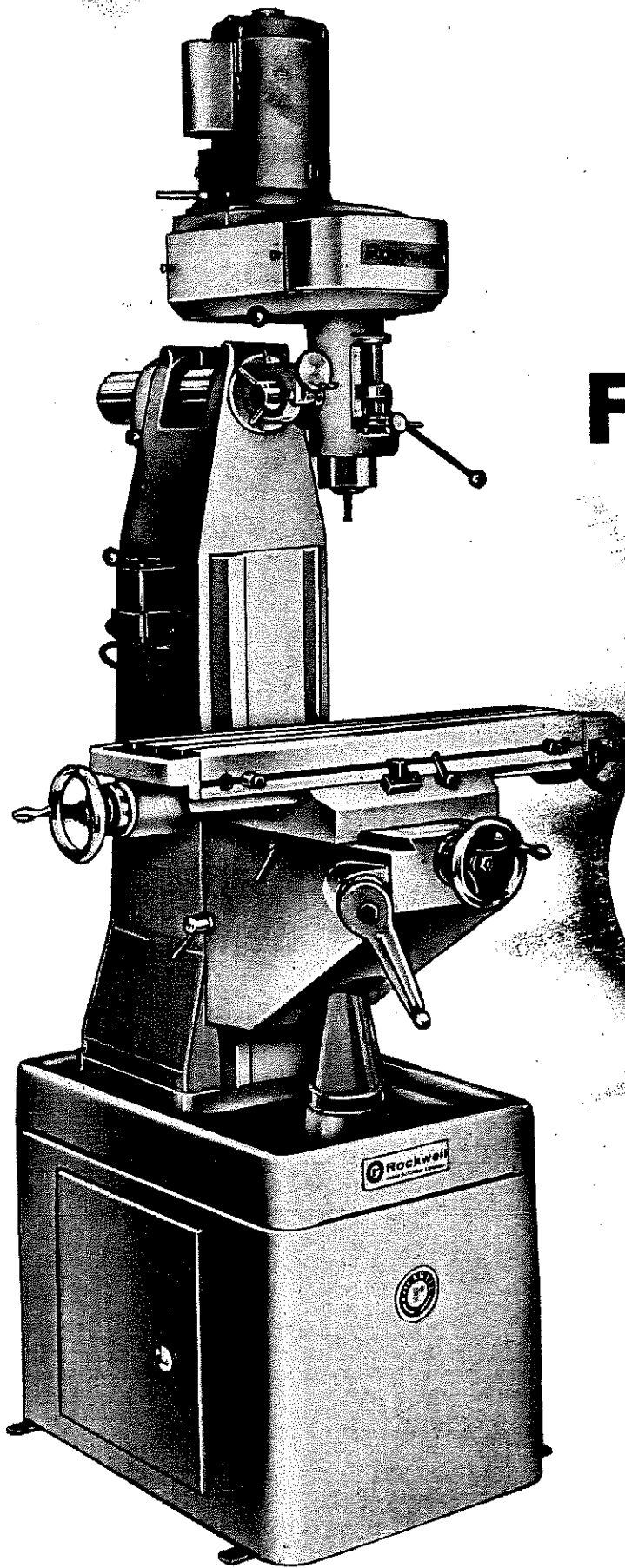




ROCKWELL

VERTICAL MILLING MACHINE



Rockwell

MANUFACTURING COMPANY

The Rockwell Building • Pittsburgh, Pa.

