

PARTS LIST
FOR
BARDONS & OLIVER
No. 4
UNIVERSAL TURRET LATHE

BARDONS & OLIVER, Inc.

BARDONS & OLIVER, INC. OHIO

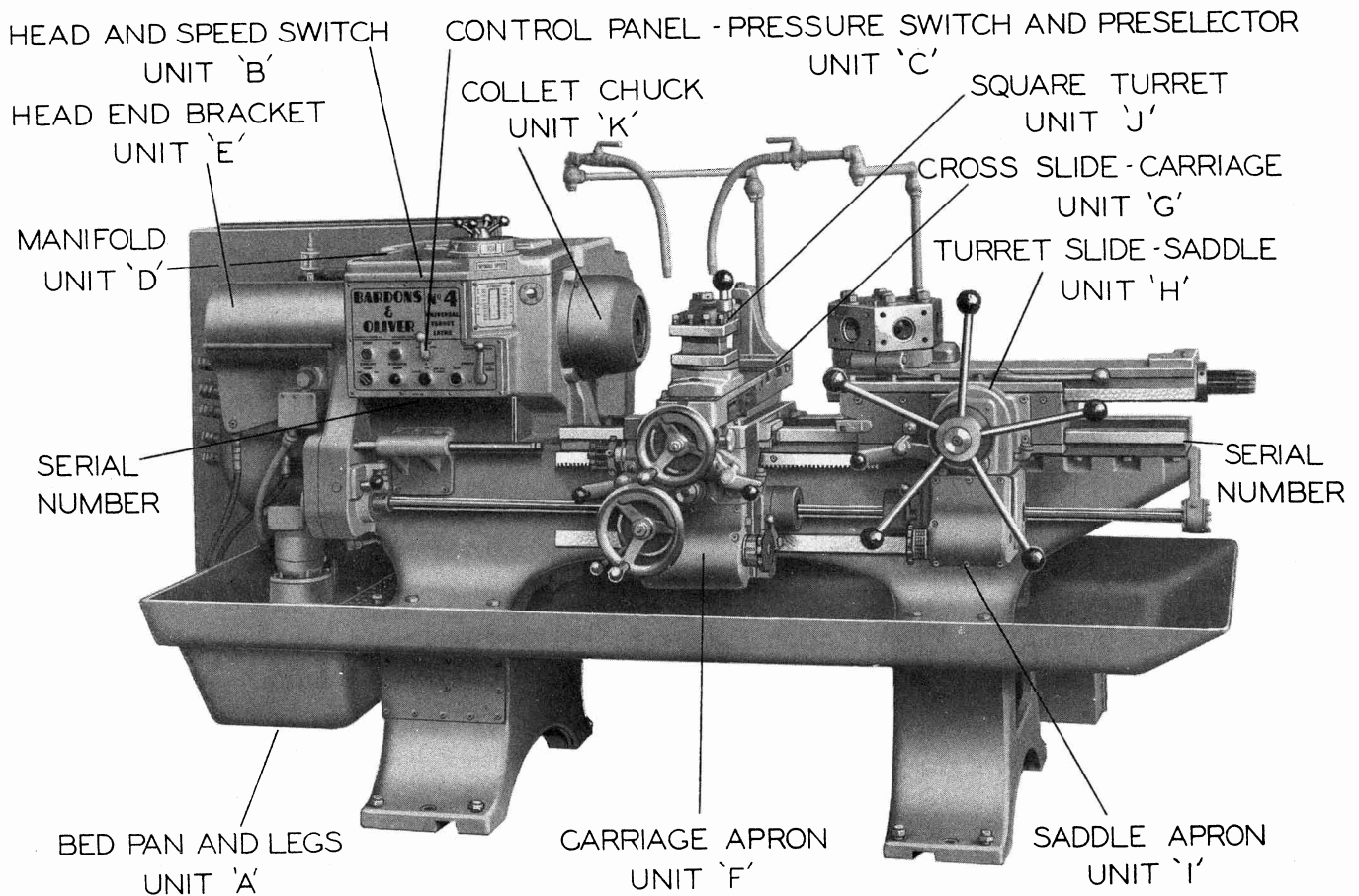
5800 HARPER ROAD

SOLON, OHIO 44139

440-498-5800 FAX 440-498-2001

BARDONS & OLIVER

#4 UNIVERSAL TURRET LATHE



HYDRAULIC POWER UNIT 'L' AND BAR FEED UNIT 'M' NOT SHOWN

When Ordering:

1. Specify the number of pieces required.
2. Give the code number, part name and drawing number of the part exactly as shown in the parts list.
3. Give the size and serial number of the machine.

Example:

Required: Wedge Shoes for the Collet Chuck Unit.

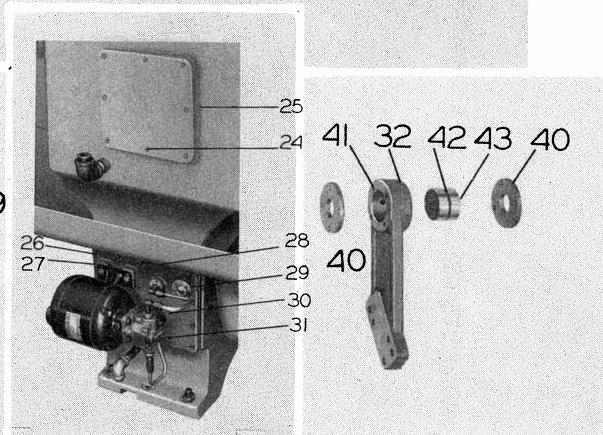
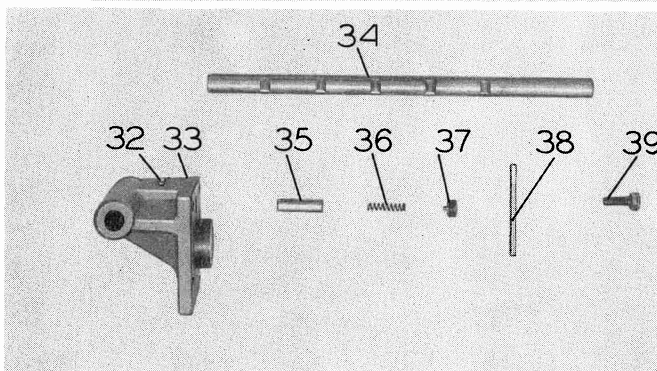
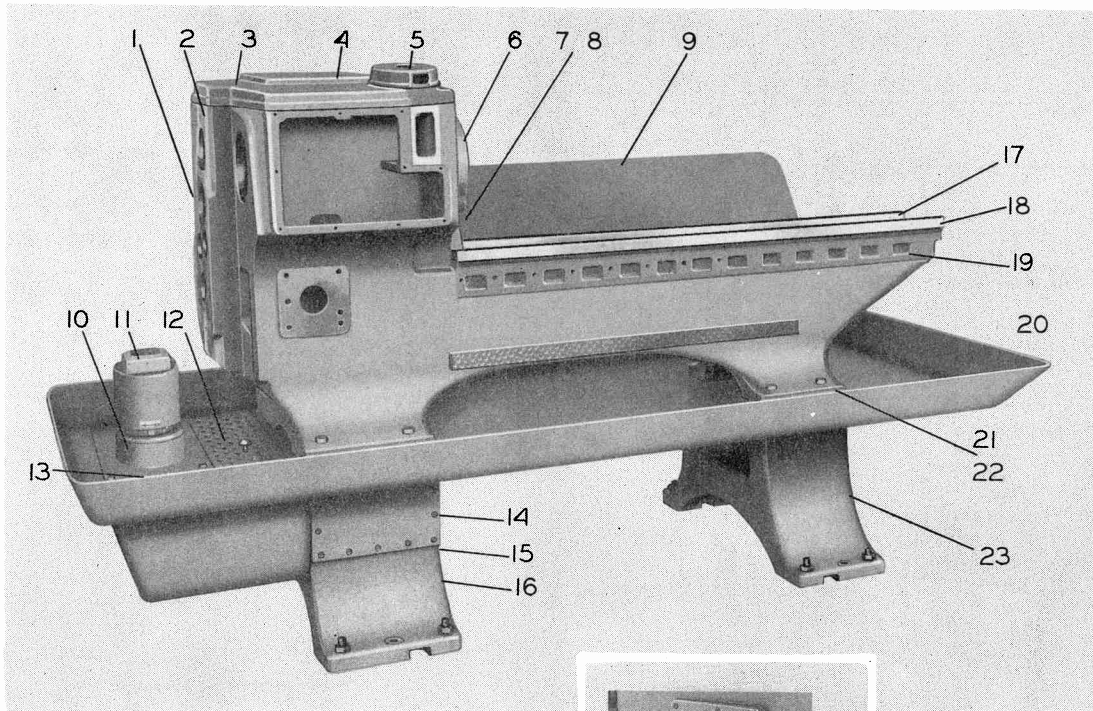
Order:

2 - K 20, Wedge Shoes, B-31983 for
#4-2" Cap. Universal Turret Lathe, Serial No. 18263

Some parts must be fitted in assembly. Allowance for fitting will be provided in those cases.

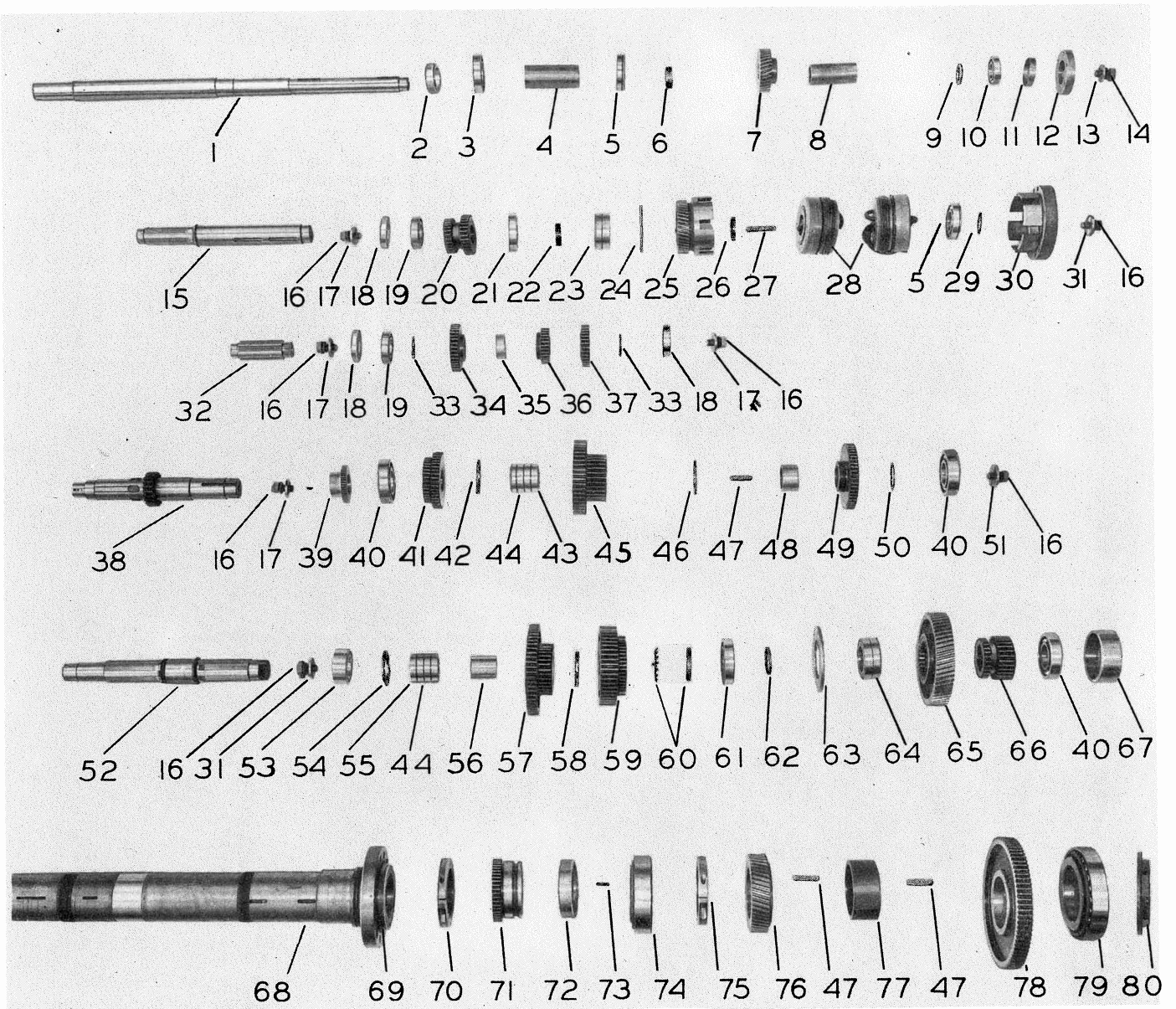
Note: Unless otherwise noted, an "A" after the code number indicates the part is for a 2-1/2" capacity machine.

