



# PARTS MANUAL

**Metal Working**



## VARIABLE SPEED VERTICAL MILL MODEL: VM-942E-1

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**Book 2 of 2**

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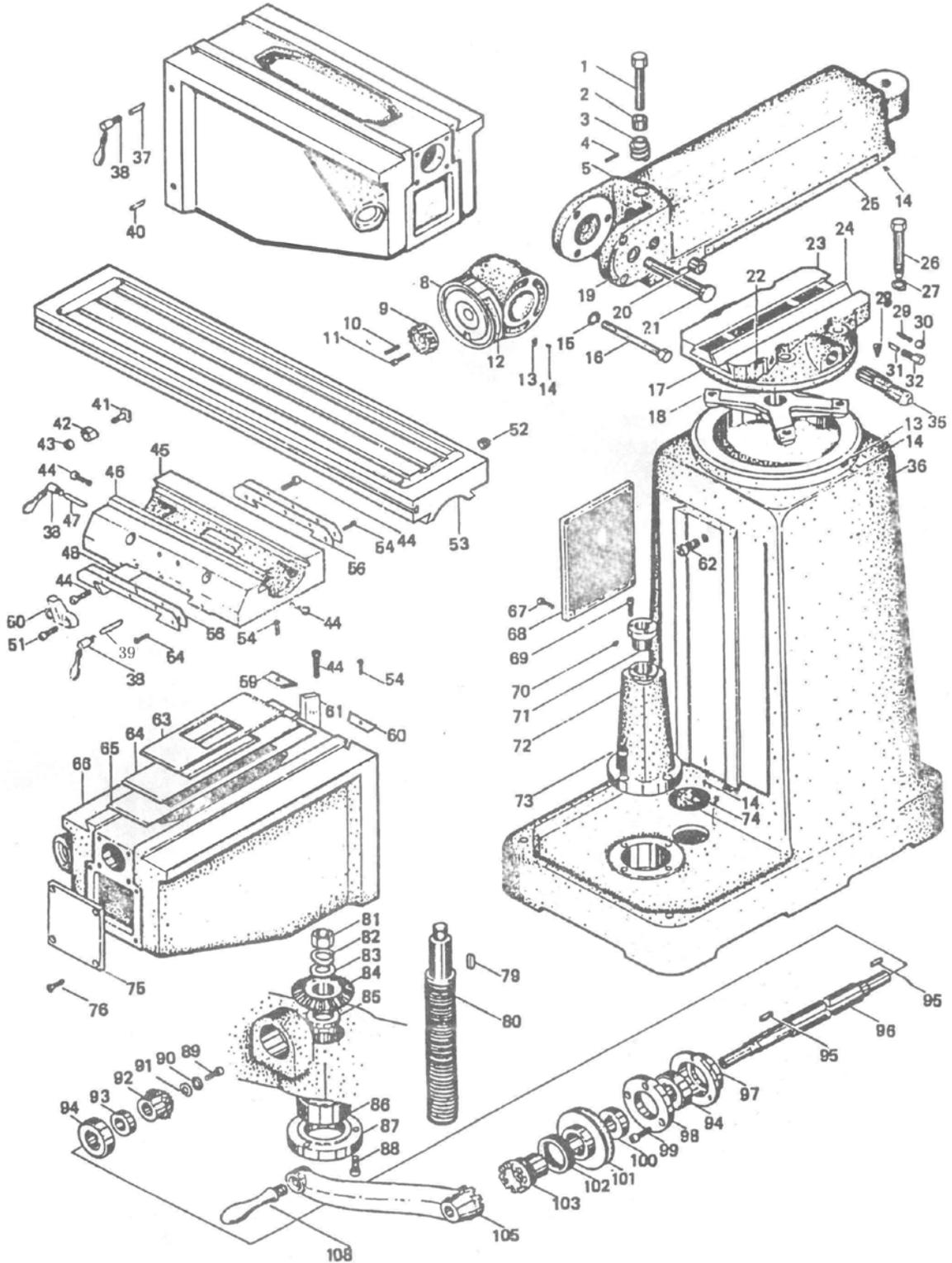


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# BASE MACHINE PARTS DIAGRAM