DATED 1M-9-1-68

PM-450-01-651-500



Rockwell

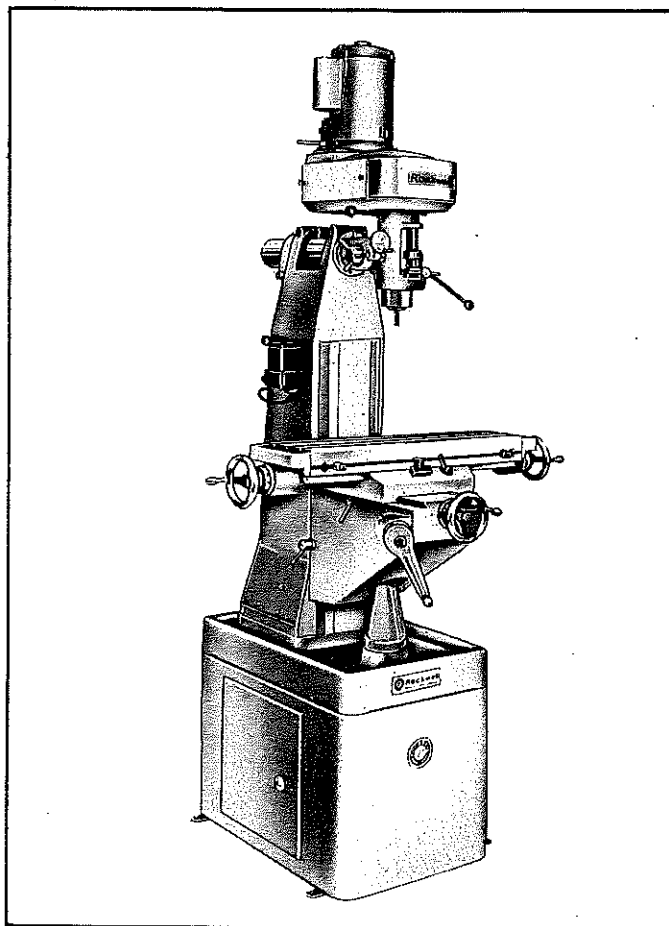
MANUFACTURING COMPANY

The Rockwell Building • Pittsburgh, Pa.

PM-450-01-651-5001

DATED 1M-9-1-68

ROCKWELL VERTICAL MILLING MACHINE



The Vertical Milling Machine you have just purchased is a **PRECISION MACHINE TOOL**, built to the same high standards that have made the name Rockwell the byword for quality built, industrial power tools for over a quarter of a century.

Treat it as such by taking the time and care to see that it is properly installed and conscientiously maintained. You will find such time to be well spent and gain the benefits derived from keeping your mill in perfect working condition for its entire life.

Before leaving our factory, the complete machine was thoroughly aligned, tested and inspected and the results of the more important tests are shown on the **QUALITY CONTROL CERTIFICATE** packed with it. However, rough handling in shipment could throw the machine out of alignment and before being placed in operation it should be thoroughly checked and readjusted where necessary.

It is of the utmost importance therefore, that you review this entire manual before installing or operating your mill so that you may become thoroughly familiar with the adjustments and functions of its various components.

INSTALLATION

UNPACKING

The Rockwell Vertical Milling Machine is shipped completely assembled and mounted to a heavy wooden skid. Allow the skid to remain in place until the mill is moved to its permanent shop location. For convenience in packaging, the head is tilted 45 degrees. Loosen the two HEAD CLAMPING SCREWS and turn the HEAD TILTING SCREW until the head is vertical. Use a dial indicator for perfect 90 degree positioning of the spindle, as shown in Fig. 2.

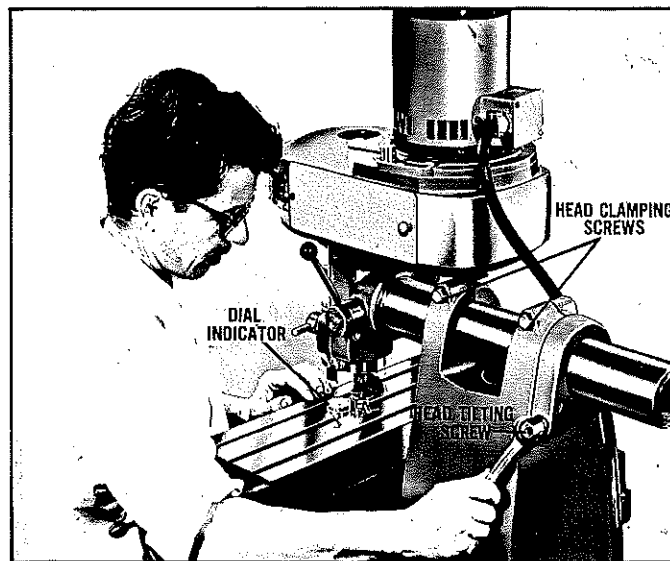


Fig. 2.

CLEANING THE MILL

The ways and all other machined and unpainted surfaces of the mill are protected with a coating of rust preventive. This coating may be removed with a soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose.) After cleaning, lubricate all exposed ways and unpainted surfaces with a light film of good machine oil. Then move each unit to the opposite limit stop and similarly clean and lubricate the exposed ways. Loosen the two head clamping screws to unlock the ram, and move it forward and backward its full length in order to clean and lubricate.

