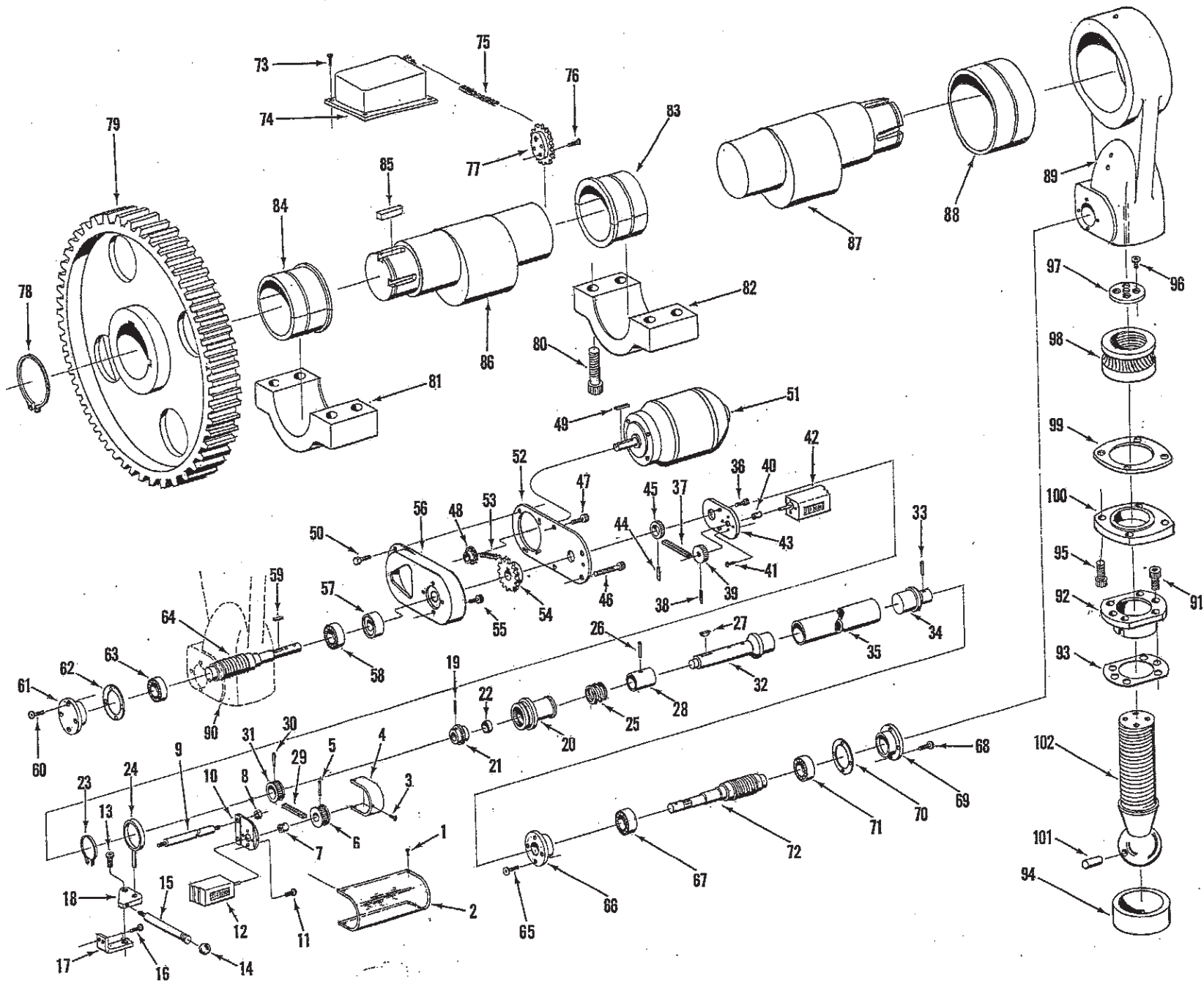


SEC. 4: PARTS LIST

SINCE THE REFERENCE OR CALL OUT NUMBERS ON THE FOLLOWING PARTS LIST ARE DUPLICATED ON OTHER PARTS LISTS, SPECIFY PART REQUIRED BY GIVING REFERENCE NUMBER AND FULL NAME FOLLOWED BY FORM AND PAGE NUMBER.

