



INSTALLATION, OPERATION, MAINTENANCE, AND PARTS LIST

SERIES I MILLING MACHINES



TP8035A

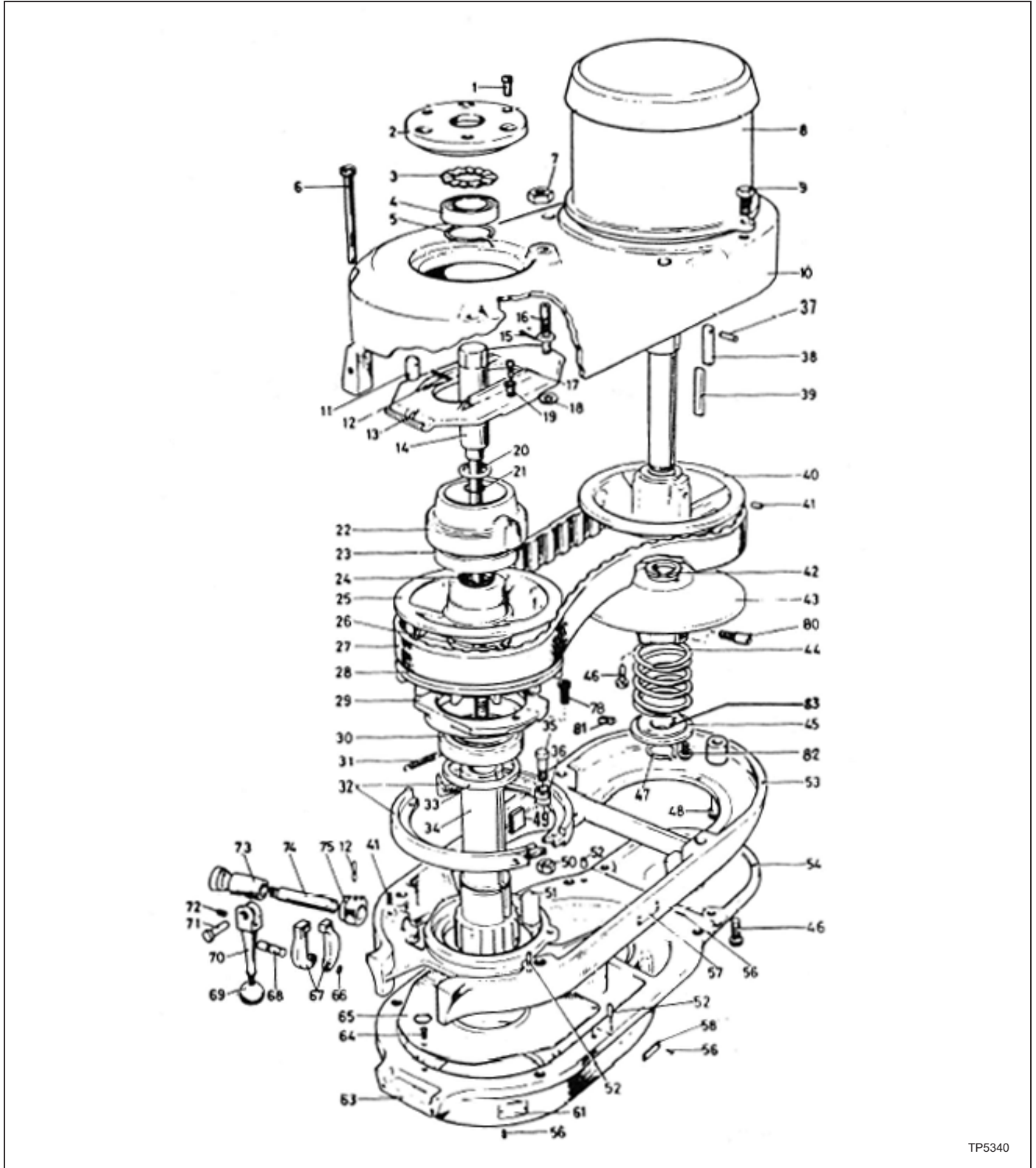
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Manual No. M-508
Part No. M -0009500-0508

Litho in U.S.A.
June, 2010

CHAPTER 4 - PARTS LISTINGS

2J-HEAD TOP HOUSING



TP5340

Figure 4.1 - 2J-Head Assembly

2J-HEAD TOP HOUSING

Item	Part Number	Description	Qty
1	BP 11011033	Screw, Socket Hd Cap, .250"-20 x .750" Lg	3
2	BP 12180094	Cap, Top Bearing	1
3	BP 11181977	Washer, Wave Spring	1
4	BP 11180252	Bearing, Ball, Fafnir #9107 NNP	1
5	BP 11180848	Ring, Snap, #5100-137	1
6	BP 11011069	Screw, Socket Hd Cap, .312"-18 x 6.00"	2
7	BP 11011745	Nut, UNC Hex Jam, .375"-16	1
8	BP 11550001A	Motor, 2 HP, Multi Volt, 50/60	1
9	BP 11011148	Screw, Hex Hd Cap, .375"-16 x 1.00"	2
10**	BP 12180051	Housing, Upper Belt (see BP 12183923)	1
11	BP 12180066	Stud, Speed Change Chain	1
12	BP 11010535	Pin, Roll, .156"Ø x 1.00" Lg	2
13	BP 11180058	Plate, Speed Change	1
14	BP 12183920	Assembly, Drawbar	1
15	BP 11010606	Pin, Cotter, .093"Ø x .750"	1
16	BP 12180074	Stud, Speed Change Plate Pivot	1
17	BP 11011020	Screw, Socket Hd Cap, #10-32 x .750"	2
18	BP 11180095	Washer	1
19	BP 12180089	Sleeve, Pivot	2
20	BP 12180093	Washer, Drawbar	1
21	BP 11180915	"O"-Ring, Parker # 2-14	1
22	BP 12180056	Housing, Spindle Pulley Bearing Sliding	1
23	BP 11170262	Bearing, #RM9110NPP	1
24	BP 11182124	Insert, Plastic	2
25	BP 12183934	Varidisc, Adjustable Drive A	1
26	BP 11180855	Ring, Retaining, #5102-156	1
27	BP 11182120	Belt, Varispeed	1
28	BP 12180082	Varidisc, Stationary Drive	1
29	BP 12180043	Cap, Brake and Bearing	1
30	BP 11170262	Bearing, #RM9110NPP	1
31	BP 11182081	Spring, Brake	2
32	BP 12180073	Shoes, Brake	2
33	BP 12180078	Spacer, Spindle Pulley	1
34	BP 12180042	Assembly, Spindle Pulley Hub	1
35	BP 11011138	Screw, Hex Hd Cap, .250"-20 x .750"	1
36	BP 12180071	Sleeve, Brake Shoe Pivot Sleeve	1
37	BP 11010513	Pin, Roll, .125" x .437"	1
38	BP 12550007	Key, Drive, Fixed Varidisc	1
39	BP 12550004	Assembly, Key, Drive, Varidisc	1
40	BP 12550006	Varidisc, Stationary Motor	1
41	BP 11011287	Screw, Stainless Steel, .250"-20 x .250"	2
42*	BP 11182126	Insert, Plastic Replaceable Type	2
43	BP 12550029	Assembly, Varidisc and Spring	1
44	BP 11182083	Spring, Varidisc Motor Shaft	1
45	BP 11550003	Collar, Adjustable Varidisc Spring	1
46	BP 11011022	Screw, Socket Hd Cap, #10-24 x 1.00"	3
47	BP 11150843	Ring, Snap	1
48	BP 11011052	Screw, Socket Hd Cap, .132"-18 x .750" Lg	1

Item	Part Number	Description	Qty
49	BP 11182122	Key, Plastic	1
50	BP 11011707	Nut, Hex Jam, .250"-20	1
51	BP 12180084	Key	1
52	BP 12180107	Pin, Taper, #4 x 1.00"	4
53**	BP 12180052	Base, Belt Housing (see BP 12183923)	1
54	BP 12180088	Cover, Motor Pulley	1
56	BP 11011552	Screw, Drive, Type U, #0 x .250"	4
58	BP 11182893	Nameplate, Hi-Low Range	1
61	BP 11182894	Nameplate, Quill Feed	1
63	BP 12180053	Housing, Gear	1
64	BP 11011443	Screw, Round Hd Machine, #10-24 x .375"	3
65	BP 11185030	Plate, Gear Housing	1
66	BP 11180818	Ring, Snap, #5100-25	1
67	BP 11182306	Finger, Brake Operating	2
68	BP 12180083	Stud, Brake Finger Pivot	1
69	BP 11192151	Knob, Bakelite, .250"-20	1
70	BP 12190133	Handle, Brake	1
71	BP 12180046	Pin, Brake Lock	1
72	BP 11011260	Screw, Stainless Steel, #10-32 UNF x .250"	1
73	BP 12180104	Sleeve, Brake Lock Shaft	1
74	BP 28025521	Shaft, Brake Lock	1
75	BP 12180069	Cam, Brake Lock	1
78	BP 11011031	Screw, Socket Hd Cap, .250"-20 x .625"	1
80	BP 11011019	Screw, Flat Hd Cap, #10-32 x .500"	1
82	0100204	Screw, Socket Hd Cap, #8-32 x .250"	1
83	BP 12550008	Key	1

* Non-replaceable turcite bushing must be purchased as part of varidisc assembly BP 12550029.

