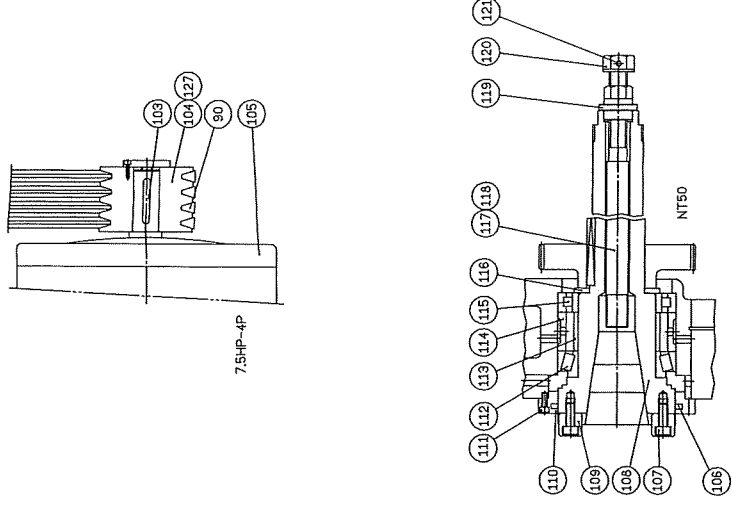
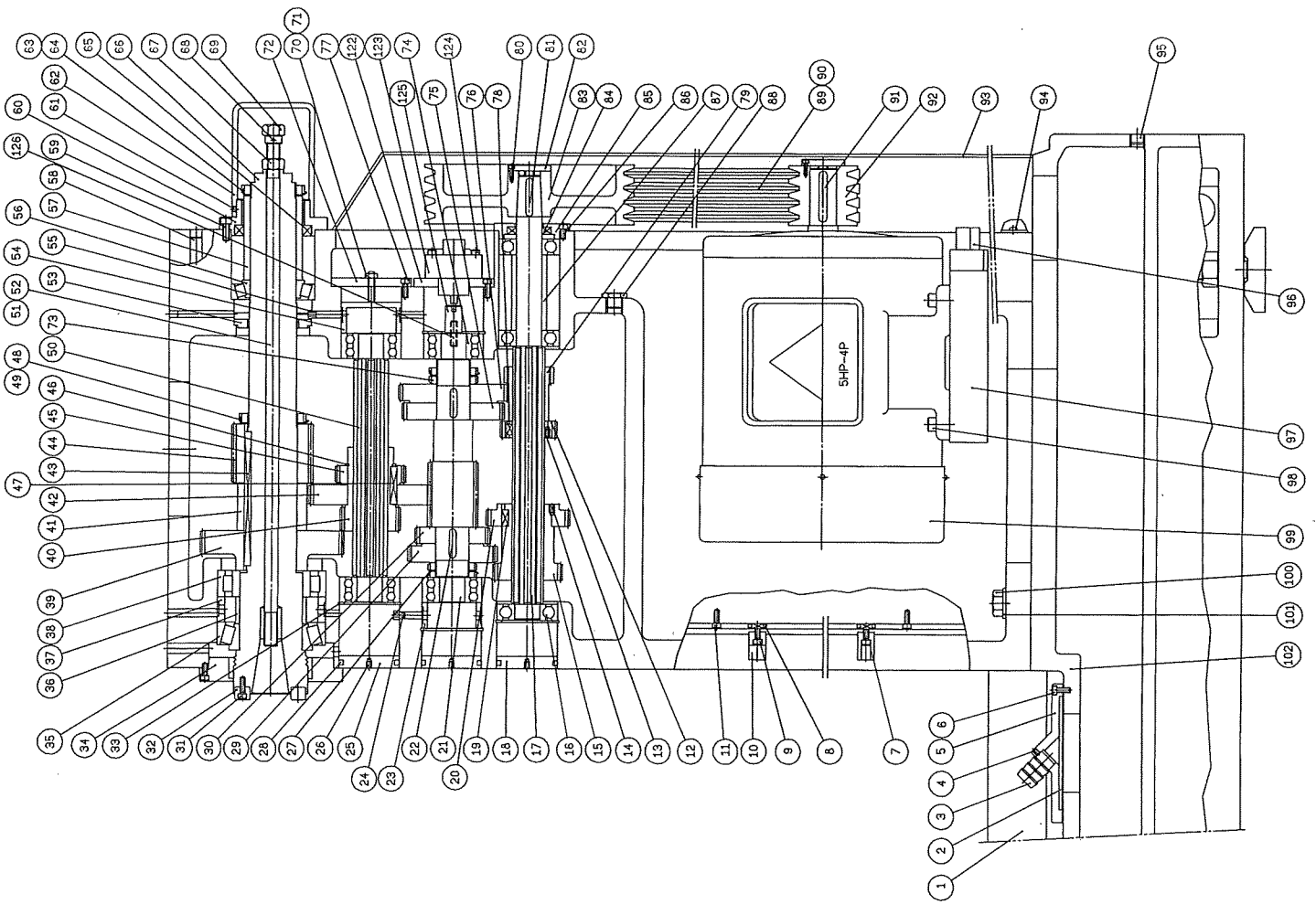
Item	Parts No.	Parts Name	Q'ty	Remark
29	C-473	Gear	1	
30	C-472	Gear	1	
31		Hex. socket screw	2	M6x1Px20L
32	H-277	Drive key	2	(NT40)
33		C snap ring	4	R72
34	C-489	Main shaft cover	1	
35		Taper roller bearing	1	HR32215J (NT40)
36	C-484	Spacing ring	1	
37	C-485	Spacing ring	1	
38		Roller bearing	1	NU2215 (NT40)
39	C-466	Gear	1	
40	C-467	Gear	1	
41	C-492	Spacing ring	1	
42	C-468	Gear	1	
43		Parallel key	1	12x8x160L
44	C-465	Gear	1	
45	C-469	Gear	1	
46	C-483	Nut	2	
47		Parallel key	1	8x8x45L
48		Lock washer	1	AW12
49	C-51	Lock nut	1	AN12
50	C-478	Shaft	1	
51	C-730	Draw bar	1	MM
52	C-501	Draw bar	1	INCH
53	C-487	Spacing ring	1	
54	C-519	Spacing ring	1	
55	C-488	Sleeve	1	
56		Taper roller bearing	1	HR30211J

Column, Base (2)

Item	Parts No.	Parts Name	Q'ty	Remark
57	C-554	Spacing sleeve	1	
58	C-683	Plug	2	
59		Hex. socket screw	3	M8x1.25Px20L
60	C-491	Cover	1	
61		Hex. socket set screw	2	M5x1.25Px8L
62	C-490	Cover	1	
63		Lock washer	1	AW11
64	H-1087	Lock nut	1	
65		Oil seal	1	709212
66	C-480	Main shaft	1	(NT40)
67		Nut	1	5/8"
68		Spring pin	1	ϕ 5x14L
69	C-535	Nut	1	
70		Nut	1	M8x1.25P
71		Hex. socket set screw	1	M8x1.25Px35L
72	C-518	Cover	1	
73	H-377	Lock nut	4	AN08
74		Ball bearing	4	5306
75	C-471	Gear	1	
76	C-470	Gear	1	
77		Hex. socket screw	6	M6x1Px12L
78		Parallel key	1	8x8x16L
79	C-669	Gear	1	
80		Flat head screw	2	M4x0.7Px12L
81		Parallel key	1	8x8x45L
82	C-572	Fixing bolt	2	
83	C-537	Pulley	1	
84		Oil seal	1	SC30528

Column, Base (2)