SELECTING FLOOR SPACE

Vibration transmitted through inadequately constructed floors by adjacent machinery or other sources can impair the accuracy of your mill. Therefore it is of utmost importance that the mill be mounted to a solid, level foundation, preferably concrete.

Unless substantially constructed, a wood floor should be braced against sagging and transmission of vibration.

LEVELING THE MILL

Proper leveling is an important factor to consider when setting up the machine. A long spirit level should be mounted on the table, both longitudinally and transversely. The floor should be as smooth as possible, and tapered wedges should be inserted in any openings so that the base receives as much foundation as possible. Lag screw holes are provided for securing the machine to the floor after leveling. See Fig. 3.

When setting machine on a floor that has any surface irregularities, shims should be used to correct this condition to the greatest extent possible. See Fig. 3.

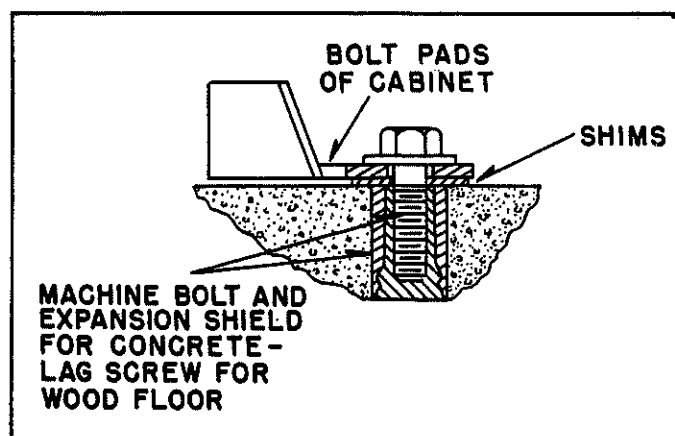
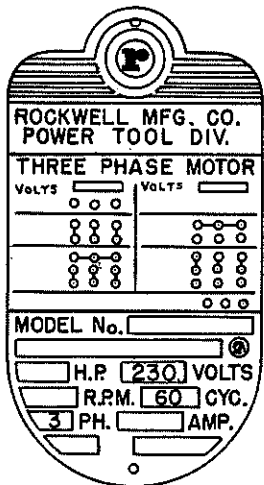


Fig. 3.

ELECTRICAL RECOMMENDATIONS

Constant speed 1/2 hp, 1140 or 1725 rpm or a 3/4 hp, 1725 rpm motor is recommended. The motor pulley, supplied with the mill is designed to fit a motor shaft 5/8" in diameter. The mounting dimensions of the mill accomodate a NEMA C Face Frame #56 Motor, having a special shaft length of 4 3/32" from the face of the flange to the end of the shaft. Wiring diagrams are included with the Rockwell Switch kits made available for use with this milling machine.



Nameplate on motor.

Make sure electrical
characteristics
are the same.



To connect to power source
use heavy enough wire.

3 PHASE
230 VOLT
60 CYCLE
POWER
SOURCE

Your power source.

