

REPAIR PARTS  
for  
**BROWN & SHARPE**  
Nos. **2A & 3A** UNIVERSAL  
Nos. **2B & 3B** PLAIN  
STANDARD TYPE AND DUAL CONTROL TYPE  
and  
Nos. **2 & 3** VERTICAL  
STANDARD TYPE  
**MILLING MACHINES**  
(Motor and Overhead Driven)



**BNSM048**

REPAIR NO. 2A & 3A UNIV

**T**HE parts are arranged in the illustrations so far as possible in the same relative positions as in the machines. This is to facilitate stripping and assembling as well as identifying the parts. It should be remembered, however, that some illustrations include repair parts for more than one machine, and since the machines vary somewhat in design from one another not all parts shown may be found in any one machine.

The parts are shown separated to make the construction of the machines more readily understood and to show each part to the best advantage. In some cases, when a particular part is ordered, not only that part but one or more supplementary parts also may be sent when, from our experience, this is known to be advisable for a more satisfactory repair job.

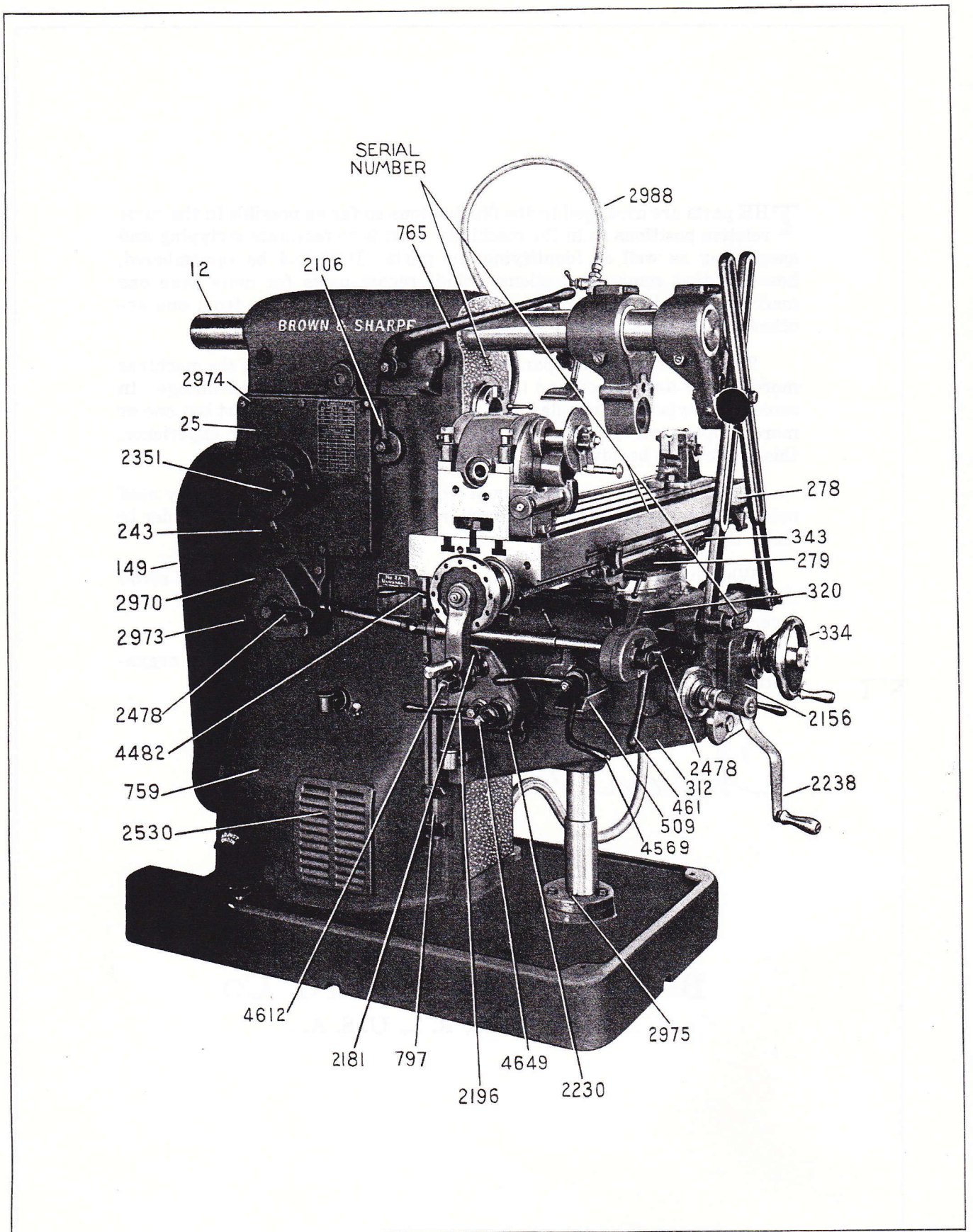
Repair parts, in some cases, will require fitting and therefore may need holes to be drilled, shoulders to be squared or similar machining in order to make them fit properly.

When ordering repair parts, it is essential that the size, style and serial number of the machine be given in addition to the part number and name given in this booklet.

Please keep this booklet in the hands of the individual in your organization who is responsible for the *repair* of these machines.

Chain 452-15

**BROWN & SHARPE MFG. CO.**  
PROVIDENCE, R. I., U. S. A.



**Front View**

**Universal Machines, Dual Control Type Machines and Motor Driven Machines  
(No. 2A Universal, Dual Control Type, Motor Driven Machine Shown)**

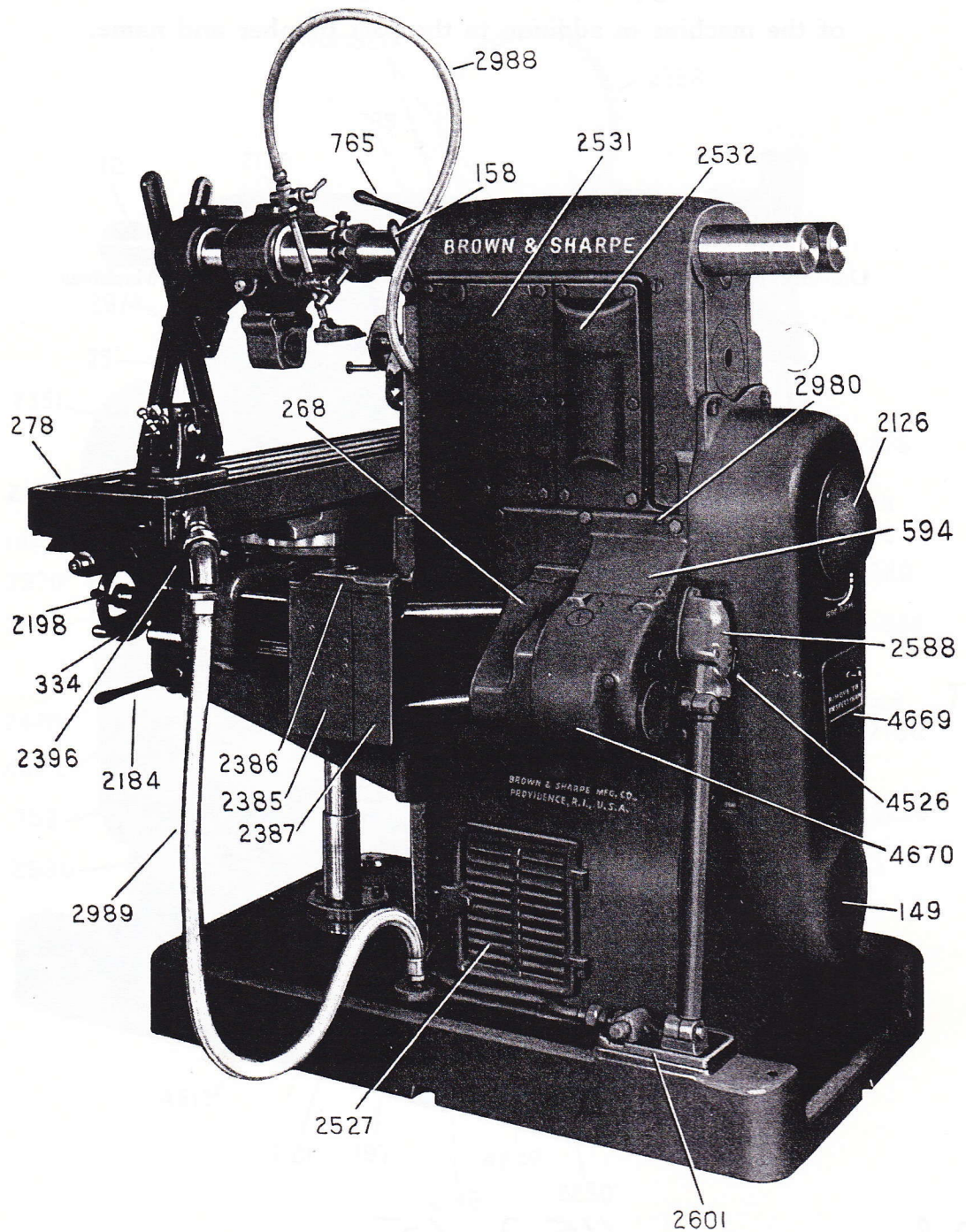
When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

Front View

Universal Machines, Dual Control Type Machines and Motor Driven Machines

12	Arm
25	Speed Case
149	Chain Guard
243	Spindle Reverse Lever
278	Table
279	Saddle
312	Knee
320	Clamp Bed
334	Cross Feed Handwheel
343	Table Feed Trip Lever
461	Knee Clamp Lever
509	Cross Feed Trip Bracket
759	Stand
765	Friction Clutch Hand Lever
797	Vertical Feed Trip Dog Bracket
2106	Back Gear Lever
2156	Cross Feed Screw Dial Bracket
2181	Cross Feed Control Lever, Left
2196	Vertical Feed Control Lever, Left
2230	Vertical Feed Trip Bracket
2238	Vertical Hand Feed Shaft Crank
2351	Speed Change Lever
2478	Feed Change Lever
2530	Motor Compartment Vent
2970	Feed Control Case
2973	Feed Control Case Dowel
2974	Speed Case Dowel
2975	Knee Screw Horn Dowel
2988	Coolant Supply Flexible Tube
4482	Fast Travel Operating Lever, Rear
4569	Cross & Vertical Feed Reverse Lever
4612	Vertical Hand Feed Shaft, Rear
4649	Cross Hand Feed Shaft

*Chain is: 452-15*



Rear View  
 Universal and Plain Machines  
 (No. 2A Universal, Dual Control Type, Motor Driven Machine Shown)

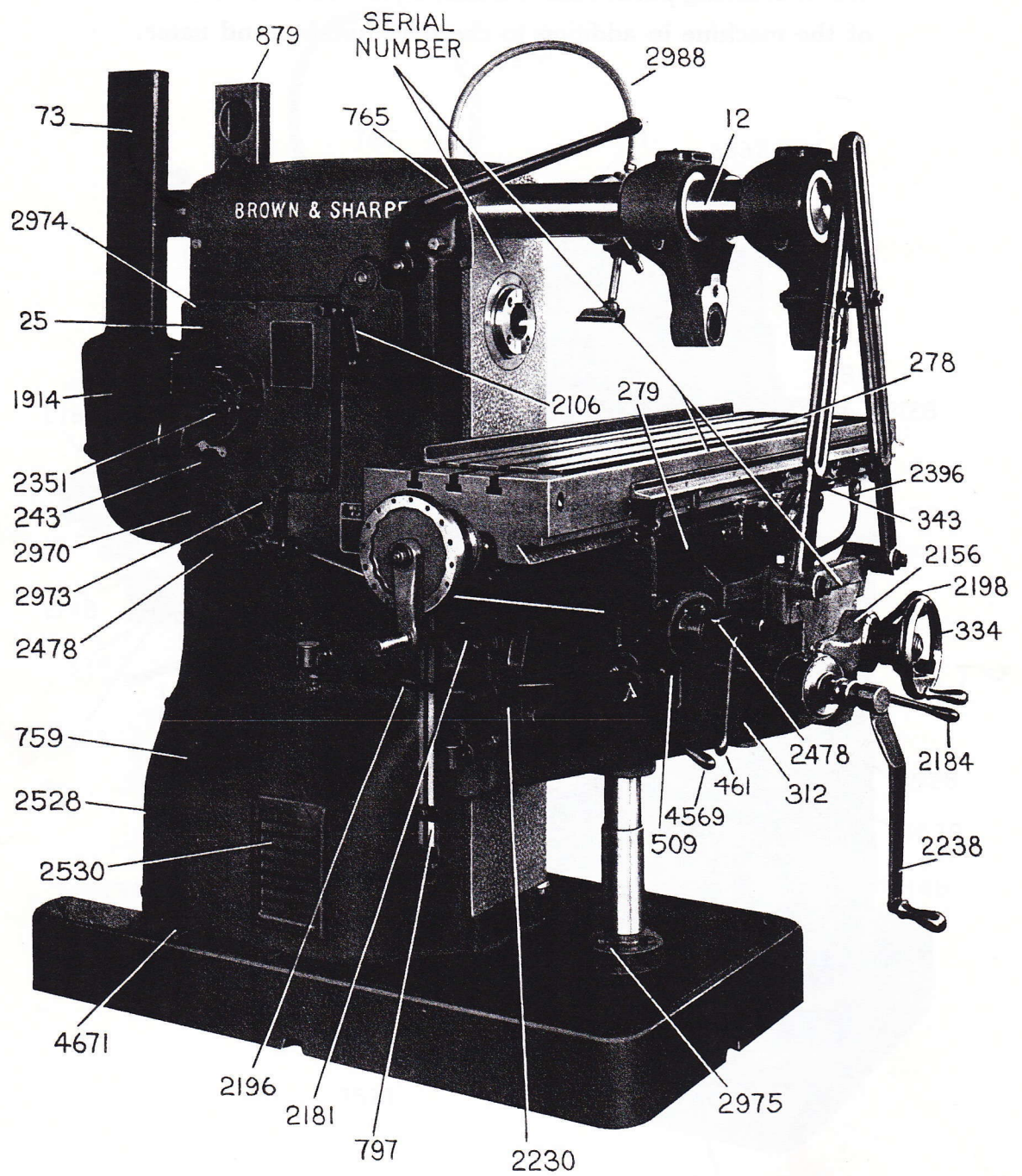
When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Rear View

#### Universal and Plain Machines

149	Chain Guard
158	Arm Clamp Lever
268	Universal Joint Guard, Rear
278	Table
334	Cross Feed Handwheel
594	Feed Case
765	Friction Clutch Hand Lever
2126	Friction Clutch Brake Body
2184	Vertical Feed Control Lever, Right
2198	Cross Feed Control Lever, Right
2385	Fast Travel Case
2386	Fast Travel Case Cover
2387	Universal Joint Guard, Front
2396	Fast Travel Trip Lever
2527	Motor Compartment Door
2531	Stand Opening Cover
2532	Lubricant Filter Hole Cover
2588	Coolant Pump Driving Shaft Bracket
2601	Coolant Pump Body
2980	Feed Case Dowel
2988	Coolant Supply Flexible Tube
2989	Coolant Return Flexible Tube
4526	Pump Throwout Eccentric Lever
4669	Chain Guard Cover
4670	Wide Feed Range Case

*Driven by overhead belt Drive*



Front View  
Plain Machines, Standard Type Machines and Overhead Driven Machines  
(No. 3B Plain, Standard Type, Overhead Driven Machine Shown)

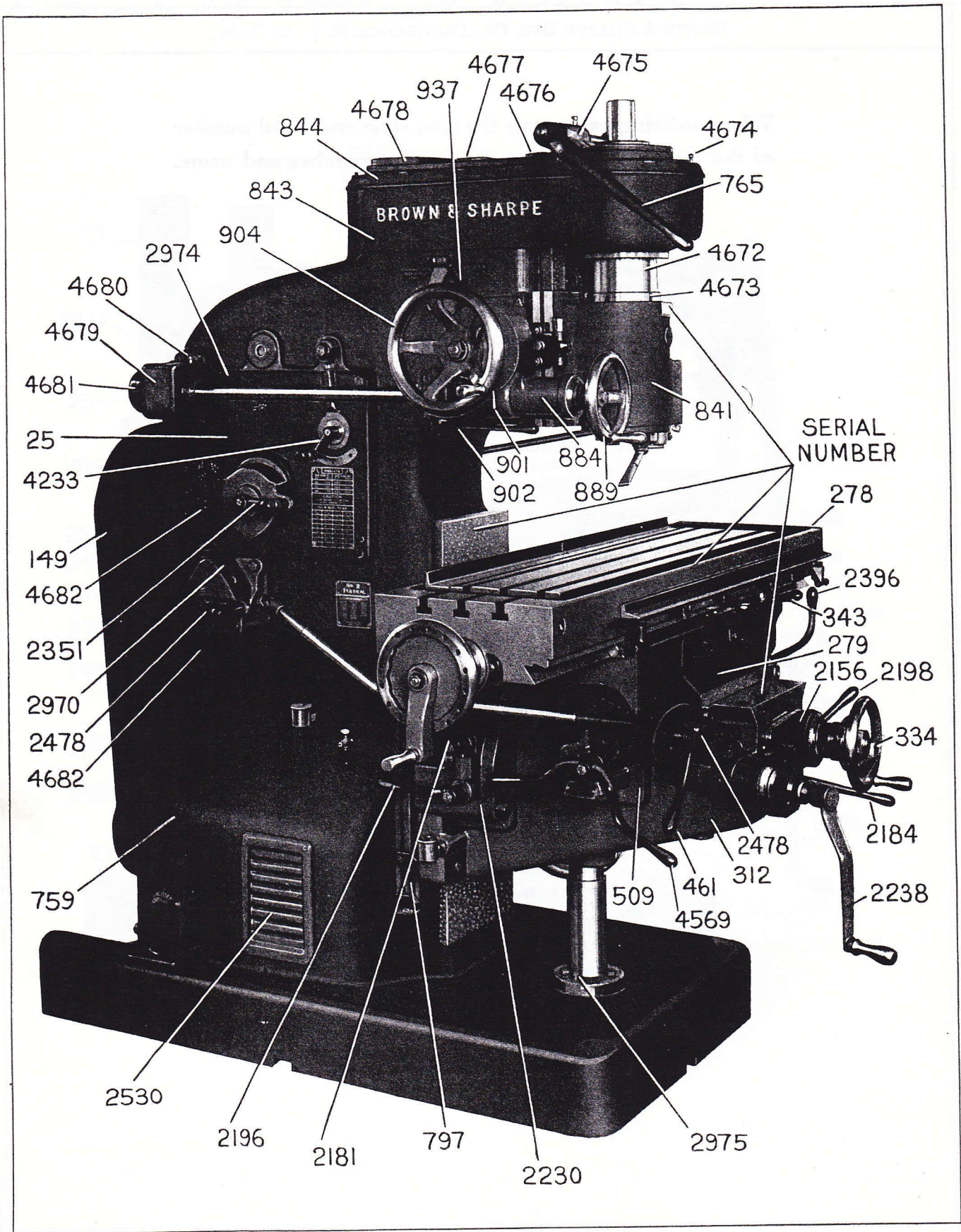
When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Front View