Item	Parts No.	Parts Name	Q'ty	Remark
85	C-503	Oil seal cover	1	
86		Hex. socket screw	3	M6x1Px12L
87	C-481	Spacing ring	1	
88		Plug	1	PT3/4
89		Belt	4	A46
90		Belt	4	A45
91		Parallel key	1	10x8x60L
92	C-678	Pulley	1	
93	C-539	Column cover	1	
94		Round head screw	6	M6x1Px12L
95		Cock	1	PT3/4
96	C-510	Set shaft	1	
97	C-1038	Motor bracket	1	
98		Hex. head screw	4	M10x1.5Px35L
99		Motor	1	7.5HP-4P (NT50)
100		Hexagon bolt	7	M18x2.5Px65L
101		Washer	7	M18
102	B-310	Base	1	
103		Parallel key	1	7x7x40L
104	C-576	Pulley	1	5HP (NT40)
105		Motor	1	5HP-4P (NT40)
106	C-583a	Felt	1	(NT50)
107		Hex. socket set screw	2	M10x1.5Px25L
108	C-582	Main shaft	1	(NT50)
109	H-432	Drive key	2	(NT50)
110	C-583	Main shaft cover	1	(NT50)
111		Hex. socket screw	3	M6x1Px16L
112		Taper roller bearing	1	HR32017J (NT50)



Knee, Gear box (1)

Item	Parts No.	Parts Name	Q'ty	Remark
1		Hex. socket set screw	1	M12x1.75Px20L
2		Hex. socket screw	3	M10x1.5Px35L
3	B-84	Nut seat	1	
4	K-513	Lead screw	1	
5	K-514	Nut	1	
6		Hex. socket screw	7	M8x1.25Px25L
7		C snap ring	1	S70
8		Ball bearing	1	6014Z
9	K-793	Gear seat bush	1	
10		Parallel key	1	6x6x12L
11	K-452	Bevel gear	1	
12		Thrust bearing	1	51114
13	K-440	Collar	1	
14		Ball bearing	1	6008ZZ
15	K-494	Nut	1	
16		Parallel key	1	6x6x18L
17		Hex. socket set screw	1	M6x1Px20L
18	G-479	Pump	1	
19		Straight joint	1	PD601
20		Thimble nut	1	PA6
21		Thimble	1	PB6
22	C-514a	Filter	1	
23	T-408	Lock bolt	2	
24	K-482	Plug	1	
25	S-565	Copper block	2	
26	K-478	Connecting rod	1	
27	K-501	Steering shaft	1	
28	K-470	Shaft	1	

Knee, Gear box (1)

Item	Parts No.	Parts Name	Q'ty	Remark
29	K-472	Lead screw	1	
30		Machine screw	2	M6x1Px12L
31	K-499	Spacing ring	1	
32	K-500	Steering seat	1	
33		Parallel key	1	6x6x10L
34	K-502	Washer	1	
35		Hex. bolt	1	M8x1.25Px25L
36	G-486	Name plate	1	
37	K-526	Cover	1	
38	K-477	Connecting rod	1	
39	K-504	Stroke control lever	1	
40		Hex. socket set screw	2	M5x0.8Px25L
41	K-527	Stop block	1	
42	K-486	Washer	1	
43		Hex. socket screw	6	M6x1Px20L
44		C snap ring	4	S10
45	K-479	Pin	2	
46	K-505	Collar	1	
47	K-466	Washer	1	
48	K-475	Connecting rod fork	2	
49		Hex. nut	2	M10x1.5P
50		Thrust bearing	2	51105
51		Oil seal	2	SC25359
52	K-465	Cover	1	
53		Needle bearing	1	TLA2512
54	K-445	Gear	2	
55		Steel ball	4	φ 8
56	K-523	Spring	4	

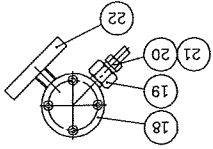
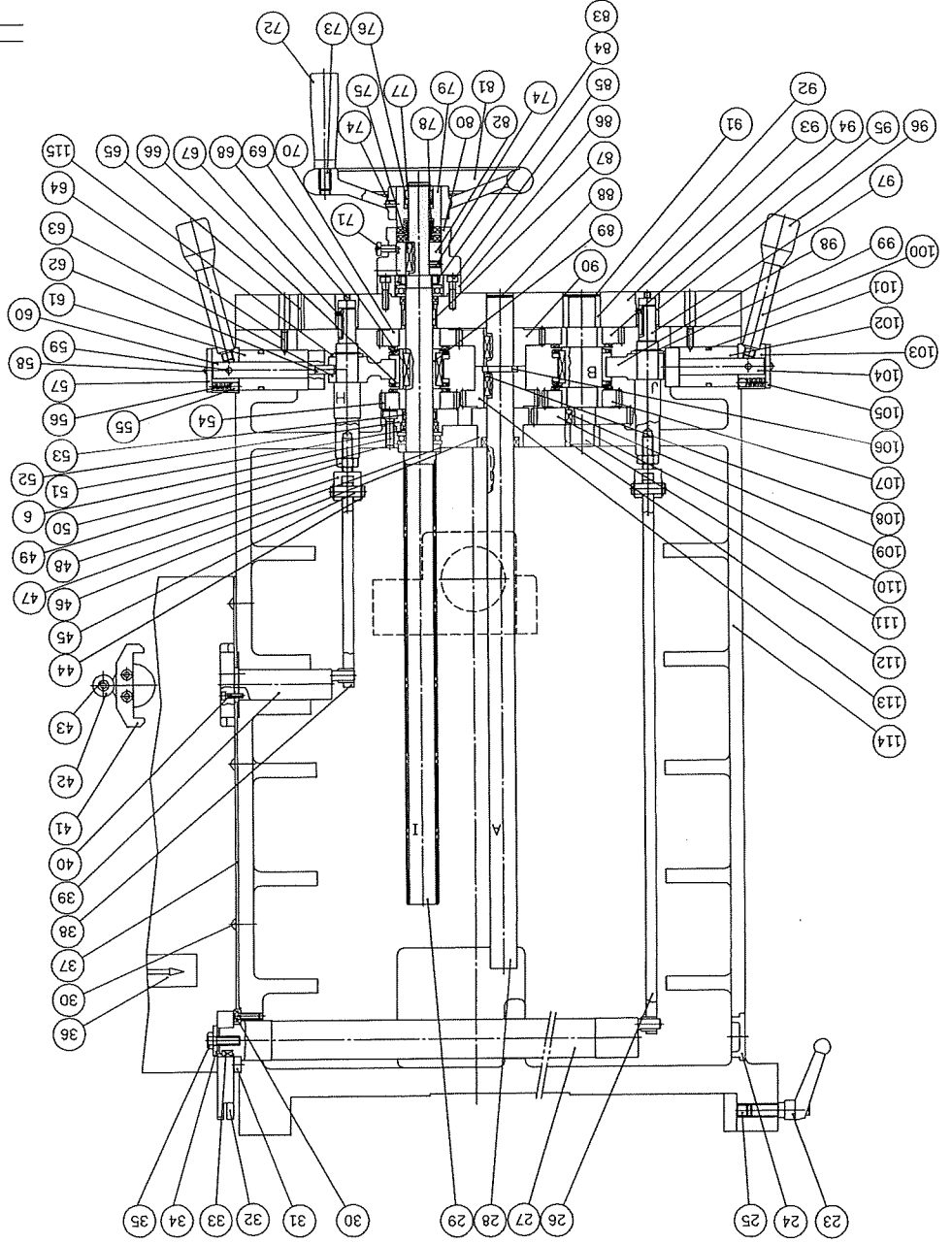
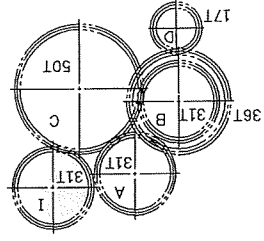
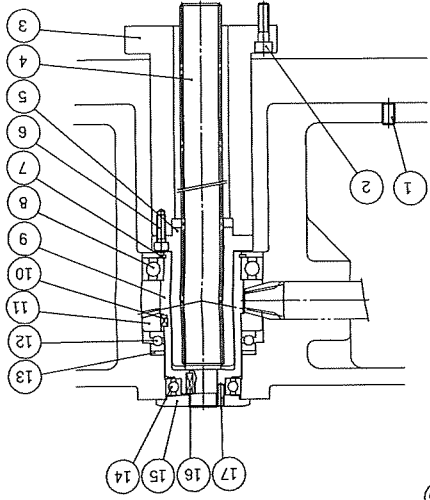
Knee, Gear box (1)