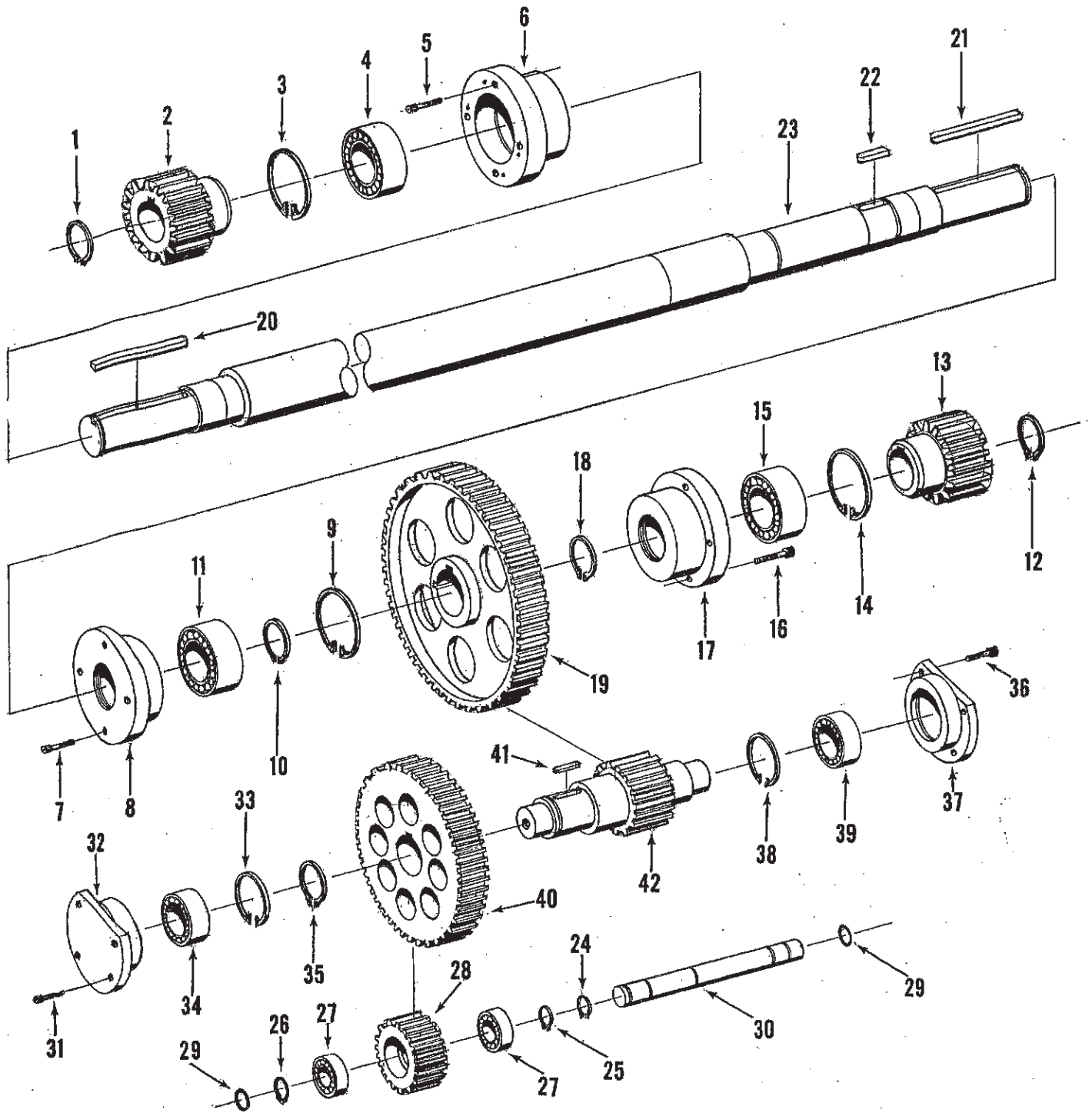
FRAME - RAM

1. Set Screw
2. Locknut
3. Retainer Rings
4. Retainer Ring Pin
5. Motor Mounting Bracket
6. Screws
7. Motor Support Bracket
8. Screws
9. Gear Box Cover
10. Screw
11. Gasket
12. Oil Level Sight
13. Screw
14. L.H. Gear Guard
15. R.H. Gear Guard
16. Screw
17. Round Nut
18. Clamp Bar
19. Spring
20. Frame
21. Screw
22. Pivot Block Retainer
23. Jam Nut
24. Set Screw
25. Screw
26. Adjusting Block
27. Pivot Block
28. Pivot Shoes
29. R.H. Outer Gib
30. Ram Liner
31. Gib Liner
32. Dowels
33. Gib Screws
34. L.H. Outer Gib



1. Screw
2. Plastic Guard
3. Screw
4. Pulley Enclosure
5. Roll Pin
6. R.H. Driven Pulley
7. Bushing
8. Support Rod Nut
9. Support Rod
10. R.H. Mounting Plate
11. Counter Screw
12. R.H. Counter
13. Screw
14. Knob
15. Disengaging Handle Rod
16. Screw
17. Disengaging Handle Bracket
18. Disengaging Handle Plate
19. Roll Pin
20. Coupling Sleeve
21. Coupling Gear
22. Bushing
23. Retainer Ring
24. Disengagement Ring
25. Spring
26. Roll Pin
27. Key
28. Spring Support
29. Timing Belt
30. Roll Pin
31. L.H. Driver Pulley
32. L.H. Trunnion
33. Roll Pin
34. R.H. Trunnion
35. Adjusting Shaft Connection Tube
36. Screw
37. Timing Belt
38. Roll Pin
39. L.H. Driven Pulley
40. Bushing
41. Counter Screw
42. L.H. Counter
43. L.H. Mounting Plate
44. Roll Pin
45. L.H. Driver Pulley
46. Screw
47. Screw
48. Driver Sprocket
49. Key
50. Motor Screw
51. Motor

52. Gear Box Cover
53. Chain
54. Driven Sprocket
55. Screw
56. Gear Box
57. L.H. Inboard Bearing Retainer
58. L.H. Inboard Bearing
59. Key
60. Screw
61. L.H. Outboard Bearing Retainer
62. Shim
63. L.H. Outboard Bearing
64. L.H. Worm
65. Screw
66. R.H. Inboard Bearing Retainer
67. R.H. Inboard Bearing
68. Screw
69. R.H. Outboard Bearing Retainer
70. Shim
71. R.H. Outboard Bearing
72. R.H. Worm
73. Screw
74. Limit Switch
75. Chain
76. Screw
77. Driver Sprocket
78. Retainer Ring
79. Bull Gear
80. Bearing Cap Screw
81. Outboard Bearing Cap
82. Inboard Bearing Cap
83. Inboard Bushing
84. Outboard Bushing
85. Key
86. L.H. Eccentric Shaft
87. R.H. Eccentric Shaft
88. Connection Bushing
89. R.H. Connection
90. L.H. Connection
91. Ball Cover Screw
92. Ball Cover
93. Shim
94. Ball Seat
95. Connection Cover Screw
96. Stop Plate Screw
97. Stop Plate
98. Adjusting Nut
99. Shim
100. Connection Cover
101. Dowel
102. Ball Screw