#### Plain Machines, Standard Type Machines and Overhead Driven Machines

12	Arm
25	Speed Case
73	Belt Guard, Left
243	Spindle Reverse Lever
278	Table
279	Saddle
312	Knee
334	Cross Feed Handwheel
343	Table Feed Trip Lever
461	Knee Clamp Lever
509	Cross Feed Trip Bracket
759	Stand
765	Friction Clutch Hand Lever
797	Vertical Feed Trip Dog Bracket
879	Belt Guard, Right
1914	Friction Clutch Pulley Guard
2106	Back Gear Lever
2156	Cross Feed Screw Dial Bracket
2181	Cross Feed Control Lever, Left
2184	Vertical Feed Control Lever, Right
2196	Vertical Feed Control Lever, Left
2198	Cross Feed Control Lever, Right
2230	Vertical Feed Trip Bracket
2238	Vertical Hand Feed Shaft Crank
2351	Speed Change Lever
2396	Fast Travel Trip Lever
2478	Feed Change Lever
2528	Motor Compartment Cover
2530	Motor Compartment Vent
2970	Feed Control Case
2973	Feed Control Case Dowel
2974	Speed Case Dowel
2975	Knee Screw Horn Dowel
2988	Coolant Supply Flexible Tube
4569	Cross & Vertical Feed Reverse Lever
4671	Base Cover





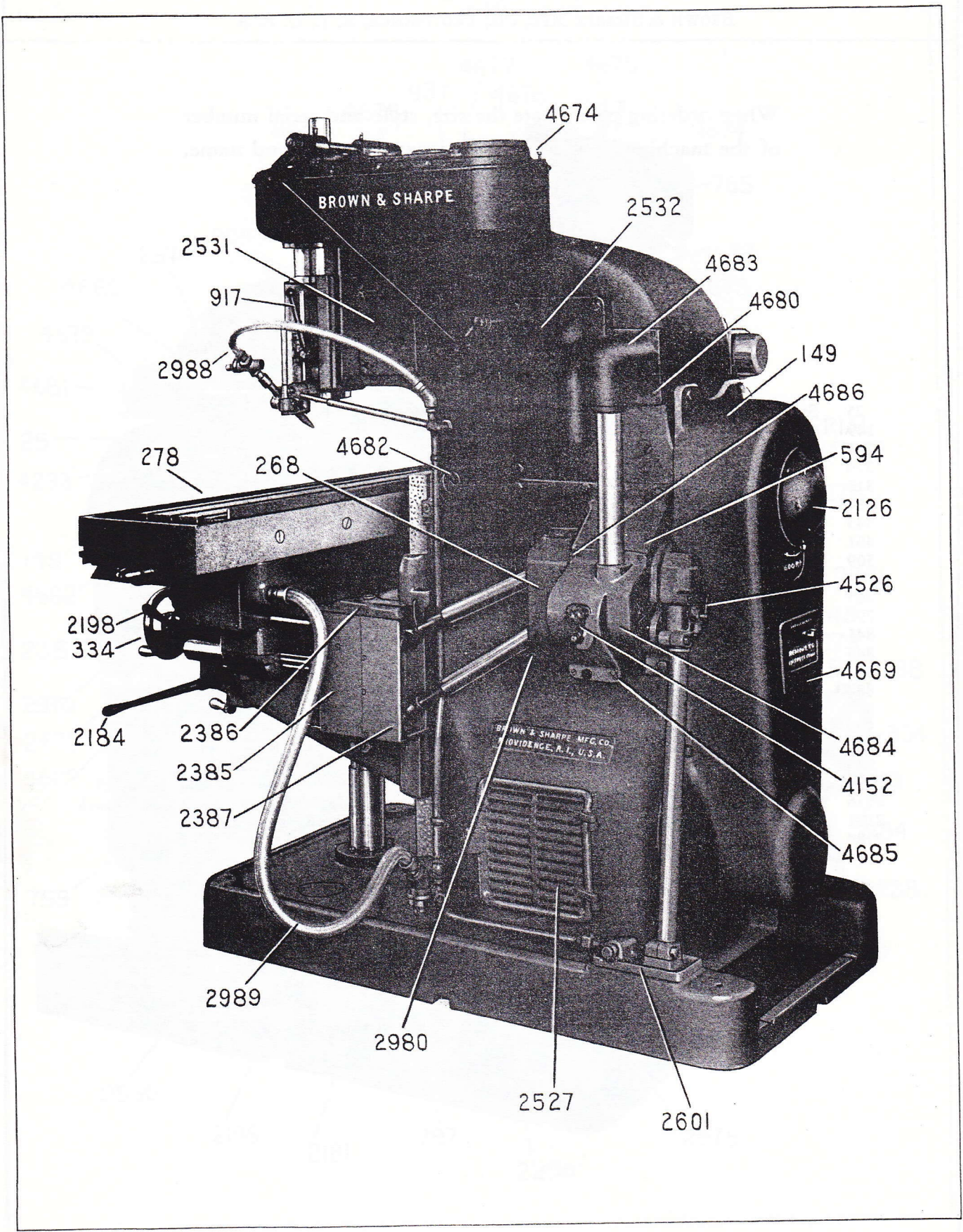
**Front View**  
**Vertical Machines**  
 (No. 2 Vertical, Motor Driven Machine Shown)

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

Front View

Vertical Machines

25	Speed Case	2196	Vertical Feed Control Lever, Left
149	Chain Guard	2198	Cross Feed Control Lever, Right
278	Table	2230	Vertical Feed Trip Bracket
279	Saddle	2238	Vertical Hand Feed Shaft Crank
312	Knee	2351	Speed Change Lever
334	Cross Feed Handwheel	2396	Fast Travel Trip Lever
343	Table Feed Trip Lever	2478	Feed Change Lever
461	Knee Clamp Lever	2530	Motor Compartment Vent
509	Cross Feed Trip Bracket	2970	Feed Control Case
759	Stand	2974	Speed Case Dowel
765	Friction Clutch Hand Lever	2975	Knee Screw Horn Dowel
797	Vertical Feed Trip Dog Bracket	4233	Spindle Reverse Lever
841	Spindle Slide	4569	Cross & Vertical Feed Reverse Lever
843	Spindle Head	4672	Spindle Guard
844	Spindle Head Cover	4673	Spindle Guard Sleeve
884	Spindle Feed Worm Gear Bracket	4674	Spindle Head Cover Dowel
889	Spindle Feed Handwheel	4675	Clutch Hand Lever Shaft Bracket
901	Spindle Quick Return Throwout Lever	4676	Back Gear Shaft Cap
902	Spindle Feed Throwout Lever	4677	Intermediate Gear Shaft Cap
904	Spindle Quick Return Handwheel	4678	Vertical Drive Shaft Cap
937	Back Gear Lever	4679	Spindle Feed Transposing Case, Left
2156	Cross Feed Screw Dial Bracket	4680	Spindle Feed Transposing Case Dowel
2181	Cross Feed Control Lever, Left	4681	Feed Transposing Case (Left) Cap
2184	Vertical Feed Control Lever, Right	4682	Stand Plug



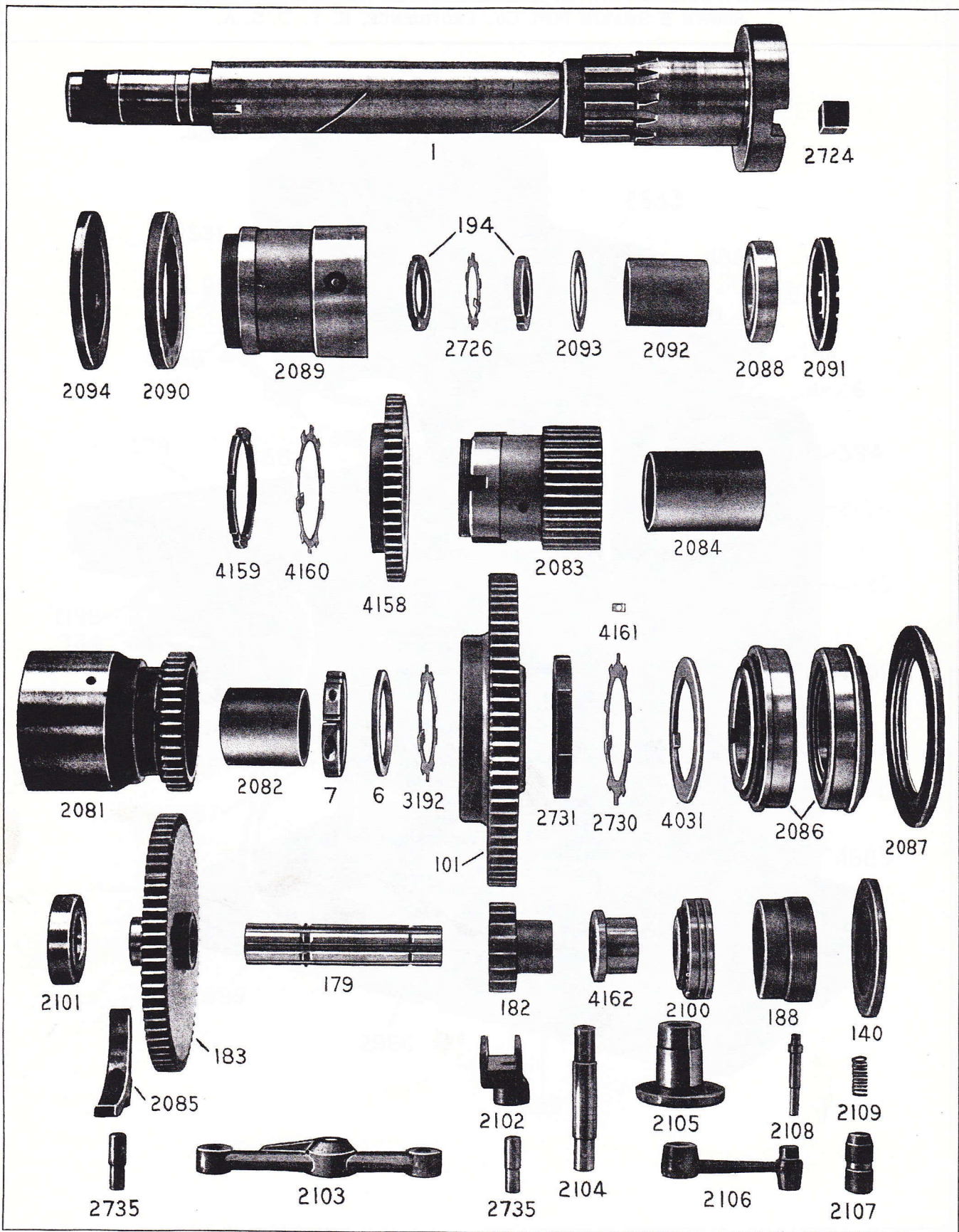
Rear View  
 Vertical Machines  
 (No. 2 Vertical, Motor Driven Machine Shown)

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Rear View

#### Vertical Machines

149	Chain Guard
268	Universal Joint Guard, Rear
278	Table
334	Cross Feed Handwheel
594	Feed Case
917	Spindle Slide Clamp Lever
2126	Friction Clutch Brake Body
2184	Vertical Feed Control Lever, Right
2198	Cross Feed Control Lever, Right
2385	Fast Travel Case
2386	Fast Travel Case Cover
2387	Universal Joint Guard, Front
2527	Motor Compartment Door
2531	Stand Opening Cover
2532	Lubricant Filter Hole Cover
2601	Coolant Pump Body
2980	Feed Case Dowel
2988	Coolant Supply Flexible Tube
2989	Coolant Return Flexible Tube
4152	Spindle Feed Connection Lever
4526	Pump Throwout Eccentric Lever
4669	Chain Guard Cover
4674	Spindle Head Cover Dowel
4680	Spindle Feed Transposing Case Dowel
4682	Stand Plug
4683	Spindle Feed Transposing Case, Right
4684	Feed Case Extension
4685	Feed Case Extension Dowel, Long
4686	Feed Case Extension Dowel, Short



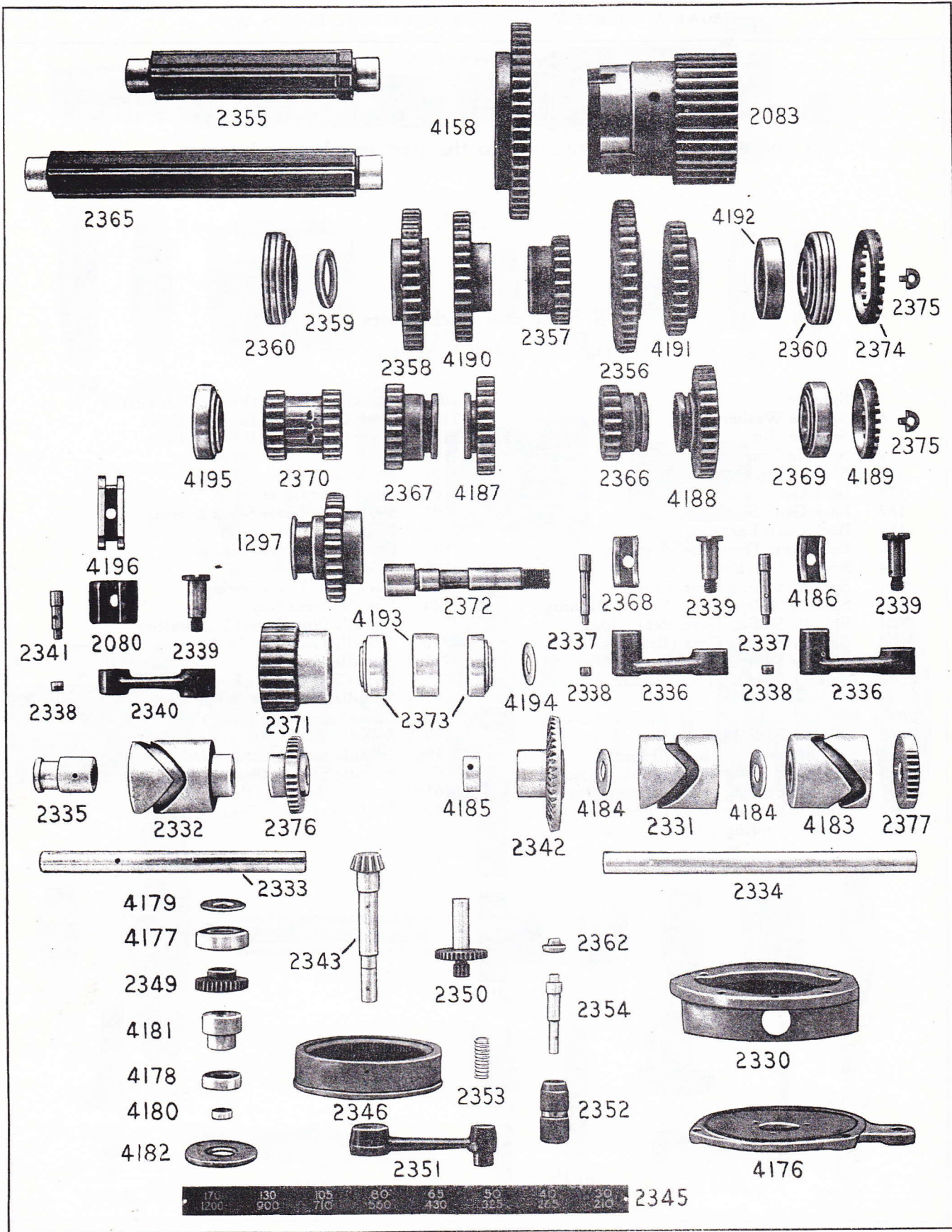
**Spindle and Back Gears**  
 Universal and Plain Machines

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Spindle and Back Gears

#### Universal and Plain Machines

1	Spindle	2094	Spindle Bearing (Rear) Dust Guard
6	Spindle Washer	2100	Back Gear Shaft Bearing, Front
7	Spindle Nut	2101	Back Gear Shaft Bearing, Rear
101	Spindle Gear	2102	Back Gear (Small) Shoe
140	Stand Plug, Front	2103	Back Gear Change Lever
179	Back Gear Shaft	2104	Back Gear Lever Shaft
182	Back Gear, Small	2105	Back Gear Lever Shaft Bearing
183	Back Gear, Large	2106	Back Gear Lever
188	Back Gear Thrust Bearing Cap	2107	Back Gear Lever Handle
194	Spindle Nut, Rear	2108	Back Gear Lever Pin
2081	Spindle Sliding Gear, Front	2109	Back Gear Lever Spring
2082	Spindle Sliding Gear (Front) Bushing	2724	Spindle Nose Key
2083	Spindle Sliding Gear, Rear, No. 1	2726	Spindle Nut (Rear) Lockwasher
2084	Spindle Sliding Gear (Rear) Bushing	2730	Spindle Gear Nut Lockwasher
2085	Spindle Sliding Gear (Front) Shoe	2731	Spindle Gear Nut
2086	Spindle Bearing, Front (State Whether with Keyway)	2735	Back Gear Change Lever Stud
2087	Spindle Bearing (Front) Dust Guard	3192	Spindle Nut Lockwasher
2088	Spindle Bearing, Rear	4031	Spindle Bearing (Front) Thrust Washer
2089	Spindle Bearing (Rear) Holder	4158	Spindle Sliding Gear, Rear, No. 2
2090	Spindle Bearing (Rear) Holder Nut	4159	Spindle Sliding Gear (Rear) Nut
2091	Spindle Bearing (Rear) Clamp Nut	4160	Spindle Sliding Gear (Rear) Lockwasher
2092	Spindle Bearing (Rear) Spacer	4161	Spindle Bearing (Front) Key
2093	Spindle Bearing (Rear) Spacer Washer	4162	Back Gear Shaft Bearing Sleeve



Speed Case

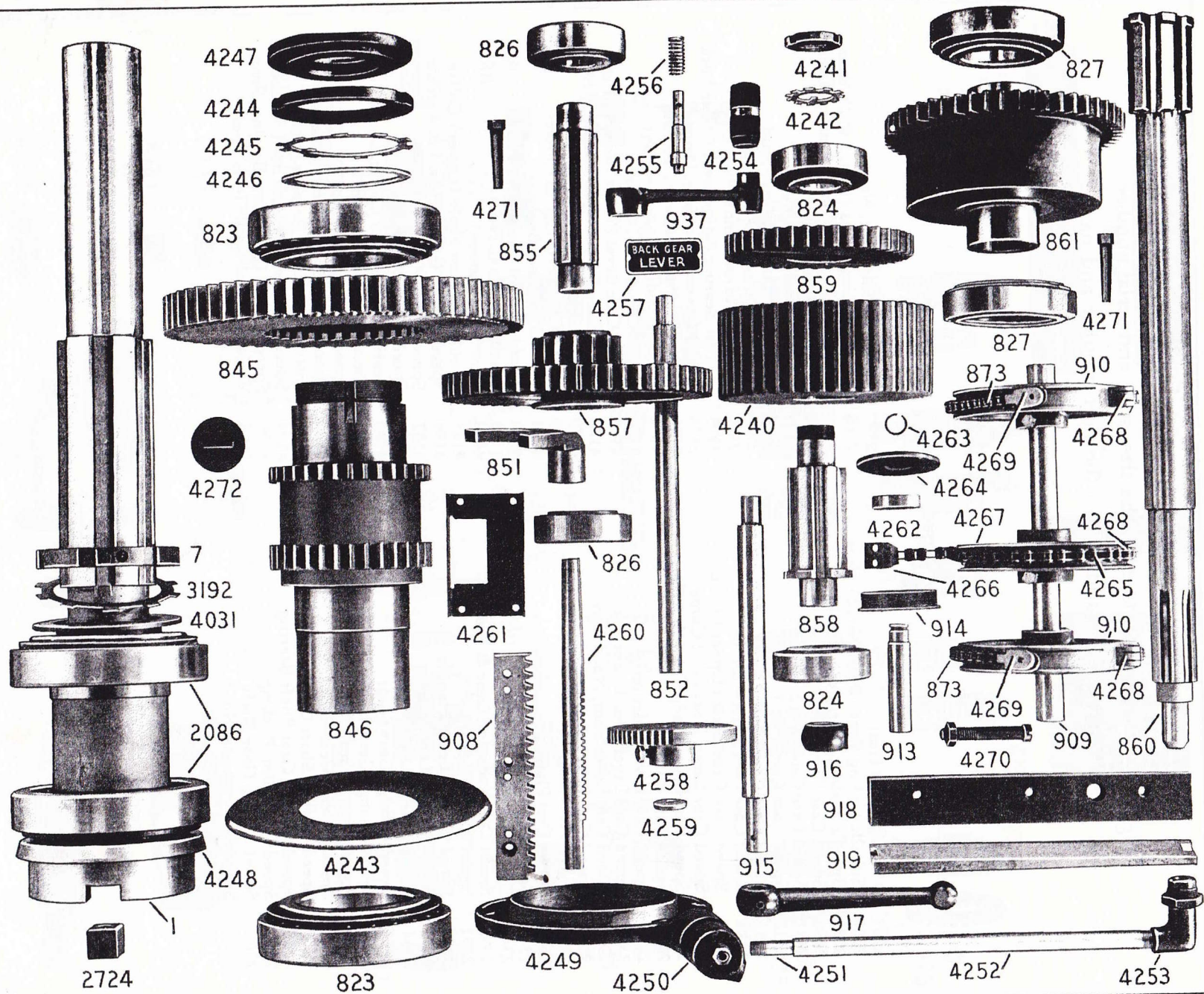
When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Speed Case