### Base Machine Parts List A

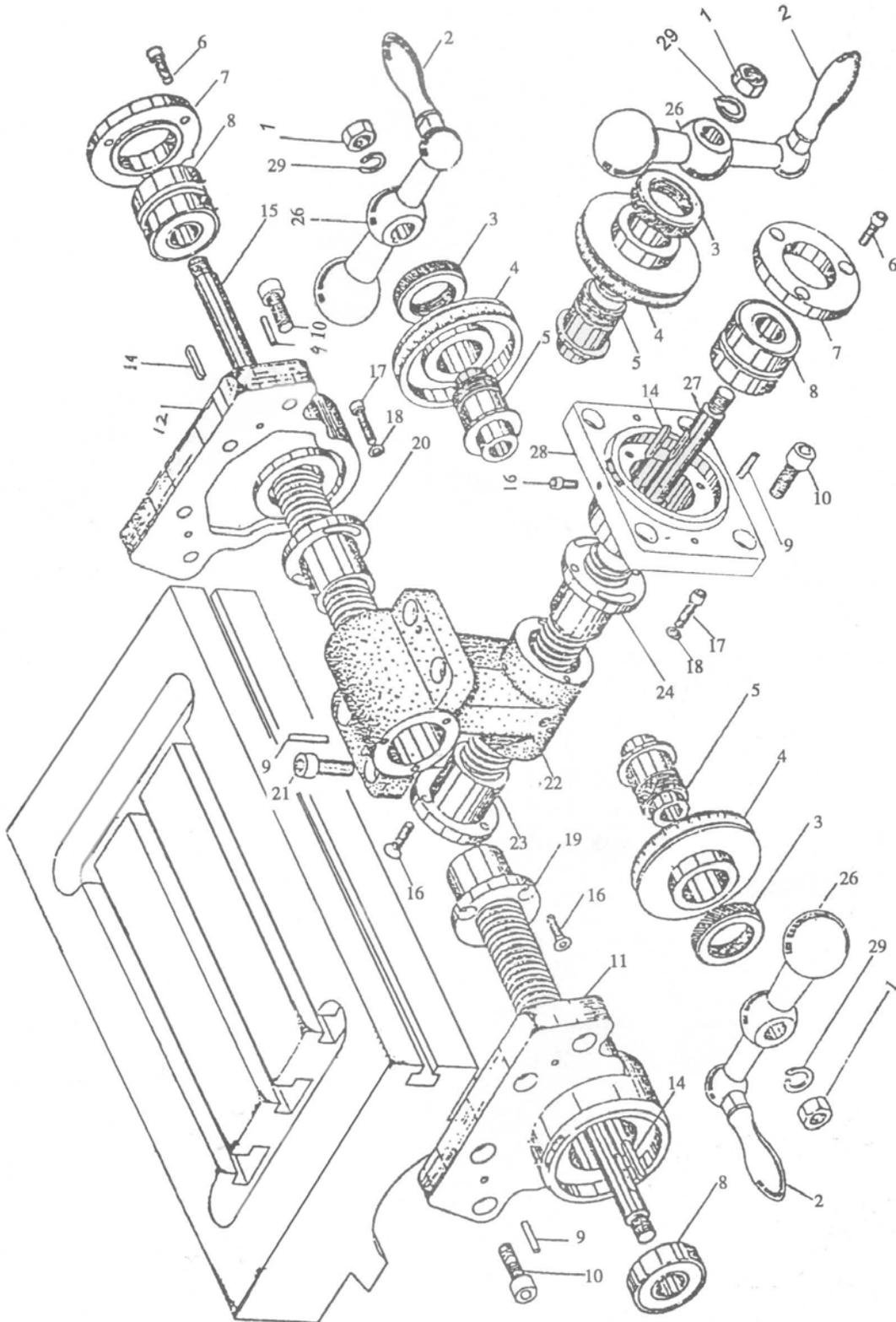
Item	Description	Item	Description
C001	Worm shaft	C038	Lock handle
C002	Sleeve of worm shaft	C039	Lock pin
C003	Worm	C040	Lock pin
C004	Spring pin	C041	Travel set handle
C005	Ram	C042	Travel set block
C008	adapter	C043	Nut
C009	Worm	C044	Adjusting screw for gib
C010	Spring pin	C045	Saddle
C011	Hex. Socket screw	C046	Gib of table
C012	Mark	C047	Lock pin
C013	Zero indicator	C048	Gib of saddle
C014	Rivet	C050	Travel stop block
C015	Spring lock washer	C051	Hex. Socket screw
C016	Lock screw	C052	Screw plug
C017	Mark	C053	Work table
C018	Bracket	C054	Round head screw
C019	Ruler	C056	Oil scraper
C020	Sleeve	C059	Right oil scraper
C021	Axle of adapter	C060	Left oil scraper
C022	Zero indicator	C061	Gib of knee
C023	Turret	C062	Travel set screw
C024	Gib	C063	Chip guard
C025	Ruler	C064	Chip guard
C026	Bracket screw	C065	Chip guard
C027	Spring lock washer	C066	Knee
C028	Set screw	C067	Hex. Socket screw
C029	Lock screw	C068	Side cover plate
C030	Hex. Head screw	C069	Hex. Socket screw
C031	Lock pin	C070	Oil nozzle
C032	Lock screw	C071	Elevating nut
C035	Gear shaft	C072	Lead screw bracket
C036	Body	C073	Hex. Socket screw
C037	Lock pin	C074	Filter screen