H. P.	1 Phase	3 Phase
1/2 3/4	#14	#14

NOMENCLATURE CHART

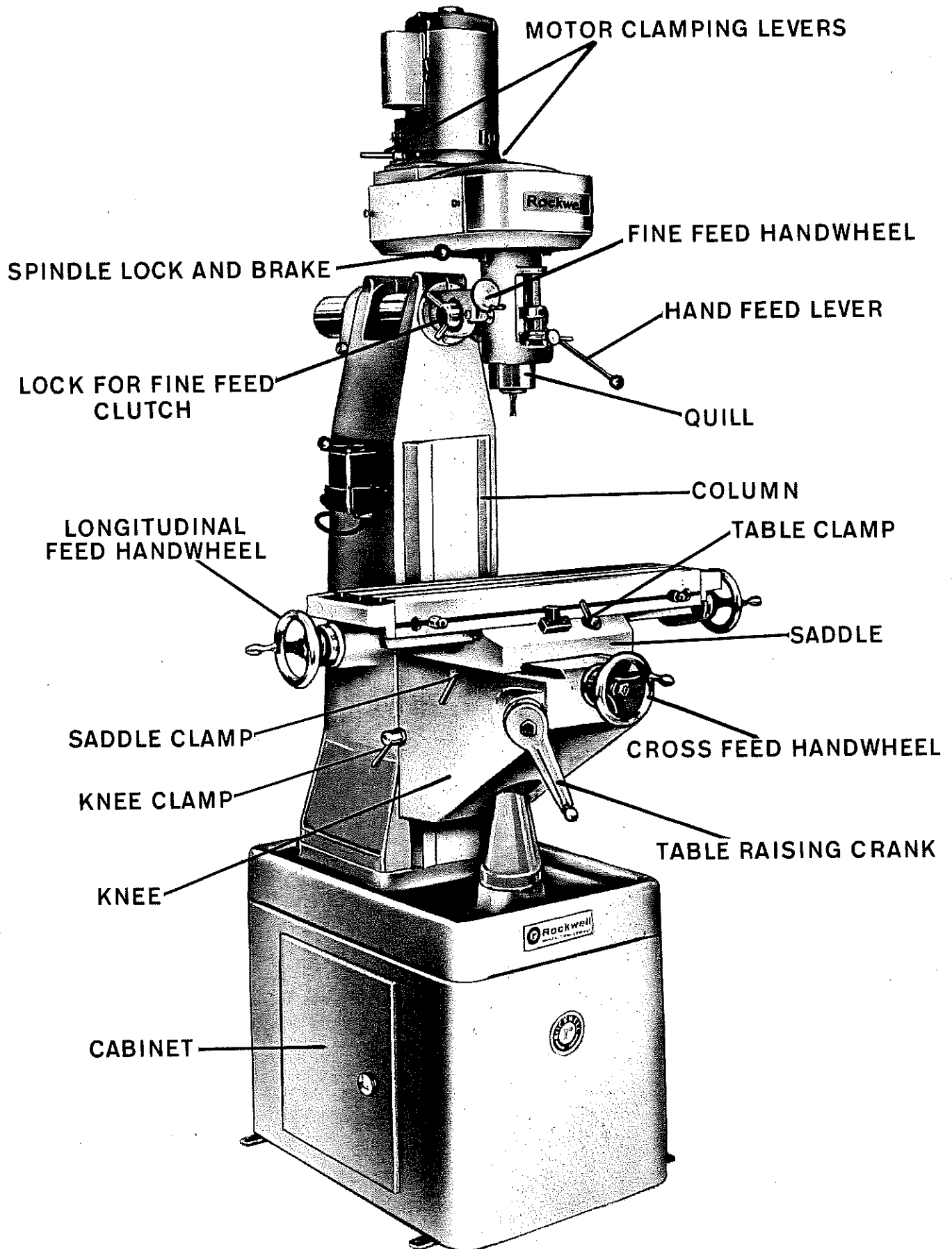
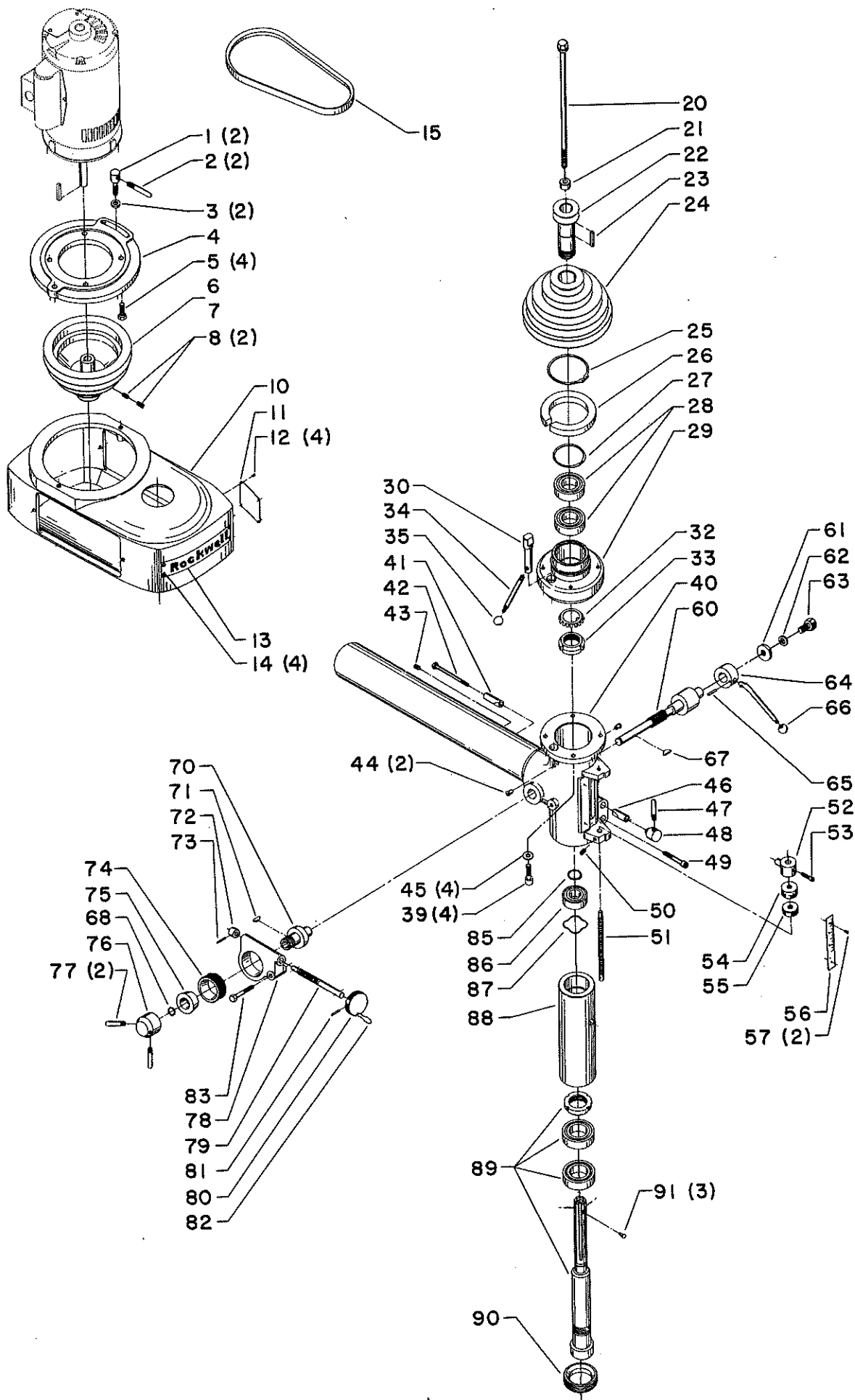