Item	Parts No.	Parts Name	Q'ty	Remark
57	K-519	Name plate	1	
58		Machine screw	4	M4x0.7Px16L
59		Taper pin	2	#3x38L
60	K-491	Steering shaft	1	
61	K-492	Sleeve	1	
62	K-489	Steering fork pin	2	
63	K-508	Steering fork	1	
64		Hex. socket set screw	2	M6x1Px20L
65		Taper pin	3	#5x45L
66	K-443	Clutch	2	
67		Hex. socket set screw	2	M4x0.7Px5L
68		Hex. socket set screw	2	M6x1Px6L
69		Parallel key	3	6x6x30L
70	K-444	Gear	1	
71	T-12	Set screw	1	
72	S-105	Handle sleeve	1	
73	S-104	Bolt	1	
74		Hex. socket set screw	1	M6x1Px10L
75		Parallel key	1	6x6x25L
76		Needle bearing	1	TA1920
77		C snap ring	1	S19
78	T-145	Spring	1	
79	K-623	Clutch	1	
80	T-129	Graduated ring	1	
81	T-688	Handle wheel	1	
82	T-130	Clutch	1	
83	K-105	Lock nut	1	AN05
84		Lock washer	1	AW05

Knee, Gear box (1)

Item	Parts No.	Parts Name	Q'ty	Remark
85		Hex. socket screw	2	M6x1Px25L
86	K-506	Graduated ring	1	
87		Needle bearing	1	TLA2520
88	K-460	Plug	1	
89	K-463	Collar	2	
90	K-448	Gear	1	
91	K-461	Plug	1	
92	K-432b	Bush	1	
93	K-432a	Cover	1	
94	K-578	Gear	1	
95	K-462	Collar	2	
96	H-149	Handle knob	2	
97	K-456	Steering shaft	2	
98	K-774	Steering fork	1	
99		C snap ring	2	S20
100	K-480	Handle rod	2	
101		O ring	2	P31
102	K-488	Sleeve	1	
103	K-490	Set seat	2	
104	K-487	Steering shaft	1	
105	S-550	Name plate	1	
106	K-560	Retainer ring	2	
107	K-577	Gear	1	
108		Parallel key	2	6x6x20L
109		Parallel key	1	6x6x12L
110	K-446	Gear	1	
111	K-471	Shaft	1	
112	K-525	Bush	1	

Model: CS-G450B



KNEE,GEAR BOX (1)

Chung Sing 69 VERSION: 2

Knee, Gear box (2)

Item	Parts No.	Parts Name	Q'ty	Remark
1	K-555	Wiper	1	
2	K-509	Wiper	2	
3	K-510	Wiper	2	
4	K-531	Set screw	2	
5	K-795	Wiper	1	
6	R-158	Adjust bolt	2	
7		Hex. socket screw	10	M16x2Px40L
8	K-770	Gib	1	
9	K-776	Wiper	1	
10	K-778	Fixed block	1	
11	S-198	Adjust bolt	4	
12	K-771	Gib	2	
13	K-511	Chip guard	1	
14	K-779	Fixed block	1	
15	K-772	Wiper	1	
16		Machine screw	12	M5x1.8Px10L
17	K-794	Wiper	1	
18	K-775	Wiper	1	
19		Parallel key	1	5x5x10L
20	K-561	Bevel gear	1	
21	G-437	Gear	1	
22		Ball bearing	1	6006
23		C snap ring	1	R55
24	G-459	Washer	1	
25	G-455	Washer	2	
26		C snap ring	1	S30
27	G-429	Gear	1	
28	G-465	Bearing seat	1	

Knee, Gear box (2)

Item	Parts No.	Parts Name	Q'ty	Remark
29		Parallel key	2	6x6x10L
30	G-427	Gear	1	
31	G-488	Gear	1	
32	G-428	Gear	1	
33		Ball bearing	1	6304
34	G-426	Helical gear	1	
35	G-467	Washer	1	
36		Parallel key	1	6x6x16L
37	G-466	Bearing seat	1	
38		Hex. socket screw	6	M6x1Px20L
39		Thrust bearing	1	51110
40	G-423	Helical gear	1	
41		Ball bearing	2	6205
42	G-422	Helical gear	1	
43		Ball bearing	1	6204
44		Hex. socket screw	1	M10x1.5Px20L
45		Motor	1	3HP-4P
46		Parallel key	1	6x6x30L
47		C snap ring	2	S20
48	G-450	Bearing seat	1	
49		C snap ring	1	R47
50		Hex. socket set screw	1	M8x1.25Px10L
51		Oil seal	1	SC30428
52	G-469	Spacing ring	1	
53		Spring washer	1	M10
54		Hex. socket screw	1	M10x1.5Px25L
55		Parallel key	1	8x7x45L
56	G-421	Helical gear	1	

Knee, Gear box (2)

Item	Parts No.	Parts Name	Q'ty	Remark
57	G-470	Washer	1	
58	G-483	Motor connect seat	1	
59		Hex. socket screw	4	M6x1Px20L
60		Spring washer	3	M12
61		Hex. bolt	3	M12x1.75Px30L
62		Taper pin	2	#5x64L
63		Hex. socket screw	2	M10x1.5Px75L
64	G-447	Spacing ring	1	
65	G-425	Helical gear	1	
66		Ball bearing	1	6905
67	G-438	Gear	1	
68	G-487	Spacing ring	1	
69	C-526	Name plate	1	
70	K-105	Lock nut	2	AN05
71		Lock washer	2	AW05
72	G-471	Spring	1	
73	C-530	Plug	1	
74	G-440	Clutch	1	
75	G-445	Nut	1	
76		Parallel key	1	6x6x9L
77	G-478	Bearing seat	1	
78		Thrust bearing	1	51106
79	K-484	Cover	1	
80		Hex. socket screw	4	M8x1.25Px90L
81	G-442	Collar	1	
82	G-443	Bush	1	
83		Hex. socket set screw	1	M5x0.8Px12L
84		Hex. socket screw	4	M10x1.5Px55L

Knee, Gear box (2)