**Items 10 and 53 sold as assembly only.

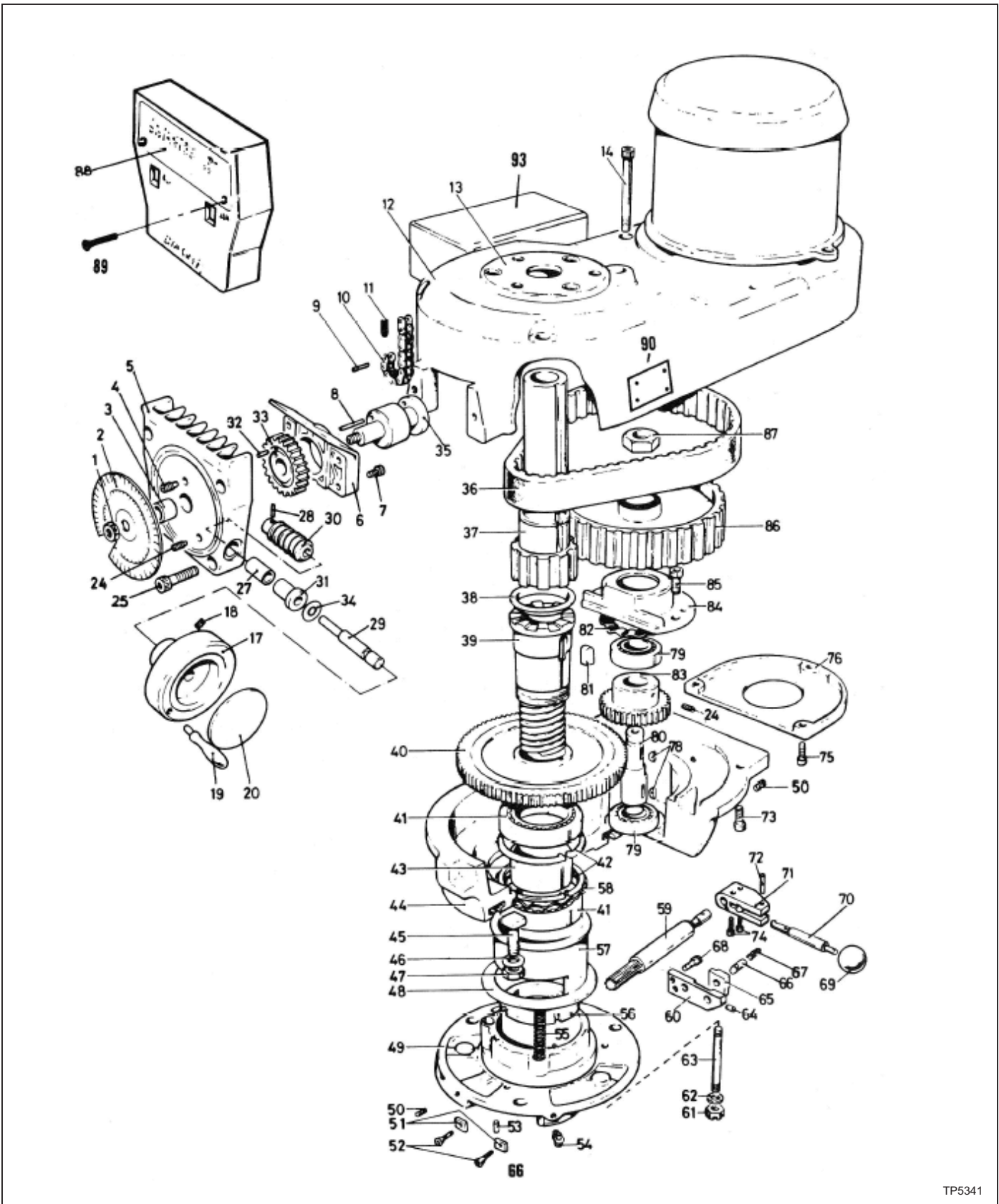
- NOTE -

IMPORTANT - for 1-1/2 HP, substitute the following parts.

Item	Part Number	Description	Qty
34	BP 12182004	Assembly, Spindle Pulley Hub	1
37	BP 11010513	Pin, Roll, .125" x .437"	1
38	BP 12180102	Key, Pulley	1
39	BP 11182121	Key, Plastic	1
40	BP 12180080	Varidisc, Stationary Motor	1
42*	BP 11182123	Insert, Plastic	2
43	BP 12180165	Assembly, Varidisc and Spring	1
45	BP 11182305	Collar, Adjustable Varidisc Spring	1
47	BP 11180860	Ring, Snap	1

* Non-replaceable turcite bushing must be purchased as part of varidisc assembly BP 12180165.

2J-HEAD BACK GEAR



TP5341

Figure 4.2 - 2J-Head Back Gear Assembly

2J-HEAD BACK GEAR

Item	Part Number	Description	Qty
1	BP 11011710	Nut, Hex, .312"	1
2	BP 11180133	Dial, Spindle Speed	1
3	BP 11183646	Bushing, Bronze, .502" x .628" x 5.00"	1
4	BP 11011380	Screw, Full Dog Socket Hd Set, .250"-20 x .500"	1
5	BP 12180055	Housing, Speed Changer	1
6	BP 12182003	Block, Plastic Bearing	1
7	BP 11011031	Screw, Socket Hd Cap, .250"-20 x .625"	4
8	BP 11010516	Pin, Roll, .125" x .625" Lg	1
9	BP 11010520	Pin, Roll, .125"Ø x 1.00" Lg	1
10	BP 11183720	Chain, Speed Changer, Morse #35	1
11	BP 12180066	Stud, Speed Change Chain	1
12	BP 12180051	Housing, Belt (see BP 12183923)	1
13	BP 12180094	Cap, Top Bearing	1
14	BP 11011065	Screw, Socket Hd Cap, .312"-18 x 4.00"	1
17	BP 12182001	Hub, Speed Change	1
18	BP 11181233	Screw, Socket Hd Set, .250"-UNC x .375"	2
19	BP 11182178	Handle, Machine, #3302	1
20	BP 11182892	Plate, Caution	1
24	BP 11011287	Screw, Stainless Steel, .250"-20 x .250"	2
25	BP 11011037	Screw, Socket Hd Cap, .250"-20 x 1.250"	4
27	BP 11183645	Bushing, Oilite	1
28	BP 28300619	Pin, Roll, 2.5mm x 12mm Lg	1
29	BP 28025716	Shaft, Speed Changer	1
30	BP 28007307	Gear, Boston Worm	1
31	BP 11180214	Bushing, Oilite Flanged, FB	1
32	BP 11010539	Pin, Roll, .187"Ø x .375" Lg	1
33	BP 12180090	Gear, Speed Changer Spur	1
34	BP 11181923	Washer, Wavy Spring	1
35	BP 12180065	Drum, Speed Change Chain	1
36	BP 11552106	Belt, Timing	1
37*	BP 12180042	Hub, Spindle Pulley	1
38*	BP 12180064	Sleeve, Timing Pulley Clutch	1
39	BP 12180059	Hub, Splined Gear	1
40**	BP 12180062	Gear, Spindle Bull (see BP 12183933)	1
41	BP 11180254	Bearing, Ball, Fafnir #RM9308NPP	2
42	BP 11180803	Ring, Snap, #5000-244	2
43	BP 12180063	Spacer, Bull Gear Bearing	1
44	BP 12180053	Housing, Gear	1
45	BP 11181650	Bolt, Tee	3
46	BP 11181906	Washer, Flat, .469" ID x .938" OD x .063"	3
47	BP 11011750	Nut, HDN Finished Hex Jam, .438"-14	3
48	BP 11181986	Washer, Ball Bearing Gear Sleeve	3
49***	BP 12183924	Bracket, Fixed Clutch	1
50	BP 11011246	Screw, Socket Hd Set, .312"-18 x .312"	2
51	BP 28025615	Guide	2
52	BP 28025671	Screw, Flat Socket Hd Cap, #10-32 x .375"	2
53	BP 11010511	Pin, Roll, .125" x .250" Lg	1
54	BP 11183104	Cup, Oil, Gits #1202 Style L	1

Item	Part Number	Description	Qty
55	BP 11182071	Spring, Compression, .375" OD x .3.00" Lg	3
56	BP 11181794	Locknut, Bearing, #-08	1
57***	BP 12183924	Sleeve, Bearing	1
58	BP 11181977	Washer, Wave Spring	1
59	BP 12180067	Pinion, Bull Gear Shift	1
60	BP 12180161	Plate, Hi-Low Detent	1
61	BP 11181732	Nut, Hex, .375"-16	3
62	BP 11151913	Lockwasher, .375"	3
63	BP 12180085	Stud	3
66	BP 12180100	Plunger, Hi-Low Detent	1
67	BP 11182072	Spring, .750" x .032 x .563"	1
68	BP 11011017	Screw, Socket Hd Cap, #10-32 x .500" Lg	2
69	BP 11192151	Knob, Bakelite, .250"-20	1
70	BP 12180099	Crank, Hi-Low Shift	1
71	BP 12180096	Block, Hi-Low Pinion	1
72	BP 11010516	Pin, Roll, .125" x .625" Lg	1
73	BP 11011052	Screw, Socket Hd Cap, .132"-18 x .750" Lg	4
74	BP 11181007	Screw, Socket Hd Cap, #8-32 x .625"	2
75	BP 11011022	Screw, Socket Hd Cap, #10-24 x 1.00"	1
76	BP 12180088	Cover, Motor Pulley	1
78	BP 11013079	Key, Woodruff #9	2
79	BP 11180235	Bearing, #203NPP-C8	2
80	BP 12180075	Shaft, Bull Gear Pinion Counter	1
81	BP 12180103	Key, Sq, .312" x .540"	1
82	BP 11181975	Washer, Wave Spring	1
83**	BP 28025529	Pinion, Bull Gear (see BP 12183933)	1
84	BP 12180076	Cap, Bull Gear Pinion Bearing	1
85	BP 11011011	Screw, Socket Hd Cap, #10-24 x .625" Lg	2
86	BP 12550016	Pulley, Timing Belt	1
87	BP 11191738	Nut, Hex Jam, .625"-18	1
88	BP 11182912	Nameplate, Speed Change	1
89	BP 11011139	Screw, Flat Hd Machine, #8-32 x .750"	2
90	BP 11182897	Plate, Lubrication	1
93	BP 11598117	Assembly, Reversing Switch	1

*Items 37 and 38 sold as assembly only.

**Items 40 and 83 sold as assembly only.

***Items 49 and 57 sold as assembly only.

- NOTE -

IMPORTANT - For 1-1/2 HP, substitute the following parts.