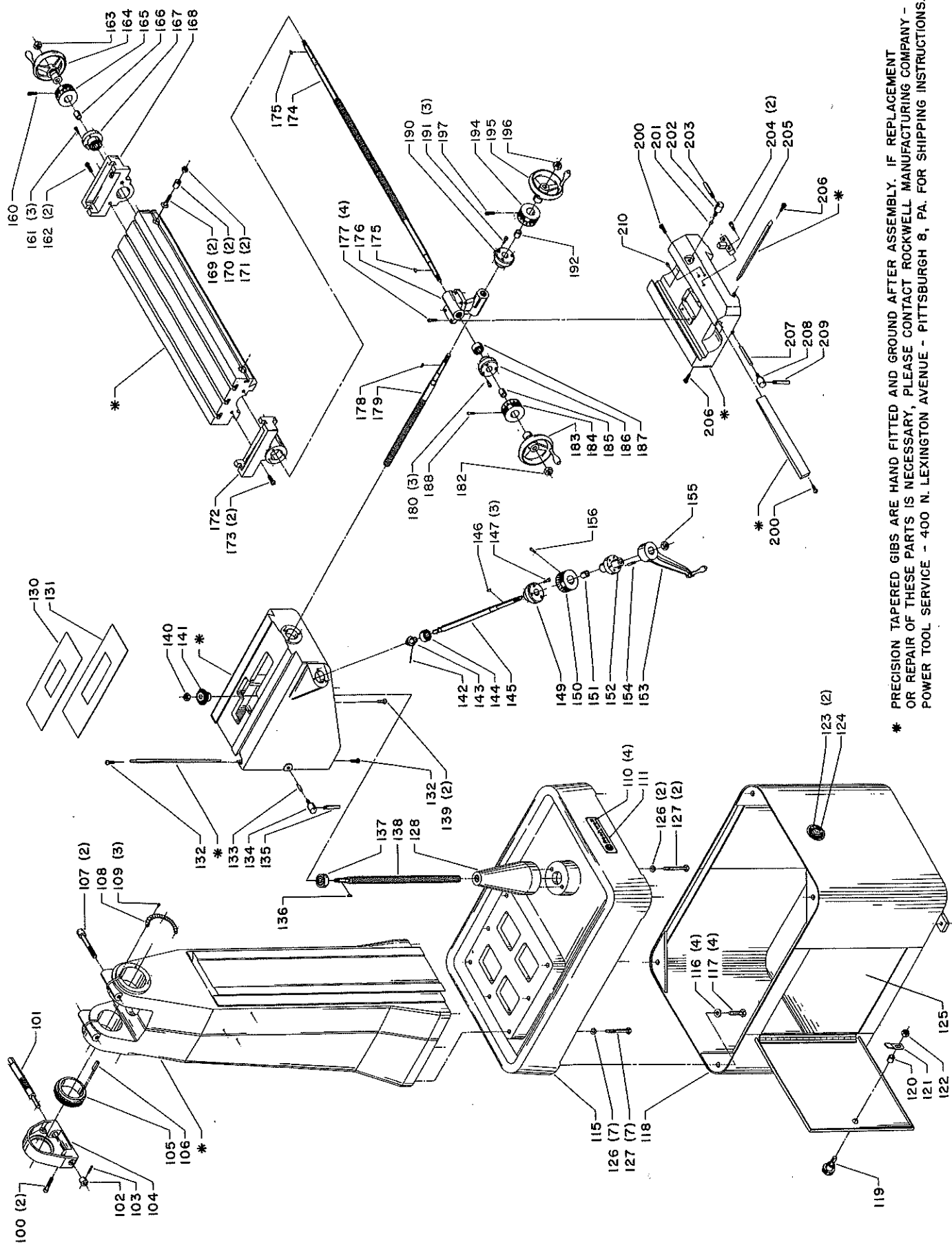