BED, PAN AND LEGS — UNIT A

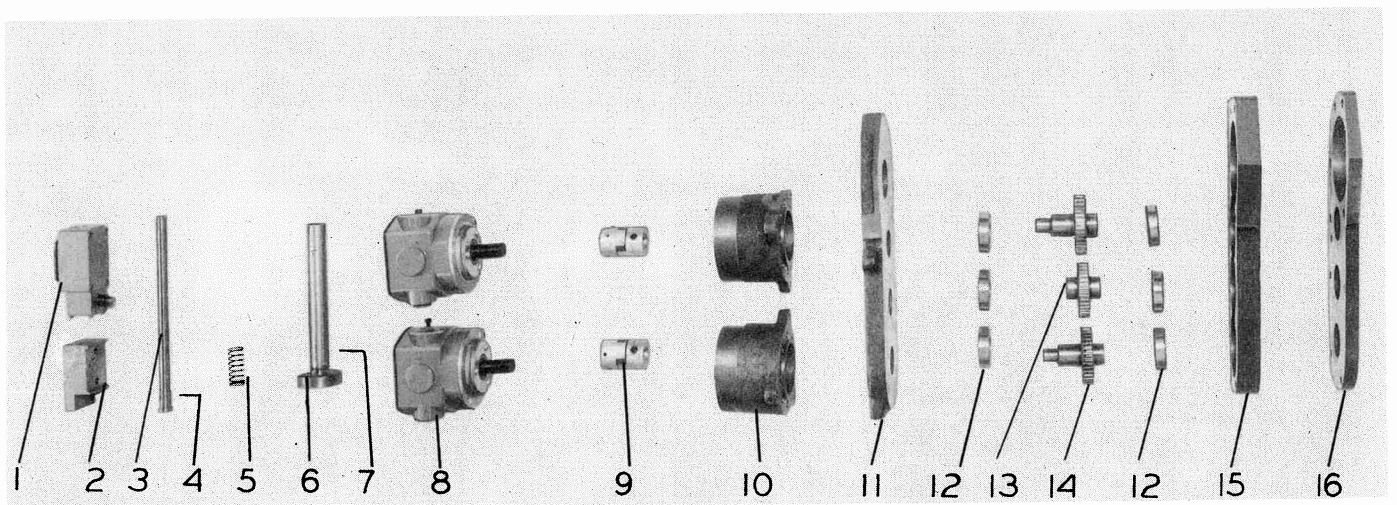


A 1	Bed	L-67671	A 26	Rear Cover	A-67515
A 2	Cover	B-65497	A 27	Rear Cover Gasket	A-65168
A 3	Housing	A-65784	A 28	Rubber Gasket	B-65781
A 4	Cover	A-66680	A 29	Oil Gauge (Complete)	B-41415
A 5	Preselector Cover	A-65786	A 30	Oil Filter	#17415
A 6	Splash Guard	B-69084	A 31	Pump	B-68169
A 7	Front Cover	A-67649	<u>STOP ROD BRACKET ASSEMBLY</u>		
A 8	Front Cover Gasket	A-67668	A 32	Oiler	(2) #502
A 9	Splash Guard	A-65886	A 33	Stop Rod Bracket	A-65763
A 10	Pump Bracket	A-65883	A 34	Stop Rod	A-65762
A 11	Coolant Pump	B-71111	A 35	Stop Rod Plunger	B-31995
A 12	Strainer	A-34772	A 36	Spring	#1557
A 13	Pan Plate	A-65882	A 37	Screw Plug	B-32063
A 14	Front Cover	A-65765	A 38	Pin	#2273
A 15	Front Cover Gasket	A-65767	A 39	Stop Rod Screw	B-36694
A 16	Head Leg	L-65770	<u>FEED SHAFT SUPPORT ASSEMBLY</u>		
A 17	Rear Bedway	A-65931	A 40	Closer	(2) B-65759
A 18	Front Bedway	A-65932	A 41	Feed Shaft Support	A-65764
A 19	Bedway Stud	(28) B-33168	A 42	Bearing	GR-20
A 20	Pan	A-65884	A 43	Inner Race	B-65758
A 21	Rubber Gasket	(4) B-65760			
A 22	Spacer	(4) B-65761			
A 23	Rear Leg	A-65769			
A 24	Clutch Bracket (Behind Cover)	B-67643			
A 25	Cover	A-66042			

HEADSTOCK GEAR TRAIN — UNIT B



SPEED GOVERNOR — UNIT BB



HEADSTOCK GEAR TRAIN — UNIT B

MOTOR SHAFT ASSEMBLY

B 1	Motor Shaft	Give Motor Data
B 2	Oil Retainer	B-69853
B 3	Ball Bearing	209-SF
B 4	Motor Shaft Spacer	B-69713
B 5	Ball Bearing	208-S
B 6	Motor Shaft Spacer	B-69711
B 7	Motor Shaft Gear	B-69710
B 8	Motor Shaft Spacer	B-69712
B 9	Spacer	B-67750
B 10	Ball Bearing	206-S
B 11	Spacer	B-69715
B 12	Retainer	B-67652
B 13	Washer	B-69500
B 14	5/8-18 x 1-1/4 L. H.H.C.S. and L.W.	

CLUTCH SHAFT ASSEMBLY

B 15	Clutch Shaft	A-69717
B 16	5/8-18 x 1-1/4 L. H.H.C.S. with L.W.	
B 17	Washer	(4) B-69499
B 18	Bearing Spacer	(2) B-65478
B 19	Ball Bearing	(2) 207-S
B 20	Double Cluster Gear	A-67680
B 21	Ball Bearing	209-S
B 22	Spacer	B-69714
B 23	Ball Bearing	(2) 109-KRDB
B 24	Bearing Closer	B-69468
B 25	Clutch Gear	A-67665
B 26	Spacer	B-66015
B 27	Key	(2) B-69709
B 28	Electric Clutch	(2) B-71112
B 29	Spacer	B-69708
B 30	Brake Housing	A-69716
B 31	Washer	(2) B-69501

INTERMEDIATE SHAFT ASSEMBLY

B 32	Intermediate Shaft	B-65480
B 33	Bearing Spacer	(2) B-65481
B 34	Gear 39 T	B-65221
B 35	Gear Spacer	B-65482
B 36	Gear 29 T	B-65483
B 37	Gear 34 T	B-65484

2nd INTERMEDIATE SHAFT ASSEMBLY

B 38	2nd Intermediate Shaft	A-69726
B 39	Gear 52 T	B-69732
B 40	Ball Bearing	(3) 309-S
B 41	Double Cluster Gear	B-69898
B 42	Thrust Washer	B-65488
B 43	Ball Bearing	(2) GR-32-D
B 44	Bearing Spacer	(2) B-65489
B 45	Double Cluster Gear	A-69896
B 46	Thrust Washer	B-65493
B 47	Key	(3) B-69316
B 48	Spacer	B-65494
B 49	Gear 54 T	B-65222
B 50	Spacer	B-65495
B 51	Washer	B-69502

HI-LO CLUTCH SHAFT ASSEMBLY

B 52	Hi-Lo Clutch Shaft	A-65508
B 53	Ball Bearing	5208-K
B 54	Thrust Washer	B-65498
B 55	Ball Bearing	(2) GR-32-ND
B 56	Bearing Sleeve	B-65499
B 57	Double Cluster Gear	A-69895
B 58	Thrust Washer	B-65503
B 59	Double Cluster Gear	A-69899
B 60	Lockwasher and Nut	W&N-11
B 61	Ball Bearing	211-S
B 62	Bearing Spacer	B-65506
B 63	Bearing Retainer	A-69791
B 64	Ball Bearing (Pair)	111 KRDB
B 65	Clutch Gear (1550 RPM)	A-69790
B 65A	Clutch Gear (2000 RPM)	A-69870
B 66	Gear Clutch Pinion (1550 RPM)	A-65224
B 66A	Gear Clutch Pinion (2000 RPM)	A-65919
B 67	Bearing Spacer	B-65507

SPINDLE ASSEMBLY

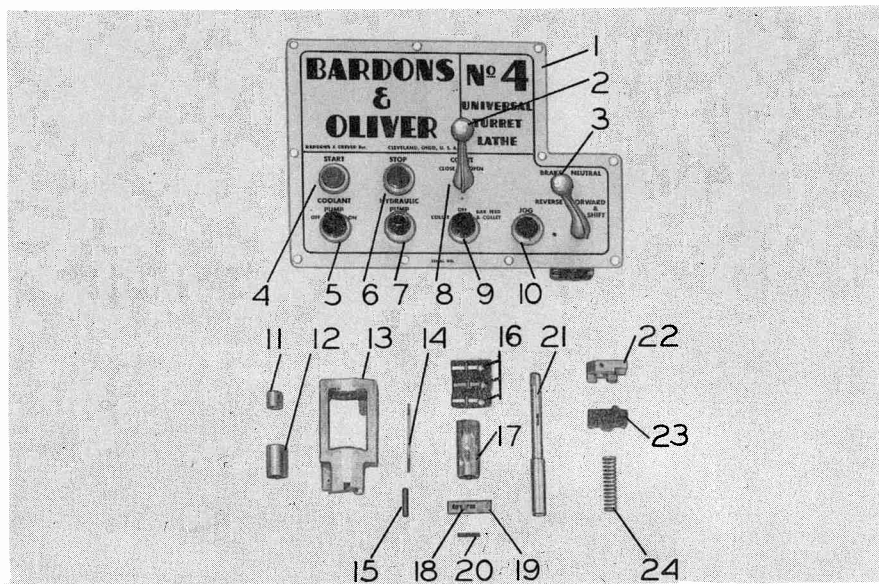
B 68	Spindle	A-66147
B 68A	Spindle	A-66454
B 69	Driving Button	B-37291
B 70	Adjusting Nut	A-54659
B 70A	Adjusting Nut	A-54656
B 71	Spindle Gear	A-65138
B 71A	Spindle Gear	A-66448
B 72	Spindle Spacer	B-65139
B 72A	Spindle Spacer	B-66447
B 73	Key	#2331
B 74	Roller Bearing	742-740
B 74A	Roller Bearing	71750-71437
B 75	Spindle Gear Nut	A-54658
B 75A	Spindle Gear Nut	A-67770
B 76	Small Spindle Gear (Note 1)	A-65226
B 76A	Small Spindle Gear (Note 2)	A-65917
B 76B	Small Spindle Gear (Note 3)	A-66452
B 76C	Small Spindle Gear (Note 4)	A-67774
B 77	Spindle Gear Spacer	B-65509
B 77A	Spindle Gear Spacer	B-66451
B 78	Large Spindle Gear (Note 1)	A-65510
B 78A	Large Spindle Gear (Note 2)	A-65916
B 78B	Large Spindle Gear (Note 3)	A-66453
B 78C	Large Spindle Gear (Note 4)	A-67775
B 79	Roller Bearing	752-759
B 79A	Roller Bearing	672-687
B 80	Front Bearing Closer	A-66019
B 80A	Front Bearing Closer	A-66455

Note 1: 2" Cap. - 1550 RPM Machine
Note 2: 2" Cap. - 2000 RPM Machine
Note 3: 2 1/2" Cap. - 1550 RPM Machine
Note 4: 2 1/2" Cap. - 2000 RPM Machine