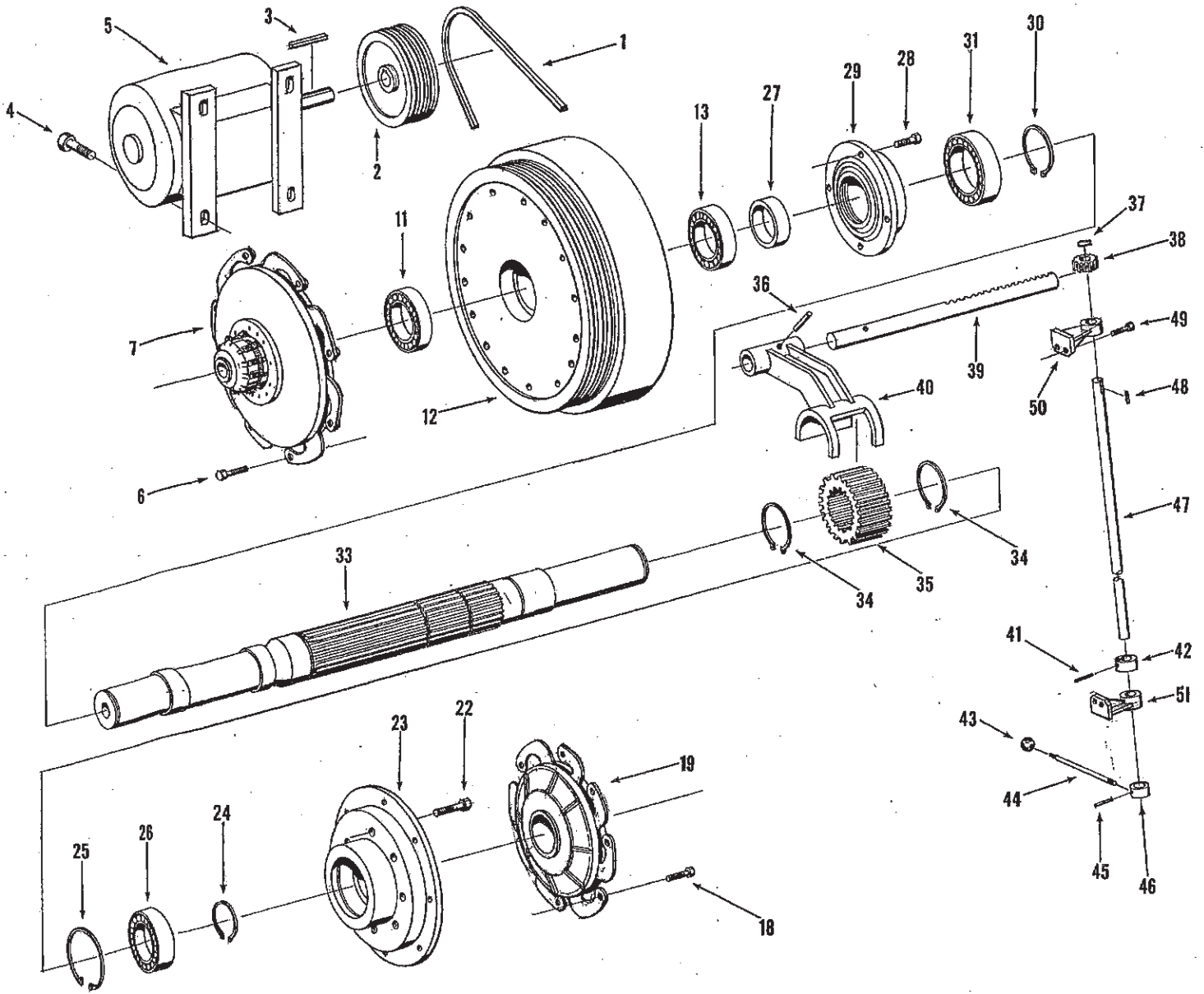


INTERMEDIATE - LOW SPEED - IDLER SHAFTS

1. Retainer Ring
2. L.H. Drive Pinion
3. L.H. Bearing Retainer Ring
4. L.H. Bearing, Int. Shaft
5. Screw
6. L.H. Bearing Cartridge, Int. Shaft
7. Screw
8. Inner R.H. Bearing Cartridge, Int. Shaft
9. Retainer Ring
10. Retainer Ring
11. Inner R.H. Bearing, Int. Shaft
12. Retainer Ring
13. R.H. Drive Pinion
14. R.H. Bearing Retainer Ring
15. R.H. Bearing, Int. Shaft
16. Screw
17. R.H. Bearing Cartridge, Int. Shaft
18. Retainer Ring
19. Intermediate Gear
20. L.H. Drive Pinion Key
21. R.H. Drive Pinion Key
22. Intermediate Gear Key
23. Intermediate Shaft

TWO SPEED MACHINES ONLY

24. Retainer Ring, Idler Shaft
25. Retainer Ring, Bearing
26. Retainer Ring, Bearing
27. Bearings, Idler Gear
28. Idler Gear
29. "O" Rings
30. Idler Shaft
31. Screw
32. L.H. Bearing Cartridge, Low Speed Shaft
33. L.H. Bearing Retainer Ring
34. L.H. Bearing, Low Speed Shaft
35. Retainer Ring
36. Screw
37. R.H. Bearing Cartridge, Low Speed Shaft
38. R.H. Bearing Retainer Ring
39. R.H. Bearing, Low Speed Shaft
40. Reducer Gear
41. Reducer Gear Key
42. Low Speed Gear Shaft