Fig. 4.



Replacement Parts

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	450-01-112-5005	Motor Clamping Screw	50	901-04-150-6202	5/16-18 x 3/8 Hex. Soc. Set Scr.
2	450-01-108-5002	Lever for Motor Clamping Scr.	51	450-01-112-5004	Screw for Depth Stop
3	904-01-031-5737	13/32 x 3/4 x 1/8 Flat Washer	52	450-01-407-0001	Depth Indicator Block
4	450-01-372-0001	Motor Mounting Plate	53	SP-755	1/4-20 x 3/4 Soc. Hd. Cap Scr.
5	901-01-060-3069	3/8-16 x 7/8 Hex. Hd. Cap Scr.	54	902-08-061-5461	Depth Stop
6	Cat. #41-893	Motor Pulley-5/8"Bore, Including:	55	902-08-061-5466	Depth Stop Lock Nut
8	901-04-150-6202	5/16-18 x 3/8 Hex. Soc. Set Scr.	56	951-02-011-8258	Depth Scale
7	Cat. #41-894	Motor Pulley-3/4"Bore, Including:	57	SP-2250	#4 x 3/16 Drive Screw
8	901-04-150-6202	5/16-18 x 3/8 Hex. Soc. Set Scr.	60	450-01-106-5006	Quill Hand Feed Pinion
10	450-01-354-0001	Belt Guard	61	904-01-031-7717	21/64 x 1 1/16 x 3/32 Spec. Flat Washer
11	960-04-011-8336	Speed Chart	62	SP-1703	5/16 Lockwasher
12	SP-2250	#4 x 3/16 Drive Screw	63	SP-606	5/16-18 x 5/8 Hex. Hd. Cap Scr.
13	960-02-012-0050	Name Plate	64	450-01-408-0001	Quill Hand Feed Lever, Including:
14	SP-2250	#4 x 3/16 Drive Screw	65	905-04-010-4056	3/16 x 3/4 Dowel Pin
15	Cat. #272	V-Belt	66	931-01-021-6390	1"Dia. Black Knob-1/4-20
20	450-01-304-0001	Draw Bar	67	SP-2606	#504 Hi Pro Key
21	450-01-104-5003	Draw Bar Spacer	68	904-15-011-7129	Retaining Ring
22	450-01-107-5001	Hub for Spindle Pulley	70	450-01-107-5005	Feed Clutch Hub
23	927-03-021-8004	3/16 x 3/16 x 1 1/8 Key	71	SP-2606	#504 Hi-Pro Key
24	926-06-041-8716	Spindle Pulley	72	904-10-071-5976	Collar for Fine Feed Handwheel
*	450-01-357-5001	Pulley Bearing Retainer Assy., Consisting of:	73	SP-2704	1/8 x 3/4 Roll Pin
25	904-15-011-7127	Retaining Ring	74	450-01-051-5001	Gear for Fine Feed Clutch
26	450-01-015-5001	Brake Shoe	75	450-01-028-5001	Cone for Fine Feed Clutch
27	904-15-101-7128	Retaining Ring	76	450-01-107-5004	Lock for Fine Feed Clutch
28	920-04-102-0953	Bearing Set (Duplexed)	77	450-01-108-5003	Handle for Lock for Fine Feed
29	450-01-079-5001	Pulley Bearing Retainer	78	450-01-312-0001	Fine Feed Housing
30	450-01-106-5001	Shaft for Spindle Lock & Brake	79	450-01-406-0001	Fine Feed Worm Shaft, Including:
32	904-04-010-7225	Bearing Lockwasher	80	931-02-151-6388	Fine Feed Handwheel
33	902-07-010-7180	Bearing Lock Nut	81	SP-2704	1/8 x 3/4 Roll Pin
34	450-01-106-5005	Lever for Spindle Lock & Brake	82	931-01-082-0457	Handle for Fine Feed Handwheel
35	931-01-021-6390	1"Dia. Black Knob-1/4-20	83	901-01-060-9504	5/16-18 x 1 3/4 Hex. Hd. Cap Scr.
39	SP-750	5/16 - 18 x 1 Soc. Hd. Cap Scr.	*	450-01-377-5001	Quill Assembly, Consisting of:
40	450-01-357-0001	Head	85	SP-7424	Retaining Ring
41	450-01-105-5003	Sleeve for Quill Lock-Inner	86	920-04-021-6578	Upper Spindle Bearing
42	901-01-060-5483	1/4-20 x 3 Hex. Hd. Cap Scr.	87	928-06-021-8852	Preload Spring
43	901-04-150-6202	5/16-18 x 3/8 Hex. Soc. Set Scr.	88	450-01-377-0001	Quill
44	907-01-010-5234	5/16 Ball Oiler	89	450-01-385-5002	Spindle W/Bearings & Lock Nut
45	TAM-185	5/16 x 5/8 x 1/16 Flat Washer	90	450-01-079-5004	Bearing Retainer
46	450-01-105-5004	Sleeve for Quill Lock-Outer	91	TAB-175	Bumper
47	450-01-108-5003	Handle for Quill Locking Lever			
48	450-01-108-5004	Quill Locking Lever	*	Not Shown Assembled	
49	SP-3371	5/16-18 x 1 3/4 Soc. Hd. Cap Scr.			