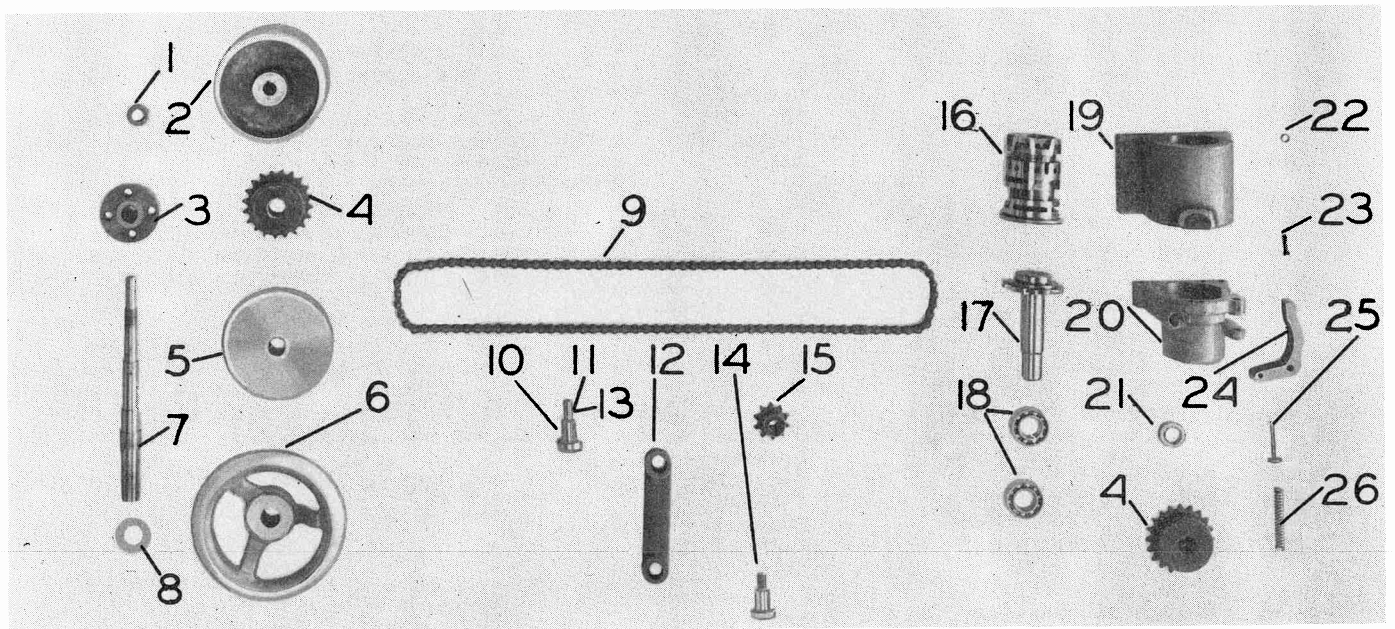
SPEED GOVERNOR — UNIT BB

BB 1	Limit Switch	802TC	BB 9	Flexible Coupling	(2)	A-070
BB 2	Switch Bracket	B-68273	BB 10	Switch Bracket	(2)	A-69733
BB 3	Plunger	B-68271	BB 11	Plate		A-69734
BB 4	O Ring	1820-7	BB 12	Ball Bearing	(6)	105-KS2
BB 5	Spring	B-42975	BB 13	40 T Gear Shaft		B-68270
BB 6	Plunger Bracket	B-68272	BB 14	40 T Gear Shaft	(2)	B-69731
BB 7	O Ring	1820-13	BB 15	Plate Housing		A-68266
BB 8	Speed Switch	(2) B-71113	BB 16	Plate		A-68267

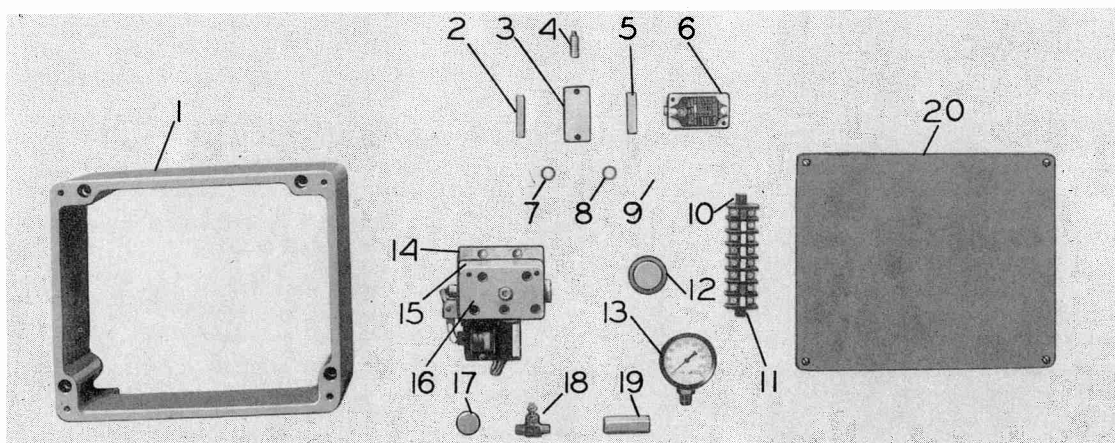
CONTROL PANEL — UNIT C



PRESELECTOR — UNIT CC



PRESSURE SWITCH — UNIT CCC



CONTROL PANEL — UNIT C

C 1	Name and Pushbutton Plate	A-66430	C 13	Switch Bracket	A-67112
C 2	Lever	B-69962	C 14	Stud	B-67118
C 3	Lever	B-69961	C 15	Spacer	B-67119
C 4	Switch	800T-A1A	C 16	Switch	(3) BZ-2RM22-A2
C 5	Switch	800T-H2A	C 17	Cam	B-67115
C 6	Switch	800T-B4A	C 18	Roller	B-67117
C 7	Switch	800T-P16	C 19	Roller Lever	B-67116
C 8	Control Cabinet Switch	B-66541	C 20	Spring	B-45767
C 9	Switch	800T-J2B	C 21	Shaft	B-70059
C 10	Switch	800T-A1B	C 22	Trip Lever	B-67114
C 11	Bushing	C-67	C 23	Switch	BZ-2RD-A2
C 12	Bushing	DB-214	C 24	Spring	B-59673

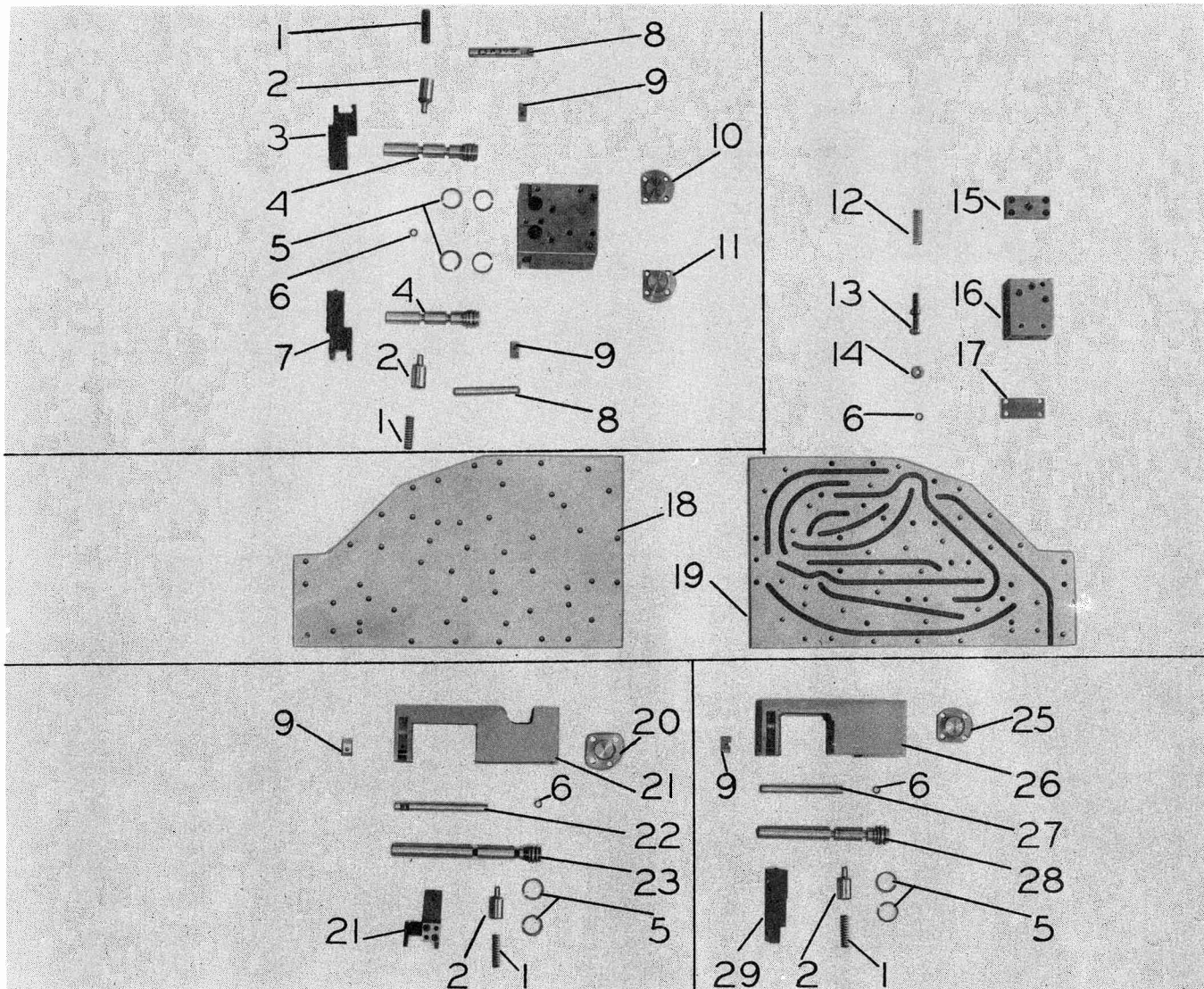
PRESELECTOR — UNIT CC

CC 1	Washer	#1071	CC 14	Lever Stud	B-66028
CC 2	Speed Drum	B-65790	CC 15	Sprocket	B-71110
CC 3	Bushing	B-65791	CC 16	Preselector Drum	A-69836
CC 4	Sprocket	B-66440	CC 17	Preselector Valve Detent	A-69835
CC 5	Spindle Speed Drum	B-69833	CC 18	Ball Bearing	105-KS
CC 6	Handwheel	A-69832	CC 19	Preselector Housing	A-69830
CC 7	Shaft	A-69251	CC 20	Preselector Valve Bracket	A-69831
CC 8	Washer	B-70107	CC 21	Spacer	B-69891
CC 9	Roller Chain	#41	CC 22	O Ring	#1820-6
CC 10	Lever Pin	B-69965	CC 23	Detent Spring	B-69838
CC 11	Bearing	MI-8-N	CC 24	Preselector Lever	B-69834
CC 12	Lever	B-69964	CC 25	Guide Rod	B-69837
CC 13	Bearing	MO-12-N	CC 26	Spring	B-44138

PRESSURE SWITCH — UNIT CCC

CCC 1	Valve Cover	A-67648	CCC 11	Terminal Block	892-15E
CCC 2	Cover	B-69311	CCC 12	Filter	A-14132
CCC 3	Block	A-69312	CCC 13	Gauge (0-300 lbs)	Type 1
CCC 4	Plunger	B-69309	CCC 14	Manifold	B-67659
CCC 5	Cover	B-69310	CCC 15	Gasket	B-67660
CCC 6	Switch	802-T	CCC 16	Valve	B-69399
CCC 7	O Ring	1820-11	CCC 17	4-Way Junction	B-70060
CCC 8	O Ring	1820-14	CCC 18	Shut-Off Cock	#6815
CCC 9	O Ring	1820-9	CCC 19	Snubber	694-1/4
CCC 10	Terminal Block	(8) 892-15T	CCC 20	Cover	A-67647