Item	Part Number	Description	Qty
36	BP 11182106	Belt, Timing	1
37	BP 12182004	Hub, Spindle Pulley	1
86	BP 12180091	Pulley, Timing Belt	1

2J- AND J-HEAD LOWER HOUSING

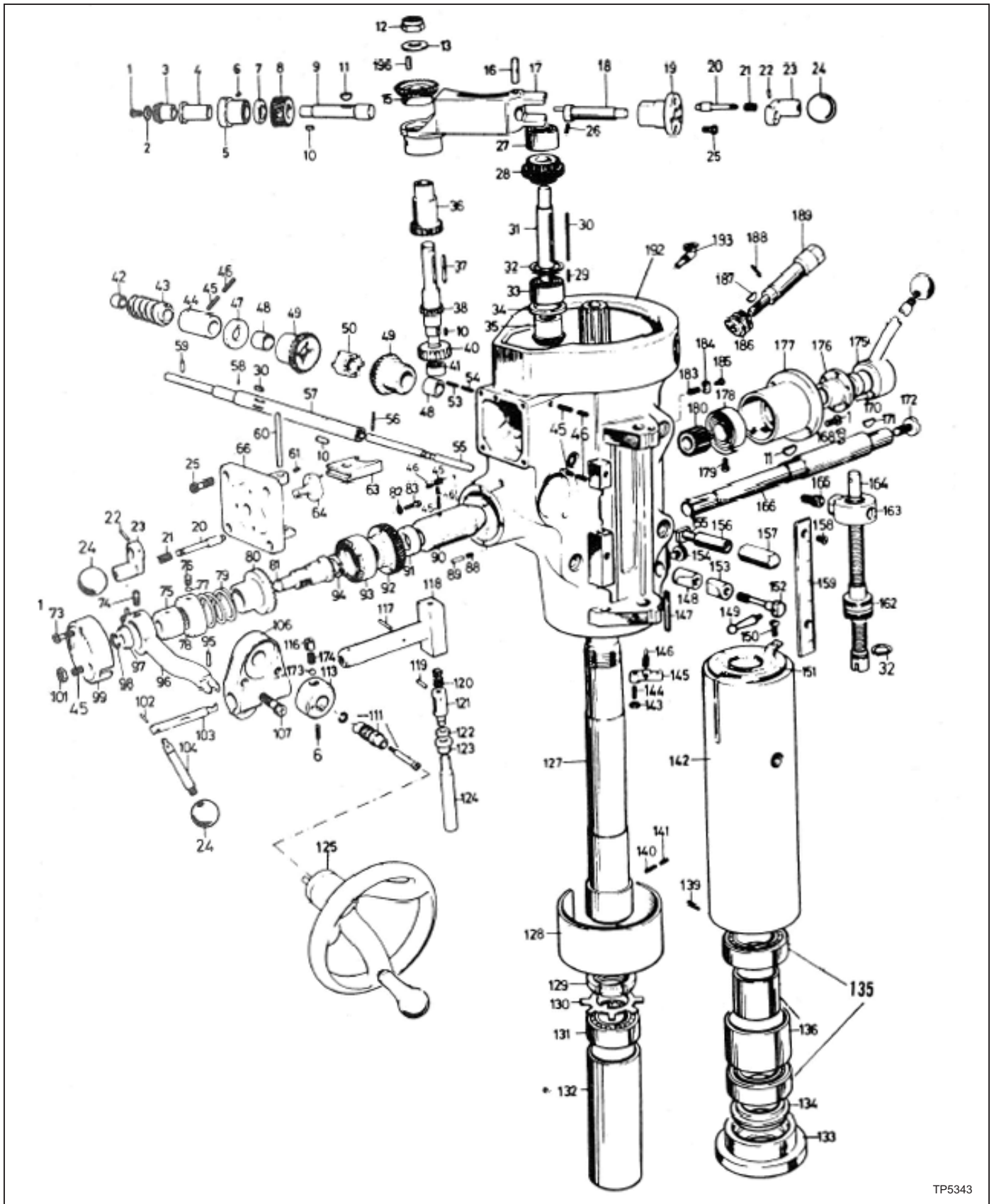


Figure 4.3 - 2J- and J-Head Lower Housing Assembly

TP5343

2J- AND J-HEAD LOWER HOUSING

Item	Part Number	Description	Qty
1	BP 11011445	Screw, Round Hd Machine, #10-24 x .375" Lg	3
2	BP 12190163	Washer, Bevel Pinion	1
3	BP 12190203	Gear, Feed Bevel Pinion	1
4	BP 12190164	Sleeve, Feed Worm Gear Shaft	1
5	BP 11192303	Bushing, Worm Cradle	1
6	BP 11011287	Screw, Stainless Steel, .250"-20 x .250"	2
7	BP 12190165	Spacer, Worm Gear	1
8	BP 12190166	Gear, Feed Drive Worm	1
9	BP 12190167	Shaft, Feed Drive Worm Gear	1
*	BP 12193440	Assembly, Gear Drive Shaft	1
10*	BP 12190162	Key, Worm Shaft, Sq, .125" x .312"	3
11	BP 11013078	Key, Woodruff #7	3
12	BP 11191796	Locknut, Flexlok, .375"-24	1
13	BP 12190199	Washer, .375"	1
15	BP 11192209	Gear, Feed Reverse Bevel	1
16	BP 12190168	Pin, Feed Engage	1
17	BP 12190059	Cradle, Worm Gear	1
18	BP 12190169	Throw-Out, Worm Gear Cradle	1
19	BP 12190170	Sleeve, Shift	1
20	BP 12190138	Pin, Shift	2
21	BP 11192052	Spring, Compression	2
22	BP 11010517	Pin, Roll, .125" x .750"	2
23	BP 12190064	Crank, Shift (see BP 12193443)	1
24	BP 11192151	Knob, Bakelite, .250"-20	4
25	BP 11011010	Screw, Socket Hd Cap, #10-24 x .500" Lg	7
26	BP 11011258	Screw, Set, #10-24 x .375"	1
27	BP 12190181	Bushing, Cluster Gear Shaft Upper	1
28	BP 28007099	Assembly, Cluster Gear (see BP 12193504)	1
29	BP 12190148	Key, Sq, .125" x 1.750"	1
*	BP 12193544	Assembly, Bevel Feed Pinion	1
30*	BP 12190175	Assembly, Key, Sq, .125" x .563"	2
31	BP 12193517	Shaft, Cluster Gear	1
32**	BP 11190836	Ring, External Retaining, #5100-62	2
33**	BP 12190149	Bearing, Bevel Gear	1
34**	BP 12190150	Spacer, Bevel Gear Thrust	1
35**	BP 12190180	Pinion, Feed Reverse Bevel	1
36*	BP 12190146	Gear, Feed Driving	1
37*	BP 12190176	Key, Round End, Sq, .125" x .750"	1
38*	BP 12190145	Shaft, Cluster Gear Input	1
40*	BP 12190144	Gear, Feed Drive	1
41	BP 11190310	Bearing, Needle, Torrington #B-66	1
42	BP 11193637	Bushing	1
43	BP 28007307	Gear, Worm Speed Control	1
44	BP 12190155	Bushing, Feed Worm Shaft	1
45	BP 11011268	Screw, Stainless Steel, Cup	6
46	BP 11011542	Screw, Set, .312"-18 x .938"	5
47	BP 11190152	Washer, Feed Worm Shaft Thrust	1

Item	Part Number	Description	Qty
*	BP 12193435	Assembly, Bevel Feed Gear	1
48*	BP 11183646	Bushing, Bronze, .502" x .628" x 5.00"	2
49*	BP 12193432	Gear, Feed Reverse Bevel	2
50	BP 12190153	Clutch, Feed Reverse	1
53	BP 11011547	Lock, Screw, Stainless Steel, .312"-18 x .156"	1
54	BP 11011375	Screw, Stainless Steel, .312"-18 x .312"	1
55	BP 12190157	Rod, Reverse Clutch	1
56	BP 11010509	Pin, Roll, .093" x .750"	1
57	BP 12190198	Shaft, Feed Worm	1
58	BP 12190200	Pin, .093" x .312" Lg	1
59	BP 28007308	Pin, .100 x .438" Lg	1
60	BP 12190179	Rod, Feed Shift	1
61	BP 11011260	Screw, Stainless Steel, #10-32 UNF x .250"	1
63	BP 11190061	Fork, Feed Gear Shift	1
64	BP 12193446	Assembly, Cluster Gear Shift Crank	1
66	BP 12190065	Cover, Cluster Gear	1
73	0100424	Screw, Cap, #10-24 x 1.500"	2
74	BP 12190188	Pin, Stop	2
75	BP 12190098	Ring, Clutch	1
76	BP 11011265	Screw, Stainless Steel, .250"-20 x .250"	1
77	BP 12190073	Plug, Brass, .187"Ø x .093"	1
78	BP 12190105	Locknut, Overload Clutch	1
79	BP 11192055	Spring, Safety Clutch	1
80	BP 11192302	Clutch, Overload	1
81	BP 12193549	Sleeve, Overload Clutch	1
82	BP 11191920	Washer, Single Spring	3
83	0350210	Screw, Round Hd Machine, #8-32 x .625"	3
88	BP 11192032	Spring, Compression, .250"Ø x 1.250"	1
89	BP 12190096	Plunger, Overload Clutch Lever Spring	1
90	BP 12190106	Bushing, Quill Pinion Shaft	1
91	BP 12190104	Spacer, Pinion Shaft Worm Gear	1
92	BP 12190103	Gear, Overload Clutch Worm	1
93	BP 12190102	Ring, Overload Clutch	1
94	BP 11190870	Ring, External Retaining	1
95	BP 11010717	Pin, Dowel, .187" x .750"	1
96	BP 12193427	Assembly, Overload Clutch Trip Lever	1
97	BP 12190097	Washer, Overload Clutch	1
98	37 000823102	Ring, External Retaining, #5100-37	1
99	BP 12190068	Cover, Clutch Arm	1
101	BP 11011740	Nut, Hex Jam, .250"-20	1
102	BP 11010717	Pin, Dowel, .187" x .750"	1
103	BP 12190094	Rod, Cam	1
104	BP 12190095	Handle, Trip	1
106	BP 12190067	Bracket, Feed Trip	1
107	BP 11011035	Screw, Socket Hd Cap, .250"-20 x 1.00"	1
111	BP 12193433	Assembly, Reverse Knob	2
113	BP 12190159	Assembly, Handwheel Clutch (see BP 12193519)	1
116	BP 12190154	Assembly, Handwheel Clutch Spring	1
117	BP 11010515	Pin, Roll, .125" x .562"	1
118	BP 12190093	Assembly, Cam Rod Sleeve	1