Replacement Parts

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
100	SP-799	3/8-16 x 1 1/2 Soc. Hd. Cap Scr.	156	SP-755	1/4-20 x 3/4 Soc. Hd. Cap Scr.
*	450-01-379-0001	Gear Housing Assy., consisting of:	160	SP-755	1/4-20 x 3/4 Soc. Hd. Cap Scr.
101	450-01-106-5003	Head Tilting Screw	161	SP-715	1/4-20 x 1/2 Fil. Hd. Screw
102	450-01-103-5001	Collar for Head Tilting Scr.	162	901-03-040-8086	3/8-16 x 7/8 Button Hd. Socket Cap Screw
103	SP-2733	5/32 x 7/8 Roll Pin			
104	450-01-379-0002	Gear Housing	163	902-01-010-9115	1/2-20 Hex. Nut
105	450-01-051-5002	Worm Gear for Head Tilting Scr.	164	930-01-991-9029	Longitudinal Feed Handwheel
106	927-03-021-8005	1/4 x 1/4 x 1 1/16 Key	165	450-01-337-0001	Micrometer Collar (200)
107	901-03-010-0794	1/2-13 x 2 3/4 Soc. Hd. Cap Scr.	166	450-01-104-5001	Bearing Spacer
108	951-02-011-8259	Head Tilting Scale	167	450-01-379-5001	Bearing Holder W/Bearing
109	SP-2250	#4 x 3/16 Drive Screw	168	450-01-314-0001	End Bracket
110	SP-2250	#4 x 3/16 Drive Screw	169	SP-2365	5/16-18 x 1 1/4 Sq. Hd. Bolt
111	960-02-012-1401	Nameplate	170	450-01-088-5002	Table Stop Barrel
115	450-01-305-0005	Base	171	902-01-040-1030	5/16-18 Hex. Nut
116	DDL-174	29/64 x 1 x 1/8 Washer	172	450-01-314-0001	End Bracket
117	SP-3080	7/16 - 14 x 1 1/2 Hex. Hd. Cap Screw	173	901-03-040-8086	3/8-16 x 7/8 Button Hd. Soc. Cap Screw
118	450-01-318-5001	Cabinet, Including:	174	450-01-112-5003	Table Screw
119	931-02-121-6392	Latch Knob	175	SP-2607	#404 Woodruff Key
120	450-01-104-5002	Latch Sleeve	176	450-01-012-5002	Feed Nut Body
121	450-01-068-5002	Latch	177	SP-755	1/4-20 x 3/4 Soc. Hd. Cap Scr.
122	SP-1227	1/2 - 20 Hex. Jam Nut	178	SP-2607	#404 Woodruff Key
123	SP-2252	#2 x 3/16 Drive Screw	179	450-01-112-5001	Cross Feed Screw
124	960-02-012-0028	Nameplate	180	SP-715	1/4-20 x 1/2 Fil. Hd. Screw
125	450-01-415-0001	Shelf	182	902-01-010-9115	1/2-20 Hex. Nut
126	SP-1704	3/8 Lockwasher	183	930-01-991-9029	Longitudinal Feed Handwheel
127	901-01-061-9849	3/8-16 x 2 1/2 Hex. Hd. Cap Scr.	184	450-01-337-0001	Micrometer Collar (200)
128	450-01-305-0006	Elevating Screw Housing	185	450-01-104-5001	Bearing Spacer
130	450-01-084-5001	Shield	186	450-01-079-5002	Bearing Holder
131	450-01-084-5002	Shield	187	920-04-010-7273	Bearing
132	901-03-042-0801	5/16-18x7/8 Button Hd. Soc. Cap Screw	188	SP-755	1/4-20 x 3/4 Soc. Hd. Cap Scr.
133	450-01-074-0002	Thread Seat	190	450-01-379-5001	Bearing Holder W/Bearing
134	450-01-068-5001	Knee Clamp	191	SP-715	1/4-20 x 1/2 Fil. Hd. Screw
135	450-01-108-5002	Handle for Knee Clamp	192	450-01-104-5001	Bearing Spacer
136	SP-2607	#404 Woodruff Key	194	450-01-337-0001	Micrometer Collar (200)
137	920-05-011-6621	Bearing	195	930-01-991-9029	Cross Feed Handwheel
138	450-01-112-5002	Elevating Screw	196	902-01-010-9115	1/2-20 Hex. Nut
139	901-03-040-8086	3/8-16 x 7/8 Button Hd. Soc. Cap Screw	197	SP-755	1/4-20 x 3/4 Soc. Hd. Cap Scr.
140	902-01-010-9114	7/16-20 Hex. Nut	200	901-03-042-0801	5/16-18 x 7/8 Button Hd. Soc. Cap Screw
141	450-01-051-5003	Bevel Gear	201	450-01-074-0001	Thread Seat
142	SP-2704	1/8 x 3/4 Roll Pin	202	450-01-068-5001	Table Clamp
143	450-01-051-5004	Bevel Gear	203	450-01-108-5002	Handle for Table Clamp
144	920-04-010-7273	Bearing	204	SP-762	5/16-18 x 5/8 Soc. Hd. Cap Scr.
145	450-01-106-5004	Shaft for Table Raising Crank	205	450-01-388-0002	Table Stop
146	SP-2607	#404 Woodruff Key	206	901-03-042-0801	5/16-18 x 7/8 Button Hd. Soc. Cap Screw
147	SP-715	1/4-20 x 1/2 Fil. Hd. Screw	207	450-01-074-0003	Thread Seat
149	450-01-379-5001	Bearing Holder W/Bearing	208	450-01-068-5001	Saddle Clamp
150	450-01-337-0002	Micrometer Collar (100)	209	450-01-108-5002	Handle for Saddle Clamp
151	450-01-104-5001	Bearing Spacer	210	907-01-010-5234	5/16 Ball Oiler
152	450-01-105-5001	Gear Shaft Clutch Sleeve			
153	450-01-333-5001	Table Raising Crank, Including:	*	Not Shown Assembled	
154	HBS-731	1/4 x 13/16 Knurled Pin			
155	902-01-010-9115	1/2-20 Hex. Nut			

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