MANIFOLD — UNIT D



DOUBLE CYLINDER ASSEMBLY

D 1	Spring	(4)	B-46849
D 2	Detent	(4)	B-65450
D 3	Fork		B-65451
D 4	Gear Shift Rod	(2)	B-65447
D 5	Piston Ring (1-1/8 x 1/8 w.)	(8)	1820-6
D 6	O Ring	(14)	B-65452
D 7	Fork		B-65453
D 8	Fork Guide	(2)	B-65454
D 9	Guide Clamp	(4)	B-65448
D 10	Cylinder Closer		A-65446
D 11	Double Cylinder		

SEQUENCE VALVE ASSEMBLY

D 12	Spring		B-69856
D 13	Valve Stem		B-65437
D 14	Valve Seat		B-65440
D 15	Bottom Plate		B-65439
D 16	Sequence Valve		B-65436
D 17	Top Plate		B-65438

MANIFOLD ASSEMBLY

D 18	Manifold Cover	A-65434
D 19	Manifold	L-65433

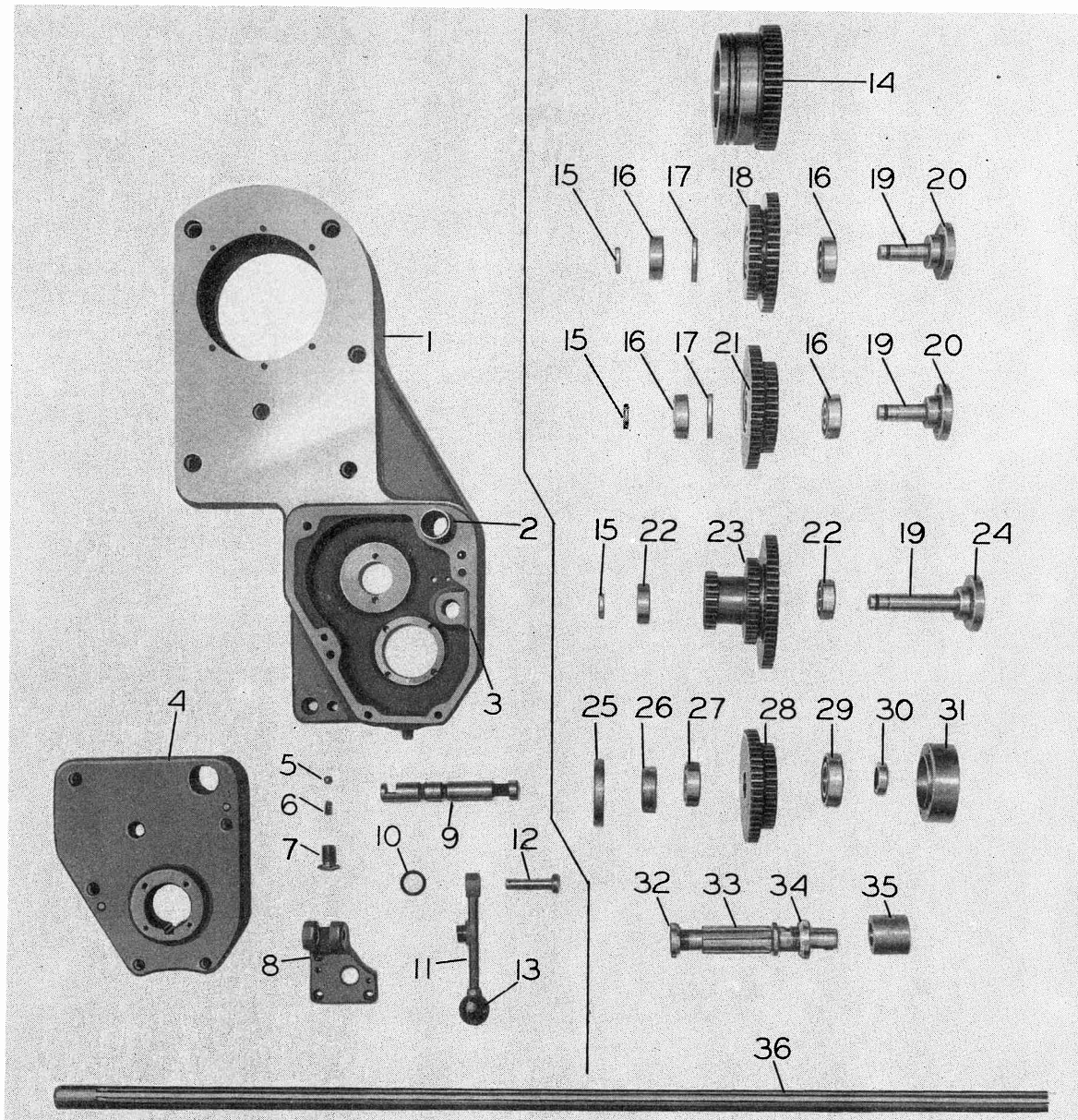
E.F. CYLINDER ASSEMBLY

D 20	Cylinder Closer	B-65457
D 21	E. F. Cylinder	A-65460
D 22	Fork Guide	B-65463
D 23	Gear Shift Rod	B-65461
D 24	Fork	A-68390

H.G. CYLINDER ASSEMBLY

D 25	Cylinder Closer	B-68622
D 26	H. G. Cylinder	A-65455
D 27	Fork Guide	B-65459
D 28	Gear Shift Rod	B-65456
D 29	Fork	B-65458

HEAD END BRACKET — UNIT E



BRACKET ASSEMBLY

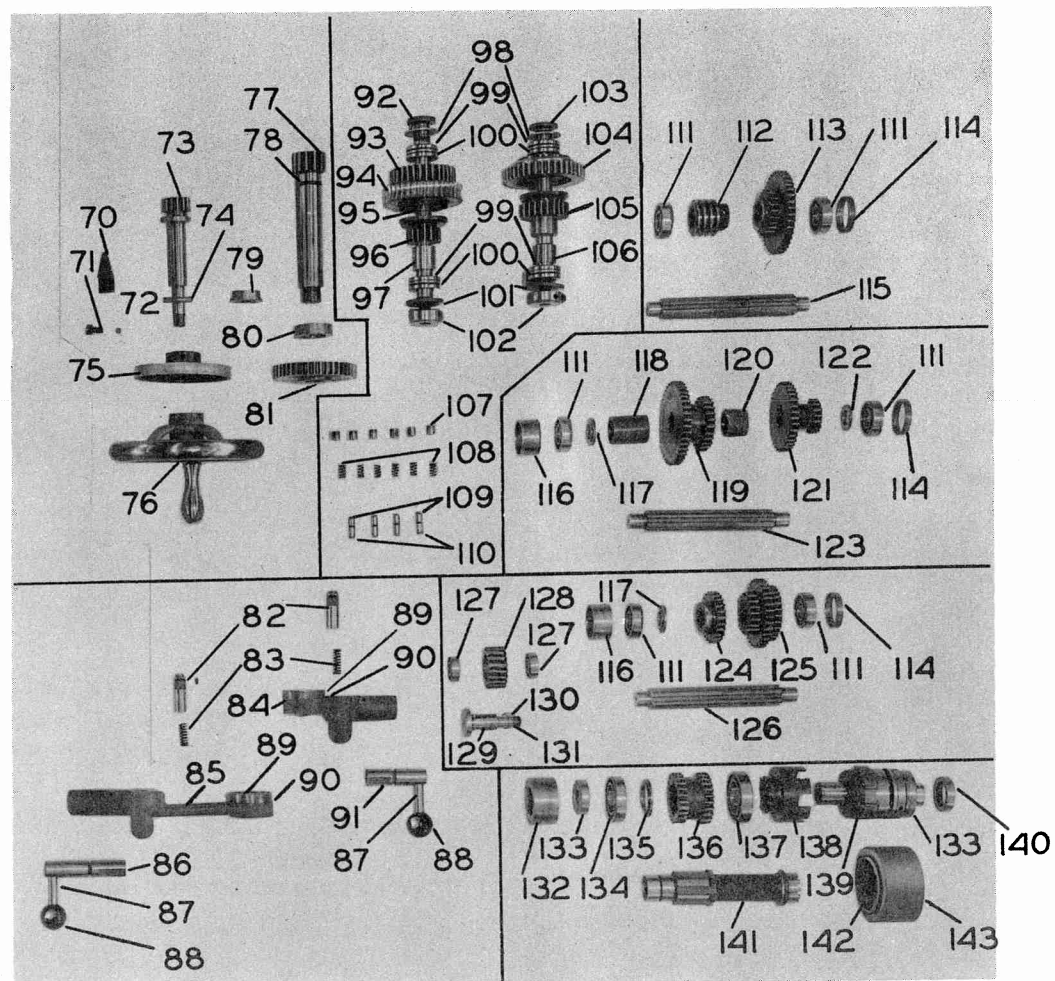
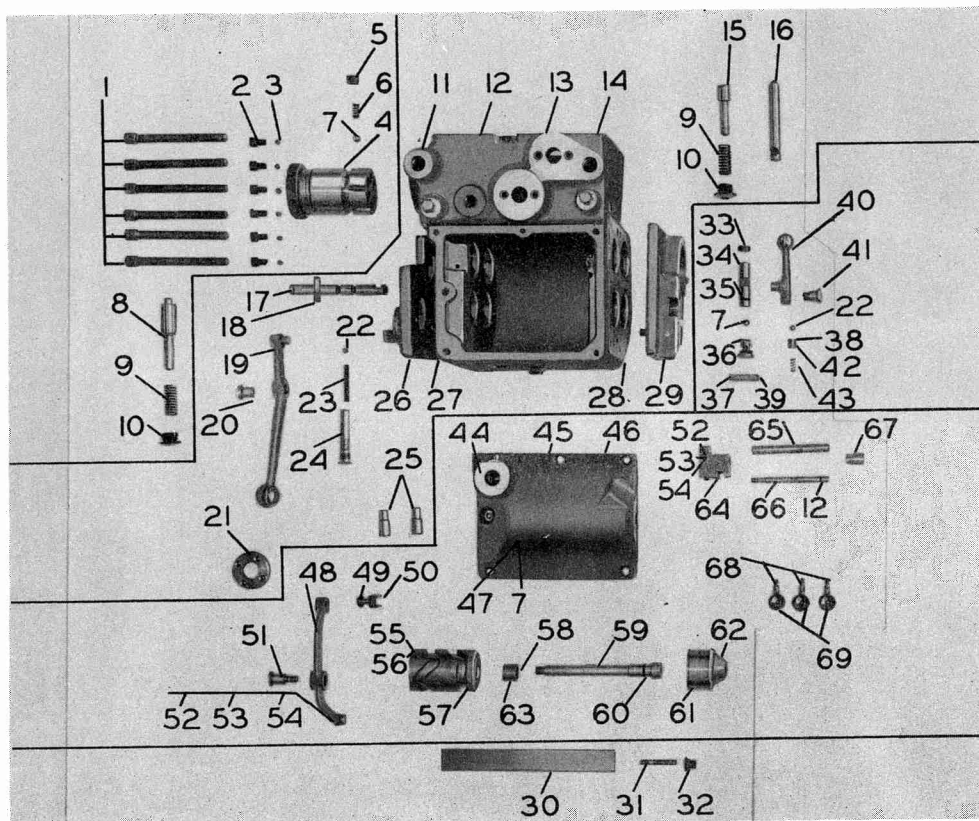
E 1	Head End Bracket	L-65132
E 2	Sleeve	B-65163
E 3	Cover Gasket	A-65162
E 4	Cover	A-65133
E 5	5/16 Dia. Steel Ball	
E 6	Detent Spring	B-45761
E 7	Retainer	B-66645
E 8	Lever Bracket	B-66643
E 9	Gear Shift Rod	B-65165
E 10	O Ring	1820-17
E 11	Lever	B-66644
E 12	Lever Pin	B-65164
E 13	1-3/8 Dia. Bakelite Ball	