Item	Description	Item	Description
C075	Front cover	C093	Adjusting spacer
C076	Hex. Socket screw	C094	Bearing
C077	Hex. Socket screw	C095	Key
C079	Key	C096	Elevating shaft
C080	Elevating lead screw	C097	Baring bracket
C081	Hex. Head nut	C098	Bearing shield
C083	Washer	C099	Hex. Socket screw
C084	Bevel gear	C100	Washer
C085	Washer	C101	Dial plate
C086	Bearing	C102	Nut
C087	Bearing shield	C103	Clutch sleeve
C088	Hex. Socket screw	C105	Elevating crank handle
C089	Hex. Socket screw	C106	Washer
C092	Pinion bevel gear	C108	Handle



## WORK TABLE PARTS DIAGRAM



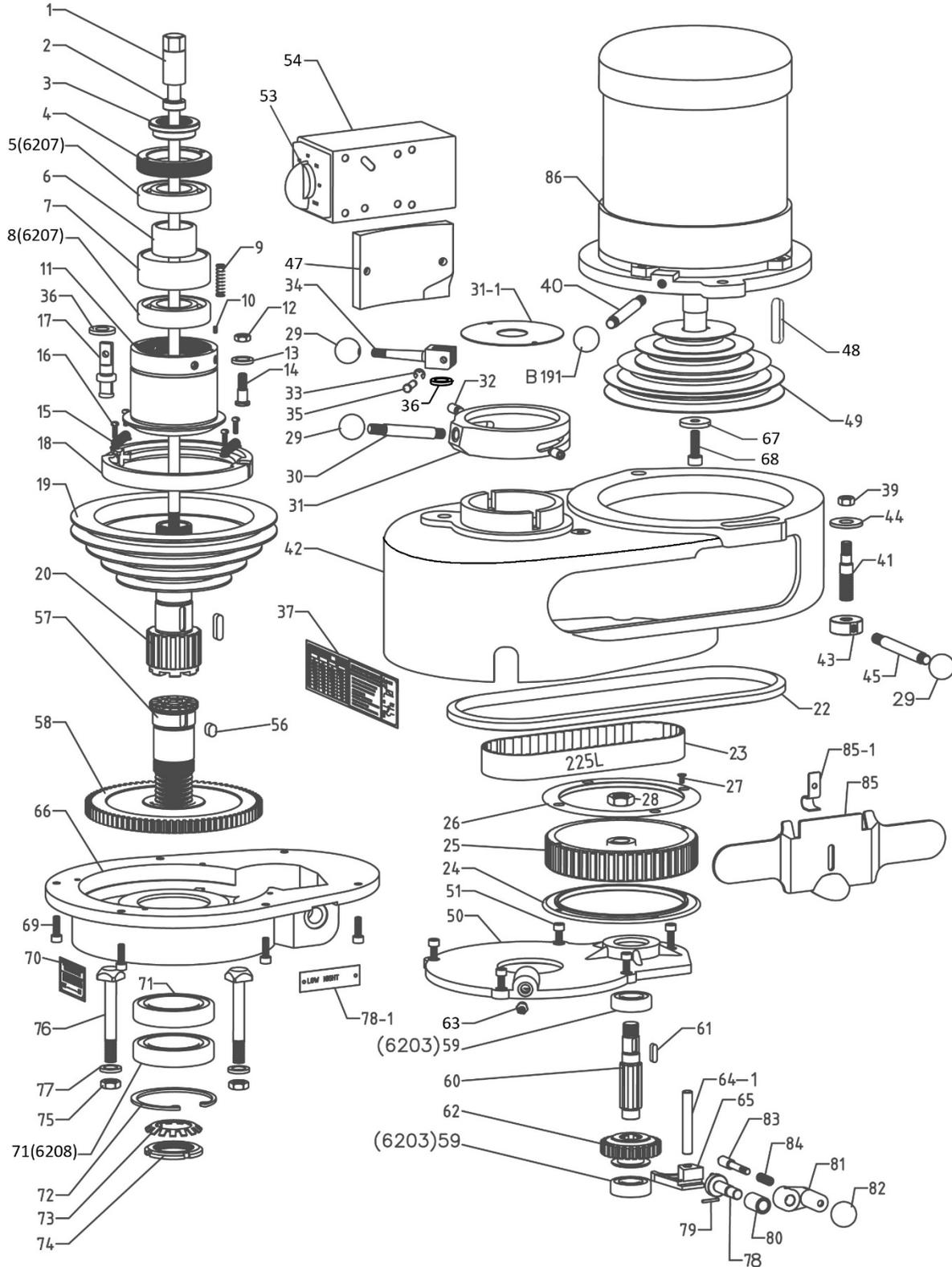


## Work Table Parts List

Item	Description
D001	Hex. Head Nut
D002	Handle
D003	Dial Plate Lock Nut
D004	Dial Plate
D005	Dial Plate Holder
D006	Screw
D007	Bearing Shield
D008	Bearing
D009	Pin
D010	Screw
D011	Left Bearing Bracket
D012	Right Bearing Bracket
D013	Bearing
D014	Key
D015	Longitudinal Feed Screw
D016	Screw
D017	Screw
D018	Washer
D019	Longitudinal Feed Nut
D020	Longitudinal Feed Nut
D021	Screw
D022	Feed Nut Bracket
D023	Cross Lead Feed Nut
D024	Cross Lead Feed Nut
D026	Crank Handle
D027	Cross Feed Screw
D028	Bearing Bracket
D029	Lock Washer