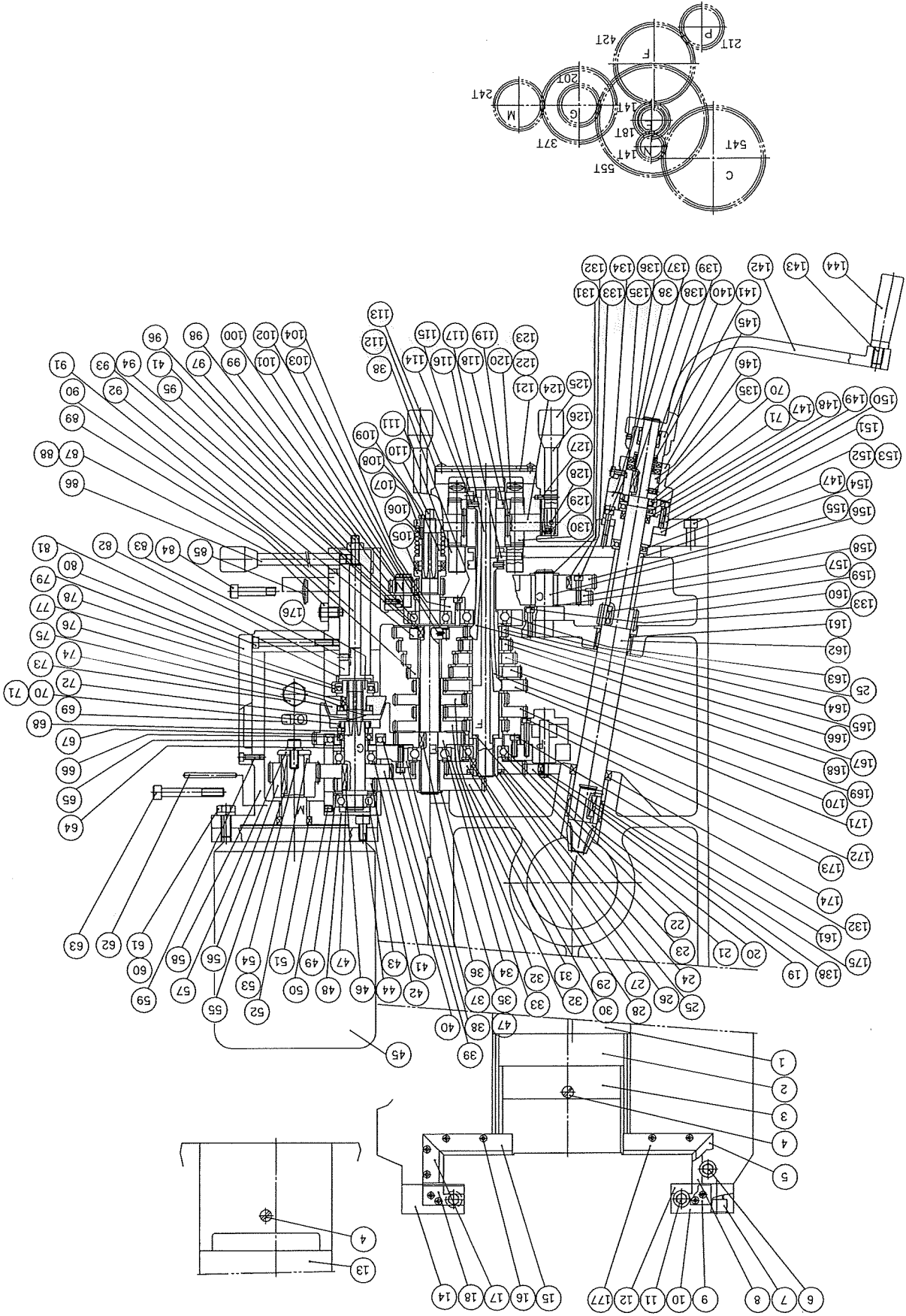
Item	Parts No.	Parts Name	Q'ty	Remark
85		Oil level gage	1	ϕ 26x ϕ 30
86	G-448	Handle lever	1	
87		Hex. nut	1	M12x1.75P
88	G-468	Set screw	1	
89	G-433	Spur gear	1	
90	G-439	Shaft	1	
91	K-431	Gear box	1	
92	G-477	Clutch	1	
93		Parallel key	1	6x6x12L
94	G-451	Spacing ring	1	
95		Hex. socket set screw	1	M6x1Px16L
96		Hex. nut	1	M10x1.5P
97		Hex. socket set screw	1	M10x1.5Px35L
98	G-461	Idle gear	1	
99	G-462	Washer	1	
100		C snap ring	1	S18
101	G-464	Shaft	1	
102	G-475	Spring	3	
103	G-476	Roller	3	
104	G-463	Bearing seat	1	
105	G-452	Gear	1	
106	G-473	Spring	1	
107	G-472	Nut	1	
108		Round head screw	1	M4x0.7Px30L
109	G-453	Clutch	1	
110	G-449	Shaft	1	
111	K-434	Rack	1	
112		Gasket	1	

Knee, Gear box (2)

Item	Parts No.	Parts Name	Q'ty	Remark
113		Machine screw	9	M6x1Px8L
114		Hex. socket set screw	2	M6x1Px10L
115	G-458	Slide bush	2	
116	G-460	Shaft	1	
117	K-453	Fork	2	
118	G-492	Spring	2	
119	K-439	Set screw	2	
120	K-433	Rack	1	
121	K-533	Name plate	1	MM, 60HZ
122	K-604	Name plate	1	MM, 50HZ
123	K-568	Name plate	1	INCH
124	K-435	Shaft	2	
125	H-149	Handle knob	3	
126	K-436	Handle lever	2	
127	K-438	Locating pin	2	
128		Taper pin	2	#3x32L
129	K-437	Spring	2	
130	K-449	Spur gear	1	
131		C snap ring	1	S22
132		Parallel key	1	6x6x14L
133		Hex. socket screw	5	M6x1Px30L
134	T-12	Set screw	1	
135		Hex. socket set screw	2	M6x1Px10L
136	K-549	Graduated ring	1	
137		C snap ring	1	S19
138		Parallel key	2	6x6x25L
139		Needle bearing	1	TA1920
140	K-623	Clutch	1	

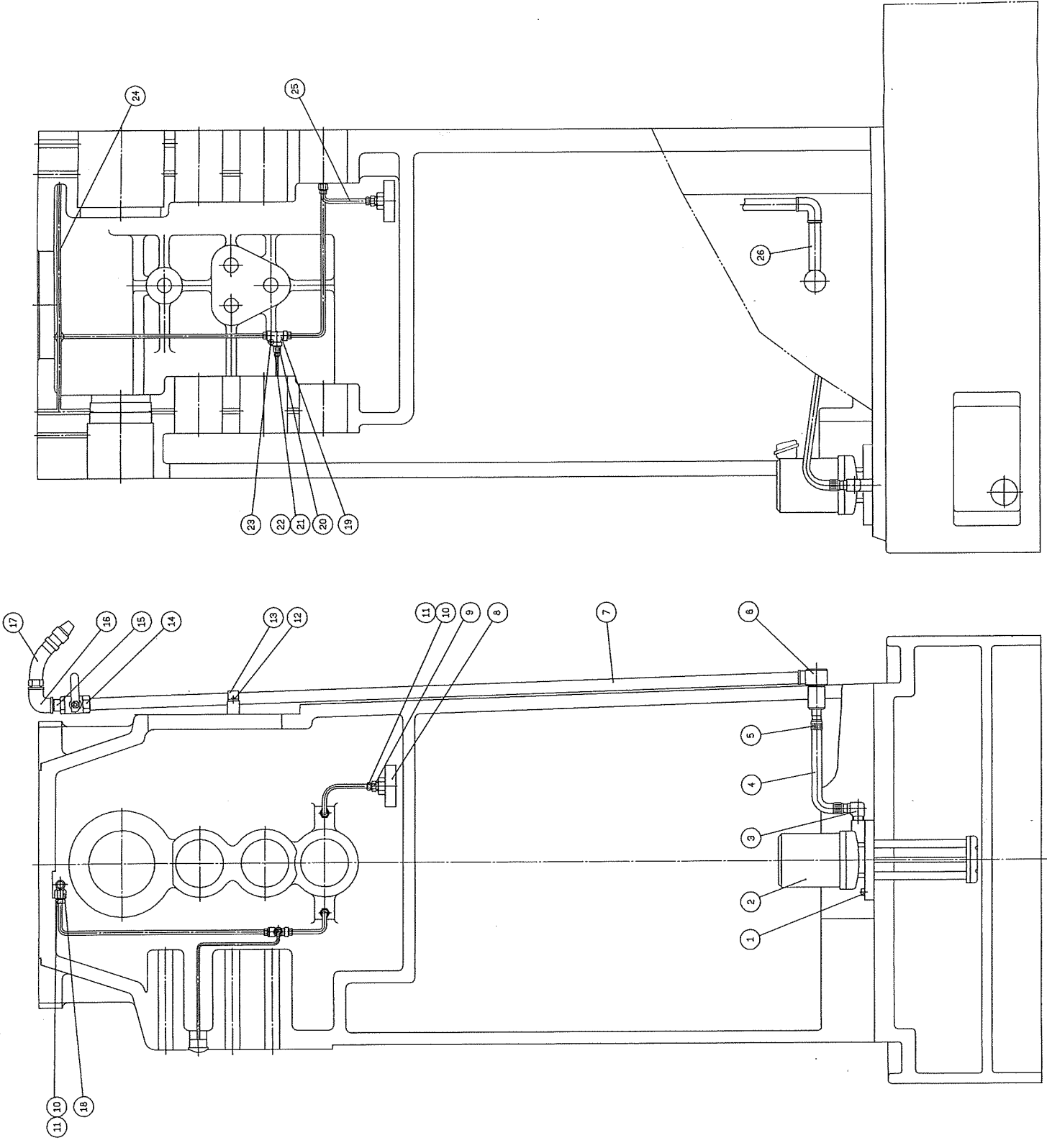
Knee, Gear box (2)