Item	Part Number	Description	Qty
119	BP 11010513	Pin, Roll, .125" x .437"	1
120	BP 11192053	Spring, Compression	1
121	BP 12190091	Plunger, Trip	1
122	BP 12190092	Bushing, Feed Trip Plunger	1
123	BP 12190090	Bushing, Trip Plunger	1
125	BP 12190089	Plunger, Feed Trip	1
125	BP 12193519	Assembly, Handwheel	1
127	BP 12190191	Spindle	1
128	BP 11190081	Skirt, Quill	1
129	BP 11191790	Locknut, #06	1
130	BP 11191942	Lockwasher, #W-06	1
131	BP 11190237	Bearing, Spindle	1
132	BP 12190197	Sleeve, Bearing	1
133	BP 12190196	Nosepiece	1
134	BP 12780915	Shield, Spindle Dirt	1
135	BP 11190238	Bearing, Spindle, Set	1
136	BP 12193513	Bearing, Spindle, Set	1
139	BP 11011265	Screw, Stainless Steel, .250"-20 x .250"	1
140	BP 12193540	Screw, Set, R-8 Collet	1
141	BP 11011545	Screw, Locking Set, .250"-32 x .125"	1
142*	BP 12190192	Quill (See BP 12194541)	1
143	BP 28300336	Nut, Steel, #6-32 NC	1
144	BP 28300609	Screw, Stainless Steel, #6-32 x .750"	1
145	BP 28007042	Lever, Feed Trip (see BP 12193498)	1
146	BP 12190185	Pin, Trip Lever	1
147	BP 12200103	Rod, Indicator	1
148	BP 12190109	Sleeve, Quill Lock, Tapped	1
149	BP 12200098	Handle, Lock	2
150	BP 11011595	Screw, Washer Hd Machine, #10-32 x .375"	1
151	BP 11192403	Strainer, Felt	1
152	BP 12190111	Bolt, Quill Lock	1
153	BP 12190110	Sleeve, Quill Lock, Untapped	1
154	BP 12200102	Screw, Rod Indicator Thumb	4
155	BP 12191620	Bolt, Tee, .500"	2
156	BP 12190135	Spacer, Lower Clamping Bolt	2
157	BP 12191736	Nut, Hex, .500" x 1.500"	2
158	0350104	Screw, Round Hd Machine, #6-32 x .250"	1
159	BP 11195306	Scale, Quill Micrometer Inch	1
162	BP 12190344	Assembly, Quick Nut	1
163	BP 12190082	Nut, Quill Stop	1
164	BP 12190083	Screw, Quill Stop Micro	1
165	BP 11011121	Screw, Socket Hd Cap, .375"-24 x .625"	1
166	BP 28007063	Shaft, Quill Pinion	1
168	BP 12200111	Pin, Spring	1
170	BP 11010541	Pin, Roll, .187" x .750" Lg	1
171	BP 11013076	Key, Woodruff #3	1
172	BP 12190182	Screw, Pinion Shaft Hub	1
173	BP 11192165	Ball, Steel	1
174	BP 11192054	Spring, Compression	1
175	BP 12201033	Assembly, Quill Feed Handle	1

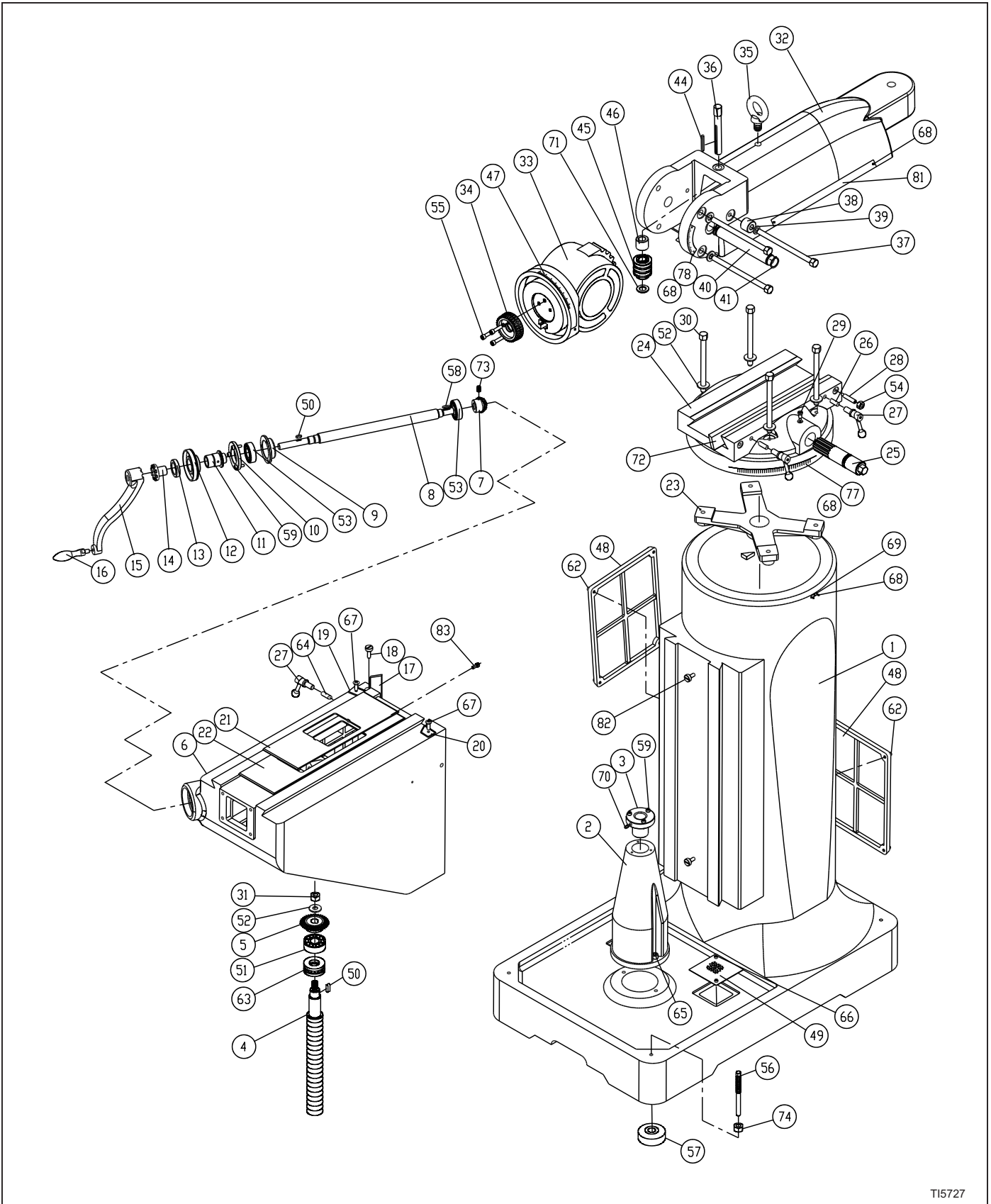
Item	Part Number	Description	Qty
176	BP 12190079	Hub, Quill Pinion	1
177***	BP 12190066	Cover, Spring	1
178***	BP 11192020	Spring, Clock	1
179***	BP 28007150	Pin, Outside Clock Spring	1
180	BP 28007064	Pinion, Quill (see BP 12190108)	1
183	BP 12190085	Lever, Reverse Trip Ball	1
184	BP 12190086	Plunger, Feed Reverse Trip	1
185	BP 12190087	Screw, Reverse Trip Ball Lever	1
186	BP 11192207	Gear, Worm	1
187	5 0001465	Key, Woodruff #405	1
188	BP 11011370	Screw, Socket Hd Set, .250"-UNC x 20 x .375"	1
189	BP 12190850	Shaft, Adjustable Worm	1
192*	BP 12190051	Housing, Quill (see BP 12194541)	1
193	BP 11193111	Cup, Oil	1
196	BP 12190162	Key, Worm Shaft, Sq, .125" x 5/16"	1

*Items 10, 36, 37 and 40 sold as assembly BP 12193440.

**Items 32, 33, 34 and 35 sold as assembly BP 12193544.

***Items 177, 178 and 179 sold as assembly BP 12193437.

BASIC MACHINE



T15727

Figure 4.4 - Basic Machine Assembly

BASIC MACHINE

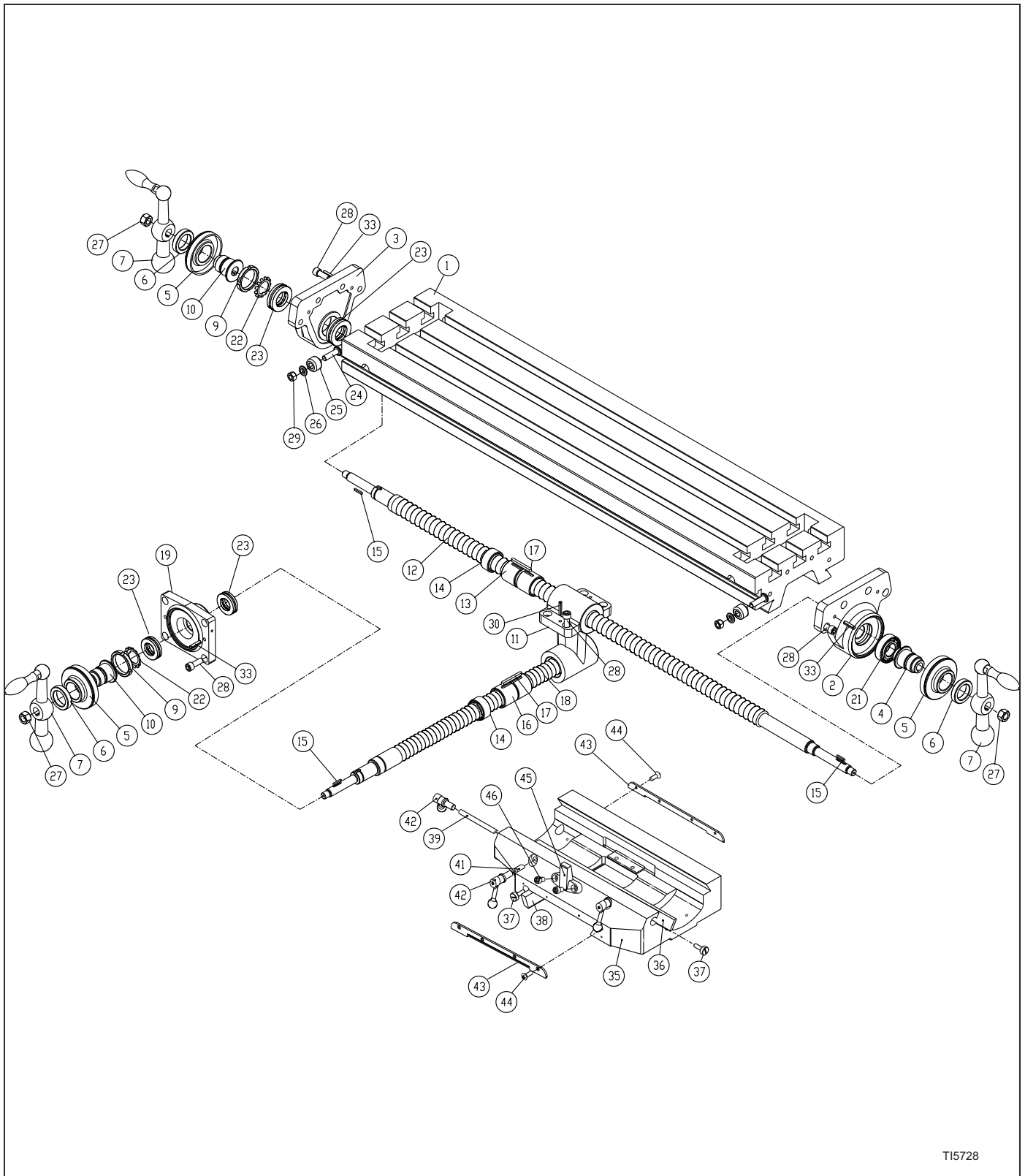
Item	Part Number	Description	Qty
1	BK 0001500C141	Body	1
2	BK 0001500C103	Column	1
3	BK 0001500C139	Elevating screw nut (Inch)	1
4	BK 0001500C137	Elevating screw (Inch)	1
5	BK 0001500C077	Bevel gear (Big)	1
6	BK 0001500C175	Knee	1
7	BK 0001500C096	Bevel gear (Small)	1
8	BK 0001500C094	Elevating shaft	1
9	BK 0001500C092	Bearing Housing	1
10	BK 0001500C090	Bearing Cap	1
11	BK 0001500C088	Dial holder	1
12	BK 0001500C1381	Dial with 100 graduation (Inch)	1
13	BK 0001500D021	Dial nut	1
14	BK 0001500C085	Gear shaft clutch insert	1
15	BK 0001500C084	Knee knob	1
16	BK 0001500C083	Ball crank handle lever	1
17	BK 0001500C055	Knee clamp	1
18	BK 0001500C041	Clamp adjusting screw	2
19	BK 0001500C044A	Scraper set	1
20	BK 0001500C044B	Scraper set	1
21	BK 0001500C063	Dustproof cover	1
22	BK 0001500C064	Dustproof cover	1
23	BK 0001500C118	Spider	1
24	BK 0001500C124	Turret	1
25	BK 0001500C120	Ram pinion	1
26	BK 0001500C126	Ram lock plunger	2
27	BK 0001500C037	Table lock bolt handle	4
28	BK 0001500C110	Gib lock screw	2
29	BK 0001500C128	Ram pinion set	1
30	BK 0001500C127	Locking bolt	4
31	BK 000146603	Nut, 1/2"	1
32	BK 0001500C172	Ram	1
33	BK 0001500C002	Ram adaptor	1
34	BK 0001500C001	Tilting worm	1
35	BK 0001500C011	Hook	1
36	BK 0001500C008	Vertical adjusting worm shaft	1
37	BK 0001500C019	Adaptor locking bolt	3
38	BK 0001500C004	Adaptor pivot stud locknut	1
39	BK 000284001	Washer, M14	3
40	BK 0001500C017	Head housing shaft	1
41	BK 000823126	Snap Ring, M26	2
44	BK 000631702	Key, 5 X 5 X 50	1
45	BK 0001500C006	Worm	1
46	BK 0001500C012	Worm thrust washer	1
47	BK 0001500C003	Adaptor scale	1
48	BK 0001500C125	Column side cover	2
49	BK 0001500C130	Oil filter	2
50	BK 000631703	Key, 5 X 5 X 15	2