GEAR TRAIN ASSEMBLY

E 14	Spindle Gear	A-65138
E 14A	Spindle Gear	A-65448
E 15	Spacer	(3) B-65146

E 16	Ball Bearing	(4)	204-S
E 17	Spacer	(2)	B-65145
E 18	Gear 39-50 T		B-65141
E 19	O-Ring	(3)	1820-11
E 20	Gear Stud	(2)	B-65140
E 21	Gear 38-52 T		B-65147
E 22	Ball Bearing	(2)	104-KS
E 23	Gear 24, 36, and 57 T		A-65151
E 24	Gear Stud		B-65150
E 25	Shaft Cover		B-65158
E 26	Spacer		B-65159
E 27	Ball Bearing		205-S
E 28	Gear 36-48 T		B-65155
E 29	Ball Bearing		206-S
E 30	Oil Seal		60250
E 31	Bearing Closer		B-65160
E 32	Lockwasher and Nut		W&N-05
E 33	Shaft		A-65154
E 34	Lockwasher and Nut		W&N-06
E 35	Coupling		B-65161
E 36	Feed Shaft		B-66206

CARRIAGE APRON — UNIT F



CARRIAGE APRON — UNIT F

STOP SCREW ROLL ASSEMBLY

F 1	Stop Screw	(6)	A-69187
F 2	3/8 x 1/2 S.H.C.S.	(6)	
F 3	Brass Shoe	(6)	#2289
F 4	Stop Screw Roll		A-67232
F 5	Detent Screw		B-65284
F 6	Clutch Spring	(7)	B-34684
F 7	3/8 Dia. Steel Ball	(16)	
F 8	Feed Disengage Pin		B-65343
F 9	Knock Out Spring	(2)	B-31760
F 10	Knock Out Plug	(2)	B-31750

APRON GEAR BOX ASSEMBLY

F 11	Oiler		#303
F 12	O Ring	(3)	1820-5
F 13	Carriage Apron		L-67444
F 14	Top Gasket		A-65348
F 15	Cross Slide Knock Out Rod		B-65299
F 16	Trip Pin		B-65101
F 17	Reverse Gear Shaft Rod		B-65338
F 18	Oil Seal		#60096
F 19	Reverse Gear Lever		A-65251
F 20	Reverse Lever Bushing		B-65332
F 21	Oil Gauge (Complete)		B-41415
F 22	5/16 Dia. Steel Ball		
F 23	Reverse Detent Spring		B-31918
F 24	Detent Holder		B-65298
F 25	Lever Stop	(2)	B-65285
F 26	Left Side Cover		A-65249
F 27	Left Side Cover Gasket		A-65351
F 28	Right Side Cover Gasket		A-65350
F 29	Right Side Cover		A-67445
F 30	Gib		B-65335
F 31	Stud		#860
F 32	Gib Adjusting Nut		#847
F 33	Pump Plug		B-65278
F 34	Pump Plunger		A-65281
F 35	O Ring	(2)	1820-9
F 36	Pump Seat		B-65279
F 37	Pump Cover		B-65277
F 38	O Ring		1820-7
F 39	Pump Gasket		B-65354
F 40	Pump Lever		B-65257
F 41	Pump Handle Stud		B-65280
F 42	Check Valve Plunger		B-65282
F 43	Valve Spring		B-45759

APRON COVER ASSEMBLY

F 44	Oiler		#302
F 45	Apron Cover		A-69273
F 46	Front Gasket		A-65348
F 47	Spring		M-101
F 48	Gear Shift Lever		B-65256
F 49	Washer		#1066
F 50	Shift Pin		B-65342
F 51	Screw		B-65341
F 52	Ball Bearing	(2)	XA-134
F 53	Spacer	(2)	B-62521
F 54	Pin	(2)	B-39805
F 55	Spacer		B-70757
F 56	Washer		#1058
F 57	Gear Shift Cam (Complete)		A-69272
F 58	Cam Spacer		B-69938
F 59	Cam Shaft		B-69268
F 60	O Ring		1820-11
F 61	Collar		B-70308
F 62	Feed Dial		B-69269
F 63	O Ring		1820-18
F 64	Shifter Block		B-65272
F 65	Shifter Rod		B-65276
F 66	Gear Shifter Rod		B-65275
F 67	Shifter Rod Plug		B-65283
F 68	Spoke	(3)	B-41451
F 69	1" Dia. Bakelite Ball	(3)	

PINION SHAFT ASSEMBLY

F 70	Dial Marker		B-65334
F 71	Dial Thumb Screw		B-65333
F 72	Brass Shoe		#1049
F 73	Handwheel Shaft		B-65321
F 74	Washer		#1079
F 75	Dial		A-65254
F 76	Handwheel		A-66344
F 77	Pinion Shaft		B-67234

F 78	O Ring		1820-19
F 79	Apron Plug		B-65303
F 80	Spacer		B-70631
F 81	Pinion Shaft Gear		B-65317

CROSS AND LONGITUDINAL FEED LEVER ASSEMBLY

F 82	Feed Lever Plunger	(2)	B-65302
F 83	Feed Lever Spring	(2)	B-31917
F 84	Cross Feed Lever		A-67050
F 85	Longitudinal Feed Lever		A-67049
F 86	Longitudinal Feed Lever Rod		B-65301
F 87	Feed Lever Stud	(2)	B-65336
F 88	1-3/8 Dia. Bakelite Ball	(2)	
F 89	Feed Lever Cam	(2)	B-67046
F 90	Lever Guard	(2)	B-67045
F 91	Cross Feed Lever Rod		B-65300

FEED ENGAGEMENT SHAFT ASSEMBLY

F 92	Carriage Clutch Bolt		A-67047
F 93	Clutch Gear with Bushing		A-65260
F 94	Worm Gear		B-65296
F 95	Snap Ring		5100-250
F 96	Tooth Clutch with Bushing		B-65297
F 97	Spacer		B-65295
F 98	Laminated Shim Stock	(2)	B-65298
F 99	O Ring	(4)	1820-13
F 100	Ball Bearing	(4)	4B8
F 101	Washer	(2)	B-65292
F 102	Clutch Bolt Nut	(2)	B-65293
F 103	Slide Clutch Bolt		A-67048
F 104	Tooth Clutch (Complete)		B-65286
F 105	Clutch Gear (Complete)		B-65289
F 106	Spacer		B-65290
F 107	Clutch Plug	(6)	B-69183
F 108	Spring	(6)	B-52222
F 109	Pin	(4)	B-65291
F 110	O Ring	(4)	1820-3

WORM SHAFT ASSEMBLY

F 111	Ball Bearing	(6)	204-S
F 112	Worm		B-65311
F 113	Double Cluster Gear		B-65306
F 114	Spacer		B-65337
F 115	Shaft		B-65315

INTERMEDIATE SHAFT ASSEMBLY

F 116	Spacer	(2)	B-65324
F 117	Spacer	(2)	B-65268
F 118	Spacer		B-65323
F 119	Double Cluster Gear		B-65307
F 120	Sleeve		B-65340
F 121	Double Cluster Gear		B-65308
F 122	Spacer		B-65322
F 123	Shaft		B-65314

TRIPLE CLUSTER GEAR SHAFT ASSEMBLY

F 124	25 T Gear		B-65309
F 125	Triple Cluster Gear		A-65259
F 126	Shaft		B-66980

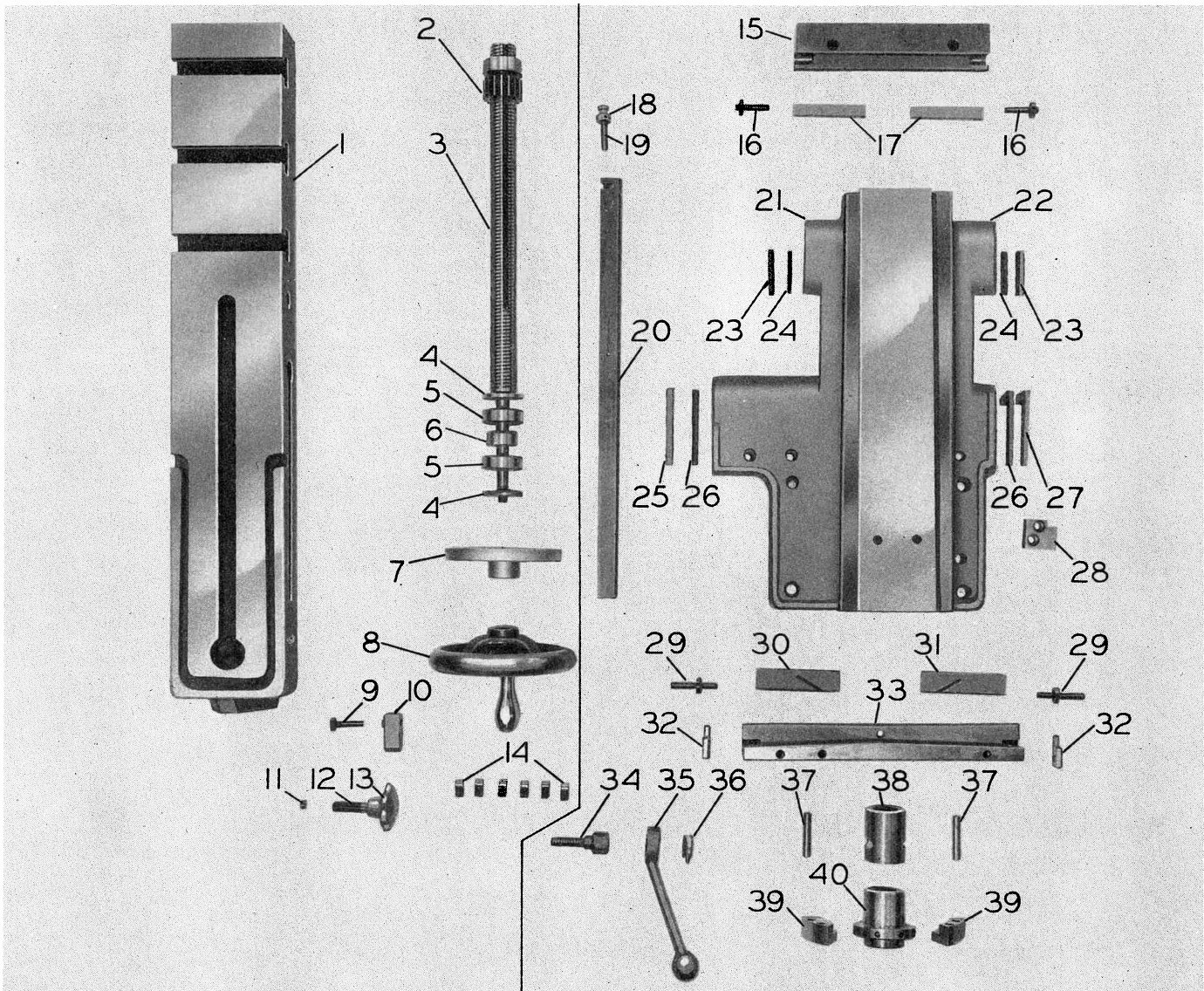
IDLER GEAR STUD ASSEMBLY

F 127	Ball Bearing	(2)	202-S
F 128	Idler Gear		B-65310
F 129	Idler Stud		B-65316
F 130	Bearing Spacer		B-65352
F 131	Snap Ring		5008-137

HOLLOW FEED SHAFT ASSEMBLY

F 132	Sleeve		B-65326
F 133	Oil Seal		#60454
F 134	Ball Bearing	(2)	107KS
F 135	Spacer		B-65325
F 136	Feed Shaft Gear		B-65313
F 137	Ball Bearing		108KS
F 138	Clutch		A-67449
F 139	Slip Clutch (Complete)		A-67450
F 140	Oil Seal		#60388
F 141	Hollow Shaft		A-67446
F 142	Gasket		B-67455
F 143	Cap		A-67447