# 8 SPEED MILLING HEAD PARTS DIAGRAM - A





### 8 Speed Milling Head Parts List - A

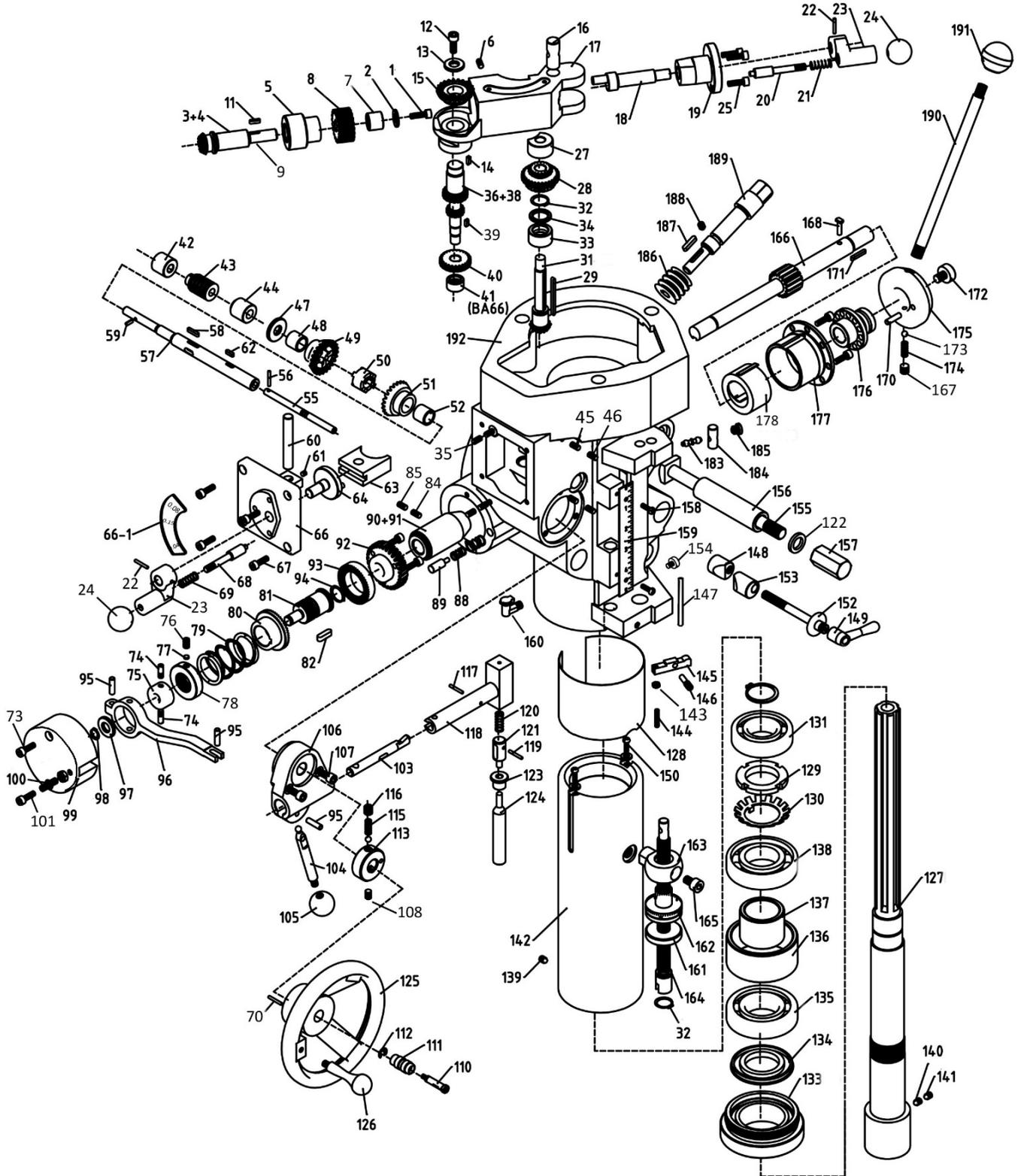
Item	Description	Item	Description
A1	Draw Bar	A42	Pulley Housing
A2	Washer	A43	Motor Lock Nut
A3	Locknut	A44	Washer
A4	Sleeve Nut	A45	Handle
A5	Bearing 6207ZZ	A47	Switch Cover Base
A6	Internal Space Sleeve	A48	Key
A7	External Space Sleeve	A49	Motor Pulley
A8	Bearing 6207	A50	Back Gear Box Cover
A9	Spring (4pc)	A51	Screw 5x12
A10	Set Screw 3x8	A53	Power Switch
A11	Spindle Pulley Sleeve	A54	Switch Cover
A12	Nut 5/16	A56	Key 8x15
A13	Washer 5/16	A57	Spindle Gear Shaft
A14	Brake Lock Screw	A58	Spindle Gear
A15	Spring (2pc)	A59	Bearing 6203ZZ
A16	Screw M3*10	A60	Small Gear Shaft
A17	Brake Shaft	A61	Key 5x15
A18	Brake Assembly	A62	Small Gear
A19	Spindle Pulley	A63	Oil Cup
A20	Pulley Clutch Shaft	A64	Sliding Pin
A21	Key 6x25	A65	Gear Engaging Fork
A22	V Belt	A66	Back Gear Box
A23	Timing Belt (225L)	A69	Screw 6x20
A24	Pulley Flange	A70	Power Feed Label
A25	Timing Pulley	A71	Bearing 6208ZZ
A26	Pulley Flange	A72	Retaining Ring 80
A27	Screw	A73	Toothed Washer 40
A28	Nut 5/8x18NF	A74	Bearing Lock Nut
A29	Plastic Ball 5/16"	A75	Nut 7/16"
A30	Clutch Lever 5/16"	A76	T Bolt (3pc) 7/16"
A31	Clutch Disk	A77	Washer 7/16"
A31-1	Top Shield	A78	Eccentric Shaft
A32	Dowel Pin with Screw	A79	Pin 3x20



Item	Description	Item	Description
A33	Retaining Ring	A80	Sleeve
A34	Brake Handle	A81	Gear Engaging Crank
A35	Pin	A82	Plastic Ball 1/4"
A36	Washer	A83	Alignment Pin
A37	Speed Table	A84	Spring
A39	Nut 3/8x24	A85	Side Shield
A40	Motor Move Handle	A85-1	Clip of Shield
A41	Motor Lock Shaft	A86	AC Motor (2/4p)