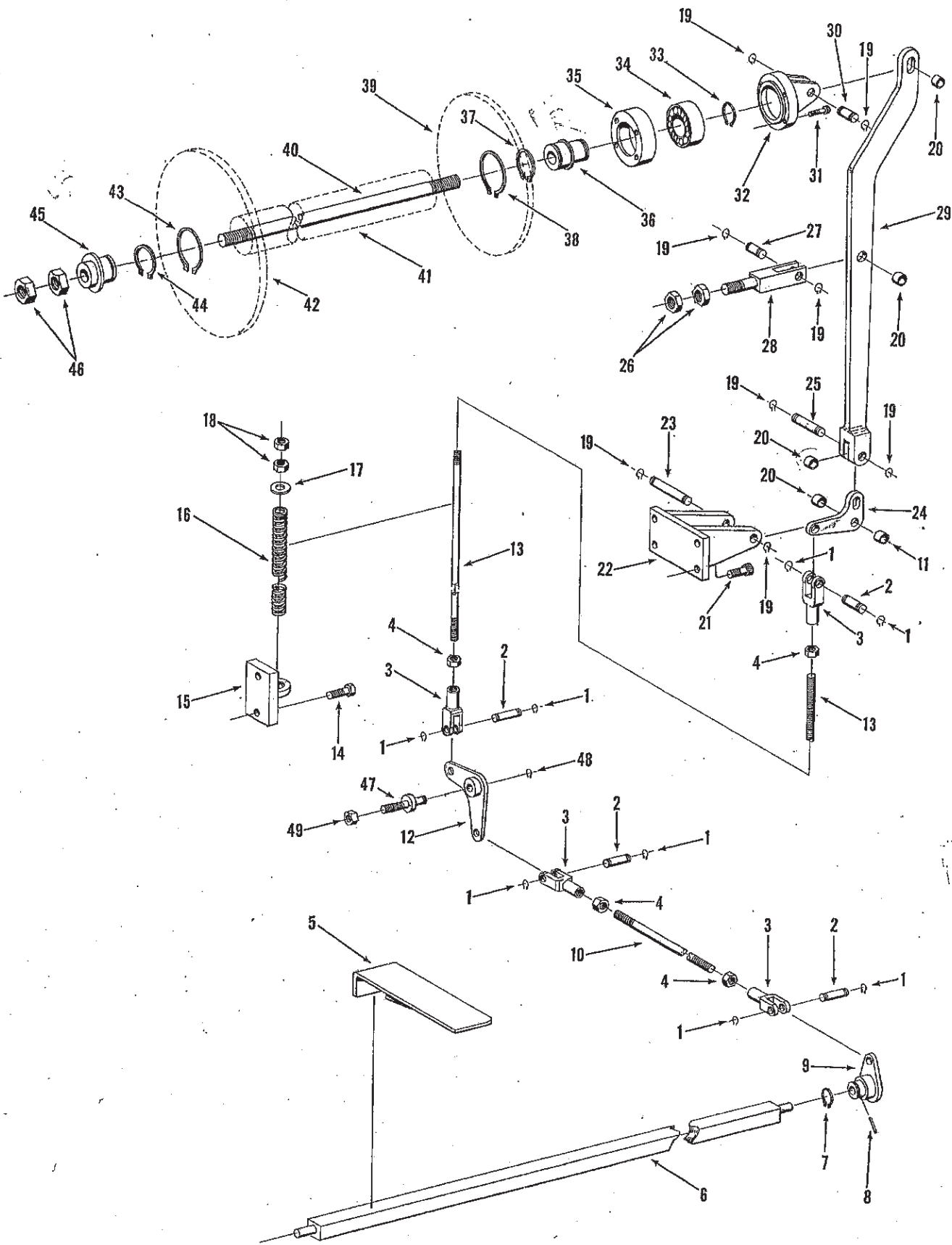


DRIVE - MECHANICAL CLUTCH & BRAKE

1. Drive Belt
2. Drive Sheave
3. Key
4. Screw
5. Drive Motor
6. Screw
7. Mechanical Clutch (See parts list on page 22)
11. L.H. Flywheel Bearing
12. Flywheel
13. R.H. Flywheel Bearing
18. Screw
19. Mechanical Brake (See parts list on page 22)
22. Screw
23. Brake
24. Retainer Ring
25. Retainer Ring
26. R.H. Bearing, Driveshaft
27. Collar, Driveshaft
28. Screw
29. L.H. Bearing Cartridge, Driveshaft
30. Retainer Ring
31. L.H. Bearing Driveshaft
33. Driveshaft
34. Retainer Rings (Single Speed Machines only)
35. High Speed Pinion