CROSS SLIDE AND CARRIAGE — UNIT G



CROSS SLIDE ASSEMBLY

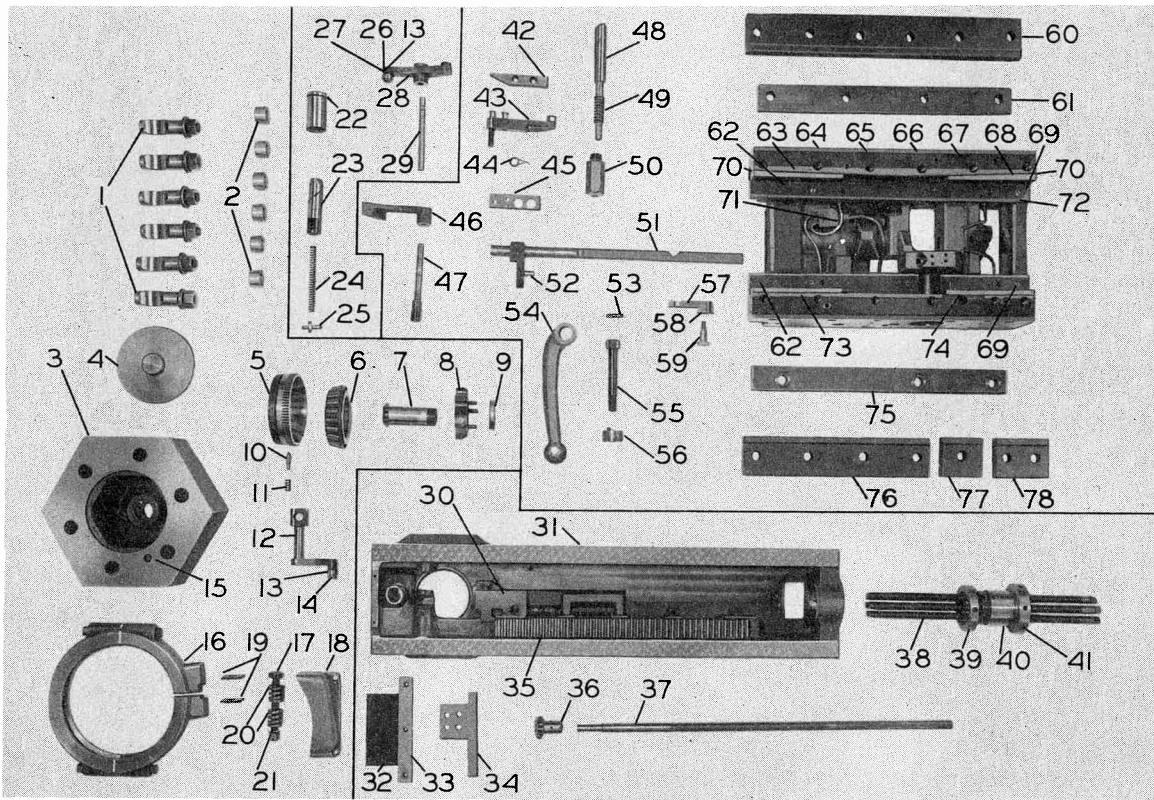
G 1	Cross Slide	A-65094
G 2	Feed Screw Gear	B-65102
G 3	Feed Screw	A-65109
G 4	Spacer	(2) B-63519
G 5	Ball Bearing	(2) 7304
G 6	Bearing Spacer	B-63520
G 7	Dial	B-67785
G 8	Handwheel	A-10449
G 9	Tee Bolt	B-31892
G 10	Trip Dog	B-65100
G 11	Brass Shoe	#2256
G 12	Binder Screw	B-47912
G 13	Binder Knob	B-47915
G 14	Clip	(6) B-31937

CARRIAGE ASSEMBLY

G 15	Rear Cap	A-65108
G 16	Gib Screw	(2) B-65098
G 17	Rear Gib	(2) B-65095
G 18	Gib Nut	B-40580

G 19	Gib Stud	B-37754
G 20	Cross Slide Gib	B-65092
G 21	Carriage	A-65093
G 22	Stop	B-65105
G 23	Wiper Cover	(2) B-47910
G 24	Wiper	(2) B-47909
G 25	Wiper Cover	B-63630
G 26	Wiper	(2) B-63455
G 27	Wiper Cover	B-63454
G 28	Saddle Pull	B-65103
G 29	Gib Screw	(2) B-65099
G 30	L. H. Front Gib	B-65096
G 31	R. H. Front Gib	B-65097
G 32	Gib Cover	(2) B-65104
G 33	Front Carriage Cap	B-65107
G 34	Binder Handle Stud	B-65106
G 35	Binder Handle	A-69392
G 36	Washer	#1069
G 37	#7 Tapered Pin 2" Long	(2)
G 38	Feed Screw Nut	B-66842
G 39	Clamp	(2) A-63522
G 40	Compensating Nut	B-66843

TURRET, SLIDE AND SADDLE — UNIT H



TURRET AND TURRET CLAMP RING ASSEMBLY

H 1	Binder Bolt (Complete)	(6)	B-34553
H 2	Lock Bolt Bushing	(6)	B-58820
H 3	Turret		A-65169
H 4	Turret Cover		B-65185
H 5	Turret Locating Ring		A-65178
H 6	Timken Cone		#29586
H 7	Turret Bevel Gear		B-65186
H 8	Ratchet (Complete)		B-65206
H 9	Bevel Gear Nut		B-13962
H 10	Turret Locating Ring Pin	(2)	B-65368
H 11	Detent Spring	(2)	B-38464
H 12	Clamp Spreader (Complete)		B-65209
H 13	Lock Bolt Lever Roller	(2)	B-34177
H 14	Lever Collar		B-42148
H 15	Oiler		#505-G
H 16	Turret Clamp Ring		A-65172
H 17	Clamp Spring Bolt		B-33401
H 18	Clamp Guard		A-65173
H 19	Turret Clamp Plate	(2)	B-33688
H 20	Clamp Spring	(2)	B-46083
H 21	Clamp Spring Washer		B-38045

SLIDE ASSEMBLY

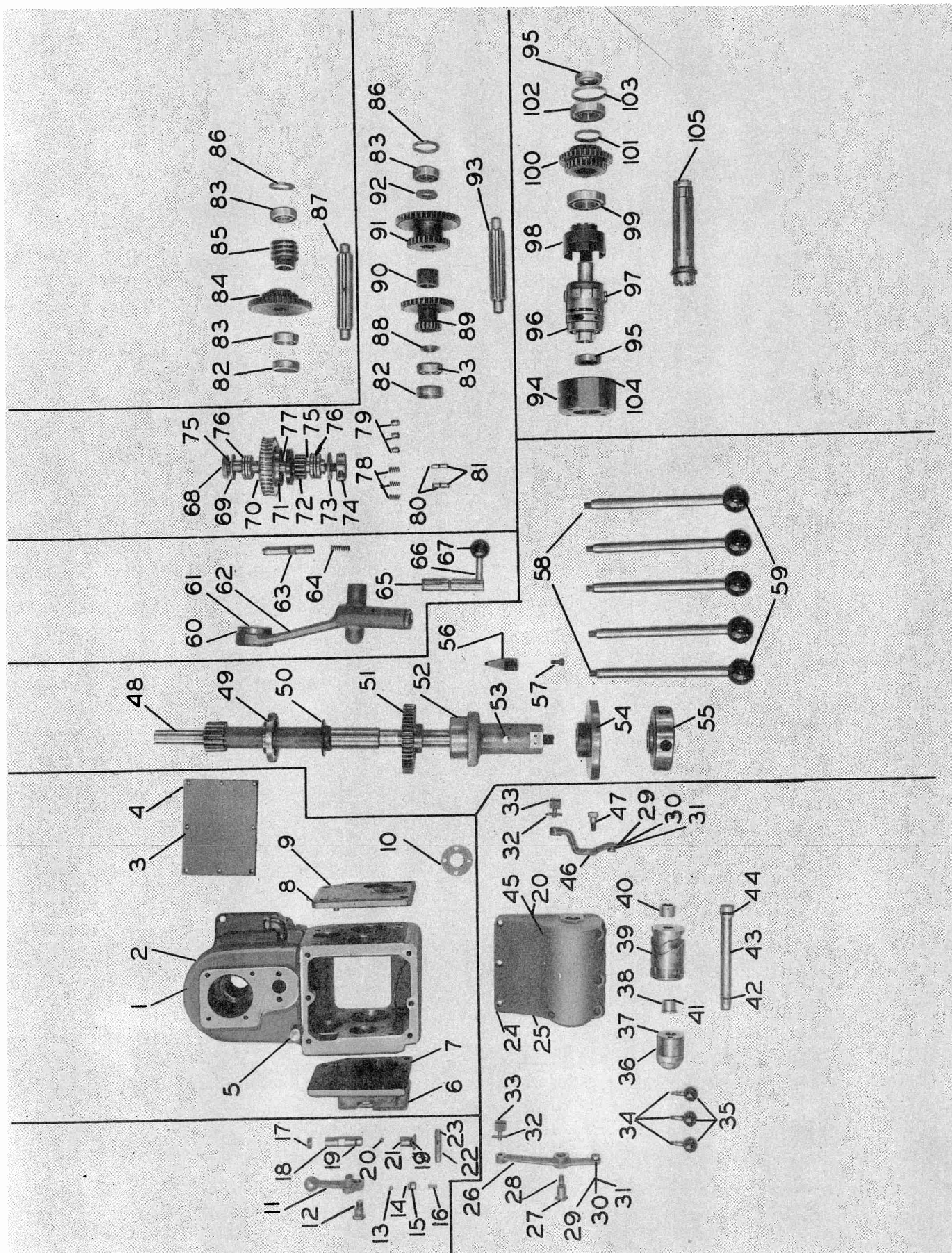
H 22	Lock Bolt Sleeve		B-70926
H 23	Lock Bolt		A-65175
H 24	Lock Bolt Spring		B-33479
H 25	Spring Guide		B-70964
H 26	Lock Bolt Lever Washer		B-34178
H 27	Snap Ring		B-71115
H 28	Lock Bolt Lever		B-69897
H 29	Lever Pin		B-62980
H 30	Pawl Cam		B-65196
H 31	Slide		L-65170
H 32	Chip Guard		B-65199
H 33	Chip Guard Support		B-65200
H 34	Spring Retainer		B-70927
H 35	Rack		A-69901
H 36	Ind. Stop Shaft Gear		B-33481
H 37	Ind. Stop Shaft		B-65187
H 38	Stop Screw	(6)	B-65188

H 39	Stop Roll Nut		B-65210
H 40	Stop Roll		A-65174
H 41	Brass Shoe	(6)	#1049

SADDLE ASSEMBLY

H 42	Turret Clamp Cam		B-65202
H 43	Pawl (Complete)		B-65194
H 44	Pawl Spring		B-65197
H 45	Pawl Stop		B-69195
H 46	Tumbler		A-62940
H 47	Tumbler Screw		B-58801
H 48	Knock Out Rod		B-65362
H 49	Knock Out Spring		B-31760
H 50	Knock Out Rod Plug		B-31805
H 51	Stop Rod		B-65189
H 52	Stop		B-65205
H 53	Lever Washer		B-63347
H 54	Binder Handle		A-68122
H 55	Clamp Stud		B-65208
H 56	Clamp Nut		B-58808
H 57	Latch		B-69776
H 58	Washer		B-69777
H 59	Latch Pivot		B-65193
H 60	Slide Cap - Rear		A-65182
H 61	Lower Saddle Cap - Rear		A-65179
H 62	Saddle Way - Long	(2)	A-65235
H 63	Right Back Gib		B-58816
H 64	Gib Set Screw Washer	(4)	#1067
H 65	Saddle		L-65171
H 66	Saddle-Way Adjustment Shoe	(4)	#884
H 67	O Ring	(5)	1820-8
H 68	Left Back Gib		B-58817
H 69	Saddle Way - Short	(2)	B-65234
H 70	Gib Screw	(2)	B-60136
H 71	Manifold		B-65191
H 72	Way Stud	(8)	B-65233
H 73	Right Front Gib		B-63015
H 74	Left Front Gib		B-58814
H 75	Lower Saddle Cap - Front		A-65180
H 76	Slide Cap - Front		A-65181
H 77	Slide Clamp Cap		B-65204
H 78	Slide Cap - Front		B-65203

SADDLE APRON — UNIT I



SADDLE APRON — UNIT I

APRON GEAR BOX ASSEMBLY

I 1	Apron	A-67454
I 2	O Ring	1820-10
I 3	Rear Cover	B-65834
I 4	Rear Gasket	B-65836
I 5	Feed Lever Stop	B-65821
I 6	Left Side Cover	A-67451
I 7	Left Side Gasket	A-65837
I 8	Right Side Gasket	A-65838
I 9	Right Side Cover	A-65794
I 10	Oil Gauge (Complete)	B-41415