# 8 SPEED MILLING HEAD PARTS DIAGRAM - B





### 8 Speed Milling Head Parts List - B

Item	Description	Item	Description
B1	Screw M5*10	B99	Clutch plate
B2	Washer	B100	Setscrew M6*16
B3	Bevel pinion shaft	B101	Locknut
B5	Bushing	B103	Slide shaft
B6	Pin	B104	Feed control lever
B7	Worm spacer	B105	Plastic ball
B8	Feed worm	B106	Feed trip bracket
B9	Worm shaft	B107	Screw M6*20
B11	Key	B108	Screw M6*20
B12	Screw M8*12	B110-112	Pull lever
B13	Washer	B113	Hand wheel clutch
B14	Key	B114	Steel Ball 3/16"
B15	Reversing gear	B115	Spring
B16	Dowel pin	B116	Screw M8*8
B17	Worm bracket	B117	Long Pin 3*14
B18	Eccentric shaft	B118	Slide block
B19	Shaft sleeve	B119	Pin 3*12
B20	Bar	B120	Spring
B21	Spring	B121	Stop plunger
B22	Pin 3*20	B122	Spring Washer 1/2"
B23	Crank	B123	Plunger pushing
B24	Plastic ball 1/4"	B124	Push bar
B25	Screw M5*12	B125	Handwheel
B27	Copper sleeve	B126	Handle
B28	Multi-gear	B127	Spindle
B29	Key 3*3*45	B128	Quill Skirt
B31	Multi-gear shaft	B129	Locknut
B32	Retaining ring	B130	Toothed washer
B33	Copper sleeve	B131	Bearing 6206ZZ
B34	Washer	B132	Sleeve
B35	Screw M6*25	B133	Quill end nut
B36	Feed gear	B134	Spindle Dirt Shield
B38	Multi-gear shaft	B135	Bearing 7207