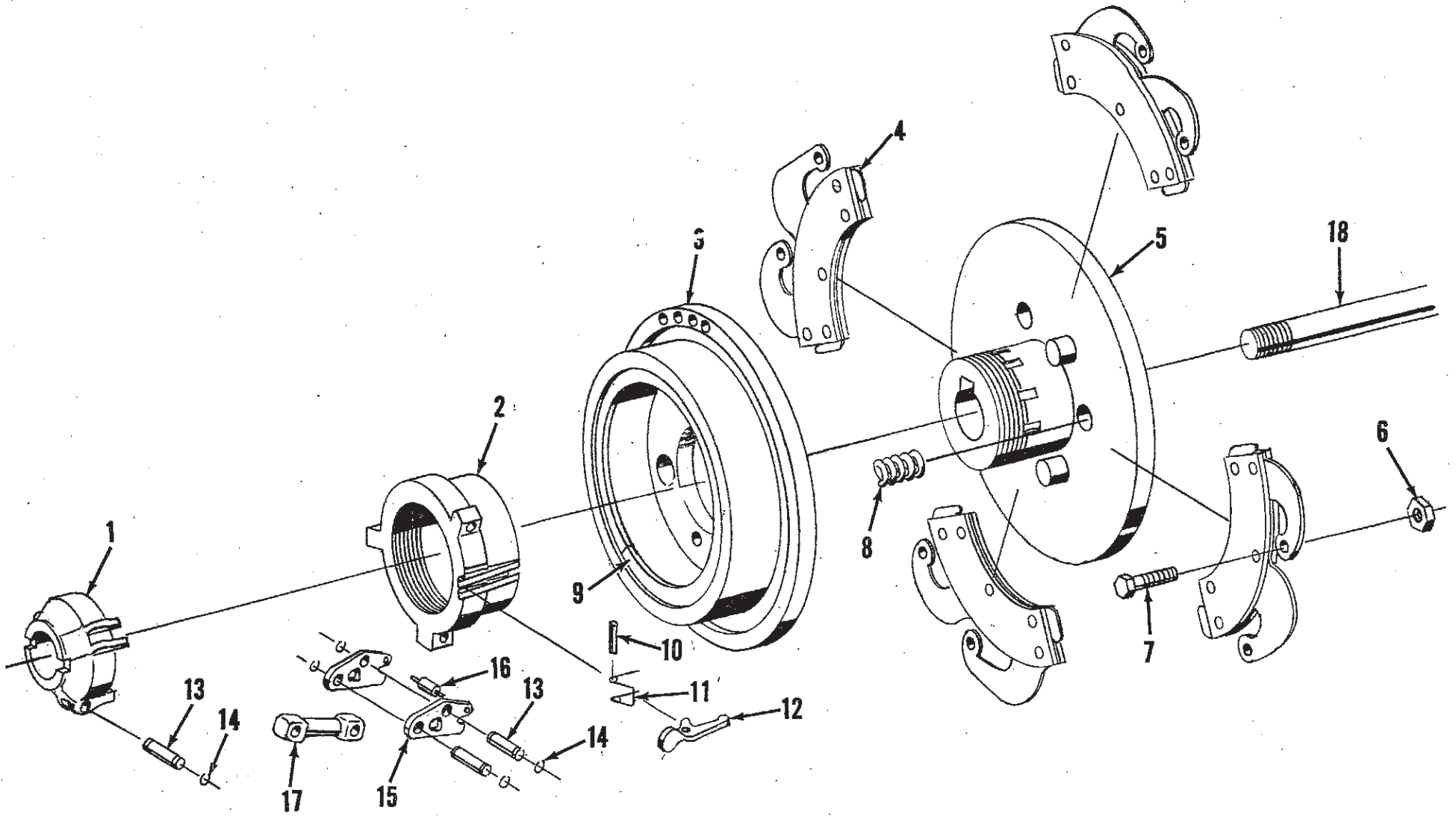
TWO SPEED MACHINES ONLY

36. Roll Pin
37. Retainer Ring
38. Shifting Fork Pinion
39. Shifting Fork Shaft
40. Shifting Fork
41. Roll Pin
42. Shifting Fork Rod Lock
43. Shifting Rod Handle Grip
44. Shifting Rod Handle
45. Roll Pin
46. Lower Shifting Rod Collar
47. Shifting Rod
48. Pinion Key
49. Screw
50. Upper Handwheel Shaft Bracket
51. Lower Handwheel Shaft Bracket

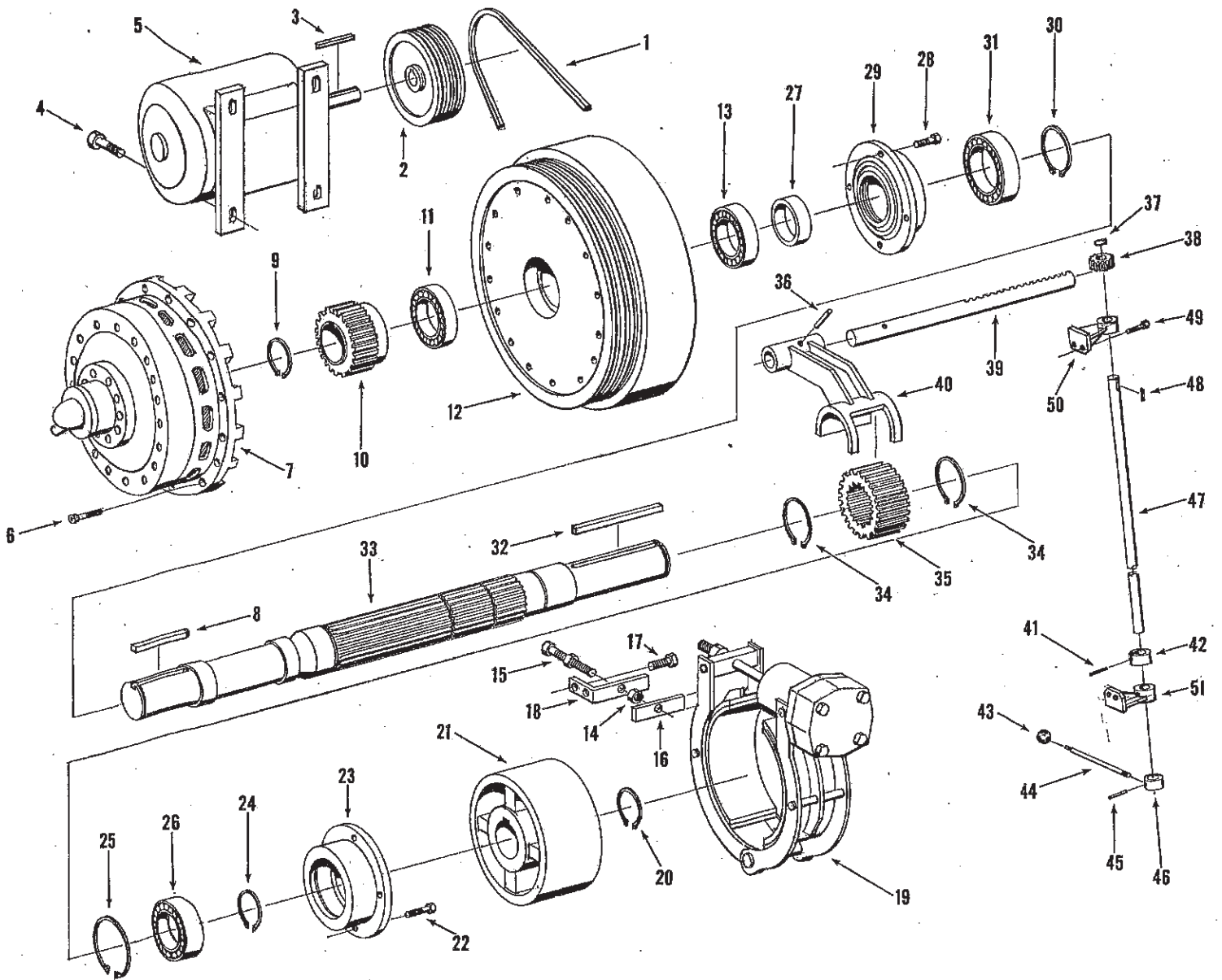


MECHANICAL TREADLE MECHANISM

1. Retainer Rings
2. Clevis Pins
3. Clevis
4. Jam Nuts
5. Foot Pedal
6. Treadle Shaft
7. Retainer Ring
8. Roll Pin
9. Bell Crank
10. Lower Treadle Rod
11. Spacers
12. Lower Rocker Arm
13. Upper Treadle Rod
14. Screw
15. Spring Bracket
16. Spring
17. Washer
18. Jam Nuts
19. Retainer Rings
20. Bushings
21. Screw
22. Bell Crank Bracket
23. Pin
24. Upper Bell Crank
25. Pin
26. Jam Nuts
27. Pin
28. Pivot Arm Bracket
29. Pivot Arm
30. Pin
31. Screw
32. Bearing Retainer Cap
33. Retainer Ring
34. Bearing
35. Bearing Retainer, throwout Rod
36. Drawrod Retainer
37. Retainer Ring
38. Retainer Ring
39. Mechanical Brake (See parts list on page 22)
40. Drawrod
41. Driveshaft (See parts list on page 18)
42. Mechanical Clutch (See parts list on page 22)
43. Retainer Ring
44. Retainer Ring
45. Adjustable Retainer, Drawrod
46. Retainer Locknuts
47. Pin, Lower Rocker Arm
48. Retainer Ring
49. Nut