1297	Driving Shaft Gear	2367	Speed Sliding Gear, No. 1
2080	Spindle Sliding Gear (Rear, No. 2) Shoe	2368	Speed Sliding Gears (Nos. 1 & 2) Shoe
2083	Spindle Sliding Gear, Rear, No. 1	2369	Speed Sliding Gear Shaft Bearing, Front
2330	Speed Case Cover, Inner	2370	Speed Driving Gear
2331	Speed Case Cam, No. 2	2371	Speed Intermediate Gear
2332	Speed Case Cam, No. 3	2372	Speed Intermediate Gear Stud
2333	Speed Case Cam Shaft, Upper	2373	Speed Intermediate Gear Bearing
2334	Speed Case Cam Shaft, Lower	2374	Bearing Adjustment Collar, Upper
2335	Speed Case Cam Shaft (Upper) Collar	2375	Thrust Bearing Adjustment Collar Lock
2336	Speed Cam Lever, Nos. 1 & 2 Cams	2376	Speed Intermittent Gear, Driven
2337	Speed Cam Lever Stud, Nos. 1 & 2 Cams	2377	Speed Intermittent Gear, Driving
2338	Speed Cam Roll	4158	Spindle Sliding Gear, Rear, No. 2
2339	Speed Cam Lever Fulcrum	4176	Speed Case Cover, Outer
2340	Speed Cam Lever, No. 3 Cam	4177	Speed Case Bevel Pinion Bearing, Inner
2341	Speed Cam Lever Stud, No. 3 Cam	4178	Speed Case Bevel Pinion Bearing, Outer
2342	Speed Case Bevel Gear	4179	Speed Case Bevel Pinion Washer
2343	Speed Case Bevel Pinion	4180	Speed Case Bevel Pinion Collar
2345	Speed Dial Plate	4181	Speed Dial Gear Bushing
2346	Speed Dial Gear	4182	Speed Control Case Cover Plate
2349	Speed Dial Reducing Pinion	4183	Speed Case Cam, No. 1
2350	Speed Dial Reducing Gear & Pinion	4184	Cam Shaft (Lower) Washer
2351	Speed Change Lever	4185	Speed Case Cam Shaft (Lower) Collar
2352	Speed Change Lever Handle	4186	Speed Sliding Gears (Nos. 3 & 4) Shoe
2353	Speed Change Lever Spring	4187	Speed Sliding Gear, No. 2
2354	Speed Change Lever Pin	4188	Speed Sliding Gear, No. 4
2355	Speed Change Gear Shaft	4189	Bearing Adjustment Collar, Lower
2356	Speed Change Gear, No. 4	4190	Speed Change Gear, No. 2
2357	Speed Change Gear, No. 3	4191	Speed Change Gear, No. 5
2358	Speed Change Gear, No. 1	4192	Speed Change Shaft Collar, Large
2359	Speed Change Shaft Collar, Small	4193	Intermediate Gear Bearing Spacer
2360	Speed Change Gear Shaft Bearing	4194	Speed Intermediate Gear Stud Washer
2362	Speed Lever Stop Bushing	4195	Speed Sliding Gear Shaft Bearing, Rear
2365	Speed Sliding Gear Shaft	4196	Variable Speed Quill Gears Shoe
2366	Speed Sliding Gear, No. 3		



Spindle and Spindle Head  
Vertical Machines



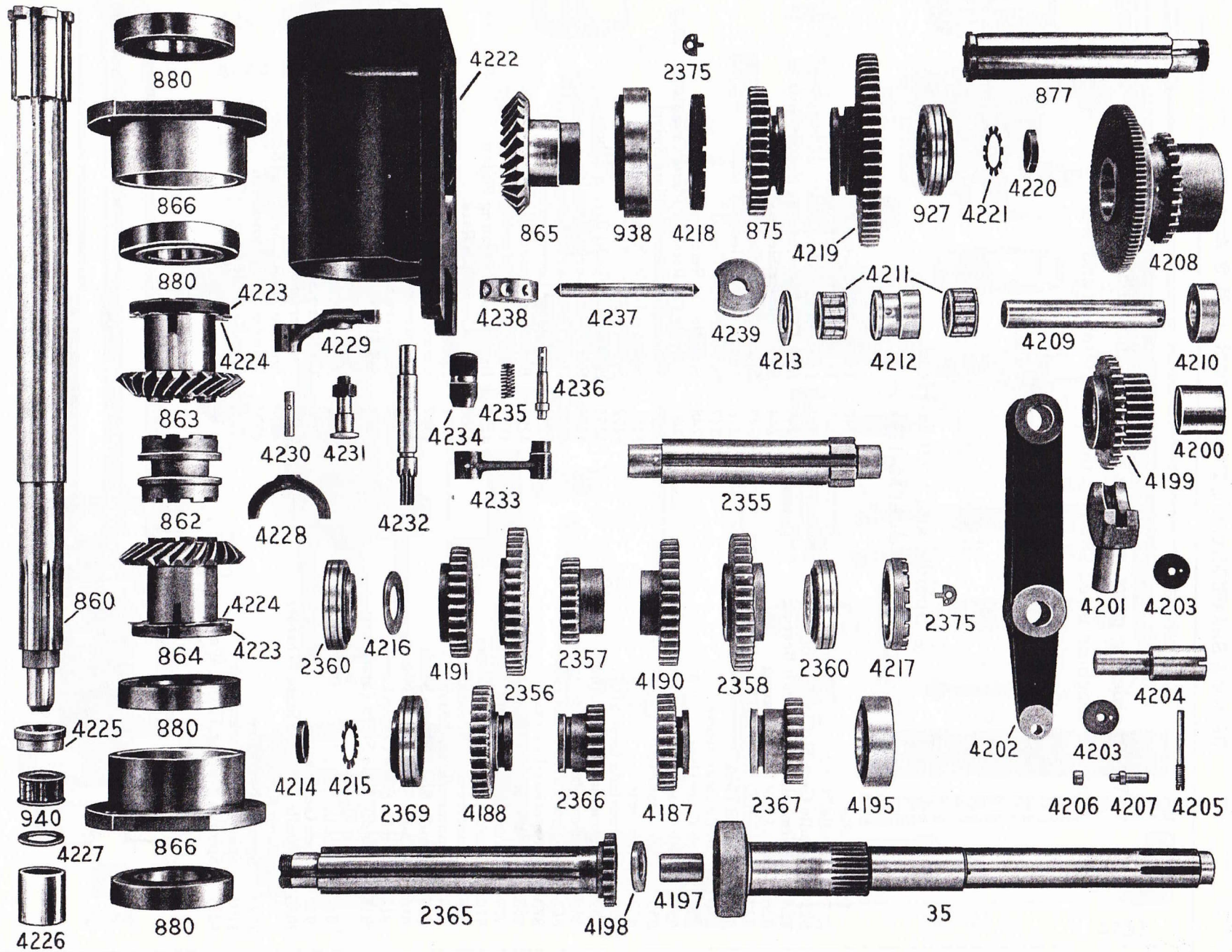
When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

## Spindle and Spindle Head

### Vertical Machines

1	Spindle	4240	Intermediate Gear, Lower
7	Spindle Nut	4241	Intermediate Gear Shaft Nut
823	Spindle Gear Sleeve Bearing	4242	Intermediate Gear Shaft Lockwasher
824	Intermediate Gear Shaft Bearing	4243	Spindle Sleeve Bearing Splash Guard
826	Back Gear Shaft Bearing	4244	Spindle Gear Sleeve Nut
827	Vertical Drive Shaft Gear Bearing	4245	Spindle Gear Sleeve Lockwasher
845	Spindle Gear	4246	Spindle Gear Sleeve Washer
846	Spindle Gear Sleeve	4247	Spindle Dust Guard
851	Back Gear Shoe	4248	Spindle Oil Retainer
852	Back Gear Operating Pinion Shaft	4249	Spindle Oil Retainer Plate, Complete
855	Back Gear Shaft	4250	Spindle Oil Retainer Plate Swivel
857	Back Gear	4251	Spindle Slide Oil Return Pipe
858	Intermediate Gear Shaft	4252	Spindle Slide Oil Return Sleeve
859	Intermediate Gear, Upper	4253	Spindle Slide Oil Return Elbow
860	Vertical Drive Shaft	4254	Back Gear Lever Handle
861	Vertical Drive Shaft Gear	4255	Back Gear Lever Pin
873	Counterweight Chain	4256	Back Gear Lever Spring
908	Spindle Slide Rack	4257	Back Gear Lever Plate
909	Counterweight Drum Shaft	4258	Back Gear Operating Pinion
910	Counterweight Chain Drum	4259	Back Gear Operating Pinion Shaft Washer
913	Counterweight Sheave Stud	4260	Back Gear Shoe Rack
914	Counterweight Sheave	4261	Spindle Feed Pinion Opening Guard
915	Spindle Slide Clamp Shaft	4262	Counterweight Sheave Bearing
916	Spindle Slide Clamp Nut	4263	Counterweight Sheave Bearing Spring
917	Spindle Slide Clamp Lever	4264	Counterweight Sheave Cap
918	Spindle Slide Strap (State Left or Right)	4265	Spindle Slide Chain
919	Spindle Slide Gib	4266	Spindle Slide Chain End
937	Back Gear Lever	4267	Spindle Slide Chain Drum
2086	Spindle Bearing (State Whether with Keyway)	4268	Counterweight Chain End, Upper
2724	Spindle Nose Key	4269	Counterweight Chain End, Lower
3192	Spindle Nut Lockwasher	4270	Spindle Slide Clamp Nut Screw
4031	Spindle Bearing Thrust Washer	4271	Spindle Head Dowel Pin
		4272	Spindle Slide Plug

Spindle Driving Parts  
Vertical Machines

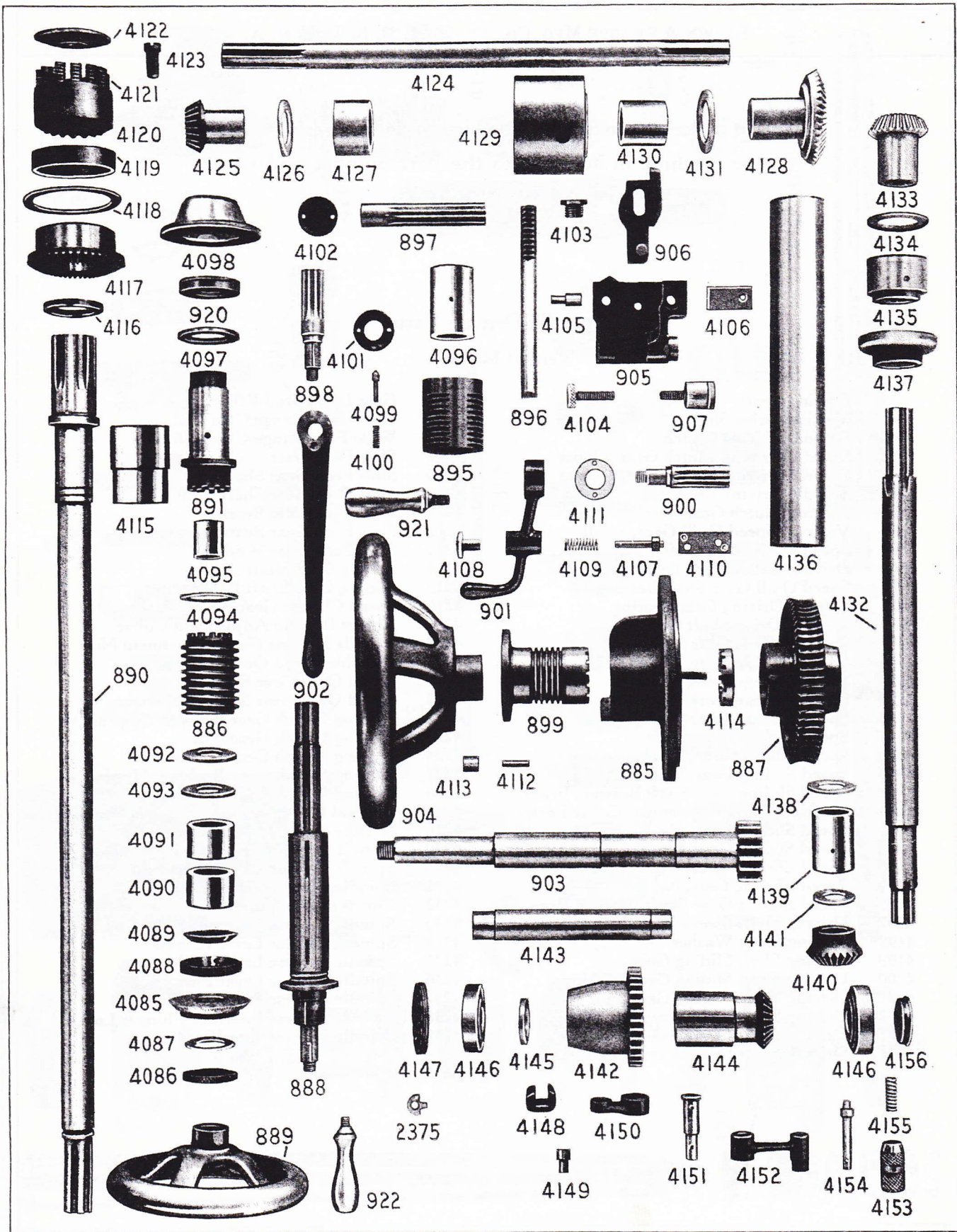


When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

## Spindle Driving Parts

### Vertical Machines

35	Driving Shaft	4205	Gear Lever Stud Retaining Screw
860	Vertical Drive Shaft	4206	Wide Feed Range Cam Roll
862	Spindle Driving Clutch	4207	Wide Feed Range Cam Roll Stud
863	Spindle Driving Clutch Gear, Upper	4208	Slow Feed Gear
864	Spindle Driving Clutch Gear, Lower	4209	Slow Feed Gear Shaft
865	Spindle Driving Gear	4210	Slow Feed Gear Shaft Collar
866	Driving Clutch Gear Bearing Holder	4211	Slow Feed Gear Bearing
875	Variable Speed Quill Gear, Small	4212	Slow Feed Gear Bearing Spacer
877	Speed Quill Gear Shaft	4213	Slow Feed Gear Washer
880	Driving Clutch Gear Bearing	4214	Sliding Gear Shaft Nut
927	Speed Quill Gear Shaft Bearing	4215	Sliding Gear Shaft Lockwasher
938	Spindle Driving Gear Bearing	4216	Speed Change Gear Shaft Washer
940	Vertical Drive Shaft Bearing	4217	Thrust Bearing Adjustment Collar
2355	Speed Change Gear Shaft	4218	Spindle Driving Gear Adjustment Nut
2356	Speed Change Gear, No. 4	4219	Variable Speed Quill Gear, Large
2357	Speed Change Gear, No. 3	4220	Speed Quill Gear Shaft Nut
2358	Speed Change Gear, No. 1	4221	Speed Quill Gear Shaft Lockwasher
2360	Speed Change Gear Shaft Bearing	4222	Driving Clutch Gear Bearing Housing
2365	Speed Sliding Gear Shaft	4223	Driving Clutch Gear Nut
2366	Speed Sliding Gear, No. 3	4224	Driving Clutch Gear Lockwasher
2367	Speed Sliding Gear, No. 1	4225	Driving Clutch Gear Bushing, Upper
2369	Speed Sliding Gear Shaft Bearing, Front	4226	Driving Clutch Gear Bushing, Lower
2375	Thrust Bearing Adjustment Collar Lock	4227	Vertical Drive Shaft Bearing Washer
4187	Speed Sliding Gear, No. 2	4228	Spindle Reverse Clutch Shoe
4188	Speed Sliding Gear, No. 4	4229	Spindle Reverse Clutch Lever
4190	Speed Change Gear, No. 2	4230	Spindle Reverse Clutch Lever Pin
4191	Speed Change Gear, No. 5	4231	Spindle Reverse Clutch Lever Stud
4195	Speed Sliding Gear Shaft Bearing, Rear	4232	Clutch Lever Pinion Shaft
4197	Driving Shaft Sleeve	4233	Spindle Reverse Lever
4198	Driving Shaft Washer	4234	Spindle Reverse Lever Handle
4199	Driving Shaft Sliding Gear	4235	Spindle Reverse Lever Spring
4200	Driving Shaft Sliding Gear Bushing	4236	Spindle Reverse Lever Pin
4201	Driving Shaft Sliding Gear Shoe	4237	Spindle Reverse Interlock Plunger
4202	Driving Shaft Gear Lever	4238	Spindle Reverse Interlock Plunger Lock
4203	Driving Shaft Gear Lever Collar	4239	Spindle Reverse Interlock Cam
4204	Driving Shaft Gear Lever Stud		