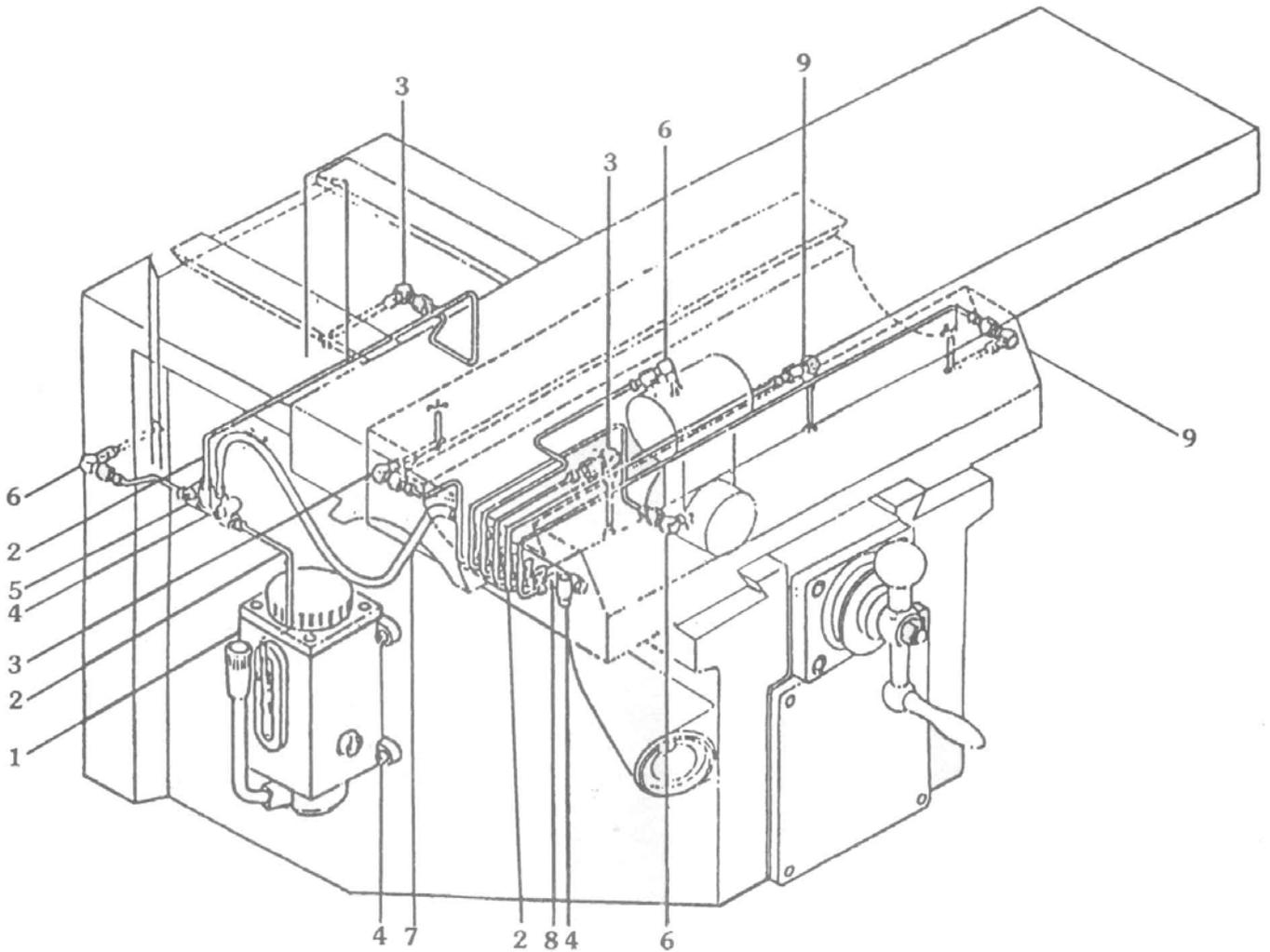
Item	Description	Item	Description
B39	Key 3*3*8	B136	(Bearing Spacer - Large)
B40	Cooper worm wheel	B137	(Bearing Spacer - Small)
B41	Bearing BA66	B138	Bearing 7207
B42	Copper sleeve	B139	Screw M5*5
B43	Auto. Feed worm	B140	Special Socket Set Screw
B44	copper sleeve	B141	Collet Alignment Screw
B45	Screw M8*8	B142	Quill
B46	Screw M6*8	B143	Lock nut M4
B47	Thrust Washer	B144	Socket Set Screw M4*16
B48	Bushing	B145	Feed Trip Lever
B49	Bevel Pinion	B146	Trip Lever Pin
B50	Clutch	B147	Side indicator bar
B51	Bevel pinion	B148	Quill lock Sleeve
B52	Copper sleeve	B149	Lock Handle
B55	Feed control pull bar	B152	Washer
B56	Pin $\Phi$ 3×20	B153	Quill Lock Sleeve Tapped
B57	Feed worm shaft	B154	Lock screw
B59	Pin $\Phi$ 3×16	B155	T - Blot Assy
B60	Sliding shaft	B156	Lower Clamping Blot Spacer (2 req)
B61	Screw M5*5	B157	Locknut
B62	Key 3*3*15	B158	Chem Blacked RD. HD. Screws (2 Req.)
B63	Feed changing fork	B159	Micrometer Scale
B64	Eccentric shaft	B160	Oil cup
B66	Clutch plate	B161	Quill Micro - stop Nut