Item	Part Number	Description	Qty
51	BK 000026602	Bearing	1
52	BK 0001500C076	Washer	5
53	BK 000026601	Bearing	2
54	BK 000146602	Nut, 3/8	2
55	BK 000033804	Hexagon socket screw	3
56	BK 0001500C170B	Leveling screw	4
57	BK 0001800C146	Leveling pads	4
58	BK 000631704	Key, 4 X 4 X 20	1
59	BK 000033805	Hexagon socket screw, M6 X 20	6
62	BK 000033806	Hexagon socket screw, M6 X 16	8
63	BK 000026603	Bearing	1
64	BK 0001500C069	Knee lock plunger	1
65	BK 000033807	Hexagon socket screw, M10 X 20	2
66	BK 000033808	Hexagon socket screw, M5 X 1	4
67	BK 000033802	Cross-Recessed Head Screw	2
68	BK 000033809	Screw, M2 X 5	6
69	BK 0001500C144	Zeroing Point Plate	1
70	BK 001032701	Nipple, 1/8PT	1
71	BK 0001500C007	Washer	1
72	BK 0001500C111	Turret-ram gib	1
73	BK 000033810	Set Screw, M6 X 10	1
74	BK 000146604	Hexagon socket nut	1
77	BK 0001500C048	Turret scale	1
78	BK 0001500C015	Angle plate	1
81	BK 0001500C013	Ram scale	1
82	BK 0001500C318	Body set screw	2
83	BK 0001500C317	Dust cover screw	1

Not Shown:

84	BK 0001500C134	Backlash adjustment tool	2
85	BK 0008150 K	Box wrench kit	1
86	BK 0001500C136	Tool Box	1
87	BK 000815001	Open-End Wrench	1

TABLE AND LEAD SCREW ASSEMBLY



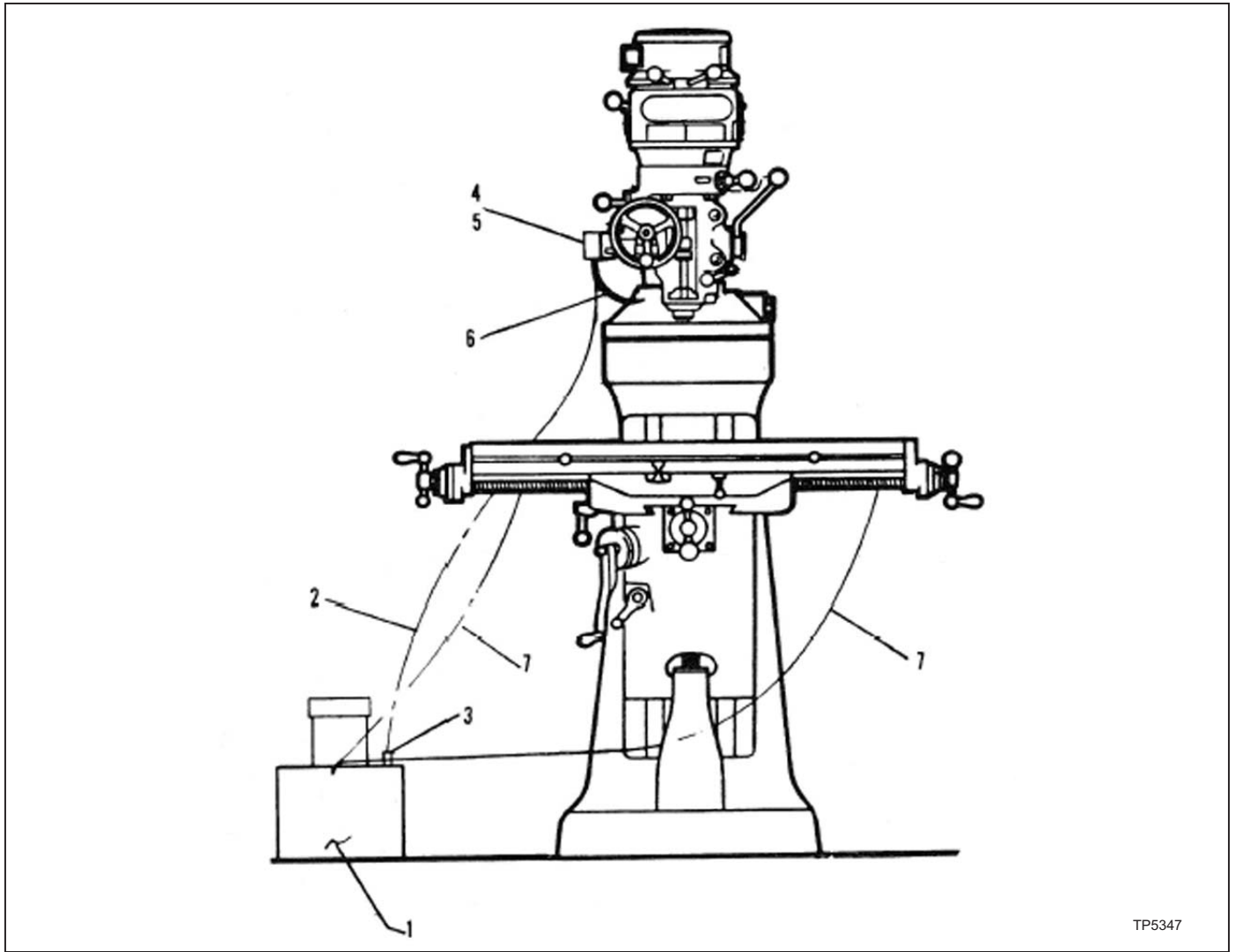
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Figure 4.5 - Table and Lead Screw Assembly

TABLE AND LEAD SCREW ASSEMBLY

Item	Part Number	Description	Qty
1	BK 0001500C035	Table	1
2	BK 0001500D024B	Right leadscrew bracket	1
3	BK 0001500D023B	Left leadscrew bracket	1
4	BK 0001500D005	Right dial holder	1
5	BK 0001500D0161	Dial (inch)	3
6	BK 0001500C086	Dial nut	3
7	BP 12060271	Ball crank handle	3
9	BK 0001500D006	Lock nut	2
10	BK 0001500D021	Left dial holder	2
11	BK 0001500D022	Feed nut bracket	1
12	BK 0001500D074A	X leadscrew	1
13	BK 0001500D033A	X lead screw nuts (Inch)	2
14	BK 0001500D017	Backlash adjustment nut	2
15	BK 000631701	Key, 3 X 3 X 20	3
16	BK 0001500D034A	Cross feed screw nut (Inch)	2
17	BK 000631702	Key, 5 X 5 X 50	2
18	BK 0001500D076	Y leadscrew	1
19	BK 0001500D025A	Cross feed bearing bracket	1
21	BK 000026601	Bearing	1
22	BK 001150101	Bearing washer	2
23	BK 000026604	Bearing	4
24	BK 0001500C031	T bolt	2
25	BK 0001500C032	Table stop piece	2
26	BK 0001500C073	Washer	2
27	BK 000146601	Nut, 1/2	3
28	BK 000033801	Screw, 3/8 X 1	16
29	BK 000146602	Nut, 3/8"	2
30	BK 000142401	Overload clutch lever spring plunger, 5 X 30	2
33	BK 000142402	Overload clutch lever spring plunger, 6 X 25	6
35	BK 0001500C052	Saddle	1
36	BK 0001500C043	Saddle table jib	1
37	BK 0001500C041	Adjusting screw	4
38	BK 0001500C049	Gib (left & right)	1
39	BK 0001500C039	Saddle lock plunger	1
41	BK 0001500C059	Table lock plunger	2
42	BK 0001500C037	Table lock bolt handle	3
43	BK 0001500C044	Felt wipers	2
44	BK 000033802	Cross-Recessed Head Screw, 3/16 X 3/8	8
45	BK 0001500C042	Table stop bracket	1
46	BK 000033803	Hexagon socket screw	2