### Spindle Feed Mechanism

Vertical Machines

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

## Spindle Feed Mechanism

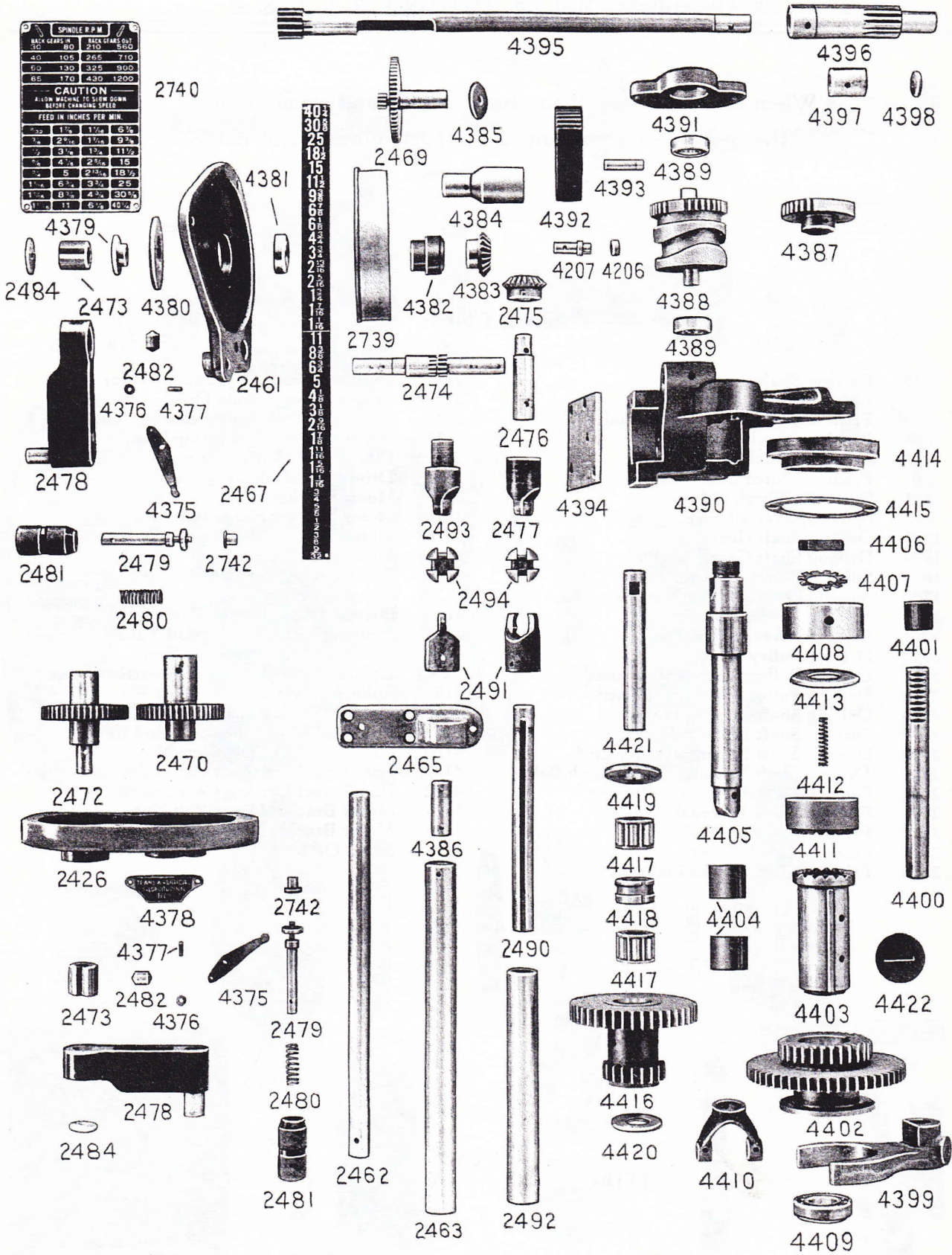
### Vertical Machines

885	Spindle Feed Pinion Outer Bearing	4109	Quick Return Lever Lock Pin Spring
886	Spindle Feed Worm	4110	Spindle Quick Return Lever Lock Plate
887	Spindle Feed Worm Gear	4111	Spindle Quick Return Pinion Washer
888	Spindle Feed Worm Shaft	4112	Spindle Quick Return Handwheel Pin
889	Spindle Feed Handwheel	4113	Quick Return Handwheel Pin Bushing
890	Spindle Feed Clutch Shaft	4114	Spindle Feed Worm Gear Clutch
891	Spindle Feed Worm Clutch	4115	Spindle Feed Clutch Shaft Bushing
895	Spindle Feed Worm Clutch Sleeve	4116	Spindle Feed Clutch Shaft Collar
896	Spindle Feed Trip Rod	4117	Spindle Feed Clutch Shaft Gear
897	Spindle Feed Trip Pinion	4118	Spindle Feed Clutch Gear Washer
898	Spindle Feed Throwout Lever Pinion	4119	Transposing Case (Left) Bushing, Outer
899	Spindle Feed Clutch	4120	Spindle Feed Safety Clutch
900	Spindle Quick Return Throwout Pinion	4121	Spindle Feed Safety Clutch Spring
901	Spindle Quick Return Throwout Lever	4122	Spindle Feed Clutch Shaft Cap
902	Spindle Feed Throwout Lever	4123	Spindle Feed Clutch Shaft Cap Screw
903	Spindle Feed Pinion	4124	Spindle Feed Transposing Shaft
904	Spindle Quick Return Handwheel	4125	Spindle Feed Transposing Shaft Pinion
905	Spindle Stop Bracket	4126	Transposing Shaft Pinion Washer
906	Spindle Stop Lever	4127	Transposing Case (Left) Bushing, Inner
907	Spindle Stop Dial	4128	Spindle Feed Transposing Shaft Gear
920	Spindle Feed Worm Clutch Nut	4129	Transposing Case (Right) Bushing, Large
921	Spindle Quick Return Handwheel Handle	4130	Transposing Case (Right) Bushing, Inner
922	Worm Shaft Handwheel Handle	4131	Transposing Shaft Gear Washer
2375	Thrust Bearing Adjustment Collar Lock	4132	Spindle Feed Driving Shaft
4085	Spindle Fine Hand Feed Dial	4133	Spindle Feed Driving Shaft Gear, Upper
4086	Fine Hand Feed Dial Clamp Nut	4134	Driving Shaft Gear (Upper) Washer
4087	Fine Hand Feed Dial Washer	4135	Transposing Case (Right) Bushing, Small
4088	Spindle Feed Worm Shaft Nut	4136	Feed Driving Shaft Guard
4089	Spindle Feed Worm Shaft Nut Washer	4137	Feed Driving Shaft Guard Cap
4090	Spindle Feed Worm Shaft Bushing, Right	4138	Spindle Feed Driving Shaft Washer
4091	Spindle Feed Worm Shaft Bushing, Left	4139	Feed Case Extension Bushing
4092	Spindle Feed Worm Shaft Washer, Bronze	4140	Spindle Feed Driving Shaft Gear, Lower
4093	Spindle Feed Worm Shaft Washer, Steel	4141	Spindle Feed Driving Shaft Gear Washer
4094	Spindle Feed Worm Washer	4142	Feed Extension Sliding Gear
4095	Spindle Feed Worm Clutch Bushing	4143	Feed Extension Sliding Gear Shaft
4096	Spindle Feed Worm Clutch Sleeve Bushing	4144	Extension Sliding Gear Shaft Pinion
4097	Spindle Feed Worm Clutch Washer	4145	Extension Sliding Gear Shaft Washer
4098	Spindle Feed Worm Gear Bracket Cap	4146	Extension Sliding Gear Shaft Bearing
4099	Spindle Feed Throwout Lever Plunger	4147	Feed Case Extension Bearing Nut
4100	Spindle Feed Throwout Lever Spring	4148	Feed Extension Sliding Gear Shoe
4101	Spindle Feed Lever Pinion Washer	4149	Feed Extension Sliding Gear Shoe Pin
4102	Spindle Feed Trip Pinion Cover	4150	Feed Extension Sliding Gear Lever
4103	Spindle Feed Trip Rod Plug	4151	Feed Extension Locking Lever Pin
4104	Spindle Stop Bracket Screw	4152	Spindle Feed Connection Lever
4105	Spindle Stop Pin	4153	Spindle Feed Connection Lever Handle
4106	Micrometer Stop Bolt Stop	4154	Spindle Feed Connection Lever Lock Pin
4107	Spindle Quick Return Lever Lock Pin	4155	Spindle Feed Connection Lever Spring
4108	Spindle Quick Return Lever Handle	4156	Feed Case Extension Plug

SPINDLE R.P.M.			
BACK GEARS IN	80	210	560
40	105	265	710
50	130	325	880
65	170	430	1200

**CAUTION**  
ALLOW MACHINE TO SLOW DOWN  
BEFORE CHANGING SPEED

FEED IN INCHES PER MIN.			
1/32"	1 1/4"	1 1/2"	6 3/4"
1/16"	2 1/2"	3 1/4"	9 3/4"
3/32"	3 1/2"	4 1/2"	11 3/4"
1/8"	4 1/2"	5 1/2"	13 3/4"
5/32"	5 1/2"	6 1/2"	15 3/4"
3/16"	6 1/2"	7 1/2"	17 3/4"
1/4"	7 1/2"	8 1/2"	19 3/4"
5/16"	8 1/2"	9 1/2"	21 3/4"
3/8"	9 1/2"	10 1/2"	23 3/4"
7/16"	10 1/2"	11 1/2"	25 3/4"
1/2"	11 1/2"	12 1/2"	27 3/4"
9/16"	12 1/2"	13 1/2"	29 3/4"
5/8"	13 1/2"	14 1/2"	31 3/4"
3/4"	14 1/2"	15 1/2"	33 3/4"
7/8"	15 1/2"	16 1/2"	35 3/4"
1"	16 1/2"	17 1/2"	37 3/4"



**Feed Control**

**Wide Feed Range**

Dual Control Type Machines and No. 2 Vertical Machines

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Feed Control

2426	Table Feed Control Bracket Cover	2490	Hand Universal Joint Piston
2461	Feed Control Case Cover	2491	Hand Universal Joint Piston Yoke
2462	Feed Control Shaft	2492	Hand Universal Joint Shell
2463	Feed Control Shaft Sleeve	2493	Hand Universal Joint Shell Yoke
2465	Feed Control Shaft Bracket	2494	Universal Joint Swivel
2467	Feed Dial Gear Plate	2739	Feed Dial Gear
2469	Feed Dial Reducing Gear & Pinion	2740	Feed & Speed Plate
2470	Feed Change Operating Gear, Driven	2742	Feed Change Lever Plunger Stop Bushing
2472	Feed Change Operating Gear, Driving	4375	Locking Pin Operating Lever
2473	Feed Change Lever Locking Bushing	4376	Locking Pin Operating Lever Roll
2474	Feed Dial Operating Pinion	4377	Locking Pin Operating Lever Roll Pin
2475	Feed Change Bevel Gear	4378	Feed Notice Plate
2476	Feed Change Bevel Gear Shaft	4379	Feed Dial Pinion Spacing Collar
2477	Bevel Gear Shaft Yoke	4380	Feed Control Case Cover Plate
2478	Feed Change Lever	4381	Feed Dial Operating Pinion Bearing
2479	Feed Change Lever Plunger	4382	Feed Dial Gear Bushing
2480	Feed Change Lever Spring	4383	Feed Dial Operating Pinion Bevel Gear
2481	Feed Change Lever Handle	4384	Feed Control Case Coupling
2482	Feed Change Lever Locking Pin	4385	Reducing Gear & Pinion End Plate
2484	Feed Change Lever Washer	4386	Feed Control Shaft Extension

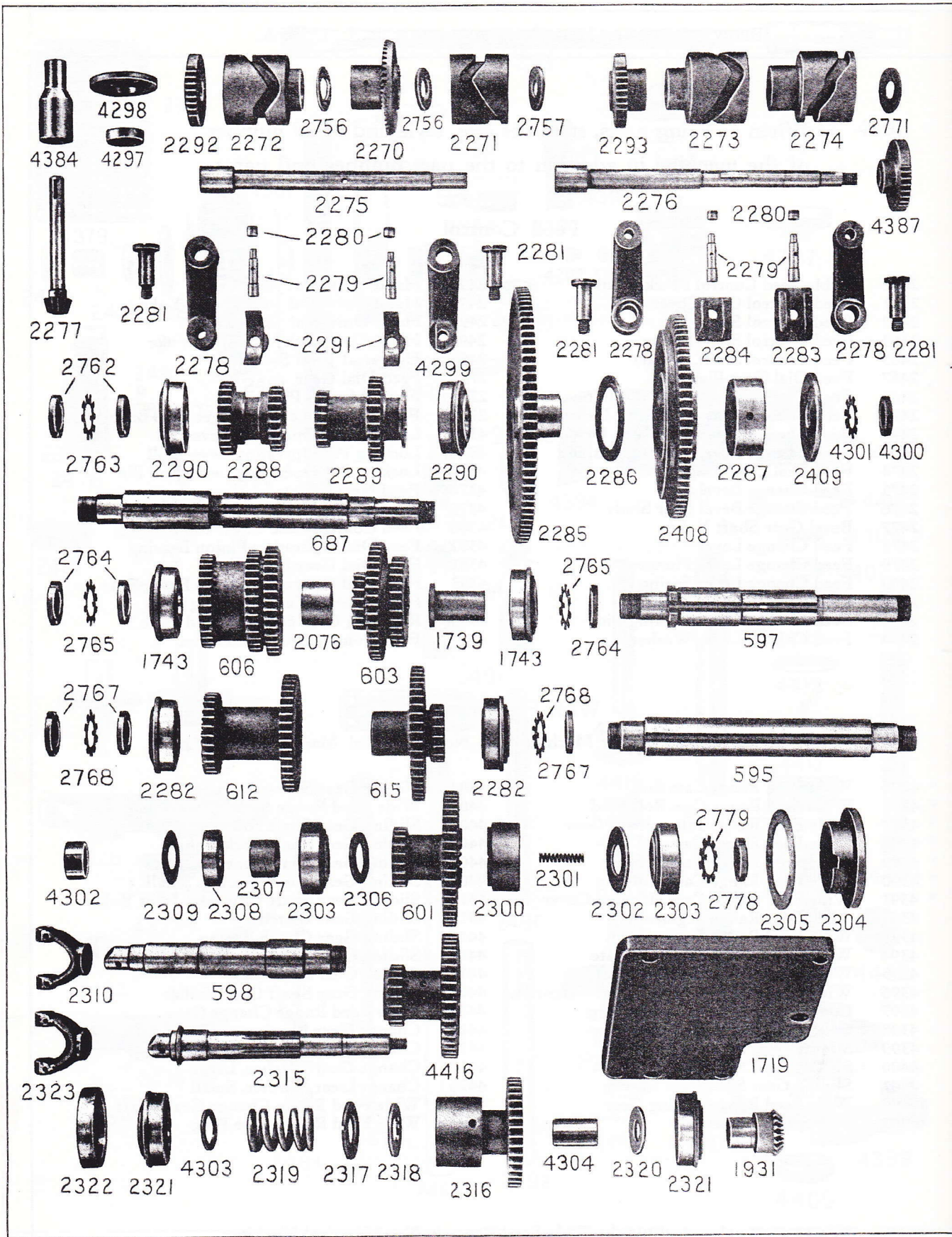
### Wide Feed Range

Dual Control Type Machines and No. 2 Vertical Machines

* 4206	Wide Feed Range Cam Roll	4404	Sliding Gear Sleeve Bushing
* 4207	Wide Feed Range Cam Roll Stud	4405	Wide Feed Range Sliding Gear Shaft
* 4387	Wide Feed Range Intermittent Gear	4406	Sliding Gear Shaft Nut
* 4388	Wide Feed Range Cam	4407	Sliding Gear Shaft Lockwasher
* 4389	Wide Feed Range Cam Bearing	4408	Sliding Gear Shaft Bearing, Large
* 4390	Wide Feed Range Cam Housing	4409	Sliding Gear Shaft Bearing, Small
* 4391	Wide Feed Range Cam Housing Cover	4410	Sliding Gear Shaft Universal Joint Yoke
4392	Wide Feed Range Segment	4411	Sliding Gear Clutch
4393	Wide Feed Range Segment Pin	4412	Sliding Gear Clutch Spring
4394	Wide Feed Range Segment Plate	4413	Sliding Gear Clutch Spring Washer
4395	Wide Feed Range Control Shaft	4414	Sliding Gear Shaft Cap
4396	Wide Feed Range Control Shaft Extension	4415	Sliding Gear Shaft Cap Washer
4397	Control Shaft Extension Bushing	4416	Wide Feed Range Change Gear
4398	Control Shaft Extension Washer	4417	Change Gear Bearing
4399	Sliding Gear Shoe	4418	Change Gear Bearing Spacer
4400	Sliding Gear Shoe Rack	4419	Change Gear Washer, Large
4401	Sliding Gear Shoe Rack Cap	4420	Change Gear Washer, Small
4402	Wide Feed Range Sliding Gear	4421	Wide Feed Range Change Gear Shaft
4403	Sliding Gear Sleeve	4422	Wide Feed Range Case Plug

\*These parts only constitute the Wide Feed Range in No. 2 Vertical Machines.