PUMP ASSEMBLY

I 11	Pump Lever	B-65801
I 12	Pump Handle Stud	B-65280
I 13	5/16 Dia. Steel Ball	
I 14	Check Valve Plunger	B-65282
I 15	O Ring	1820-7
I 16	Valve Spring	B-45759
I 17	Pump Plug	B-65278
I 18	Pump Plunger	B-65281
I 19	O Ring	(2) 1820-9
I 20	3/8 Dia. Steel Ball	
I 21	Pump Seat	B-65279
I 22	Pump Gasket	B-65835
I 23	Oil Pump Cover	B-65809

APRON COVER ASSEMBLY

I 24	Apron Cover	A-69180
I 25	Cover Gasket	A-65842
I 26	Lever	B-65803
I 27	Screw	B-65341
I 28	O Ring	1820-5
I 29	Ball Bearing	(2) XA-134
I 30	Spacer	(2) B-62521
I 31	Pin	(2) B-39805
I 32	Washer	(2) #1066
I 33	Shift Pin	(2) B-65342
I 34	Spoke	(3) B-41451
I 35	1" Dia. Bakelite Ball	(3)
I 36	Feed Dial	B-69167
I 37	Collar	B-70308
I 38	Cam Spacer	B-69170
I 39	Cam with Detent Plate	A-69916
I 40	Cam Spacer	B-69175
I 41	O Ring	1820-17
I 42	O Ring	(2) 1820-11
I 43	Cam Shaft	B-69169
I 44	O Ring	1820-15
I 45	Spring	M-101
I 46	Lever	B-65802
I 47	Lever Screw	B-65817

PINION SHAFT ASSEMBLY

I 48	Pinion Shaft	A-69859
I 49	Seal Retainer	B-65813
I 50	Hat Seal	#1167
I 51	Gear	B-65829
I 52	Turnstile Sleeve	A-66846
I 53	Oiler	#302
I 54	Dial	A-66849
I 55	Turnstile Hub	B-69857

I 56	Dial Marker	B-65334
I 57	Dial Thumb Screw	B-65333
I 58	Turnstile Handle	(5) B-65823
I 59	1-7/8 Dia. Bakelite Ball	(5)

FEED ENGAGEMENT LEVER ASSEMBLY

I 60	Lever Guard	B-67045
I 61	Feed Lever Cam with Bushing	B-67046
I 62	Feed Lever	A-67052
I 63	Feed Lever Plunger	B-65822
I 64	Spring	B-31917
I 65	Feed Lever Rod	B-65301
I 66	Feed Lever Stud	B-65336
I 67	1-3/8 Dia. Bakelite Ball	

FEED LEVER SHAFT ASSEMBLY

I 68	Clutch Bolt	B-67051
I 69	Shim	B-65294
I 70	Worm Gear	B-65296
I 71	Tooth Clutch with Bushing	B-65824
I 72	Tooth Clutch with Bushing	B-65828
I 73	Washer	B-65292
I 74	Clutch Bolt Nut	B-65293
I 75	O Ring	(2) 1820-13
I 76	Ball Bearing	(2) 4B8
I 77	Snap Ring	5100-250
I 78	Spring	(3) B-52222
I 79	Clutch Plug	(3) B-69183
I 80	Pin	(2) B-65291
I 81	O Ring	(2) 1820-3

WORM SHAFT ASSEMBLY

I 82	Spacer	(2) B-65815
I 83	Ball Bearing	(4) 204-S
I 84	Double Cluster Gear	B-65306
I 85	Worm	B-65311
I 86	Spacer	(2) B-65816
I 87	#2 Splined Shaft	B-65832

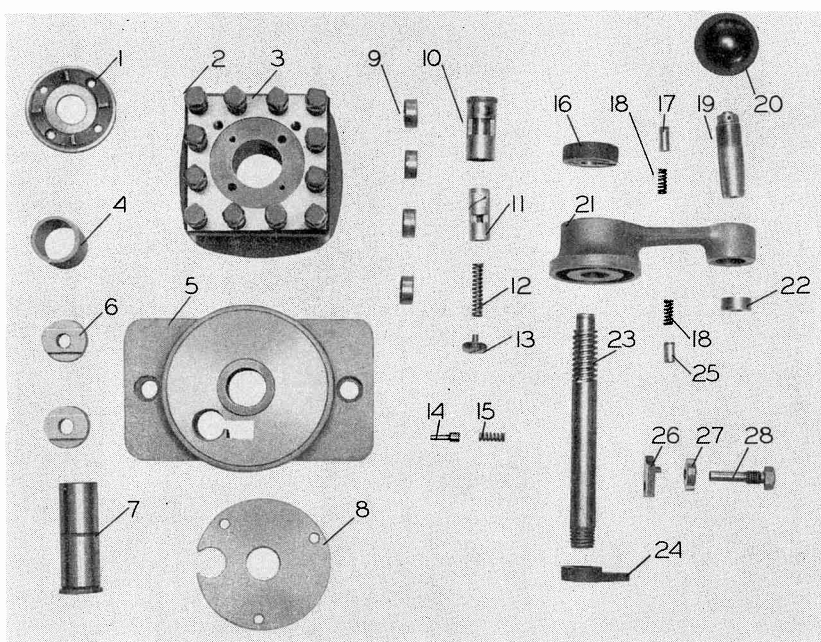
INTERMEDIATE SHAFT ASSEMBLY

I 88	Spacer	B-65322
I 89	Double Cluster Gear	B-65308
I 90	Sleeve	B-65340
I 91	Double Cluster Gear	B-65307
I 92	Spacer	B-65268
I 93	#1 Splined Shaft	B-65831

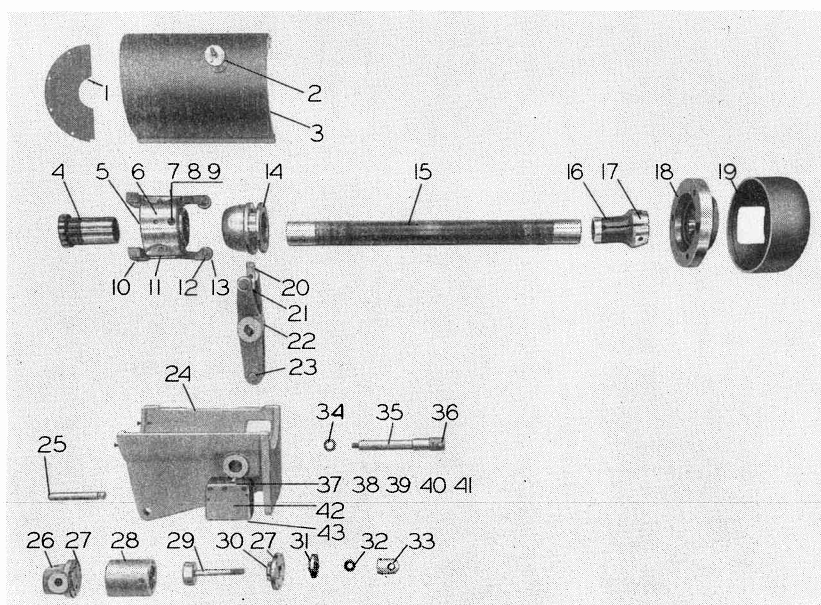
HOLLOW FEED SHAFT ASSEMBLY

I 94	Cap	A-67453
I 95	Oil Seal	(2) #60388
I 96	Ball Bearing	107-KS
I 97	Slip Clutch (Complete)	A-67450
I 98	Clutch	A-67449
I 99	Ball Bearing	108-KS
I 100	Triple Cluster Gear	A-65808
I 101	Spacer	B-65825
I 102	Ball Bearing	107 KSF
I 103	Spacer	B-65286
I 104	Gasket	B-67455
I 105	Hollow Shaft	A-67452

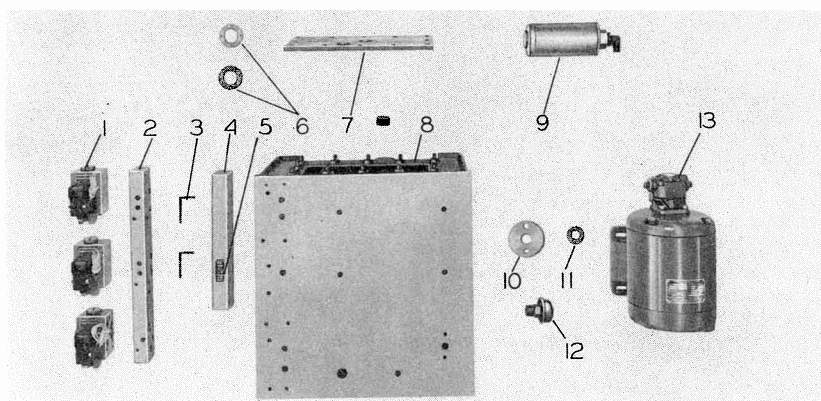
SQUARE TURRET — UNIT J



COLLET CHUCK — UNIT K



HYDRAULIC POWER UNIT — UNIT L



SQUARE TURRET — UNIT J

J 1	Indexing Plate		B-43639	J 15	Spring	#2075
J 2	Set Screw	(12)	#2041	J 16	Binder Lever Collar	B-32475
J 3	Square Turret		A-58494	J 17	Spring Plunger	B-32476
J 4	Center Bushing		B-51198	J 18	Spring	(2) B-34684
J 5	Base		A-58495	J 19	Lever Shaft - Complete	B-42145
J 6	Tee Nut	(2)	B-63947	J 20	Lever Ball	B-42149
J 7	Center Sleeve		B-51199	J 21	Binder Lever	B-42150
J 8	Bottom Plate		B-32056	J 22	Lever Collar	B-42147
J 9	Lock Bolt Bushing	(4)	B-32046	J 23	Center Stud	B-43638
J 10	Lock Bolt Sleeve		B-32045	J 24	Lock Bolt Cam	B-61737
J 11	Lock Bolt		B-32044	J 25	3/8 x 3/4 Hard Pin	
J 12	Lock Bolt Spring		B-32049	J 26	Lock Bolt Lever	B-61738
J 13	Screw Plug		B-32055	J 27	Tumbler	B-51817
J 14	Tumbler Plunger		B-58487	J 28	Pivot Screw	B-58486