FLOOD COOLANT



TP5347

Figure 4.6 - Flood Coolant Assembly

Item	Part Number	Description	Qty
1	BP 11713642	Tank, Pump and Motor	1
2	BP 11715470	Tubing, Coolant Pressure Hose, Vinyl, .50"Ø x .625"	10 ft
3	BP 11565476	Valve, Check	1
4	BP 12561010	Block, Manifold	1
7	BP 11565470	Tubing, Drain Hose, Vinyl, .750" x 1000"	15 ft
One Nozzle			
5	BP 11563490	Valve, Shut-Off	1
6	BP 11560264	Hose, Flexible Nozzle Coolant, 21" Lg	1
Two Nozzles			
5	BP 11563490	Valve, Shut-Off	2
6	BP 11560264	Hose, Flexible Nozzle Coolant, 21" Lg	2

LUBRICATION SYSTEM

STANDARD MACHINE

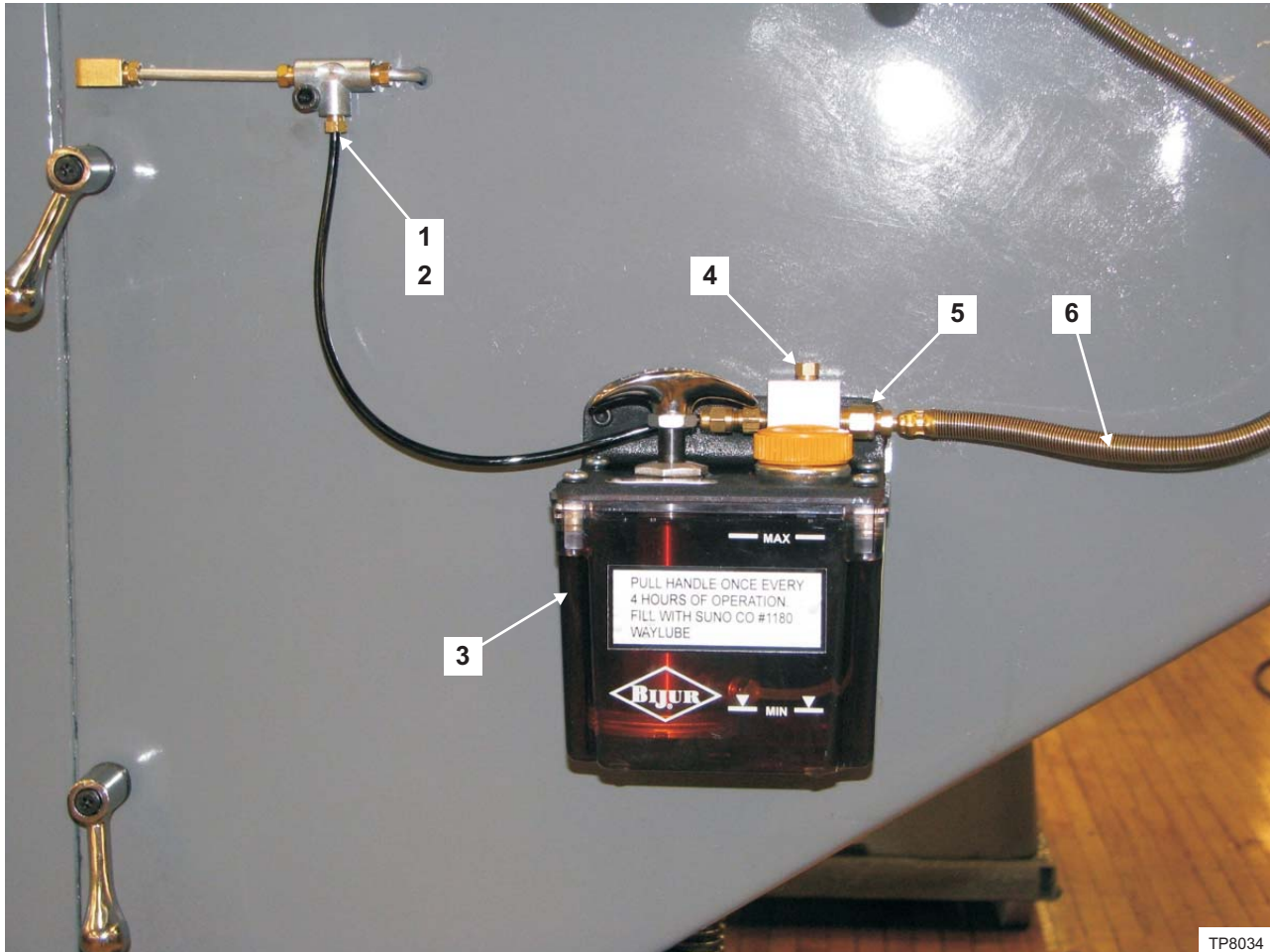
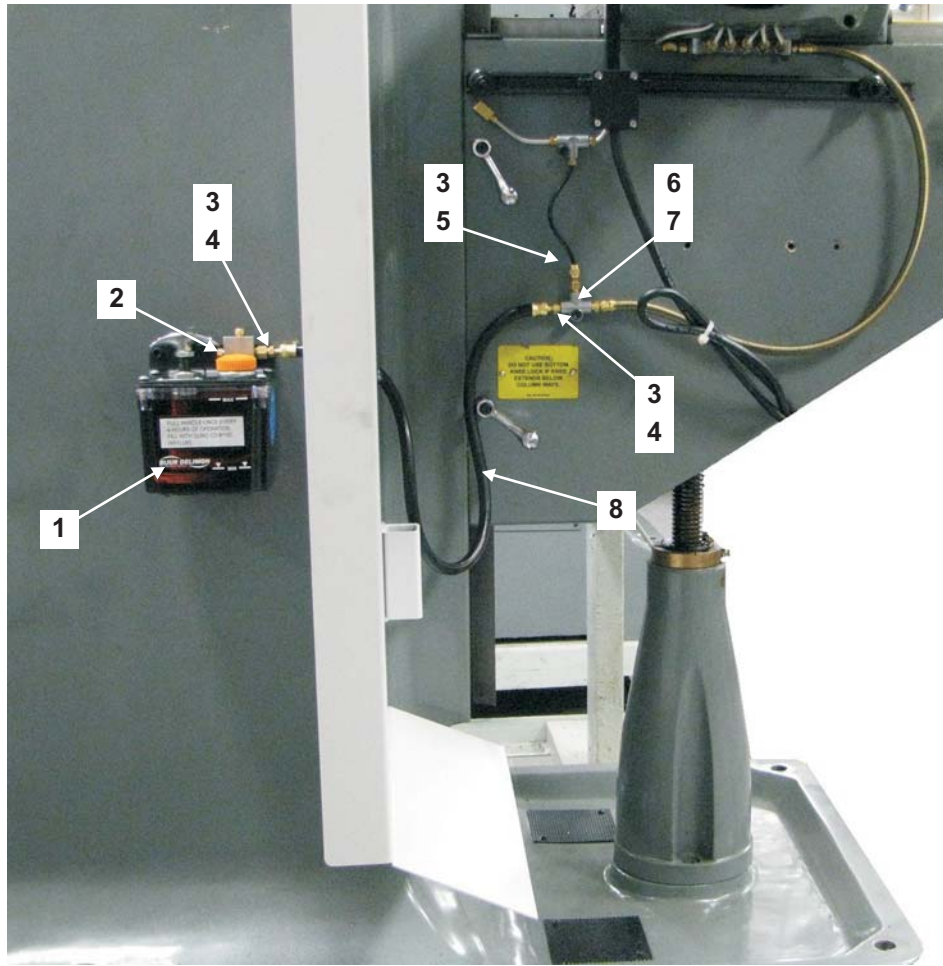


Figure 4.7 - Lubrication System
(Standard Machine)

Item	Part Number	Description	Qty
1	BP 11060490	Ferrule	1
2	BP 11060491	Nut	1
3	BP 11060492	Lubricator Kit	1
4	BP 11060493	Plug	1
5	BP 11060494	Adapter	1
6	BK 0001500LU150	Hose, Lubrication Spring	1

MACHINE WITH SPLASHGUARD OPTION



TP8963

Figure 4.8 - Lubrication System
(Machine with Splashguard Option)

Item	Part Number	Description	Qty
1	BP 11060492	Lubricator Kit	1
2	BP 11060493	Plug	1
3	LH 0011030	Nut, Lubrication Line	3
4	BP 28303617	Ferrule, Double	2
5	BP 11060490	Ferrule, Single	1
6	BP 11413212	Junction, 3 Way	1
7	MS 0103619	Screw, M6-1.0 x 20mm	1
8	BP 11413285	Hose, 24"	1

REPLACEMENT MOTOR ASSEMBLIES

Motor Assembly 2J-Head 2 HP Unified without NFPA, BPA12550001

Part Number	Description	Qty
BP 11010514	Pin, Roll, .125 X .500	1
BP 11012760	Marker, 230 Volt	1 *
BP 11550001A	Motor, 2 HP Multi Volt 50/60	1
BP 11562534	Wire Nut Connector, Medium, Type-Y	3
BP 12550007	Key, Drive, Fixed Varidisc	1
BP 12550006	Varidisc, Motor Stationary	1
BP 11012762	Marker, 460 Volt	1 *
BP 12550029	Varidisc & Spring Assembly	1
BP 11012759	Marker, 208 Volt	1 *
BP 11012761	Marker, 380 Volt	1 *
BP 11012770	Marker, 200 Volt	1 *
BP 11012771	Marker, 400 Volt	1 *
BP 11012772	Marker, 416 Volt	1 *
BP 11150843	Ring, Retaining	1
BP 11012764	Tape, Ground	1
BP 11598154	Reversing Switch and Cable Assembly	1

* Marker is selected based on motor voltage.

Motor Assembly 2J-Head 2 HP Unified with NFPA

Contact Sales Department for Part Number.