1. Shifter Collar
2. Adjusting Ring
3. Hub
4. Drive Disc Assembly
5. Driving Plate
6. Adjusting Nut
7. Hex Head Capscrew
8. Spring
9. Push Ring
10. Roll Pin
11. Spring
12. Release Latch
13. Pin (9 Req.)
14. Snap Ring (18 Req.)
15. Toggle (6 Req.)
16. Pin (3 Req.)
17. Toggle Lever (3 Req.)
18. Drawrod (See Page 20)

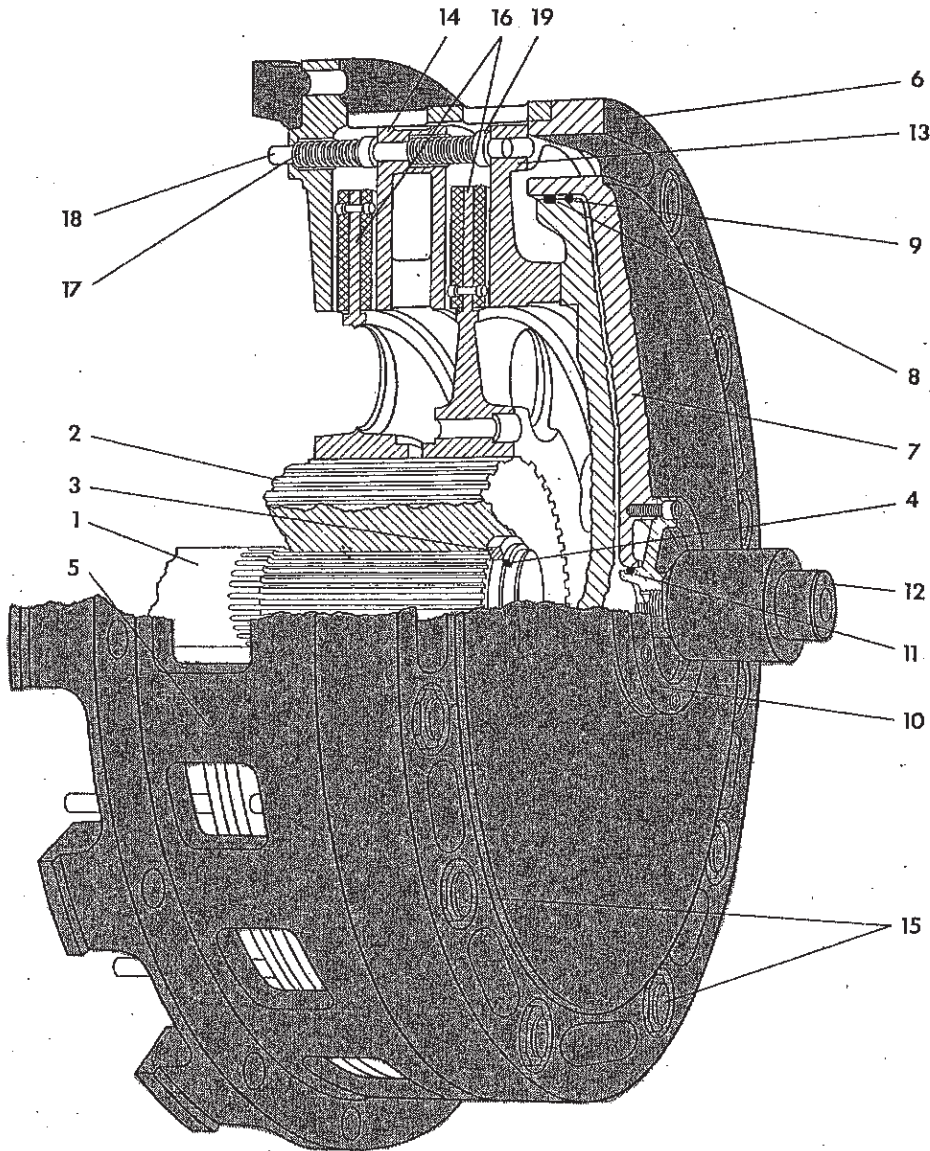


DRIVE - AIR FRICTION CLUTCH & BRAKE

1. Drive Belt
2. Drive Sheave
3. Key
4. Screw
5. Drive Motor
6. Screw
7. Air Friction Clutch (See Parts List on Page 26)
8. Clutch Key
9. Retainer Ring
10. Driving Hub
11. L.H. Flywheel Bearing
12. Flywheel
13. R.H. Flywheel Bearing
14. Jam Nut
15. Set Screw
16. Brake Stop Plate
17. Screw
18. Brake Support Bracket
19. Air Releasing Brake (See Parts List on Page 28)
20. Retainer Ring
21. Brake Collar
22. Screw
23. R.H. Bearing Cartridge, Driveshaft
24. Retainer Ring
25. Retainer Ring
26. R.H. Bearing, Driveshaft
27. Collar, Driveshaft
28. Screw
29. L.H. Bearing Cartridge, Driveshaft
30. Retainer Ring
31. L.H. Bearing Driveshaft
32. Brake Key
33. Driveshaft
34. Retainer Rings (Single Speed Machines Only)
35. High Speed Pinion