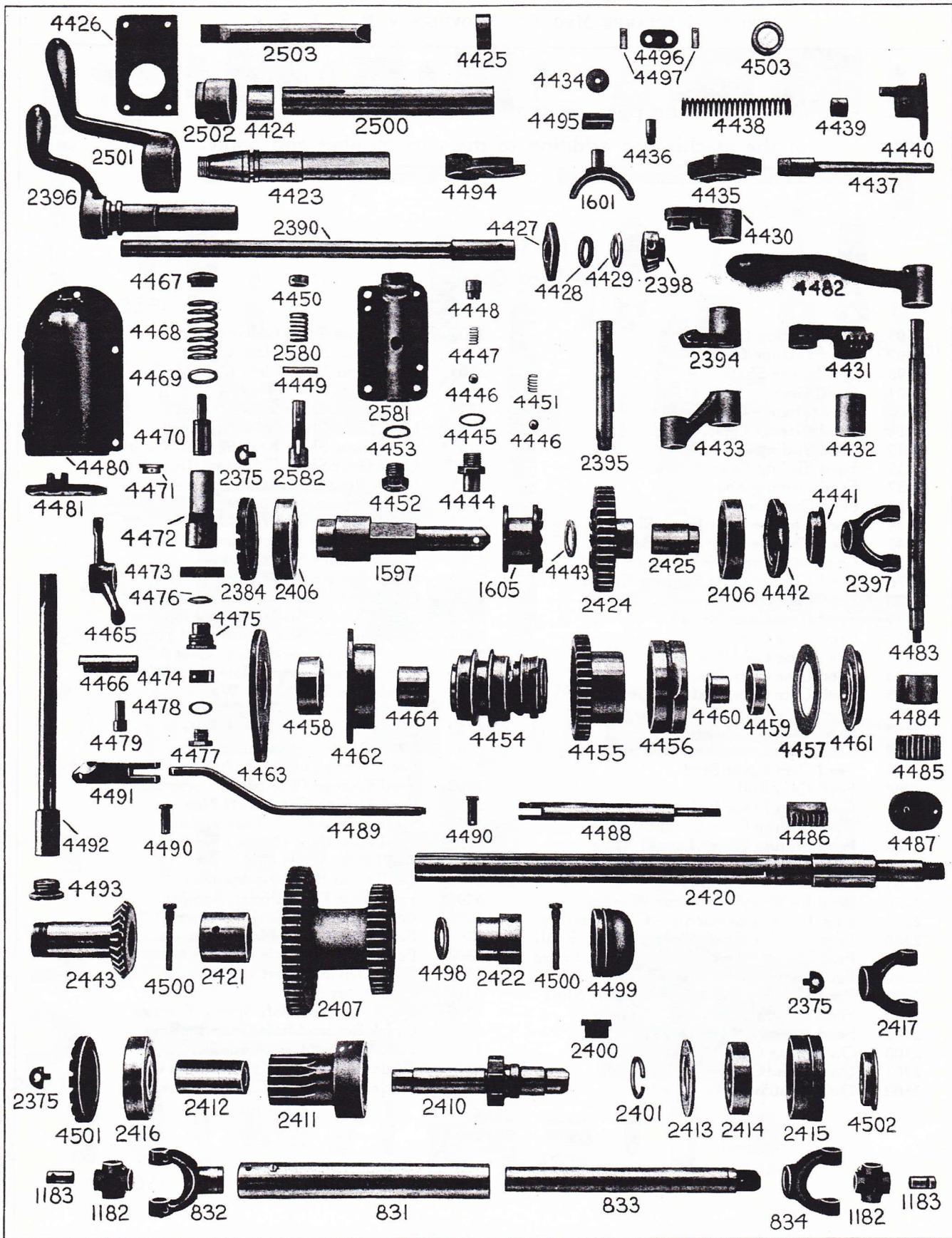


Feed Case

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

Feed Case

595	Feed Sliding Gear Shaft	2303	Quill Gear Shaft Bearing, Large
597	Feed Change Gear Shaft	2304	Quill Gear Shaft Hole Cap
598	Quill Gear Shaft	2305	Quill Gear Shaft Hole Cap Washer
601	Quill Gear	2306	Quill Gear Shaft Washer
603	Feed Change Gear, Large	2307	Quill Gear Shaft Collar, Inner
606	Feed Change Gear, Small	2308	Quill Gear Shaft Bearing, Small
612	Feed Sliding Gear, Small	2309	Quill Gear Shaft Bearing Dust Guard
615	Feed Sliding Gear, Large	2310	Quill Gear Shaft Universal Joint Yoke
687	Feed Driving Shaft	2315	Quick Return Shaft
1719	Feed Case Cover	2316	Quick Return Shaft Gear
1739	Feed Change Gear Shaft Sleeve	2317	Quick Return Shaft Steel Disk
1743	Feed Change Gear Shaft Bearing	2318	Quick Return Shaft Bronze Disk
1931	Coolant Pump Driving Gear	2319	Quick Return Shaft Spring
2076	Feed Change Gear Spacing Collar	2320	Quick Return Shaft Washer
2270	Feed Case Bevel Gear	2321	Quick Return Shaft Bearing
2271	Feed Case Cam, No. 1	2322	Quick Return Shaft Bearing Retainer
2272	Feed Case Cam, No. 2	2323	Quick Return Shaft Universal Joint Yoke
2273	Feed Case Cam, No. 3	2408	Fast Travel Intermediate Gear
2274	Feed Case Cam, No. 4	2409	Fast Travel Intermediate Gear Washer
2275	Feed Case Cam Shaft, Upper	2756	Feed Case Bevel Gear Washer
2276	Feed Case Cam Shaft, Lower	2757	Feed Case Cam (No. 1) Washer
2277	Feed Case Bevel Pinion	2762	Feed Driving Shaft Nut, Left
2278	Feed Cam Lever, Nos. 2, 3 & 4 Cams	2763	Feed Driving Shaft Lockwasher, Left
2279	Feed Cam Lever Stud	2764	Feed Change Gear Shaft Nut
2280	Feed Cam Roll	2765	Feed Change Gear Shaft Lockwasher
2281	Feed Cam Lever Fulcrum	2767	Feed Sliding Gear Shaft Nut
2282	Feed Sliding Gear Shaft Bearing	2768	Sliding Gear Shaft Lockwasher
2283	Feed Sliding Gear (Large) Shoe	2771	Feed Case Cam (No. 4) Washer
2284	Feed Sliding Gear (Small) Shoe	2778	Quill Gear Shaft Nut
2285	Feed Driving Shaft Gear	2779	Quill Gear Shaft Lockwasher
2286	Feed Driving Shaft Gear Washer	4297	Feed Case Bevel Pinion Bearing
2287	Fast Travel Intermediate Gear Bearing	4298	Bevel Pinion Bearing Retainer
2288	Feed Driving Shaft Sliding Gear, Small	4299	Feed Cam Lever, No. 1 Cam
2289	Feed Driving Shaft Sliding Gear, Large	4300	Feed Driving Shaft Nut, Right
2290	Feed Driving Shaft Bearing	4301	Feed Driving Shaft Lockwasher, Right
2291	Feed Driving Shaft Sliding Gear Shoe	4302	Quill Gear Shaft Collar, Outer
2292	Feed Intermittent Gear, Driving	4303	Quick Return Shaft Spring Washer
2293	Feed Intermittent Gear, Driven	4304	Quick Return Shaft Gear Bushing
2300	Quill Gear Clutch	4384	Feed Control Case Coupling
2301	Quill Gear Clutch Spring	4387	Wide Feed Range Intermittent Gear
2302	Quill Clutch Spring Washer	4416	Wide Feed Range Change Gear

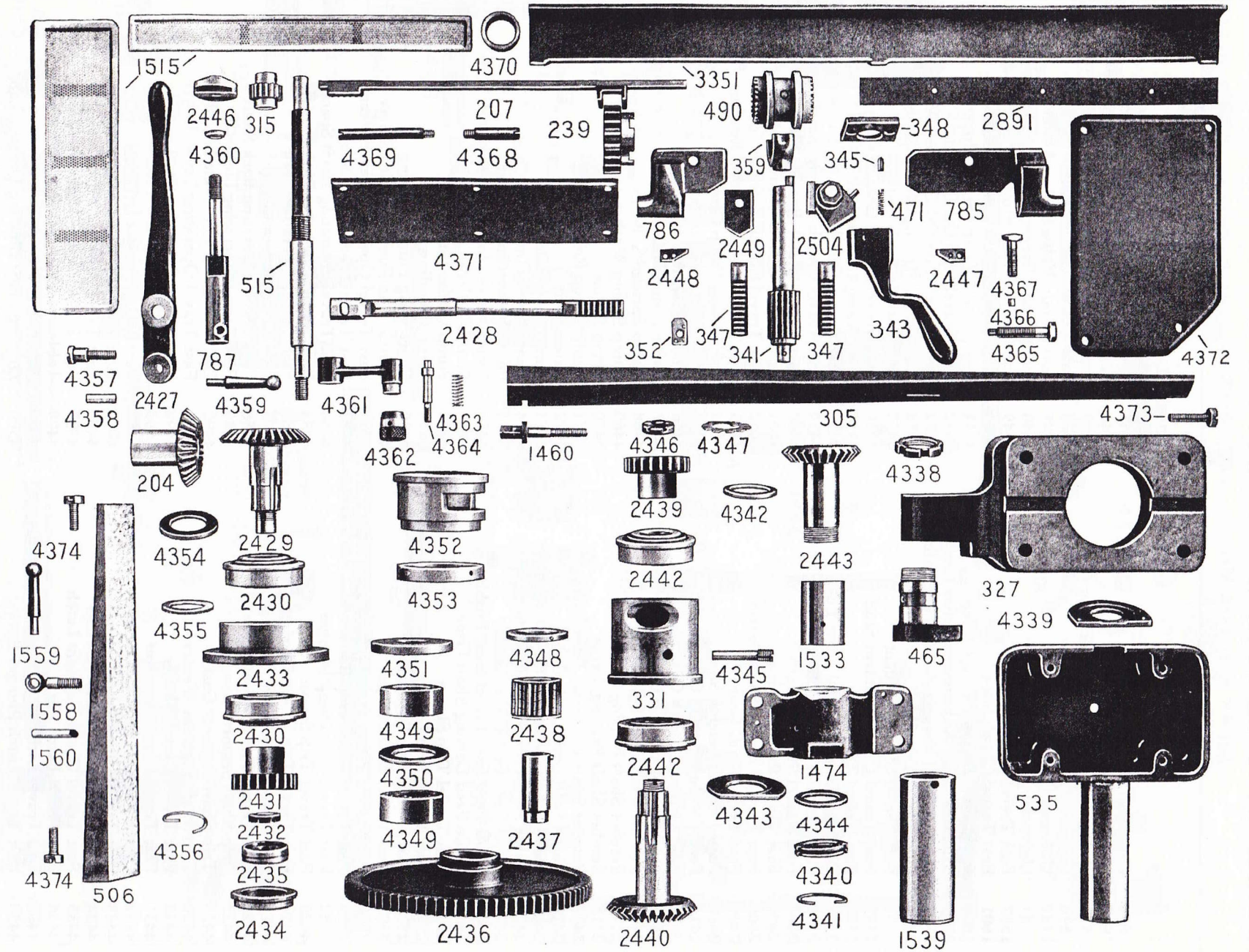


Fast Travel Case

## Fast Travel Case

831	Universal Joint Shell	4443	Fast Travel Driving Shaft Washer
832	Universal Joint Shell Yoke	4444	Fast Travel Pump Coupling
833	Universal Joint Piston (State Length)	4445	Fast Travel Pump Coupling Washer
834	Universal Joint Piston Yoke	4446	Fast Travel Case Pump Ball
1182	Universal Joint Swivel	4447	Pump Body Valve Spring, Lower
1183	Universal Joint Pivot	4448	Pump Valve Spring Retainer
1597	Fast Travel Driving Shaft	4449	Lubricating Pump Plunger Pin
1601	Fast Travel Clutch Shoe	4450	Lubricating Pump Plunger Collar
1605	Fast Travel Driving Shaft Clutch	4451	Pump Body Valve Spring, Upper
2375	Thrust Bearing Adjustment Collar Lock	4452	Fast Travel Case Oil Coupling
2384	Driving Shaft Bearing Adjustment Collar	4453	Fast Travel Case Oil Coupling Washer
2390	Fast Travel Trip Shaft	4454	Fast Travel Driving Shaft Clutch
2394	Fast Travel Clutch Segment	4455	Fast Travel Clutch Gear
2395	Fast Travel Clutch Segment Stud	4456	Fast Travel Clutch Gear Bearing
2396	Fast Travel Trip Lever	4457	Fast Travel Clutch Gear Washer
2397	Driving Shaft Universal Joint Yoke	4458	Fast Travel Clutch Bearing, Large
2398	Fast Travel Trip Shaft Segment	4459	Fast Travel Clutch Bearing, Small
2400	Fast Travel Ratchet Pawl	4460	Fast Travel Clutch Bearing Sleeve
2401	Fast Travel Ratchet Spring	4461	Fast Travel Clutch Bearing Oil Slinger
2406	Fast Travel Driving Shaft Bearing	4462	Fast Travel Clutch Bearing Housing
2407	Fast Travel Quill Gear	4463	Fast Travel Clutch Bearing Retainer
2410	Feed Driving Ratchet Shaft	4464	Lubricating Pump Cam
2411	Feed Driving Ratchet Gear	4465	Pump Operating Lever
2412	Feed Driving Ratchet Gear Bushing	4466	Pump Operating Lever Stud
2413	Feed Driving Ratchet Gear Plate	4467	Pump Piston Rod Head
2414	Ratchet Shaft Bearing, Small	4468	Pump Spring
2415	Ratchet Shaft Bearing Holder	4469	Pump Spring Washer
2416	Ratchet Shaft Bearing, Large	4470	Pump Piston
2417	Ratchet Shaft Universal Joint Yoke	4471	Pump Piston Rod Bushing
2420	Table Feed Driving Shaft	4472	Pump Body
2421	Table Feed Driving Shaft Bushing, Left	4473	Pump Valve, Outer
2422	Table Feed Driving Shaft Bushing, Right	4474	Pump Valve, Inner
2424	Table Feed Fast Travel Gear	4475	Pump Valve (Inner) Seat
2425	Table Feed Fast Travel Gear Bushing	4476	Pump Valve (Inner) Seat Gasket
2443	Table Feed Driving Shaft Gear	4477	Pump Outlet
2500	Fast Travel Trip Sleeve	4478	Pump Outlet Gasket
2501	Fast Travel Trip Lever	4479	Pump Coupling
2502	Fast Travel Trip Segment	4480	Lubricating Pump Housing
2503	Fast Travel Trip Plunger	4481	Lubricating Pump Housing Cover
2580	Lubricating Pump Plunger Spring	4482	Fast Travel Operating Lever, Rear
2581	Fast Travel Case Pump Body	4483	Fast Travel Operating Shaft
2582	Fast Travel Case Pump Plunger	4484	Fast Travel Operating Shaft Spacer
4423	Fast Travel Trip Sleeve	4485	Fast Travel Operating Pinion
4424	Fast Travel Trip Sleeve Bearing	4486	Fast Travel Operating Rack
4425	Fast Travel Trip Sleeve Bushing	4487	Fast Travel Operating Rack Cover
4426	Fast Travel Trip Segment Cover	4488	Fast Travel Operating Rack Shaft
4427	Trip Shaft Segment Bracket	4489	Fast Travel Operating Link
4428	Trip Shaft Segment Gasket	4490	Operating Link Pin (State Length)
4429	Trip Shaft Segment Washer	4491	Fast Travel Operating Lever, Lower
4430	Fast Travel Clutch Shifter	4492	Fast Travel Operating Stud
4431	Fast Travel Clutch Segment	4493	Operating Stud Hole Plug
4432	Clutch Segment Stud Collar	4494	Fast Travel Shifter Fork
4433	Fast Travel Clutch Shoe Lever	4495	Fast Travel Shifter Fork Block
4434	Fast Travel Clutch Shoe Washer	4496	Fast Travel Clutch Shifter Link
4435	Fast Travel Clutch Segment Latch	4497	Fast Travel Clutch Shifter Link Pin
4436	Fast Travel Latch Pin	4498	Table Feed Driving Shaft Washer
4437	Fast Travel Latch Plunger	4499	Table Feed Driving Shaft Guard
4438	Fast Travel Latch Plunger Spring	4500	Driving Shaft Bushing Dowel (State Length)
4439	Fast Travel Latch Plunger Bushing	4501	Ratchet Shaft Bearing Adjustment Collar
4440	Fast Travel Latch Plunger Handle	4502	Oil Retainer, Outer, Upper
4441	Oil Retainer, Outer, Upper	4503	Oil Retainer, Outer, Lower
4442	Oil Retainer, Inner		Oil Sight, Complete

Table, Saddle and Clamp Bed

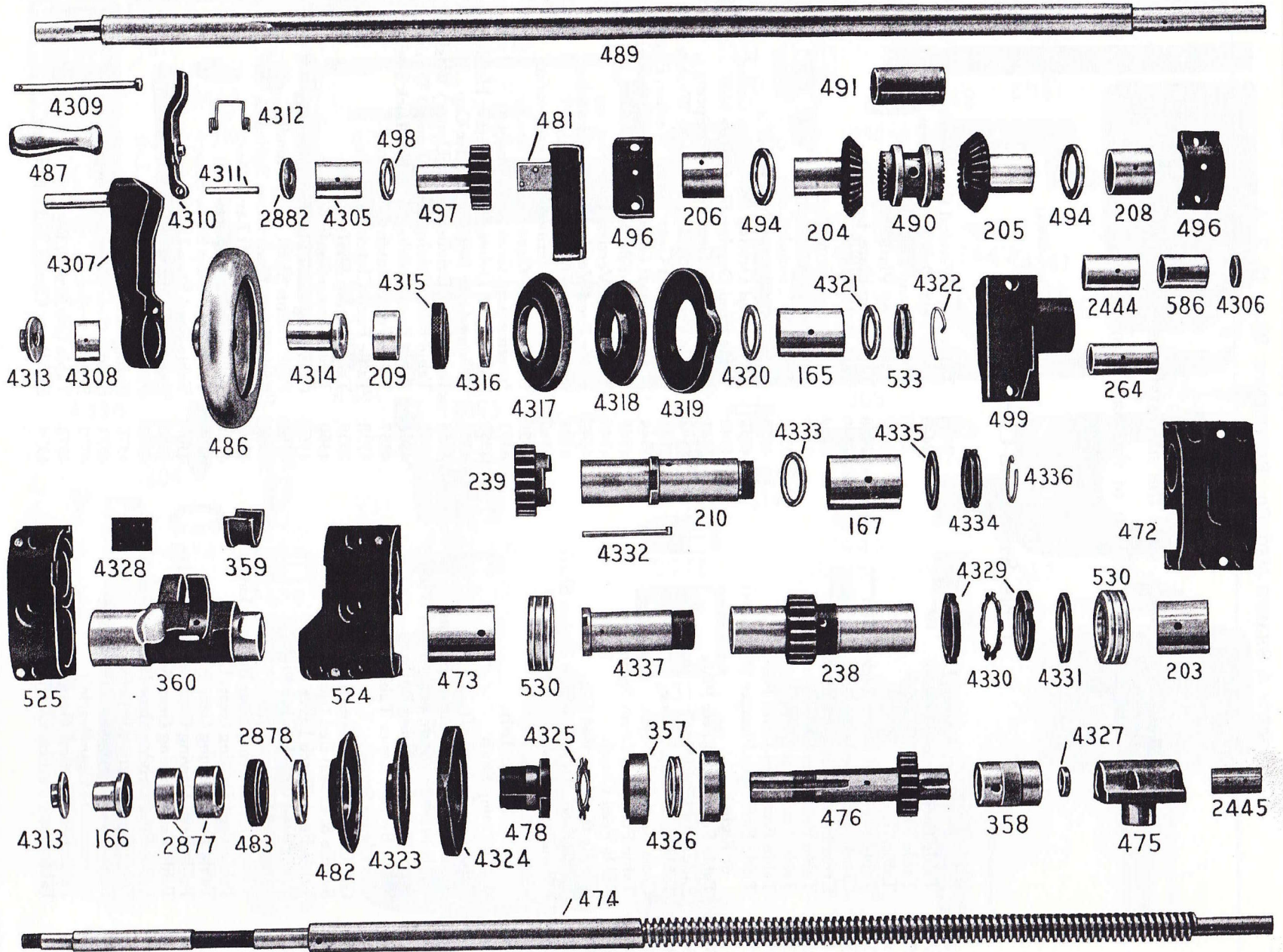


When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Table, Saddle and Clamp Bed

204	Table Feed Clutch Gear, Left	2442	Table Feed Vertical Gear Bearing
207	Table Feed Operating Rack	2443	Table Feed Driving Shaft Gear
239	Table Feed Shaft Gear	2446	Table Clamp Shaft Nut
305	Table Gib	2447	Table Stop Plate, Right
315	Table Feed Operating Rack Pinion	2448	Table Stop Plate, Left
327	Cross Feed Screw Bracket	2449	Table Stop Dog
331	Cross Feed Screw Bracket Bushing	2504	Fast Travel Trip Dog
341	Table Feed Trip Lever Shaft	2891	Saddle T-Slot Cover
343	Table Feed Trip Lever	3351	Table Oil Trough Cover
345	Table Feed Trip Lever Pin	4338	Cross Feed Screw Nut Lock Nut
347	Table Feed Trip Plunger (State Left or Right)	4339	Table Feed Driving Shaft Chip Guard
348	Table Feed Trip Lever Plate	4340	Table Feed Driving Shaft Gear Nut
352	Saddle Index Finger	4341	Driving Shaft Gear Nut Lock Spring
359	Table Feed Clutch Shoe	4342	Table Feed Driving Shaft Gear Washer
465	Cross Feed Screw Nut	4343	Driving Shaft Gear Thrust Washer, Bronze
471	Table Feed Trip Lever Spring	4344	Driving Shaft Gear Thrust Washer, Steel
490	Table Feed Clutch	4345	Screw Bracket Bushing Pin
506	Saddle & Clamp Bed Gib	4346	Table Feed Vertical Gear Nut
515	Table Feed Operating Rack Pinion Shaft	4347	Table Feed Vertical Gear Lockwasher
535	Cross Feed Screw Bracket Cover	4348	Intermediate Gear Stud Washer
785	Table Feed Stop, Right	4349	Table Feed Intermediate Gear Bearing
786	Table Feed Stop, Left	4350	Intermediate Gear Bearing Spacer
787	Table Clamp Shaft	4351	Intermediate Gear Stud Washer
1460	Table Gib Screw, Left	4352	Table Feed Driving Gear Bearing Holder
1474	Cross Feed Screw Bracket Bearing	4353	Driving Gear Bearing Holder Cap
1515	Table Strainer (State Length and Width)	4354	Table Feed Driving Gear (Upper) Washer
1533	Screw Bracket Bearing Bushing	4355	Table Feed Driving Gear (Lower) Washer
1539	Screw Bracket Cover Tubing	4356	Table Feed Driving Gear Nut Lock Spring
1558	Gib Clamp Screw	4357	Table Feed Clutch Lever Stud
1559	Gib Clamp Screw Handle	4358	Table Feed Clutch Lever Pin
1560	Saddle & Clamp Bed Gib Shoe	4359	Table Clamp Shaft Handle
2427	Table Feed Clutch Lever	4360	Table Clamp Shaft Washer
2428	Table Feed Clutch Lever Rod	4361	Operating Rack Pinion Shaft Lever
2429	Table Feed Driving Gear, Upper	4362	Rack Pinion Shaft Lever Handle
2430	Table Feed Driving Gear Bearing, Large	4363	Rack Pinion Shaft Lever Spring
2431	Table Feed Driving Gear, Lower	4364	Rack Pinion Shaft Lever Pin
2432	Table Feed Driving Gear Nut	4365	Table Feed Stop Screw
2433	Table Feed Driving Gear Bearing Holder	4366	Table Feed Stop Screw Shoe
2434	Table Feed Driving Gear Bearing Cup	4367	Table Feed Stop Lock Screw
2435	Table Feed Driving Gear Bearing, Small	4368	Positive Table Stop Stud, Right
2436	Table Feed Intermediate Gear	4369	Positive Table Stop Stud, Left
2437	Table Feed Intermediate Gear Stud	4370	Table Oil Drain Sleeve
2438	Intermediate Gear Bearing	4371	Saddle Gear Opening Cover
2439	Table Feed Vertical Gear, Upper	4372	Saddle Cover
2440	Table Feed Vertical Gear, Lower	4373	Table Gib Screw, Right
		4374	Saddle or Clamp Bed Gib Screw