Item	Parts No.	Parts Name	Q'ty	Remark
141	K-656	Spring	1	
142	K-516	Rocking arm	1	
143	S-104	Handle bolt	1	
144	S-105	Handle sleeve	1	
145	K-547	Graduated ring	1	
146	T-130	Clutch	1	
147		Thrusting bearing	2	51105
148		Oil seal	1	SC25359
149		Hex. socket screw	2	M6x1Px20L
150	K-469	Graduated ring seat	1	
151	K-455	Spacing ring	1	
152		Hex. socket screw	6	M10x1.5Px45L
153		Hex. socket screw	2	M10x1.5Px90L
154	K-455	Spacing ring	1	
155	K-442	Spur gear	1	
156	K-468	Shaft	1	
157	K-467	Washer	2	
158	K-565	Spur gear	1	
159		Parallel key	1	6x6x20L
160	K-450	Helical gear	1	
161		Needle bearing	2	TA3525
162	K-473	Shaft	1	
163		Ball bearing	1	6206
164	G-436	Spur gear	1	
165	G-457	Spring lever	1	
166	G-454	Spacing ring	6	
167	G-435	Spur gear	1	
168	G-434	Spur gear	1	



Lubrication

Item	Parts No.	Parts Name	Q'ty	Remark
1		Hex. socket screw	4	M6x1Px20L
2		Pump	1	1/8HP-2Px150L
3		Hose	1	3/8PTx1/2E
4		Hose	1	1/2"x500m/m
5		Tube clips	2	5/8"
6	C-435	Hose connector	1	
7	C-368	Pipe connector	1	
8	C-514	Oil filter	1	
9		Straight joint	1	PD602
10		Thimble nut	6	PA6
11		Thimble	6	PB6
12		Round head screw	2	M4x0.7Px10L
13		Pipe clips	1	3/8"
14		Cock	1	3/8"
15		Nipple	1	3/8"x2"
16		Elbow	2	PT3/8"xPT3/8"
17		Nozzle pipe	1	3/8"
18		Straight joint	6	PD601
19		T joint	1	PKD6
20		Straight joint	1	PD401
21		Thimble nut	1	PA4
22		Thimble	1	PB4
23		Hex. socket screw	1	M5x0.8Px20L
24	C-571a	Oil pipe	1	
25		Aluminum pipe	3	φ 6
26		Nipple	1	3/8"x3"



Overarm

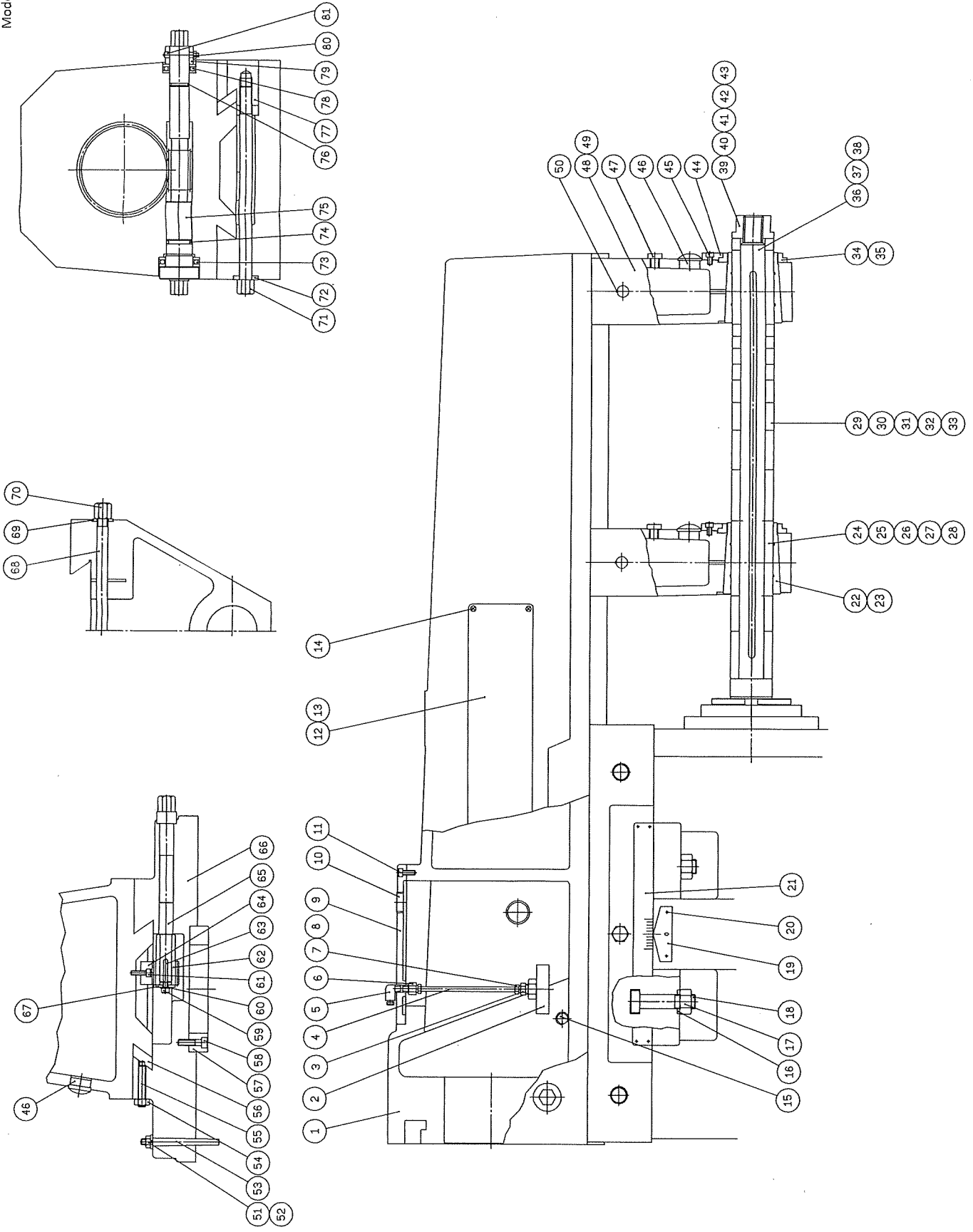
Item	Parts No.	Parts Name	Q'ty	Remark
1	R-383	Overarm	1	
2	C-5114	Oil filter	1	
3		Straight joint	1	PD602
4		Oil pipe	1	ϕ 6
5		Elbow joint	1	PH4
6		Straight joint	1	PD601
7		Thimble nut	2	PA6
8		Thimble	2	PB6
9	R-76	Cover	1	
10		Plug	1	3/4"
11		Hex. socket screw	4	M6x1Px16L
12	C-1197	Name plate	2	
13	C-671	Name plate	2	SHARP
14		Round head screw	8	M4x0.7Px12L
15		Plug	1	PT3/8"
16		Washer	4	M18
17		Hexagon nut	4	M18x2.5P
18	R-388	Set bolt	4	
19	C-366	Indicating plate	2	
20		Rivet	8	ϕ 2x5L
21	R-440	Name plate	1	
22	C-252	Brass bush	2	(NT40)
23	R-405	Brass bush	2	(NT50)
24	C-422	Bearing collars	2	25.4MM (NT40)
25	R-407	Bearing collars	2	31.75MM (NT50)
26	R-482	Bearing collars	2	27MM (NT40)
27	R-486	Bearing collars	2	32MM (NT50)
28	R-592	Bearing collars	2	38.1MM (NT50)