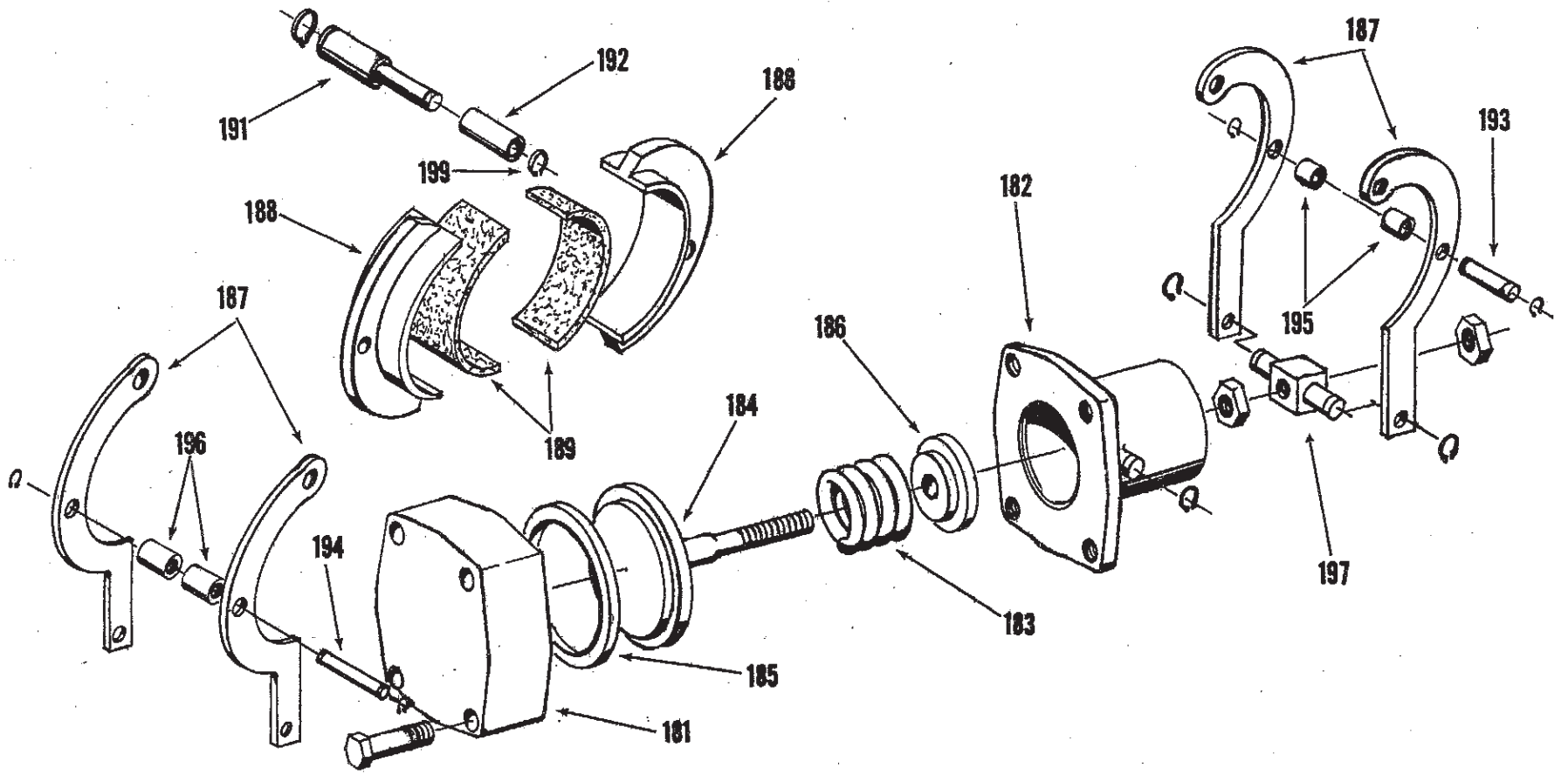
TWO SPEED MACHINES ONLY

36. Roll Pin
37. Retainer Ring
38. Shifting Fork Pinion
39. Shifting Fork Shaft
40. Shifting Fork
41. Roll Pin
42. Shifting Fork Rod Lock
43. Shifting Rod Handle Grip
44. Shifting Rod Handle
45. Roll Pin
46. Lower Shifting Rod Collar
47. Shifting Rod
48. Pinion Key
49. Screw
50. Upper Handwheel Shaft Bracket
51. Lower Handwheel Shaft Bracket