Table Feed Shaft and Table Feed Screw

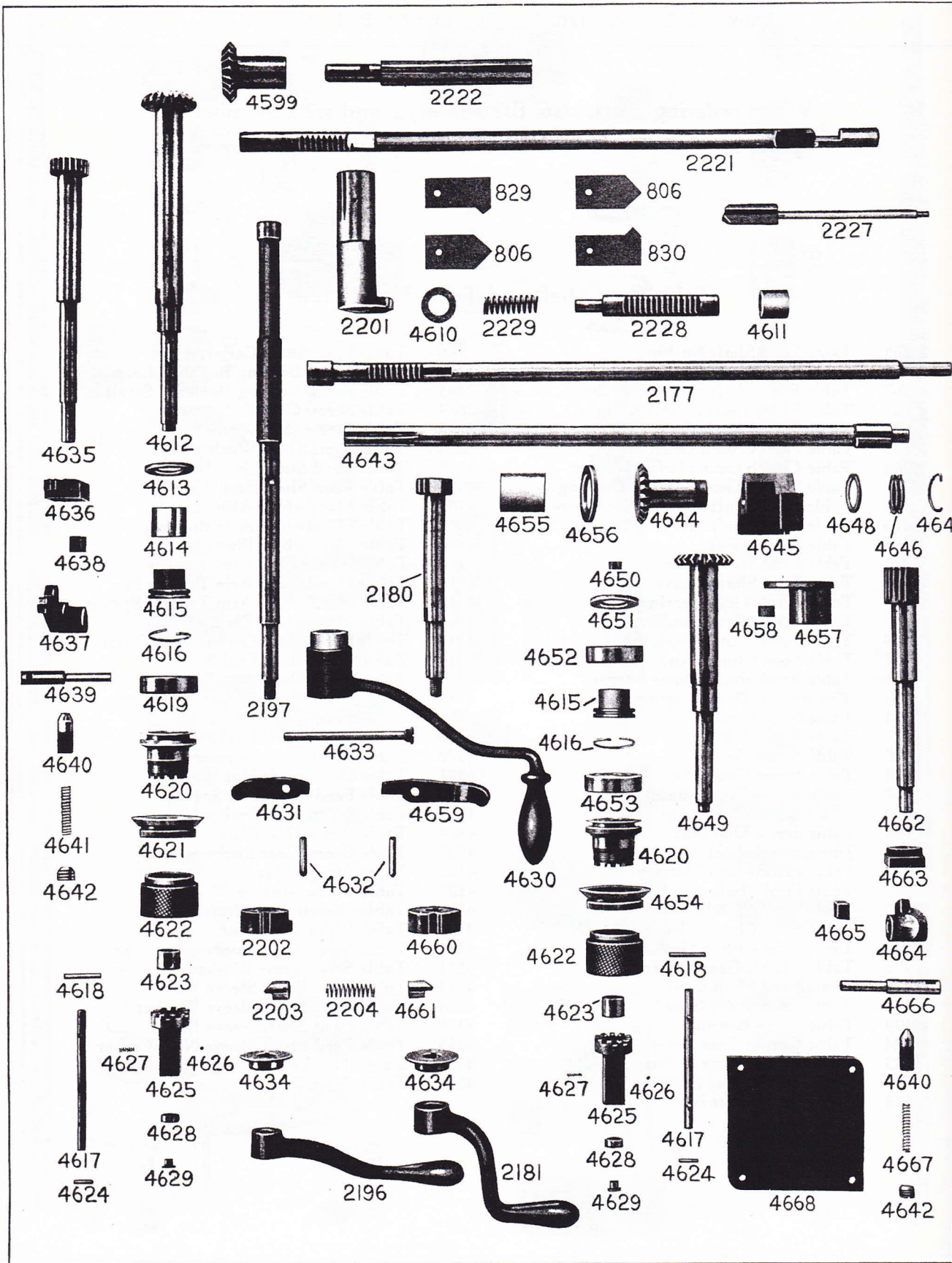


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Table Feed Shaft and Table Feed Screw

165	Table Feed Shaft Bushing	586	Table Feed Shaft Collar, Right
166	Table Screw Collar	2444	Table Screw Bearing Bushing, Large
167	Table Feed Shaft Sleeve Bushing	2445	Table Screw Bearing Bushing, Small
203	Table Screw Gear Bushing, Right	2877	Table Screw Gear Collar
204	Table Feed Clutch Gear, Left	2878	Table Screw Dial Washer
205	Table Feed Clutch Gear, Right	2882	Table Feed Shaft Washer
206	Table Clutch Gear (Left) Bushing	4305	Table Feed Shaft Gear Bushing
208	Table Clutch Gear (Right) Bushing	4306	Table Feed Shaft End Washer
209	Table Feed Shaft Collar, Left, Inner	4307	Table Handwheel Arm
210	Table Feed Shaft Sleeve	4308	Table Handwheel Arm Bushing
238	Table Screw Gear	4309	Table Handwheel Plunger
239	Table Feed Shaft Gear	4310	Table Handwheel Arm Trigger
264	Table Feed Shaft Sleeve	4311	Table Handwheel Arm Trigger Pin
357	Table Screw Gear Bearing	4312	Table Handwheel Arm Trigger Spring
358	Table Screw Gear Coupling	4313	Table Handwheel Clamp Nut
359	Table Feed Clutch Fork Shoe	4314	Table Feed Shaft Collar, Left, Outer
360	Table Feed Clutch Fork	4315	Table Feed Shaft Dial Nut
472	Table Feed Shaft Sleeve Bearing	4316	Table Feed Shaft Dial Washer
473	Table Screw Gear Bushing, Left	4317	Table Feed Shaft Dial
474	Table Feed Screw	4318	Table Feed Shaft Dial Back
475	Table Screw Nut	4319	Table Feed Shaft Dial Plate
476	Table Screw Gear	4320	Table Feed Shaft Washer
478	Table Screw Gear Nut	4321	Table Feed Shaft Nut Washer
481	Table Screw Gear Guard	4322	Table Feed Shaft Nut Spring
482	Table Screw Dial	4323	Table Screw Dial Back
483	Table Screw Dial Nut	4324	Table Screw Dial Plate
486	Table Handwheel	4325	Table Screw Gear Lockwasher
487	Table Handwheel Handle	4326	Table Screw Oiler
489	Table Feed Shaft	4327	Table Screw Washer
490	Table Feed Clutch	4328	Table Clutch Trip Shaft Shoe
491	Table Feed Clutch Sleeve	4329	Table Screw Gear Nut
494	Table Feed Clutch Gear Washer	4330	Table Screw Gear Lockwasher
496	Table Clutch Gear Bearing Cap	4331	Table Screw Gear Washer
497	Table Feed Shaft Gear	4332	Table Feed Shaft Sleeve Key
498	Table Feed Shaft Gear Washer	4333	Table Feed Shaft Sleeve Washer
499	Table Screw Bearing	4334	Table Feed Shaft Sleeve Nut
524	Table Clutch Gear Bearing, Right	4335	Table Feed Shaft Sleeve Nut Washer
525	Table Clutch Gear Bearing, Left	4336	Sleeve Nut Locking Spring
530	Table Screw Gear Bearing	4337	Table Screw Nut
533	Table Feed Shaft Nut		



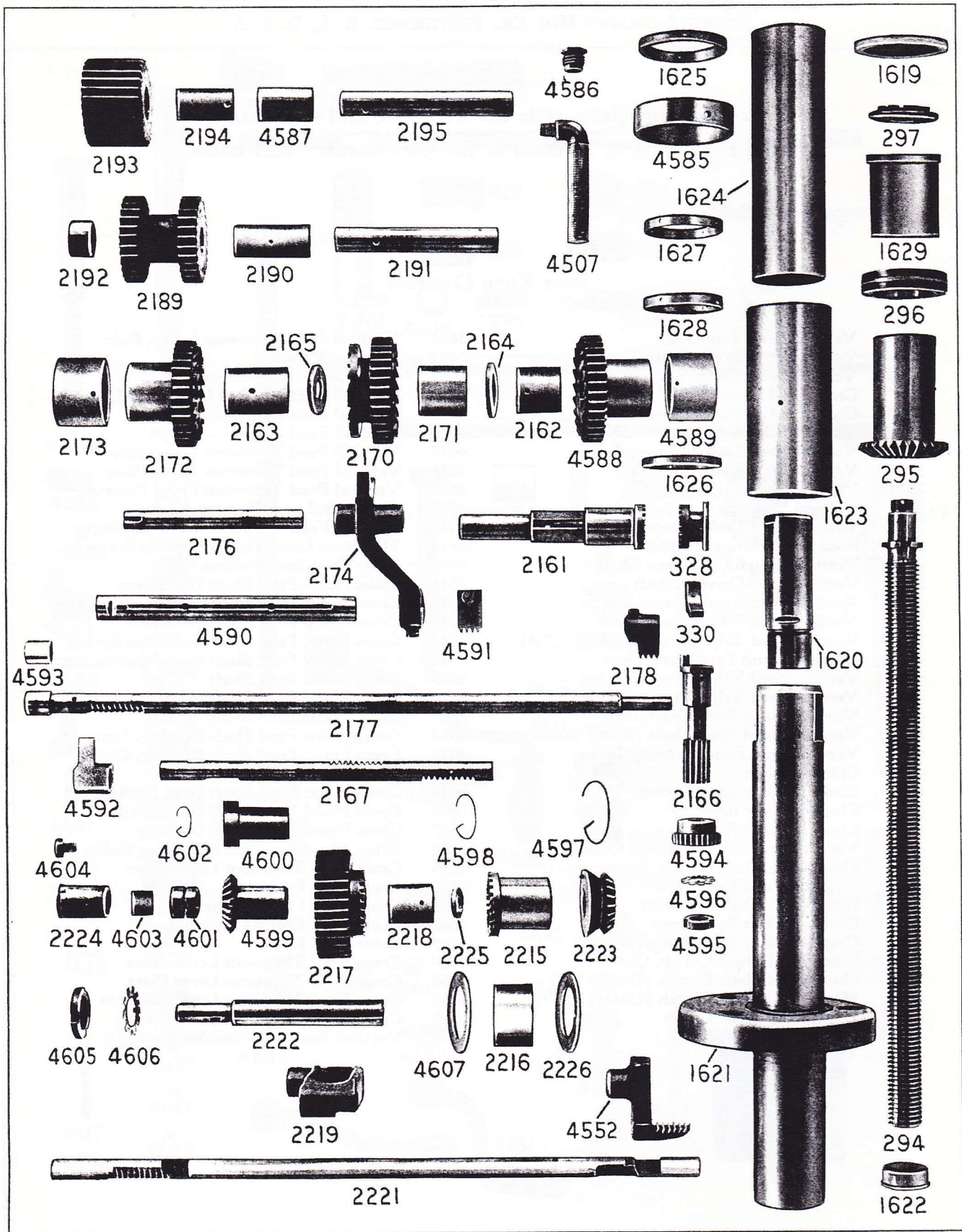


Rear Knee Controls

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Rear Knee Controls

806	Vertical Feed Trip Dog	4631	Vertical Feed Throwout Lever, Rear
829	Vertical Feed Safety Stop, Upper	4632	Feed Lock Pin
830	Vertical Feed Safety Stop, Lower	4633	Throwout Lever Fulcrum
2177	Cross Feed Shoe Shaft	4634	Cross & Vertical Feed Lock Guard
2180	Cross Feed Control Pinion, Left	4635	Vertical Feed Control Shaft
2181	Cross Feed Control Lever, Left	4636	Vertical Feed Latch
2196	Vertical Feed Control Lever, Left	4637	Vertical Feed Throwout Lever, Rear
2197	Vertical Feed Control Shaft	4638	Vertical Feed Throwout Lever Plate
2201	Vertical Feed Trip Pinion	4639	Vertical Feed Throwout Lever Fulcrum
2202	Vertical Feed Lock	4640	Throwout Lever Plunger
2203	Vertical Feed Lock Plunger	4641	Vertical Feed Throwout Lever Spring
2204	Feed Lock Plunger Spring	4642	Throwout Lever Plunger Spring Screw
2221	Vertical Clutch Gear Shoe Shaft	4643	Cross Feed Intermediate Shaft
2222	Vertical Feed Driving Shaft	4644	Cross Hand Feed Shaft Gear, Rear
2227	Vertical Feed Trip Plunger Rod	4645	Cross Hand Feed Shaft Gear Bearing
2228	Vertical Feed Trip Plunger Rack	4646	Cross Hand Feed Shaft Gear Nut
2229	Vertical Feed Trip Plunger Spring	4647	Cross Hand Feed Shaft Gear Nut Spring
4599	Vertical Hand Feed Shaft Gear	4648	Cross Hand Feed Shaft Gear Washer
4610	Vertical Feed Trip Plunger Gasket	4649	Cross Hand Feed Shaft
4611	Vertical Feed Trip Plunger Cap	4650	Cross Hand Feed Shaft Plug
4612	Vertical Hand Feed Shaft, Rear	4651	Cross Hand Feed Shaft Washer
4613	Vertical Hand Feed Shaft (Rear) Washer	4652	Cross Hand Feed Shaft Bearing, Inner
4614	Vertical Feed Shaft Bearing, Inner	4653	Cross Hand Feed Shaft Bearing, Outer
4615	Clutch Shifter	4654	Cross Hand Feed Shaft Dial
4616	Clutch Shifter Lock Spring	4655	Cross Hand Feed Shaft Gear Bushing
4617	Clutch Shifter Rod	4656	Cross Hand Feed Shaft Gear Washer
4618	Clutch Shifter Pin	4657	Cross Hand Feed Shaft Bushing
4619	Vertical Feed Shaft Bearing, Outer	4658	Cross Hand Feed Shaft Bushing Collar
4620	Hand Feed Shaft Clutch, Inner	4659	Cross Feed Throwout Lever, Rear
4621	Vertical Hand Feed Dial	4660	Cross Feed Lock
4622	Hand Feed Shaft Dial Nut	4661	Cross Feed Lock Plunger
4623	Clutch Shifter Rod Sleeve	4662	Cross Feed Control Pinion, Left
4624	Clutch Shifter Rod Sleeve Pin	4663	Cross Feed Latch
4625	Hand Feed Shaft Clutch, Outer	4664	Cross Feed Throwout Lever, Rear
4626	Hand Feed Shaft Clutch (Outer) Ball	4665	Cross Feed Throwout Lever Plate
4627	Hand Feed Shaft Clutch (Outer) Spring	4666	Cross Feed Throwout Lever Fulcrum
4628	Hand Feed Shaft Collar	4667	Cross Feed Throwout Lever Spring
4629	Hand Feed Shaft Pin	4668	Vertical Feed Trip Bracket Cover
4630	Adjusting Crank		