Overarm

Item	Parts No.	Parts Name	Q'ty	Remark
29	C-250	Spacing collars	1 set	25.4MM (NT40)
30	R-404	Spacing collars	1 set	31.75MM (NT50)
31	R-481	Spacing collars	1 set	27MM (NT40)
32	R-482	Spacing collars	1 set	32MM (NT50)
33	R-591	Spacing collars	1 set	38.1MM (NT50)
34	R-397	Lock nut	2	(NT40)
35	R-406	Lock nut	2	(NT50)
36	R-371	Milling arbor	1	25.4MM (NT40)
37	R-409	Milling arbor	1	31.75MM (NT50)
38	R-484	Milling arbor	1	27MM (NT40)
39	C-254	Set nut	1	INCH (NT40)
40	R-408	Set nut	1	INCH (NT50)
41	R-483	Set nut	1	MM (NT40)
42	R-487	Set nut	1	MM (NT50)
43	R-590	Set nut	1	38.1MM (NT50)
44	R-411	Clamping block	2	
45		Hex. socket screw	2	M6x1Px10L
46		Oil level gage	3	ϕ 26x ϕ 30
47		Plastic screw	2	W1/2"
48	R-412	Arbor bracket	2	
49	R-384	Arbor bracket	2	
50		Spring pin	2	ϕ 5x14L
51		Hexagon nut	2	M10x1.5P
52		Spring washer	1	M10
53	C-256	Taper pin	2	
54		Hexagon nut	2	M10x1.5P
55	H-641	Adjusting bolt	3	
56	R-396	Adjusting gib	1	

Overarm

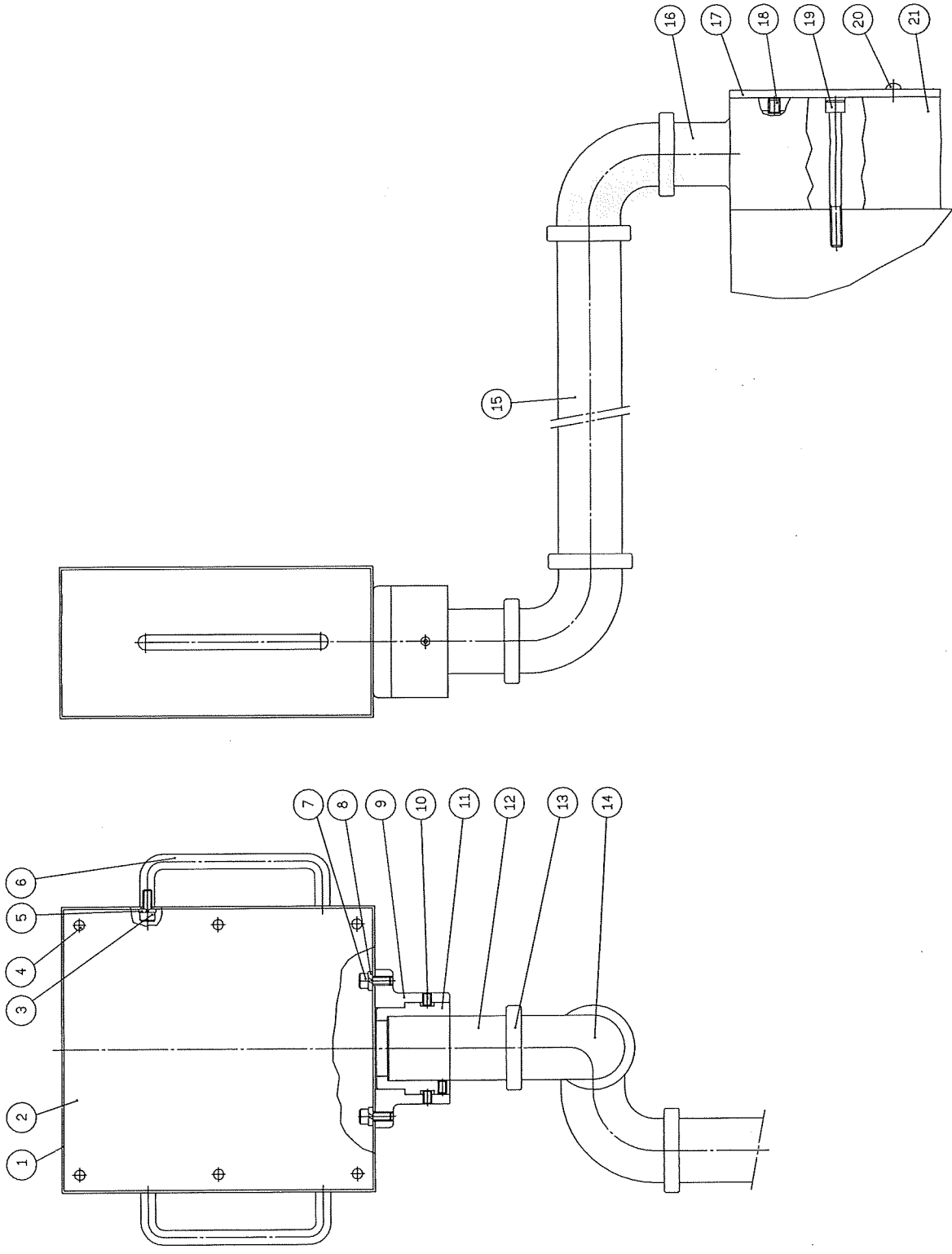
Item	Parts No.	Parts Name	Q'ty	Remark
57	R-392	Tenon	1	
58		Hex. socket screw	3	M8x1.25Px30L
59		Hex. socket screw	1	
60		Spring washer	1	M6
61		Hex. socket screw	4	M6x1Px20L
62	R-389	Spur gear	1	
63		Parallel key	1	5x5x30L
64	R-391	Rack	1	
65	R-390	Gear shaft	1	
66	R-369	Rotation seat	1	
67	R-562	Washer	1	
68	R-378	Bolt	2	
69	R-380	Washer	2	
70	R-379	Nut	2	
71	R-386	Locking bolt	2	
72	R-394	Washer	2	
73		Thrust bearing	1	51107
74		O ring	1	P26
75	R-395	Worm shaft	1	
76		O ring	1	P21
77	R-387	Locking block	2	
78		Thrust bearing	1	51105
79	R-146	Shaft sleeve	1	
80		Hexagon nut	1	M5x0.8P
81	R-272	Taper pin	1	