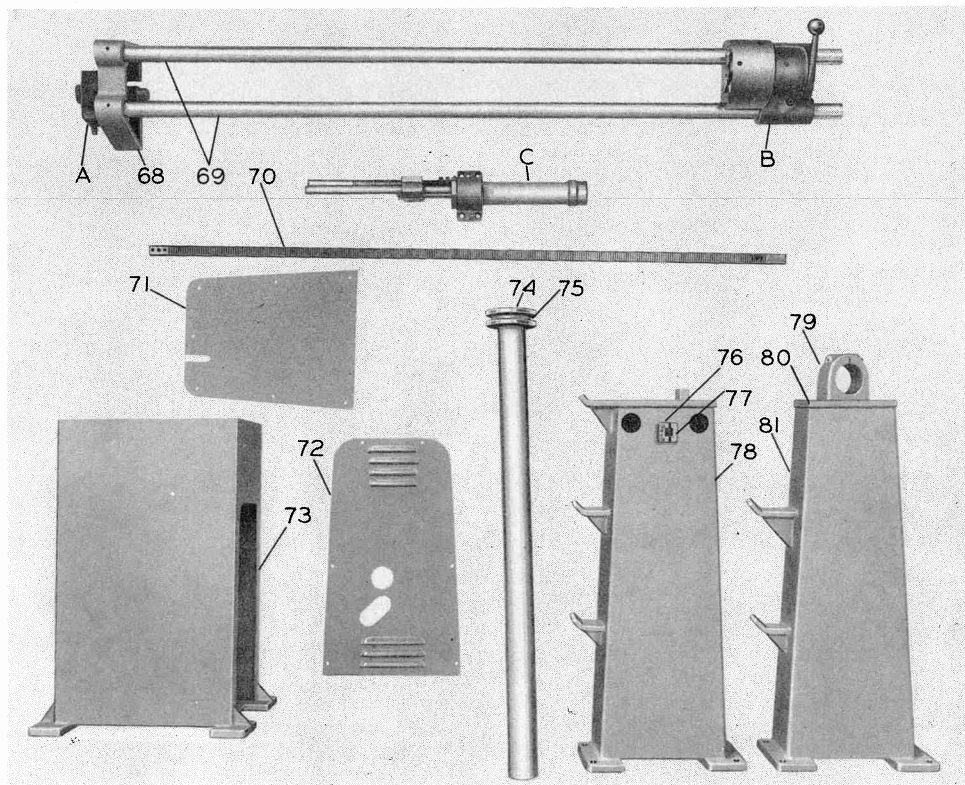
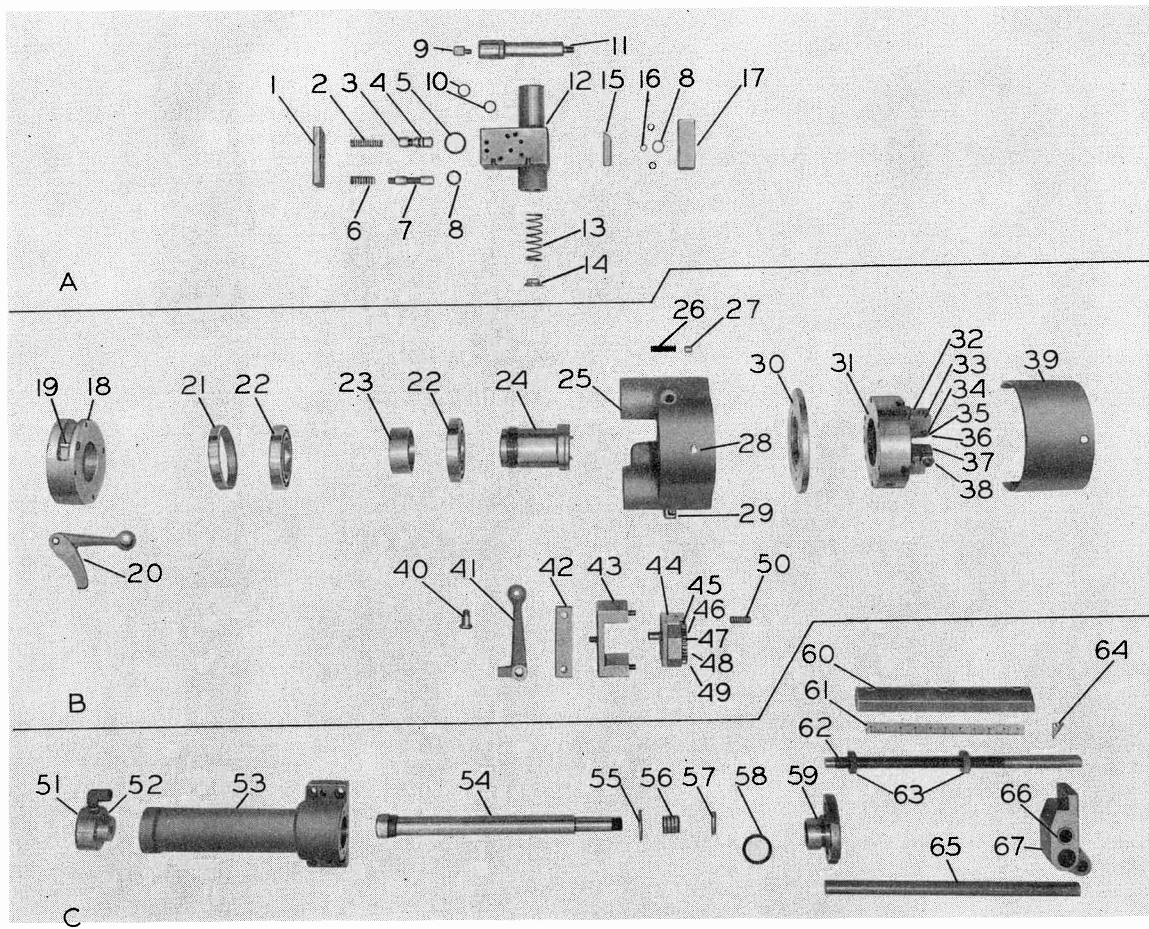
COLLET CHUCK — UNIT K

K 1	Yoke Bracket		B-65676	K 20	Wedge Shoe	(2) B-31983
K 2	Oiler		#114	K 20A	Wedge Shoe	(2) B-36828
K 3	Spindle Guard		A-69022	K 21	Shoe Stud	(2) B-62792
K 4	Abutment Sleeve		B-69766	K 21A	Shoe Stud	(2) B-31984
K 4A	Abutment Sleeve		B-69769	K 22	Yoke	A-70755
K 5	Finger Adjustment Ring		B-69765	K 22A	Yoke	A-66450
K 5A	Finger Adjustment Ring		B-69768	K 23	Link Pin	B-65679
K 6	Finger Holder		A-69767	K 24	Yoke Bracket	A-70754
K 6A	Finger Holder		A-69770	K 24A	Yoke Bracket	A-69021
K 7	Detent		B-46705	K 25	Pin	B-65680
K 8	Detent Spring		B-46707	K 26	Cylinder Closer	B-65671
K 9	Detent Plug		B-46706	K 27	Cylinder Gasket	(2) B-65688
K 10	Finger	(2)	A-70711	K 28	Cylinder	B-65669
K 11	Finger Pivot Pin	(2)	B-36830	K 29	Piston Rod Assembly	B-65686
K 12	Roller Pin	(2)	B-62785	K 30	Cylinder Closer	B-65670
K 13	Finger Roller	(2)	B-62784	K 31	Packing Gland	B-65673
K 14	Wedge		B-62790	K 32	Packing	B-65687
K 14A	Wedge		A-62797	K 33	Link	B-65678
K 15	Plunger		B-65674	K 34	Washer	#1059
K 15A	Plunger		B-66449	K 35	Yoke Pin	A-70756
K 16	Collet		B-42589	K 36	Dog	(2) B-65682
K 16A	Collet		A-46092	K 37	Switch Bushing	(2) B-52246
K 17	Collet Pad Screws		#1453	K 38	Switch Plunger	(2) B-56194
K 18	Collet Hood		A-37289	K 39	Spring	(2) B-34684
K 18A	Collet Hood		A-37661	K 40	Switch	(2) BZ- 2RS
K 19	Collet Hood Guard		A-37621	K 41	Switch Pin	(2) B-65683
K 19A	Collet Hood Guard		A-37660	K 42	Switch Box	A-65672
				K 43	Cover	B-65681

HYDRAULIC POWER UNIT — UNIT L

L 1	Valve	(3)	B-69399	L 8	Sump	A-70285
L 2	Manifold		A-70285	L 9	Oil Filter	#17415
L 3	Duct Support	(2)	B-70291	L 10	Gasket Cap	B-66195
L 4	Duct		LD-21	L 11	Gasket	B-66197
L 5	Terminal Block		892-15T	L 12	Filter	#A-14132
L 6	Oil Gauge (Complete)		B-41415	L 13	Pump	B-70335
L 7	End Sump Cover		A-70290			

BAR FEED — UNIT M



BAR FEED — UNIT M

VALVE ASSEMBLY - A

M 1	Valve Cover		B-68506
M 2	Spring		B-48439
M 3	Valve		B-68508
M 4	O Ring		1820-11
M 5	O Ring		1820-17
M 6	Spring		B-70165
M 7	Valve		B-70164
M 8	O Ring	(2)	1820-15
M 9	Adjustment Screw		B-67980
M 10	O Ring	(3)	1820-13
M 11	Dog		B-68509
M 12	Valve Block		A-68512
M 13	Spring		B-67897
M 14	Stop Washer		B-67879
M 15	Valve Plate		B-67884
M 16	O Ring	(3)	1820-7
M 17	Side Cover		B-68505

M 44A	Clutch Slide	A-70146
M 45	Slide Bushing	B-66758
M 46	31 T Clutch Gear	B-66756
M 47	Clutch Pin	B-66757
M 48	Key	#2296
M 49	Clutch	FS-50-2
M 50	Spring	B-44585

BAR FEED CYLINDER ASSEMBLY - C

M 51	Cylinder Closer	B-70166
M 51A	Cylinder Closer	B-68197
M 52	Cylinder Gasket	B-66345
M 52A	Cylinder Gasket	B-68220
M 53	Cylinder	A-70157
M 53A	Cylinder	A-68179
M 54	Piston	A-70179
M 54A	Piston	A-70161
M 55	Packing Retainer	B-67875
M 55A	Packing Retainer	B-68200
M 56	Packing Mould	B-71116
M 56A	Packing Mould	B-71117
M 57	Washer	#1073
M 58	O Ring	1820-29
M 58A	O Ring	1820-31
M 59	Cylinder Closer	B-66775
M 59A	Cylinder Closer	B-68181
M 60	Scale Block	A-70182
M 60A	Scale Block	A-70183
M 61	Scale	A-67811
M 61A	Scale	A-68202
M 62	Stop Rod	B-67889
M 62A	Stop Rod	B-68198
M 63	Stop Nut	(2) B-67888
M 64	Pointer	B-70167
M 65	Guide Rod	B-66320
M 65A	Guide Rod	B-68199
M 66	Guide Bushing	B-66321
M 67	Support	A-66778
M 67A	Support	A-68182

SLIDING HEAD ASSEMBLY - B

M 18	Rear Bearing Closer		A-70147
M 18A	Rear Bearing Closer		A-70146
M 19	Pin		B-69148
M 20	Lever		B-70163
M 21	End Bearing Closer		B-66313
M 21A	End Bearing Closer		B-68191
M 22	Ball Bearing	(2)	114-KS
M 22A	Ball Bearing	(2)	XLS-3-3/4
M 23	Inner Bearing Spacer		B-66315
M 23A	Inner Bearing Spacer		B-68188
M 24	Revolving Head		A-66303
M 24A	Revolving Head		A-68204
M 25	Sliding Head		A-69152
M 25A	Sliding Head		A-70145
M 26	Spring		B-43666
M 27	Shoe		B-66329
M 28	Oiler		#502-G
M 29	Oiler		#L-1224
M 30	Front Bearing Closer		A-66304
M 30A	Front Bearing Closer		A-68195
M 31	6" Chuck		SK-B1394
M 31A	8" Chuck		SK-C1411
M 32	Lock Support	(2)	B-66318
M 32A	Lock Support	(2)	B-68184
M 33	Spring	(2)	B-31944
M 34	Pin	(2)	B-66327
M 34A	Pin	(2)	B-68183
M 35	Snap Ring		B-71115
M 36	Lock	(2)	B-66322
M 36A	Lock	(2)	B-68185
M 37	Work Alignment Support	(2)	B-66316
M 37A	Work Alignment Support	(2)	B-68186
M 38	Aligning Screw		B-66330
M 38A	Aligning Screw		B-68187
M 39	Chuck Guard		A-66305
M 39A	Chuck Guard		A-68196
M 40	Lever Stud		B-66762
M 41	Lever		B-66753
M 42	Cover		B-70162
M 43	Clutch Bracket		A-70151
M 43A	Clutch Bracket		A-70149
M 44	Clutch Slide		A-70150

BAR FEED STAND ASSEMBLY

M 68	Bar Support	A-70159
M 68A	Bar Support	A-68180
M 69	Bar	(2) B-70186
M 69A	Bar	(2) B-70187
M 70	Rack	B-69142
M 71	Side Stand Cover	A-70288
M 72	End Stand Cover	A-70287
M 73	Stand	A-70286
M 74	Support Tube	B-69145
M 74A	Support Tube	B-70172
M 75	Collar	B-69146
M 75A	Collar	B-70171
M 76	Support Bar Guide	B-69144
M 77	Cap	B-66312
M 78	Front Stand	A-70154
M 78A	Front Stand	A-70152
M 79	Support Tube Bracket	A-70156
M 79A	Support Tube Bracket	A-70155
M 80	Stand Head Washer	B-70191
M 81	Rear Stand	A-70153