Rear Knee Mechanism

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

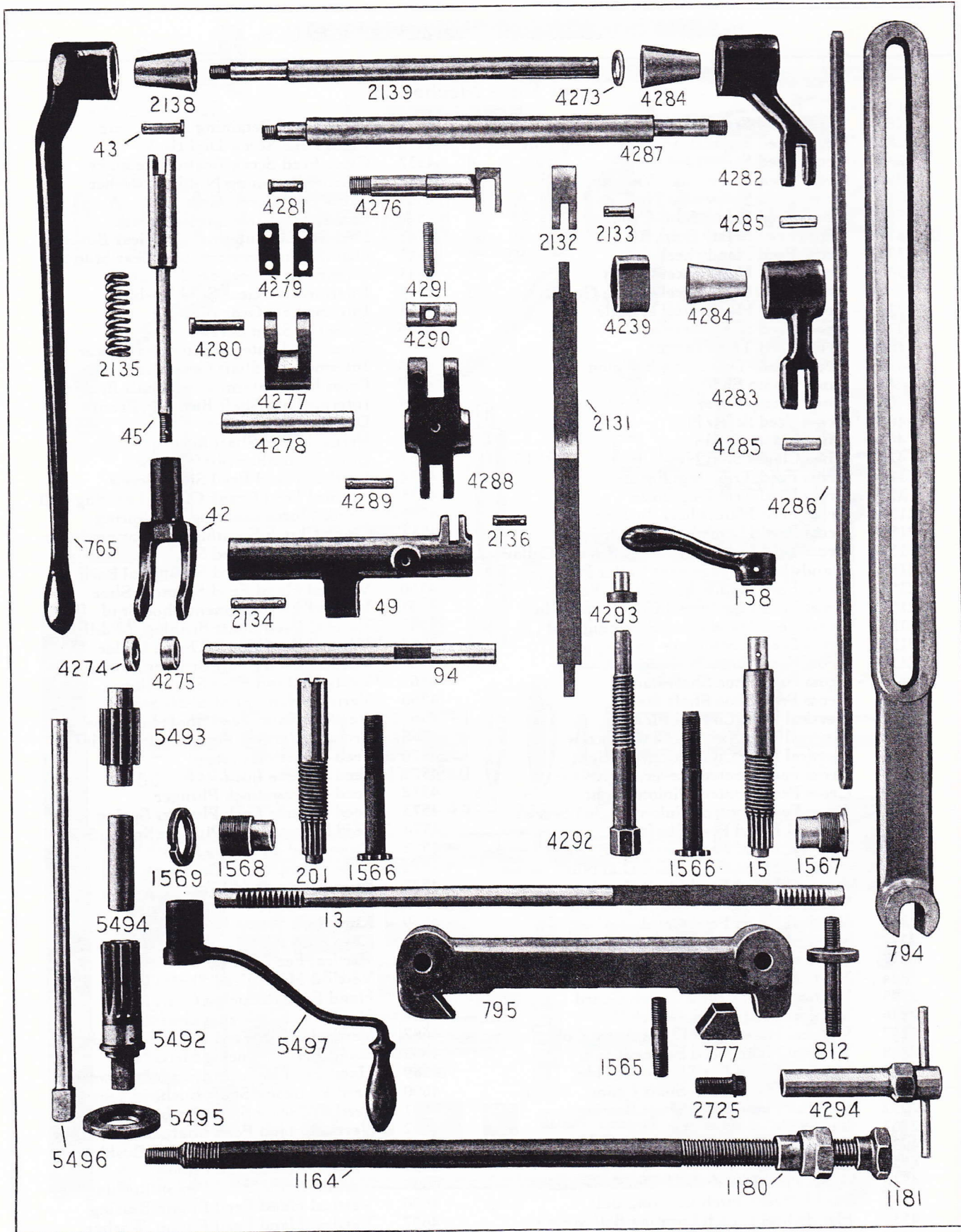
Rear Knee Mechanism

294	Knee Screw	2195	Cross & Vertical Driving Gear Shaft
295	Knee Screw Gear	2215	Vertical Feed Clutch
296	Knee Screw Gear Bearing	2216	Vertical Feed Clutch Bearing
297	Knee Screw Gear Nut	2217	Vertical Feed Clutch Gear
328	Cross Feed Clutch	2218	Vertical Feed Clutch Gear Bushing
330	Cross Feed Clutch Shoe	2219	Vertical Feed Clutch Gear Shoe
1619	Knee Screw Hole Cover	2221	Vertical Clutch Gear Shoe Shaft
1620	Knee Screw Nut	2222	Vertical Feed Driving Shaft
1621	Knee Screw Horn	2223	Vertical Feed Driving Shaft Pinion
1622	Knee Screw Horn Plug	2224	Vertical Feed Driving Shaft Bushing
1623	Knee Screw Horn Sleeve, Outer	2225	Vertical Feed Driving Shaft Washer
1624	Knee Screw Horn Sleeve, Inner	2226	Vertical Feed Driving Pinion Washer
1625	Knee Screw Horn Sleeve Ring	4507	Round Lubricant Strainer
1626	Knee Screw Horn Sleeve Ring, Lower	4552	Vertical Shoe Shaft Rack
1627	Knee Screw Horn Sleeve Ring, Inner	4585	Knee Bushing
1628	Knee Screw Horn Sleeve Ring, Upper	4586	Lubricant Pipe Check Nut
1629	Knee Screw Gear Bushing	4587	Feed Driving Gear Shaft Collar
2161	Cross Feed Driving Shaft	4588	Cross & Vertical Gear, Front
2162	Cross Feed Driving Shaft Bushing, Front	4589	Cross & Vertical Gear (Front) Bushing
2163	Cross Feed Driving Shaft Bushing, Rear	4590	Reverse Clamp Sleeve
2164	Cross Feed Driving Shaft Washer, Front	4591	Reverse Pinion Rack
2165	Cross Feed Driving Shaft Washer, Rear	4592	Cross Feed Rack Clamp
2166	Cross Feed Clutch Eccentric Pinion	4593	Cross Feed Shoe Shaft Bushing
2167	Cross Feed Clutch Pinion Shaft	4594	Cross Feed Clutch Pinion Gear
2170	Cross & Vertical Reverse Clutch	4595	Eccentric Pinion Nut
2171	Cross & Vertical Reverse Clutch Sleeve	4596	Eccentric Pinion Nut Lockwasher
2172	Cross & Vertical Gear, Rear	4597	Vertical Driving Shaft Pinion Spring
2173	Cross & Vertical Gear (Rear) Bushing	4598	Vertical Feed Shaft Washer Lock Spring
2174	Cross & Vertical Reverse Clutch Shoe	4599	Vertical Hand Shaft Gear
2176	Reverse Clutch Shoe Guide Shaft	4600	Vertical Feed Driving Shaft Spacer
2177	Cross Feed Shoe Shaft	4601	Vertical Feed Driving Shaft Collar
2178	Cross Feed Shoe Shaft Rack	4602	Vertical Driving Shaft Collar Spring
2189	Cross & Vertical Reverse Gear	4603	Vertical Feed Driving Shaft Bearing
2190	Cross & Vertical Reverse Gear Bushing	4604	Vertical Feed Driving Shaft Screw
2191	Cross & Vertical Reverse Gear Shaft	4605	Vertical Feed Driving Shaft Nut
2192	Cross & Vertical Reverse Gear Spacer	4606	Vertical Feed Driving Shaft Lockwasher
2193	Cross & Vertical Driving Gear	4607	Vertical Feed Clutch Washer
2194	Cross & Vertical Driving Gear Bushing		



## Front Knee Mechanism

280	Cross Feed Screw	4535	Handwheel Retaining Nut Spring
281	Cross Feed Screw Bearing Retaining Nut	4536	Cross Feed Screw Dial Back
282	Cross Feed Screw Dial	4537	Cross Feed Screw Bearing Retainer
283	Cross Feed Screw Dial Washer	4538	Bearing Retaining Nut Lockwasher
284	Cross Feed Screw Dial Nut	4539	Cross Feed Screw Gear
314	Cross Feed Safety Stop, Front	4540	Dial Bracket Intermediate Gear
317	Cross Feed Safety Stop, Rear	4541	Dial Bracket Intermediate Gear Bushing
334	Cross Feed Handwheel	4542	Dial Bracket Intermediate Gear Stud
335	Cross Feed Handwheel Clutch	4543	Intermediate Gear Stud Washer
336	Cross Feed Handwheel Clutch Guard	4544	Intermediate Gear Stud Bushing
370	Cross Feed Handwheel Handle	4545	Intermediate Gear Bushing
378	Cross Feed Screw Bearing	4546	Knee Oil Sight Screw
406	Cross Feed Trip Plunger	4547	Cross Feed Intermediate Shaft Gear
408	Cross Feed Trip Plunger Pinion	4548	Intermediate Shaft Gear Bushing
443	Knee Clamp Shaft	4549	Cross Feed Intermediate Shaft Bushing
461	Knee Clamp Lever	4550	Intermediate Shaft Bushing, Front
465	Cross Feed Screw Nut	4551	Dial Bracket Cover
469	Knee Clamp Stud	4552	Vertical Shoe Shaft Rack
470	Knee Clamp Stud Nut	4553	Cross Feed Shoe Shaft Screw
511	Cross Feed Trip Dog, Front	4554	Vertical Hand Feed Shaft Screw
512	Cross Feed Trip Dog, Rear	4555	Vertical Feed Crank Clutch Locating Ball
2150	Cross Feed Handwheel Bushing	4556	Crank Clutch Locating Ball Spring
2151	Cross Feed Handwheel Clutch Rod	4557	Crank Clutch Locating Ball Spring Screw
2152	Cross Feed Handwheel Engagement Collar	4558	Vertical Hand Feed Shaft Dial Washer
2153	Handwheel Engagement Collar Pin	4559	Vertical Hand Feed Shaft Dial Back
2154	Cross Feed Handwheel Clutch Fork	4560	Vertical Hand Feed Segment Shoe
2155	Cross Feed Handwheel Clutch Fork Pin	4561	Vertical Feed Segment Shoe Stud
2157	Cross Feed Handwheel Retaining Nut	4562	Vertical Feed Shaft Bushing, Middle
2158	Cross Feed Screw Plate	4563	Vertical Feed Shaft Thrust Collar
2159	Cross Feed Screw Bushing	4564	Vertical Feed Shaft Bushing, Inner
2178	Cross Feed Shoe Shaft Rack	4565	Vertical Hand Feed Shaft Sleeve
2179	Cross Feed Shoe Shaft Sleeve	4566	Vertical Hand Feed Shaft Stop
2182	Vertical Feed Control Pinion	4567	Vertical Hand Feed Shaft Stop Spring
2183	Vertical Feed Control Pinion Screw	4568	Cross & Vertical Reverse Clutch Pinion
2184	Vertical Feed Control Lever, Right	4570	Feed Direction Plate
2198	Cross Feed Control Lever, Right	4571	Feed Reverse Lock
2199	Cross Feed Control Pinion, Right	4572	Feed Reverse Lock Plunger
2200	Cross Feed Control Pinion (Right) Screw	4573	Feed Reverse Lock Plunger Spring
2235	Vertical Hand Feed Shaft	4574	Feed Reverse Lock Plunger Spring Screw
2236	Vertical Hand Feed Shaft Dial	4575	Cross Feed Trip Dog Stop
2237	Vertical Hand Feed Shaft Dial Nut	4576	Knee Clamp Shaft Bearing
2238	Vertical Hand Feed Shaft Crank	4577	Knee Clamp Stud Washer
2240	Vertical Feed Shaft Bushing, Outer	4578	Knee Gib Screw
2241	Vertical Hand Feed Crank Bushing	4579	Knee Stop Screw
2242	Vertical Hand Feed Crank Handle	4580	Knee Stop Pin
2243	Vertical Hand Feed Shaft End Washer	4581	Vertical Feed Pinion Oil Drip
2244	Vertical Feed Crank Clutch	4582	Vertical Hand Feed Shaft Gear
2245	Vertical Feed Crank Clutch Guard	4583	Hand Feed Reducing Gear, Large
2246	Vertical Feed Crank Clutch Rod	4584	Hand Feed Reducing Gear, Small
2247	Vertical Hand Feed Engagement Collar	4687	Vertical Hand Feed Reducing Shaft
2248	Vertical Hand Feed Segment	4688	Hand Feed Reducing Shaft Nut
2249	Vertical Hand Feed Segment Plug	4689	Hand Feed Reducing Shaft Lockwasher
2250	Vertical Hand Feed Shaft Pinion	4690	Feed Reducing Shaft Bushing, Large
2252	Vertical Hand Feed Shaft Bearing	4691	Feed Reducing Shaft Bushing, Small
2865	Knee Gib	4692	Vertical Hand Feed Shaft Extension
4338	Cross Feed Screw Nut Lock Nut	4693	Hand Feed Shaft Extension Bushing
4529	Knee Oil Guard	4694	Vertical Hand Feed Pinion
4530	Cross Feed Handwheel Clutch Retainer	4695	Vertical Hand Feed Pinion Bushing
4531	Handwheel Clutch Locating Ball	4696	Vertical Hand Feed Pinion Bearing
4532	Handwheel Clutch Locating Ball Spring	4697	Vertical Hand Feed Pinion Washer
4533	Clutch Locating Ball Spring Screw	4698	Cross Feed Trip Bracket Split Bushing
4534	Cross Feed Handwheel Clutch, Inner	4699	Cross Feed Trip Bracket Cap



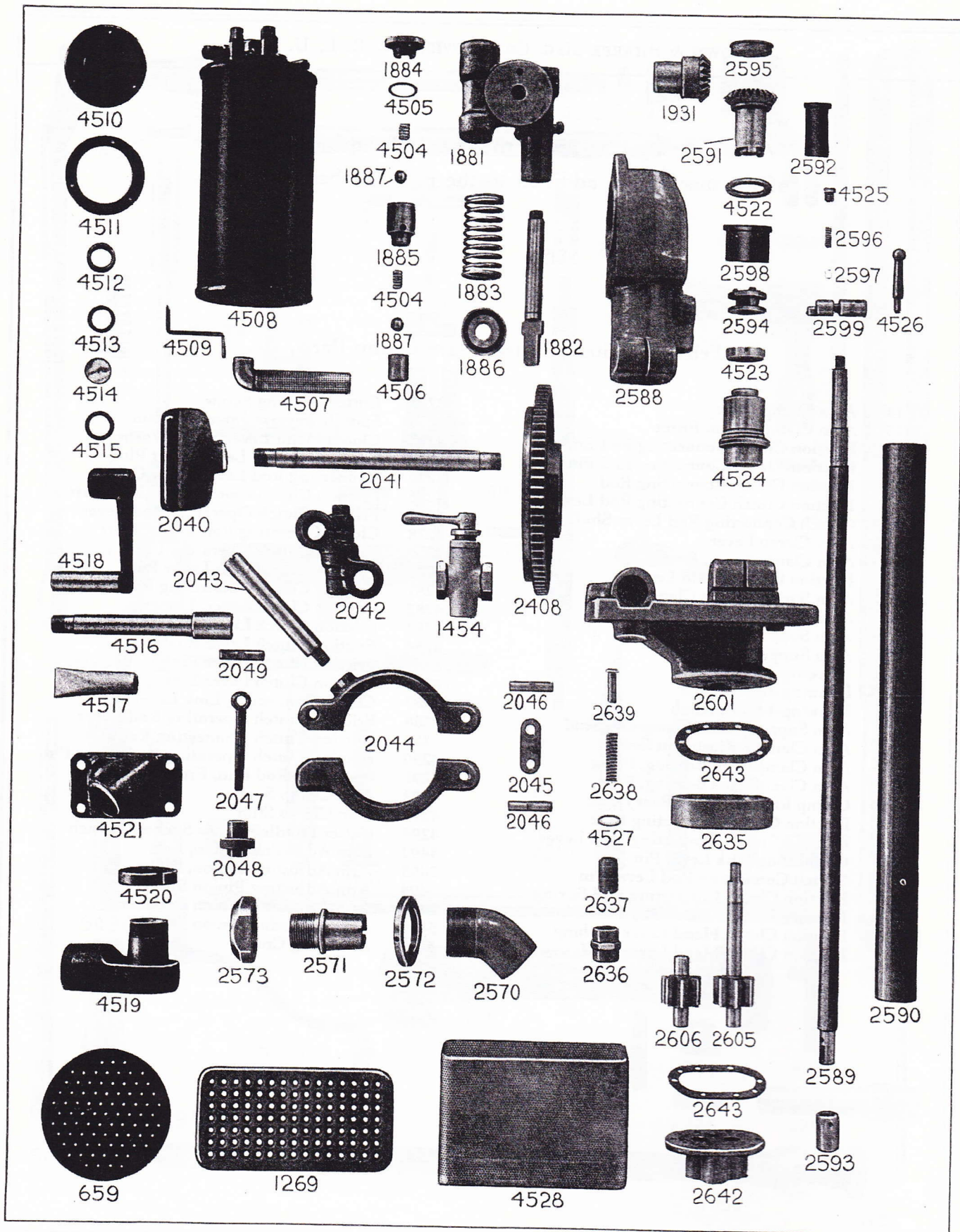
Friction Clutch Control, Arm Clamp Parts, etc.

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

Friction Clutch Control, Arm Clamp Parts, etc.

13	Arm Clamp Rack	2725	Cutter Holding Screw
15	Arm Clamp Screw, Front	4239	Spindle Reverse Interlock Cam
42	Friction Clutch Connecting Rod End	4273	Clutch Hand Lever Shaft Washer
43	Friction Clutch Connecting Rod Pin	4274	Connecting Rod Lever Shaft Plug
45	Friction Clutch Connecting Rod	4275	Connecting Rod Lever Shaft Collar
49	Friction Clutch Connecting Rod Lever	4276	Friction Clutch Connecting Link Shaft
94	Clutch Connecting Rod Lever Shaft	4277	Friction Clutch Operating Rod Lever
158	Arm Clamp Lever	4278	Clutch Operating Rod Lever Shaft
201	Arm Clamp Screw, Rear	4279	Friction Clutch Operating Link
765	Friction Clutch Hand Lever	4280	Friction Clutch Link Lever Pin
777	Arm Support Knee Clamp Gib	4281	Friction Clutch Connecting Rod Pin
794	Arm Support	4282	Friction Clutch Lever, Upper
795	Arm Support Knee Clamp	4283	Friction Clutch Lever, Lower
812	Arm Support Stud	4284	Friction Clutch Lever Bushing
1164	Drawing-In Bolt	4285	Friction Clutch Lever Pin
1180	Drawing-In Bolt Nut	4286	Friction Clutch Lever Link
1181	Drawing-In Bolt Knob	4287	Clutch Connecting Link Lever Shaft
1565	Arm Support Knee Clamp Gib Stud	4288	Friction Clutch Operating Rod Lever
1566	Arm Clamp Adjustment Screw	4289	Friction Clutch Connecting Rod Pin
1567	Arm Clamp Rack Bearing, Front	4290	Friction Clutch Operating Rod Lever Pin
1568	Arm Clamp Rack Bearing, Rear	4291	Operating Rod End, Front
1569	Clamp Rack Bearing (Rear) Nut	4292	Arm Clamp Screw
2131	Friction Clutch Connecting Link	4293	Arm Clamp Stud
2132	Friction Clutch Connecting Link Lever	4294	Cutter Holding Screw Socket Wrench
2133	Connecting Link Lever Pin	5492	Arm Adjusting Pinion, Left
2134	Clutch Connecting Rod Lever Pin	5493	Arm Adjusting Pinion, Right
2135	Friction Clutch Connecting Rod Spring	5494	Arm Adjusting Pinion Spacer
2136	Friction Clutch Connecting Link Pin	5495	Arm Adjusting Pinion Retainer
2138	Friction Clutch Hand Lever Bushing	5496	Arm Adjusting Pinion Shaft
2139	Friction Clutch Hand Lever Shaft	5497	Adjusting Crank



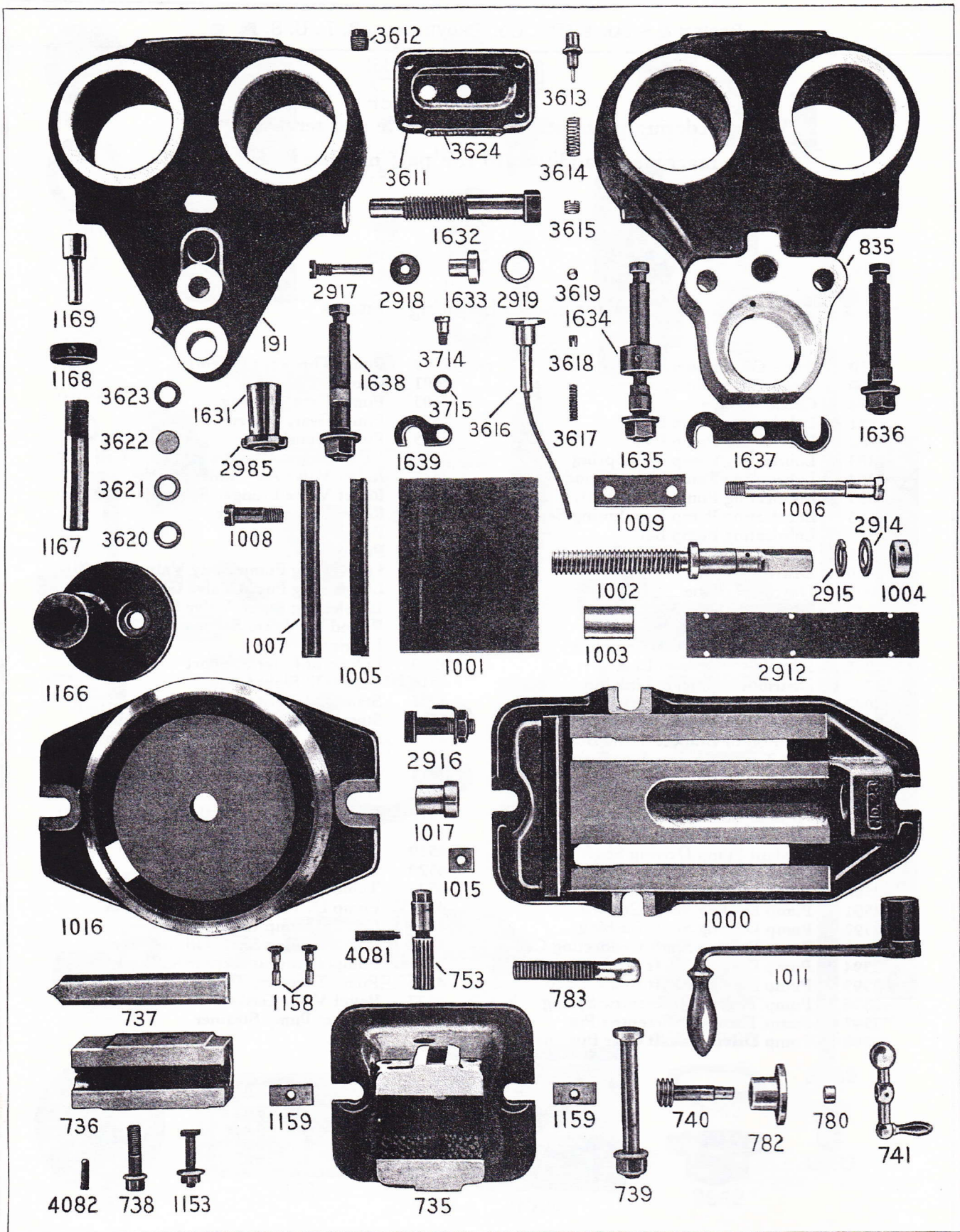


Coolant and Lubricating Systems

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Coolant and Lubricating Systems