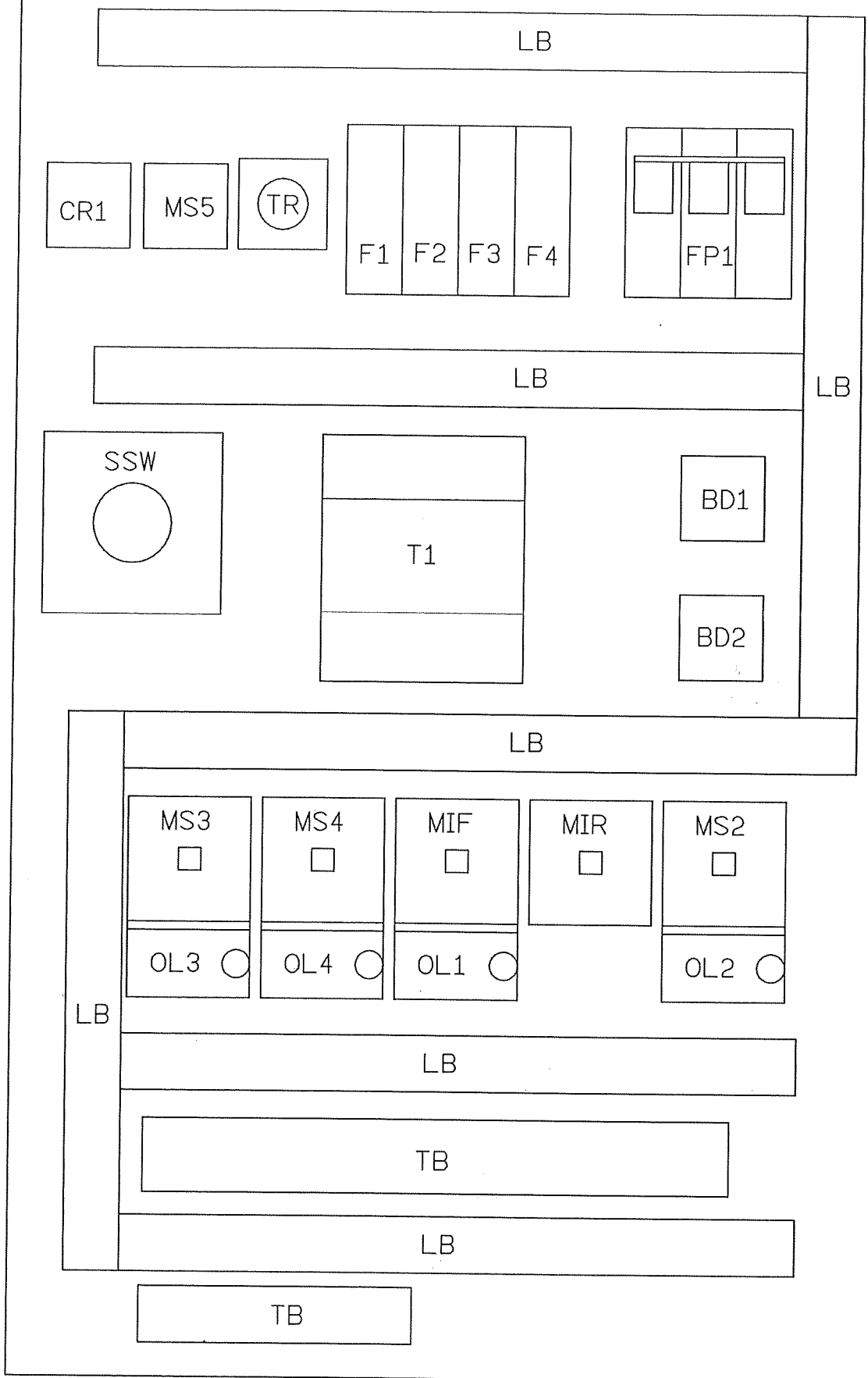
OVERARM

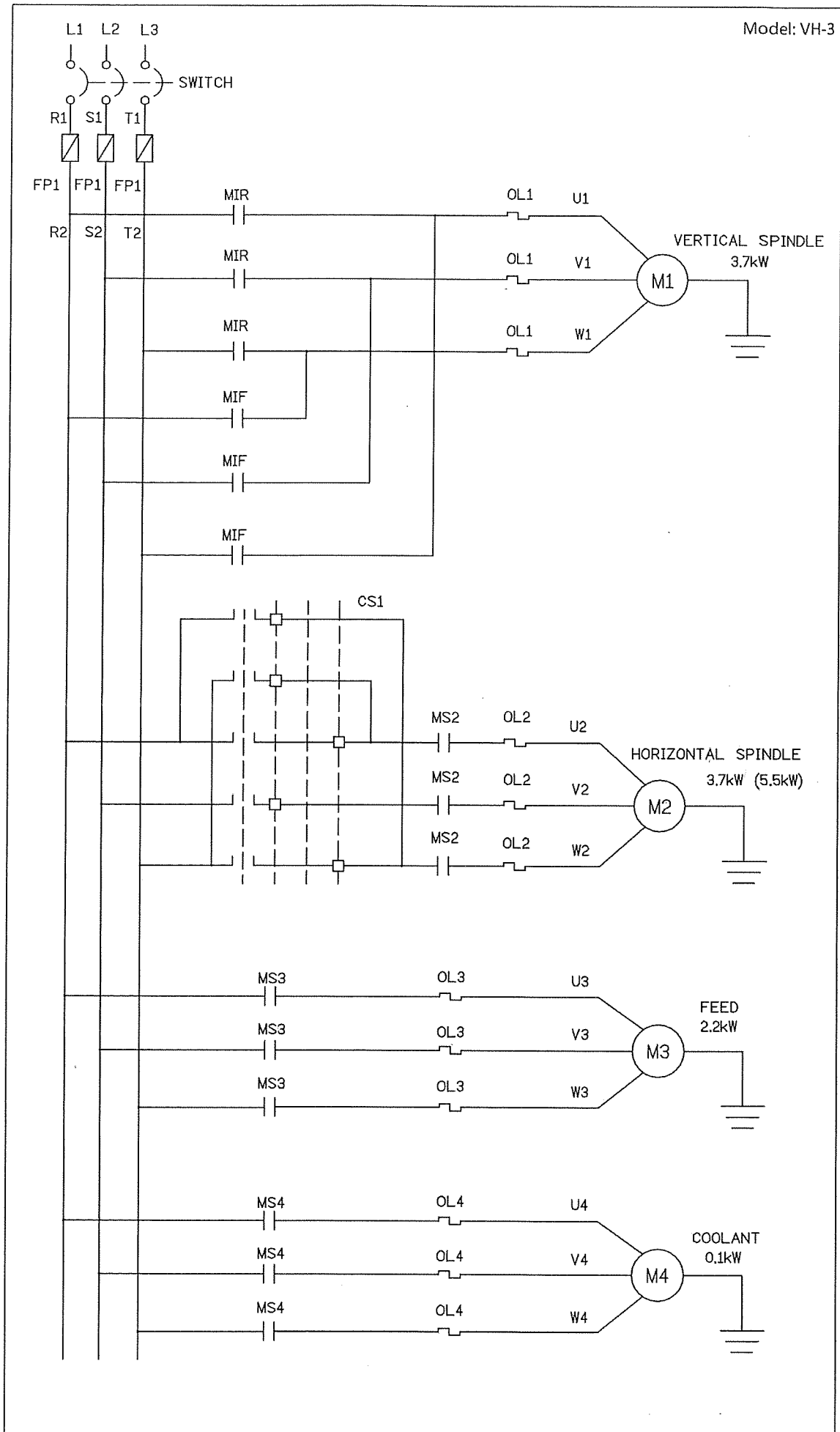
Control box

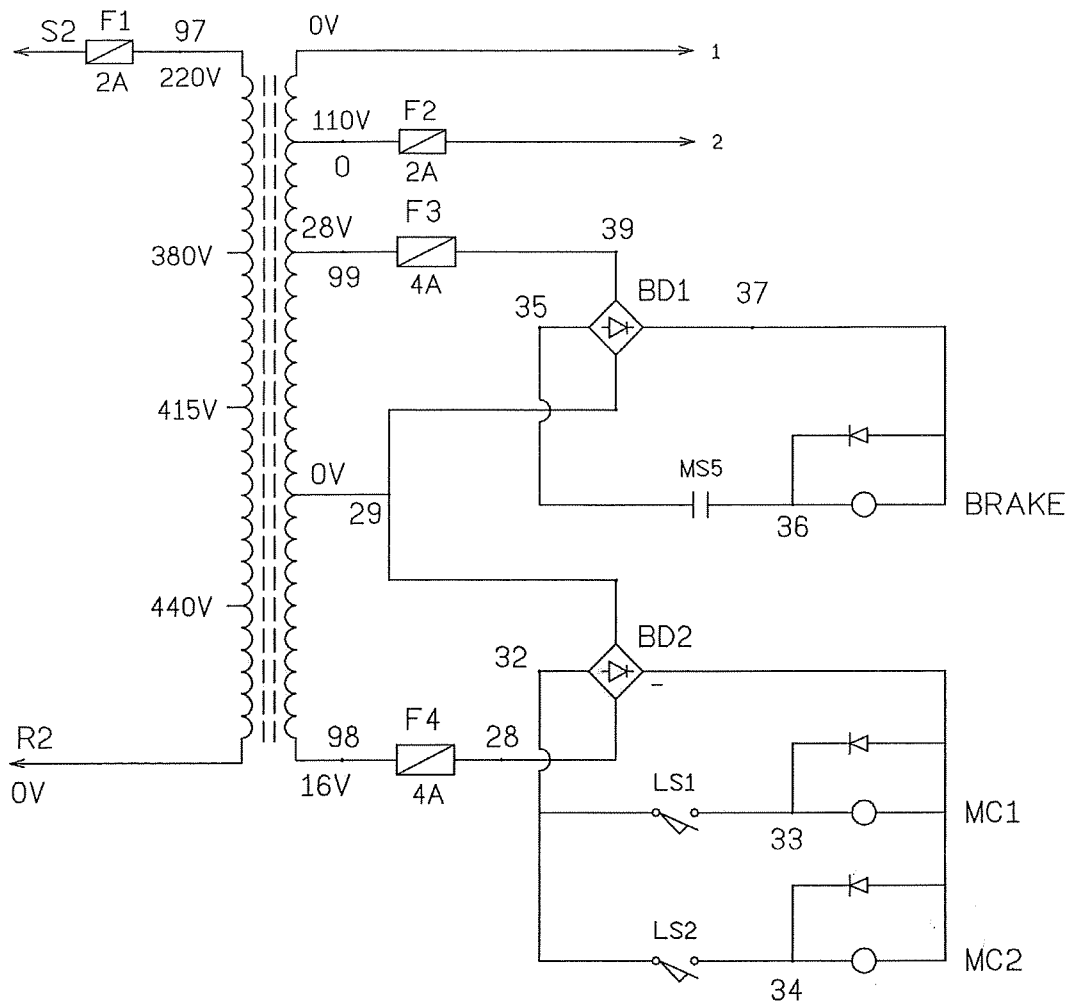
Item	Parts No.	Parts Name	Q'ty	Remark
1	E-1050	Operation box	1	
2	E-1049	Name plate	1	
3		Hex. socket screw	4	M6x1Px10L
4		Round head screw	4	M5x0.8Px10L
5		Spring washer	4	M6
6	C-664	Handle	2	
7		Hex. socket screw	2	M6x1Px16L
8		Spring washer	2	M6
9	E-105	Sleeve	1	
10		Hex. socket set screw	3	M6x1Px8L