Replacement Motors Available

Part Number	Description
BP 11190161HQ	Motor, 1 HP, 230/460
BP 11550001A	Motor, 2 HP, Multi Volt, 50/60

2J MILLING HEAD

1-1/2 HP – Spare Parts

Part Number	Description	Qty
BP 11182120	Belt, Varispeed	1
BP 11182106	Belt, Timing	1
BP 12180073	Shoe, Brake, Set	1
BP 11182081	Spring, Brake	1
BP 11182121	Key, Motor	1
BP 11182122	Key, Plastic	1
BP 12193437	Assembly, Clockspring and Cover	1
BP 12180117	Lubricant, Gear	1
BP 11183147	Lubriplate	1
BP 11190238	Bearing, Spindle, Pair	1
BP 11190237	Bearing, Spindle	1
BP 11192403	Strainer, Felt	2
BP 11191942	Lockwasher	2
BP 12193540	Screw, Set, R-8 Collet	6

2 HP – Spare Parts

Same as above except:

Part Number	Description	Qty
BP 11552106	Belt, Timing	1
BP 12550004	Assembly, Key, Drive, Varidisc	1
BP 11182122	Key, Plastic	1

METRIC CONVERSION KIT

BP 2184000 – 2J-Head, Metric Conversion Kit

Part Number	Description	Qty
BP 11195307	Scale	1
BP 12191013	Assembly, Stop	1

NFPA ELECTRICAL CASE (Option)

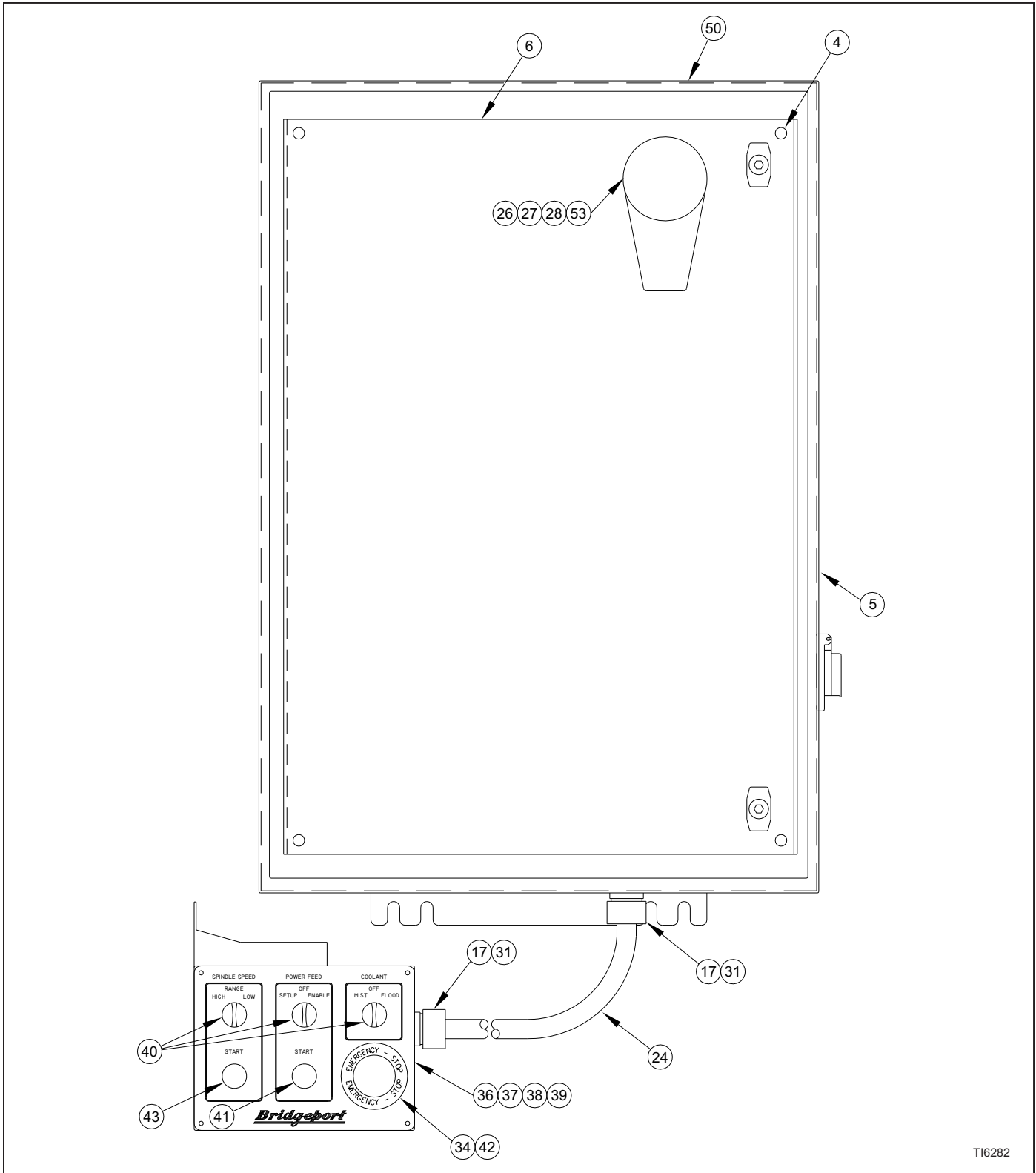


Figure 4.9 - NFPA Electrical Case:
Front View with Operator Pendant

NFPA ELECTRICAL CASE (Option)

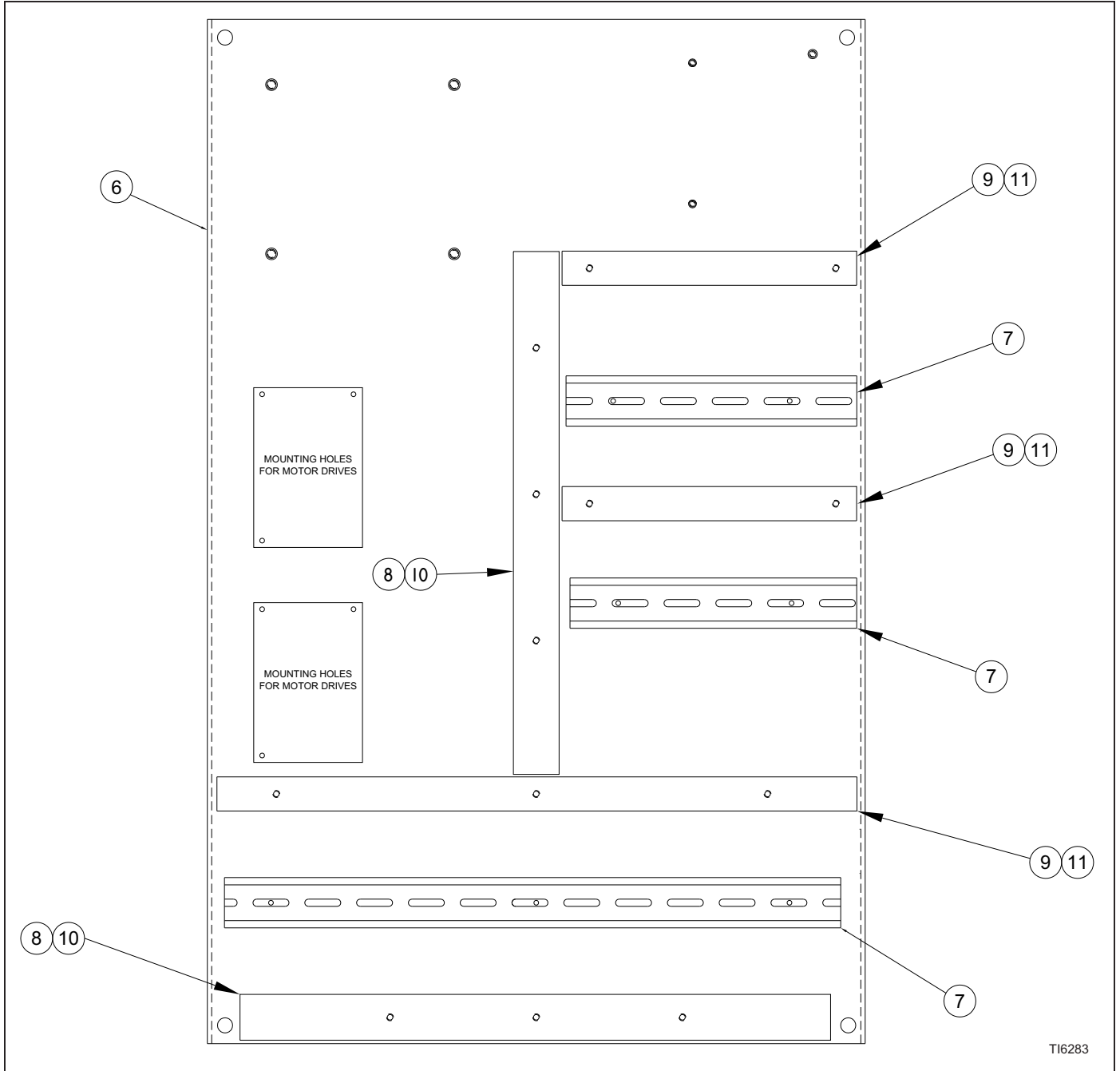
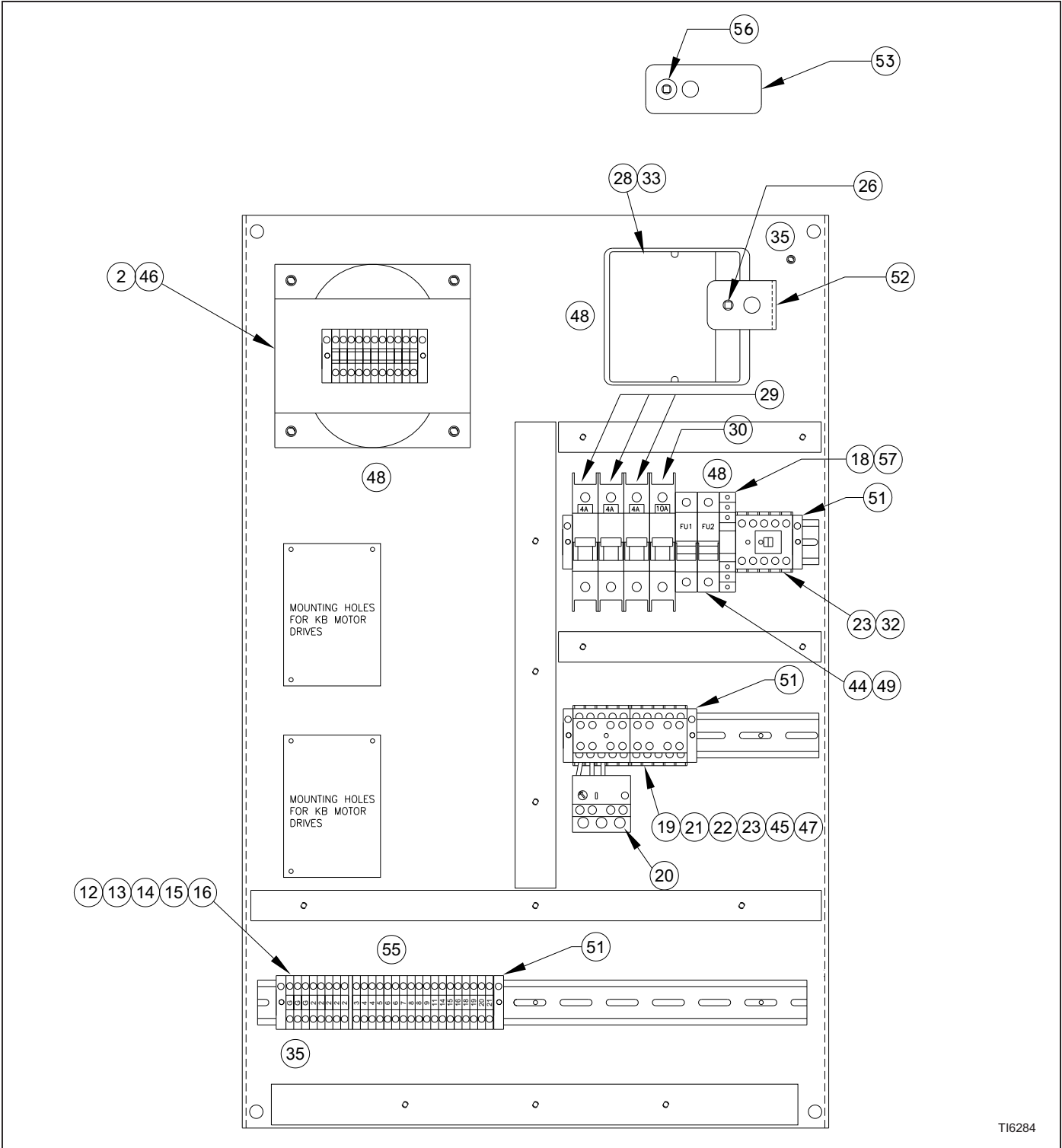