659	Stand Oil Strainer, Front	2599	Pump Throwout Eccentric
1269	Stand Oil Strainer, Side	2601	Coolant Pump Body
1454	Coolant Valve	2605	Pump Gear, Driving
1881	Lubricating Pump Body	2606	Pump Gear, Driven
1882	Lubricating Pump Ram	2635	Pump Housing
1883	Lubricating Pump Ram Spring	2636	Relief Valve Adjustment Screw Cap
1884	Lubricating Pump Valve Gland	2637	Relief Valve Adjustment Screw
1885	Lubricating Pump Valve Seat, Upper	2638	Relief Valve Plunger Spring
1886	Lubricating Pump Ram Spring Seat	2639	Relief Valve Plunger
1887	Lubricating Pump Ball	2642	Pump Cap
1931	Coolant Pump Driving Gear	2643	Pump Gasket
2040	Distributor	4504	Lubricating Pump Body Valve Spring
2041	Distributor Pipe	4505	Lubricating Pump Valve Gland Washer
2042	Distributor Pipe Swivel	4506	Lubricating Pump Valve Seat, Lower
2043	Distributor Stud	4507	Round Lubricant Strainer
2044	Distributor Bracket, Complete	4508	Lubricant Filter
2045	Distributor Bracket Link	4509	Lubricant Filter Support
2046	Distributor Bracket Link Pin	4510	Stand Oil Sight Gage
2047	Distributor Bracket Swing Bolt	4511	Stand Oil Sight Gage Gasket
2048	Distributor Bracket Swing Bolt Nut	4512	Stand Oil Sight Gage Glass Holder
2049	Distributor Bracket Swing Bolt Pin	4513	Stand Oil Sight Gage Washer, Fibre
2408	Fast Travel Intermediate Gear	4514	Stand Oil Sight Gage Glass
2570	Flexible Tube Swivel	4515	Stand Oil Sight Gage Washer, Cork
2571	Flexible Tube Swivel Sleeve	4516	Distributor Pipe
2572	Flexible Tube Swivel Nut	4517	Distributor Pipe Nozzle
2573	Flexible Tube Swivel Adjustment Nut	4518	Distributor Pipe Bracket
2588	Coolant Pump Driving Shaft Bracket	4519	Flexible Tube Swivel
2589	Pump Driving Shaft	4520	Flexible Tube Swivel Nut
2590	Pump Driving Shaft Guard	4521	Table Drain Bracket
2591	Pump Driving Shaft Gear	4522	Pump Driving Shaft Gear Washer
2592	Pump Driving Shaft Bushing	4523	Coolant Pump Oil Slinger
2593	Pump Driving Shaft Connecting Collar	4524	Pump Driving Shaft Oil Retainer
2594	Pump Driving Shaft Clutch	4525	Pump Throwout Eccentric Screw
2595	Pump Driving Shaft Bracket Cap	4526	Pump Throwout Eccentric Lever
2596	Pump Throwout Eccentric Spring	4527	Relief Valve Gasket
2597	Pump Throwout Eccentric Pin	4528	Coolant Pump Strainer
2598	Pump Driving Shaft Gear Bushing		



Footstock, Vises, Center Rest, Arbor Yokes

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

Footstock, Vises, Center Rest, Arbor Yokes

* 191	Arbor Yoke, Outer	1632	Arbor Yoke Clamp Screw
* 735	Footstock Base	1633	Arbor Yoke Clamp Stud
736	Footstock Adjustable Block	1634	Arm Support Bolt Spacer Collar
737	Footstock Center	1635	Arm Support Bolt, Long
738	Footstock Center Clamp Bolt	1636	Arm Support Bolt, Short
739	Footstock Adjustable Block Clamp Bolt	1637	Arm Support Clamp Plate
740	Footstock Center Adjustment Worm	1638	Arm Support Clamp Stud
741	Footstock Center Adjustment Handle	1639	Arm Support Clamp Stud Plate
753	Footstock Pinion	2912	Vise Bed Guard
780	Center Adjustment Worm Bushing	2914	Vise Screw Thrust Washer, Small
782	Center Adjustment Worm Bearing	2915	Vise Screw Thrust Washer, Large
783	Footstock Rack Bolt	2916	Vise Swivel Base Clamp Bolt
* 835	Arbor Yoke, Inner	2917	Arbor Yoke Clamp Washer (Small) Screw
1000	Vise Bed	2918	Arbor Yoke Clamp Washer, Small
1001	Vise Slide	2919	Arbor Yoke Clamp Washer, Large
1002	Vise Screw	2985	Arbor Bushing Nut (State for Which Yoke)
1003	Vise Screw Nut	3611	Arbor Yoke Oil Well Cover
1004	Vise Screw Collar	3612	Arbor Yoke Oil Well Cover Plug
1005	Vise Jaw, Loose	3613	Arbor Yoke Oil Plunger
1006	Vise Jaw (Loose) Screw	3614	Arbor Yoke Oil Plunger Spring
1007	Vise Jaw, Fixed	3615	Arbor Yoke Check Valve
1008	Vise Jaw (Fixed) Screw	3616	Arbor Yoke Check Valve Body
1009	Vise Strap	3617	Arbor Yoke Check Valve Spring
1011	Vise Crank	3618	Arbor Yoke Check Valve Plunger
1015	Vise Swivel Base Tongue	3619	Arbor Yoke Check Valve Ball
1016	Vise Swivel Base	3620	Arbor Yoke Glass Disk Holder
1017	Vise Swivel Base Pin	3621	Arbor Yoke Washer, Fibre
1153	Footstock Adjustable Block Guide Bolt	3622	Arbor Yoke Glass Disk
1158	Footstock Taper Pin	3623	Arbor Yoke Washer, Cork
1159	Footstock Base Tongue	3624	Arbor Yoke Oiling Instruction Plate
1166	Center Rest Stand	3714	Clamp Plate Fulcrum
1167	Center Rest Shell	3715	Clamp Plate Fulcrum Washer
1168	Center Rest Shell Nut	4081	Footstock Pinion Screw
1169	Center Rest Piston	4082	Footstock Adjustable Block Screw
1631	Arbor Bushing (State for Which Yoke)		

\*Serial number of machine stamped on this part.



**Headstock**  
 Universal Spiral Index Centers

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Headstock

#### Universal Spiral Index Centers

* 690	Spiral Head Swivel	731	Intermediate Gear Plate
691	Spiral Head Base	732	Headstock Center
692	Spiral Head Spindle	733	Work Driver
693	Spiral Head Spindle Nut	743	Spindle Thread Guard
695	Spindle Bushing	744	Intermediate Gear Nut
696	Index Wormwheel	1155	Indexing Center
697	Index Wormwheel Nut	2052	Spiral Gear Bracket
706	Spindle Stop Pin Pinion	2055	Reverse Gear Washer
707	Spindle Stop Pin	2057	Spindle Stop Pin Pinion Handle
711	Index Plate, Large	2058	Spindle Clamp Screw
712	Spiral Head Base Tongue	2059	Spindle Clamp Screw Handle
721	Spiral Gear, Driving	2060	Spindle Clamp Screw Plug
722	Spiral Gear Shaft	2061	Spindle Washer
723	Spiral Gear Shaft Nut	2062	Indexing Center Collar
728	Spiral Head Change Gear (State No. of Teeth)	2063	Indexing Center Adjustment Collar
729	Reverse Gear	2064	Intermediate Gear Bushing
730	Reverse Gear Plate	2065	Intermediate Gear Stud Washer
		2066	Intermediate & Reverse Gear Plate Screw

(Continued on next page)

\*Serial number of machine stamped on this part.

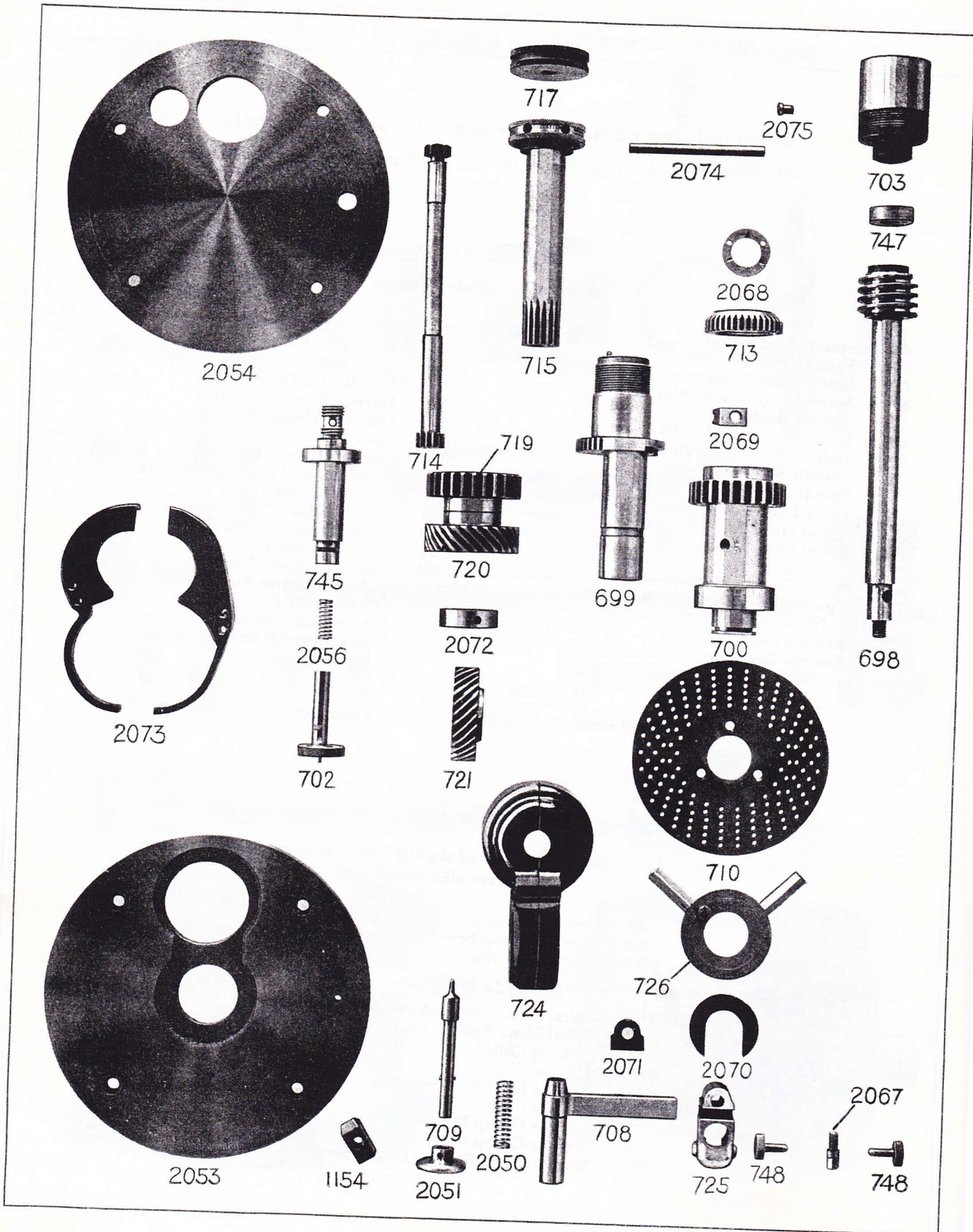
### Headstocks Having Spindle Mounted on Antifriction Bearings

On these headstocks the Spindle (692) is of slightly different shape and the following parts are eliminated.

695	Spindle Bushing
2060	Spindle Clamp Screw Plug
2061	Spindle Washer

Also, the following additional parts are required.

3759	Spiral Head Spindle Bearing, Front
3760	Spiral Head Spindle Bearing, Rear
3761	Spacing Collar
3762	Oil Seal Ring
3763	Spindle Rear Washer
3764	Spindle Clamp Bushing
3765	Spindle Clamp Bushing Pin
3766	Spindle Clamp Shoe
3767	Spindle Front Bearing Dust Guard



Headstock (continued)  
 Universal Spiral Index Centers

When ordering parts, state the size, style and serial number of the machine in addition to the part number and name\*.

### Headstock (continued)

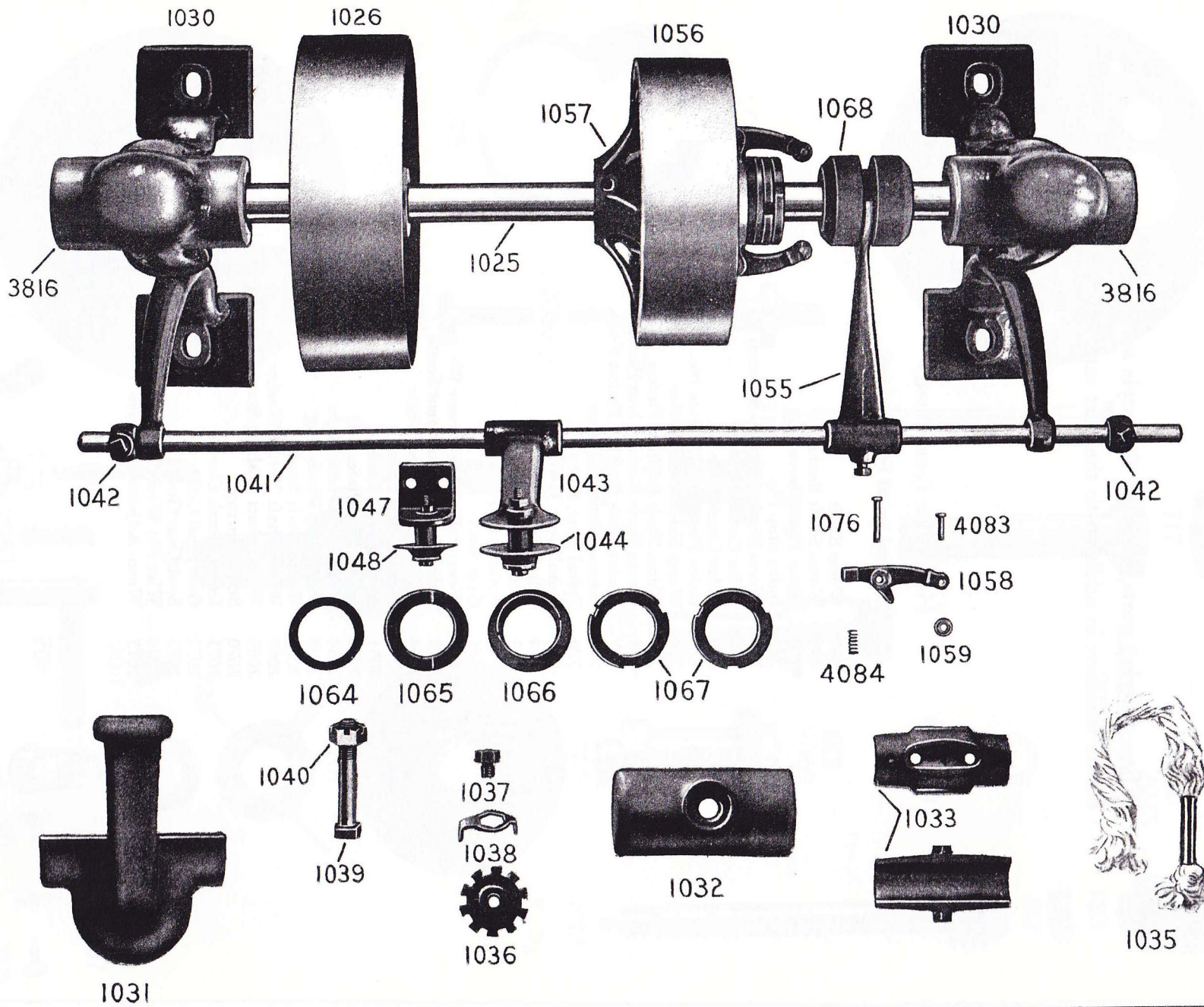
#### Universal Spiral Index Centers

698	Worm Shaft
699	Worm Shaft Bushing
700	Index Plate Sleeve
702	Index Stop Pin
703	Worm Shaft Adjustment Screw
708	Index Crank
709	Index Crank Piston
710	Index Plate, Small (State No. of Holes)
713	Worm Shaft Bushing Nut
714	Worm Shaft Bushing Pinion
715	Worm Shaft Bushing Nut Pinion
717	Worm Shaft Bushing Pinion Knob
719	Intermediate Stud Gear
720	Spiral Gear, Driven
721	Spiral Gear, Driving
724	Spiral Gear Guard
725	Index Crank Collar
726	Index Sector
745	Gear Stud
747	Worm Adjustment Screw Washer
748	Index Crank Adjustment Screw
1154	Spiral Head Index Finger
2050	Index Crank Spring
2051	Index Crank Knob
2053	Swivel Side Plate, Left
2054	Swivel Side Plate, Right
2056	Index Stop Pin Spring
2067	Worm Shaft Stud
2068	Worm Shaft Thrust Washer
2069	Worm Shaft Bushing Stop
2070	Sector Spring
2071	Index Crank Clamp
2072	Gear Stud Collar
2073	Spur Gear Guard
2074	Wire Pin Wrench
2075	Worm Adjustment Screw Clamp Shoe

\*Serial number of machine stamped on Spiral Head Swivel.



Countershaft



When ordering parts, state the size, style and serial number of the machine in addition to the part number and name.

### Countershaft

#### Overhead Driven Machines

1025	Countershaft
1026	Standard Tight Pulley
1030	Countershaft Hanger
1031	Hanger Drip
1032	Drip Cover
1033	Drip Box, Complete
1035	Drip Wick
1036	Drip Cover Washer
1037	Drip Cover Washer Screw
1038	Drip Cover Washer Screw Lock
1039	Drip Bolt
1040	Drip Bolt Nut
1041	Shipper Rod
1042	Shipper Rod Stop
1043	Shipper Arm, Complete
1044	Shipper Arm Washer
1047	Shipper Bracket, Complete
1048	Shipper Bracket Washer
1055	Shipper Fork
1056	Friction Pulley
1057	Friction Pulley Back
1058	Friction Pulley Lever
1059	Friction Pulley Lever Roll
1064	Friction Pulley Spring Washer
1065	Friction Pulley Lever Washer
1066	Friction Pulley Washer
1067	Friction Pulley Nut
1068	Thimble
1076	Friction Pulley Lever Fulcrum
3816	Hanger Drip, Complete
4083	Friction Pulley Lever Roll Pin
4084	Friction Pulley Lever Spring