B67	Screw	B162	Micrometer Nut
B68	Alignment bar	B163	Quill Stop Knob
B69	Spring	B164	Quill Stop Micro - screw
B70	Pin 3*15	B165	Screw
B73	Screw M5*35	B166	Quill Pinion Shaft
B74	Screw	B168	Spring Pin
B75	Clutch ring	B169	RD. Head Screw (2 Req.) M5*12
B76	Screw M6*6	B170	Roll Pin
B77	Brass plug	B171	Key 3*3*20
B78	Overload clutch nut	B172	Pinion shaft Hub Screw
B79	Spring	B173	Steel Ball 3/16"



Item	Description	Item	Description
B80	Overload clutch	B174	Compression Spring
B81	Shaft sleeve	B175	Rack Feed Handle Hub
B82	Key 5*8*13	B176	Pinion Shaft Hub Sleeve
B84	Screw M6*8	B177	Spring cover
B85	Screw M6*8	B178	Clock Spring (Clock Spring Assy.)
B88	Spring	B183	Reverse Trip Ball Lever
B89	Bar	B184	Feed Reverse Trip Plunger
B90+91	Bushing	B185	Reverse/Trip Ball Lever Screw
B92	Feed worm wheel	B186	Worm Gear
B93	Teethed clutch ring	B187	Key 4*4*18
B94	Retaining ring	B188	Socket Set Screw
B95	Pin 5*14	B189	ADJ Worm Shaft
B96	Feed control lever	B190	Quill feed Handle
B97	Washer	B191	Black Plastic Ball Handles 3/8"
B98	Retaining ring	B192	Quill Housing