Figure 4.10 - NFPA Electrical Case:
Interior View with Mounting Rails and Wire Ducts

NFPA ELECTRICAL CASE (Option)



TI6284

Figure 4.11 - NFPA Electrical Case:
Interior View with Electrical Components

NFPA ELECTRICAL CASE (Option)

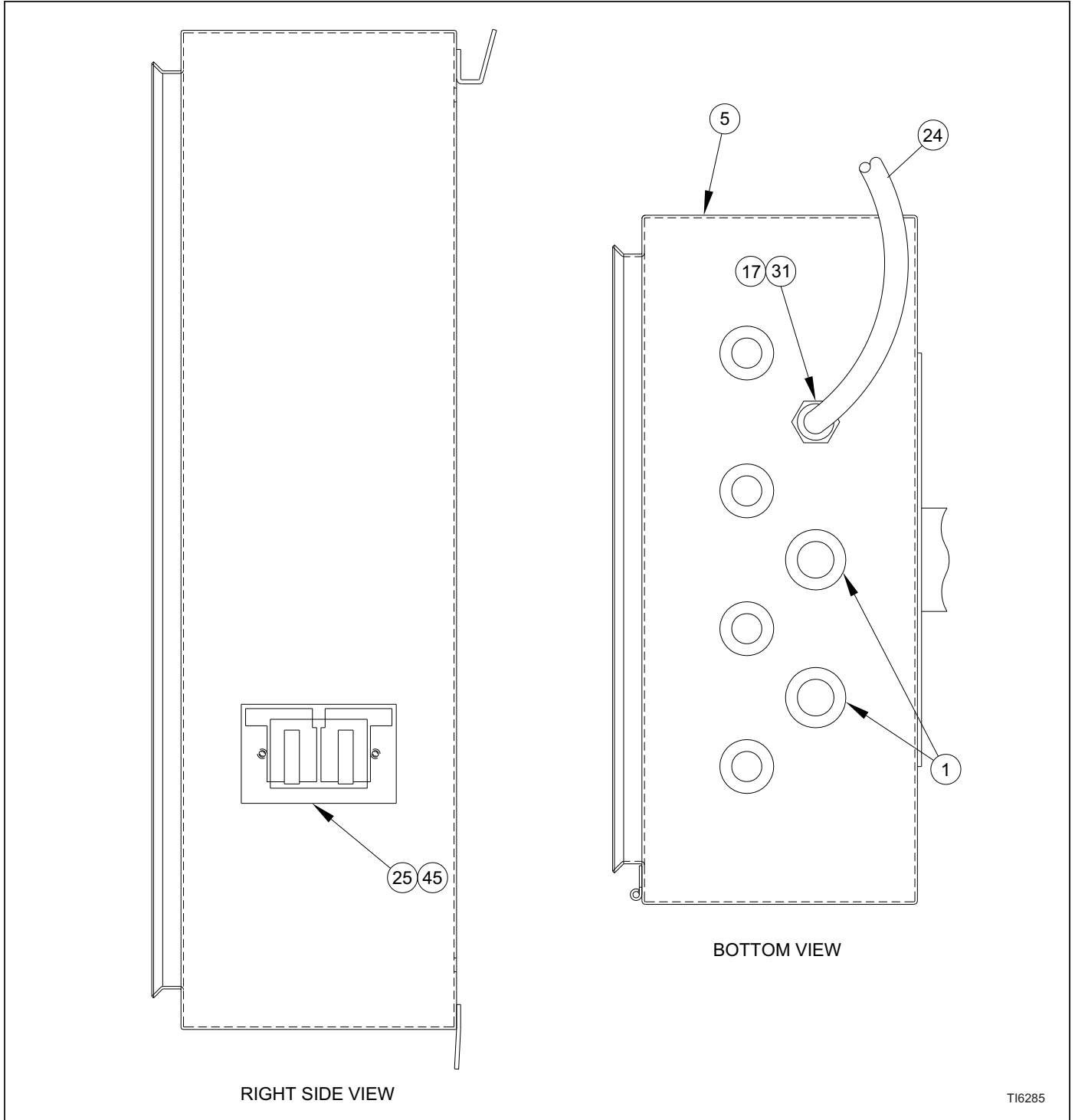


Figure 4.12 - NFPA Electrical Case:
Right Side and Bottom Views

NFPA ELECTRICAL CASE (Option)

Item	Part Number	Description	Qty
1	BP 00005490052	Hole Plug 1 Conduit Seal	2
2	BP 14031008	Transformer (Input 230/460) (Output 115V @ 750VA)	1
3	BP 00005490203	Label, NFPA Serial	1
4	7 0001502	Hex Nut 3/8-16	4
5	BPA11591331	NFPA Enclosure with Modifications	1
6	BP 11591333	Electrical Panel NFPA with Modifications	1
7	BP 11591497	Din Rail 35mm 6' LONG	6
8	BP 00005490199	Wireway 1.5" X 3" X 6' Lg	6
9	BP 00005490198	Wireway 1" X 3" X 6' Lg	6
10	BP 11597386	Wireway Cover 1.5" X 6' Lg	6
11	BP 31541773	Wireway Cover 1" X 6' Lg"	6
12	BP 0008116TB2	ST 2.5 Quattro Terminal	19
13	BP 00005490013	ST 2.5 Quattro Pe Terminal	3
14	BP 00005490012	FBS 2-5 Plug In Bridge	1
15	BP 00005490003	FBS 3-5 Plug In Bridge	1
16	BP 00005490006	D-ST 2.5 Quattro Cover	2
17	AH 001150801	Cord Grip Lock Nut	2
18	BP 0011791DPDT	PLC Relay	1
19	BP 0010019CR	Contactora Reversing Kit	1
20	BP 0010019LR	Overload Relay	1
21	BP 0008122VR	Varistor	2
22	CK 0010019	Contactora Switch Blocks 2NO & 2NC	2
23	BP 00005490190	Contactora 3 Pole 120V 9A	3
24	BP 00005490201	16 Conductor 16 AWG SO Cord	12
25	BP 00005490076	Duplex Water Proof Cover	1
26	BP 0010018SS	Disconnect Switch Shaft	1
27	BP 0010018DH	Disconnect Switch Operating Handle	1
28	BP 0010016DS	Disconnect Switch 3 Pole 30A Fused	1
29	NV 00100160007	1 Pole 4A Circuit Breaker	3
30	BP 00100160010	1 Pole 10A Circuit Breaker	1
31	BP 00005490202	Cord Grip, Straight	2
32	LP 0011298	RC Transient Suppressor	1
33	CK 000961015	Fuse, Main 15A 600 VAC	3
34	BP 00005490197	Legend Plate, Emergency Stop	1

Item	Part Number	Description	Qty
35	ML 0010366G	Tag, Ground Symbol	5
36	BP 11591338	Weldment, Operator Remote Pendant	1
37	BP 11591370	Remote Enclosure Cover	1
38	BP 11591371	Remote Enclosure Cover Overlay	1
39	BP 11591374	Remote Enclosure Cover Gasket	1
40	BP 00005490196	Selector Switch Assembly, 3 Position Maintained	3
41	BP 00005490192	Switch Assembly, Green Illuminated Push Button	1
42	BP 00005490193	Switch Assembly, Emergency Stop Push Button	1
43	BP 00005490195	Switch Assembly, Non Illuminated Push Button	1
44	SG 000961001	Fuse, Cartridge 5A	2
45	BP 00005490075	Twist Lock Duplex Receptacle	1
46	ML 0008776FG	Terminal Cover, Transformer	1
47	BP 0003277MRSA	RC Snubber, 575 VAC	1
48	BP 00005490205	Labels, NFPA Power Case	1
49	SG 001001701	Fuseholder, 2 Pole 30 Amp 600 VAC	1
50	BP 00005490064	Cap Plug	1
51	BP 0000549ES14	Din Rail End Clamp	6
52	BP 0004158DLP1	Bracket, Disconnect Locking	1
53	BP 0004158DLP2	Lock Plate, Disconnect Locking	1
54	BPB11591350	Schematic, NFPA	1
55	BP 00005490204	Labels, Terminal Block	1
56	BP 11111912	Washer, 1/4" Flat	5
57	BP 0003277RC1	RC Suppressor	1