11	E-104	Sleeve	1	
12	E-107	Connector pipe	1	
13	E-108	Connector	4	
14		Elbow	2	PT1/2"
15	C-666	Pipe	1	
16	E-106	Connector pipe	1	
17	C-676	Cover	1	
18		Hex. socket set screw	1	M8x1.25Px10L
19		Hex. socket screw	1	M8x1.25Px80L
20		Round head screw	2	M6x1Px8L
21	C-667	Connector seat	1	

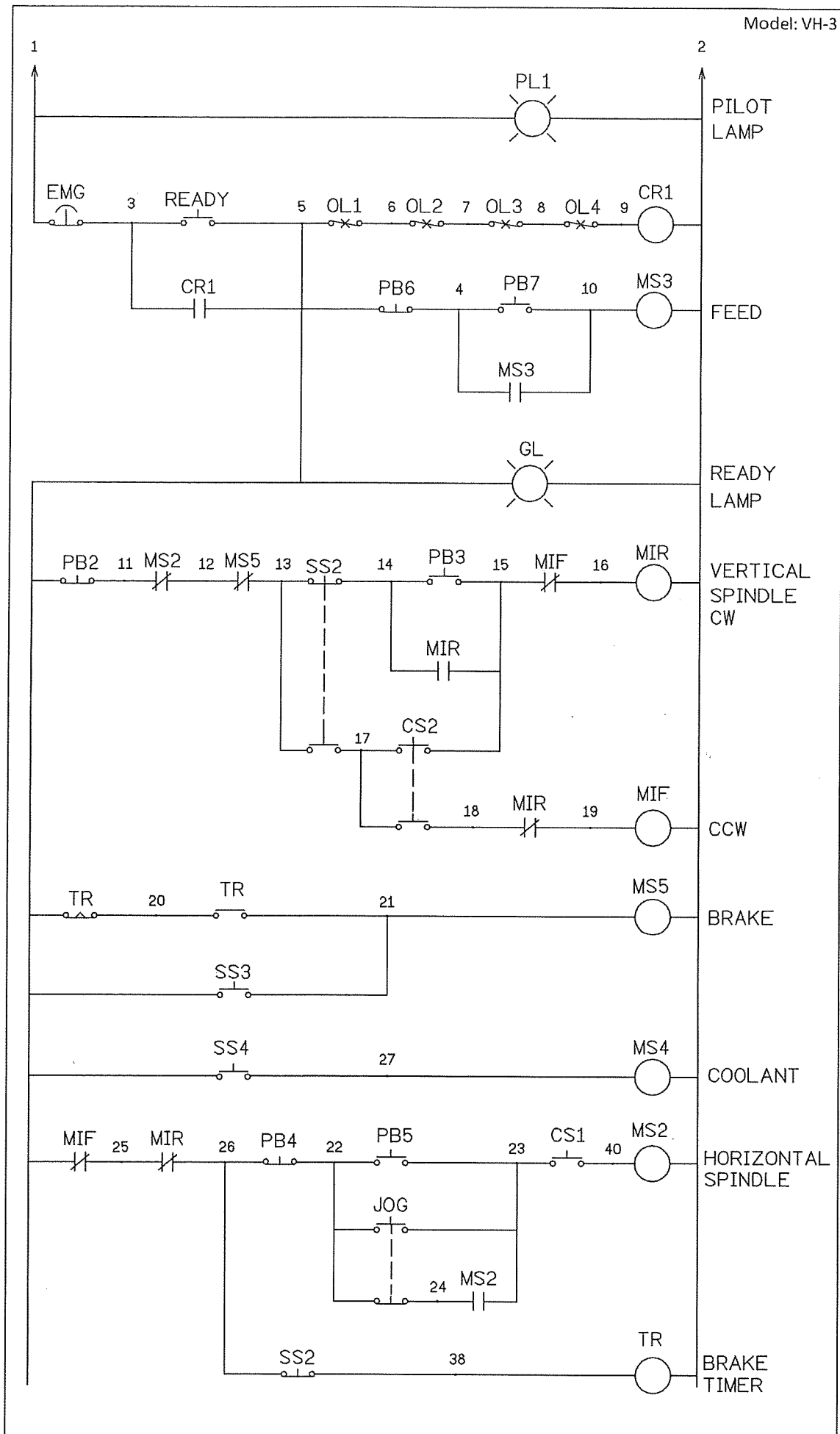


INSTALLATION DIAGRAM FOR CONTROL CABINET











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