**CENTRAL LUBRICATING OIL-FEEDING EQUIPMENT PARTS DIAGRAM E**

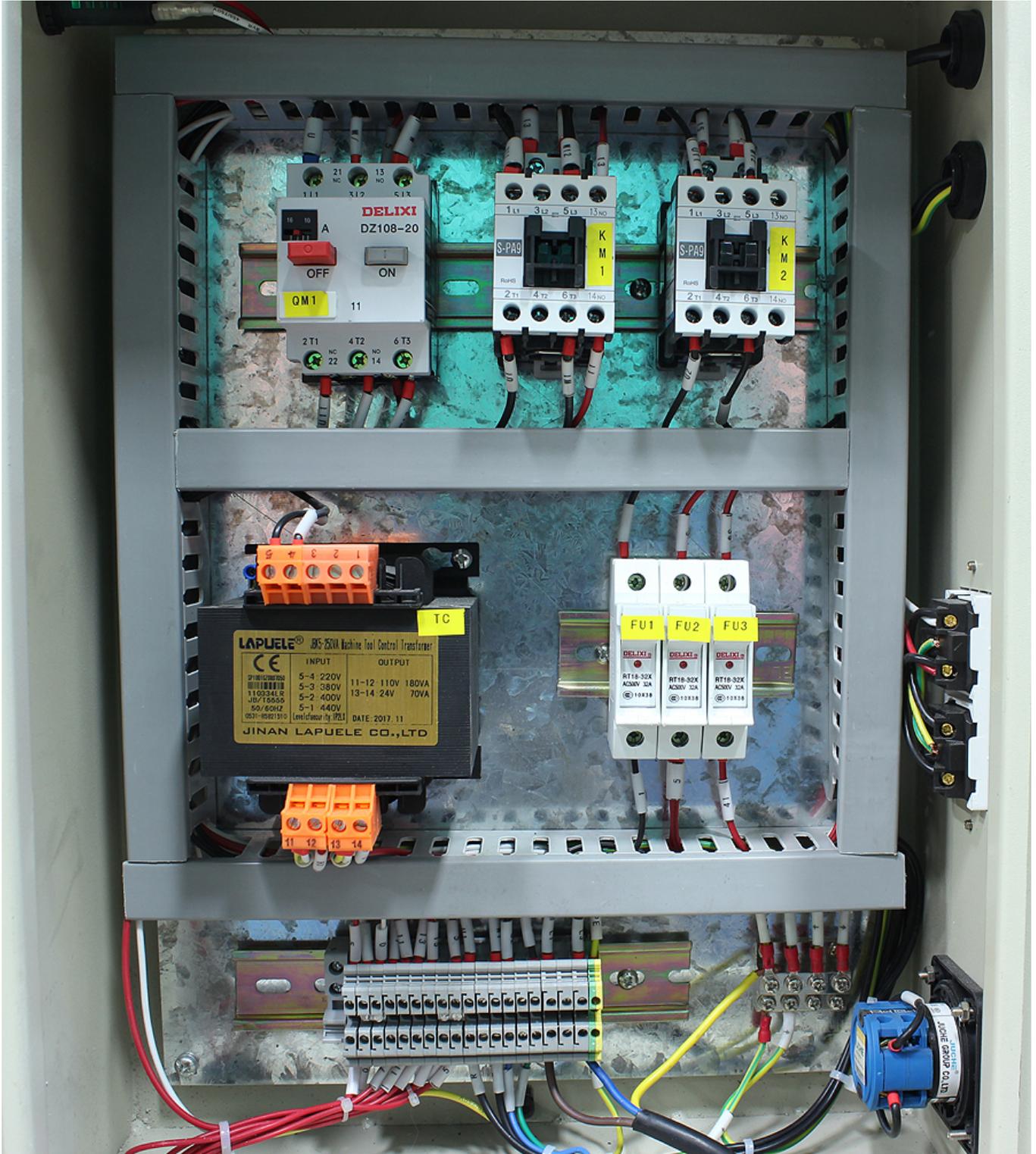


**Central Lubricating Oil-Feeding Equipment Parts List E**

Item	Description	Item	Description
B001	Hand Oil Pump	E006	Ratio Oil Distributor
B002	Pipe Φ4	E007	Steel Flexible Tube
B003	Ratio Oil Distributor	E008	A Type Oil Distributor
B004	Screws	E009	Ratio Oil Distributor



## ELECTRICAL ENCLOSURE COMPONENTS





NOTES



NOTES



NOTES



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