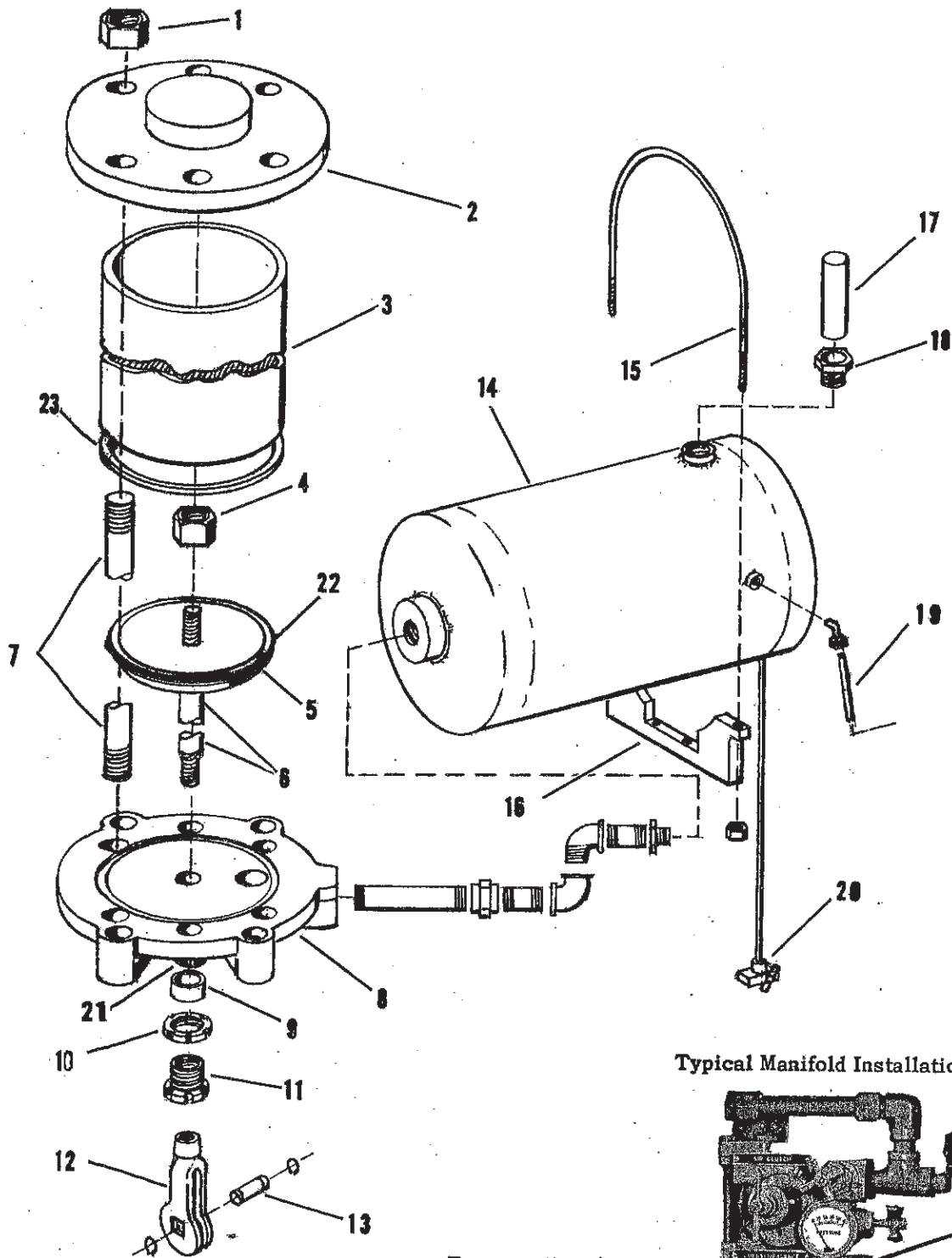
AIR FRICTION CLUTCH-TYPE LI-P

1. Drive Shaft
2. Driving Hub
3. Driving Hub Retaining Ring
4. Clutch Snap Ring
5. Clutch Housing
6. Clutch Cylinder
7. Clutch Piston
8. Piston Wiper
9. Piston 'O' Ring
10. Rotary Air Seal Adapter
11. Adapter 'O' Ring
12. Rotary Air Seal
13. Pressure Plate
14. Inner Pressure Plate
15. Pressure Plate Guides and Nut
16. Friction Disc
17. Spreader Spring
18. Spring Guide
19. Guide Collar

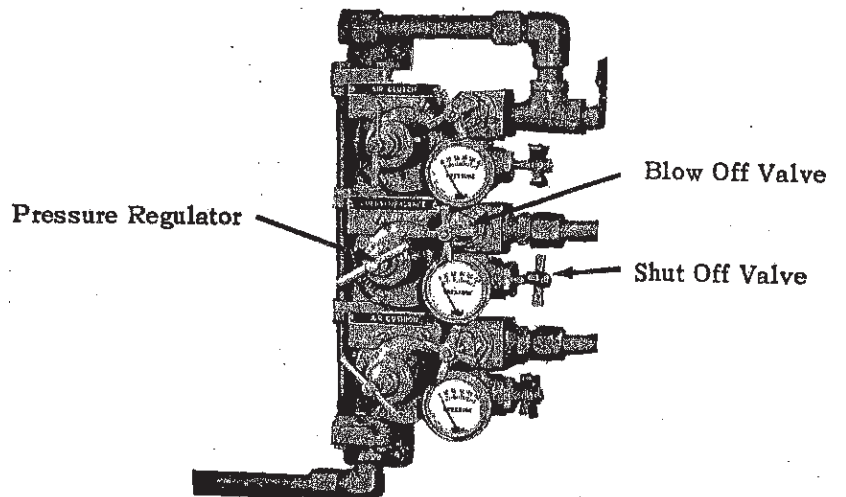


- 179. Brake Collar Retainer Ring
- *180. Brake Collar
- 181. Brake Air Cylinder Head
- 182. Brake Spring Pot
- 183. Brake Spring
- 184. Brake Piston
- 185. Piston 'U' Ring Packing
- 186. Non-Metallic Bushing
- 187. Brake Lever Arms
- 188. Brake Shoe
- 189. Brake Shoe Lining
- *190. Tubular Rivet For Brake
- 191. Brake Pivot
- 192. Pivot Spacer
- 193. Short Brake Shoe Pin
- 194. Long Brake Shoe Pin
- 195. Short Brake Shoe Spacer
- 196. Long Brake Shoe Spacer
- 197. Trunion
- 198. Cylinder Drain Petcock
- 199. Brake Pivot Pin Retainer Rings

* Not Shown



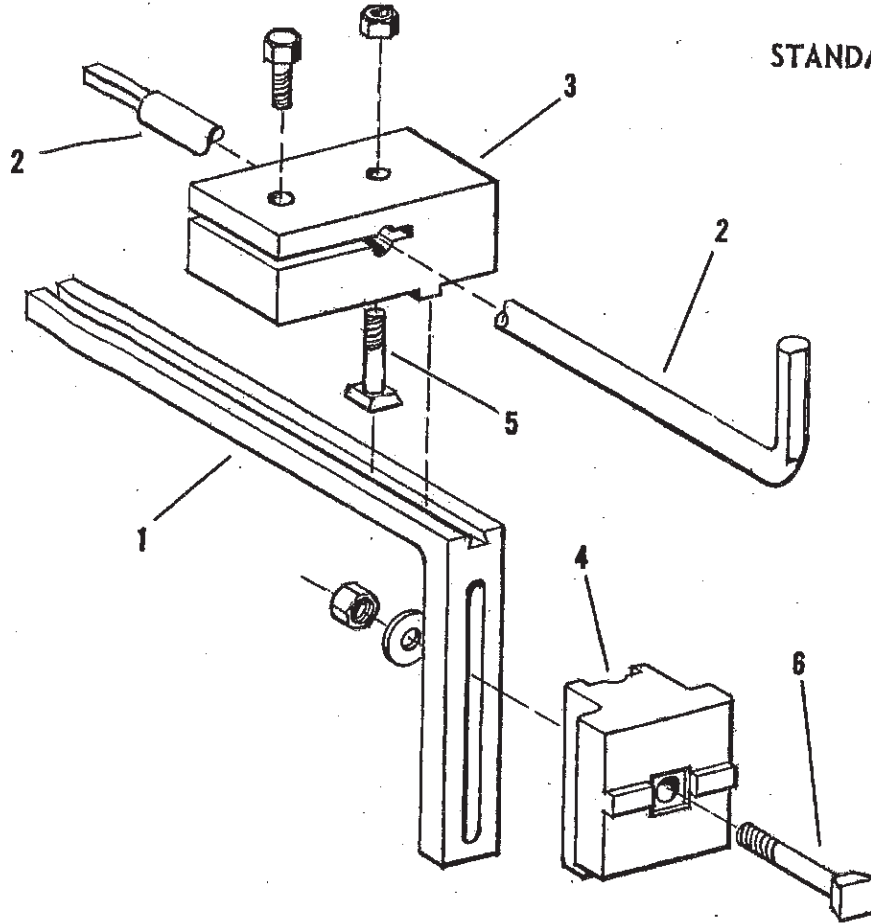
Typical Manifold Installation



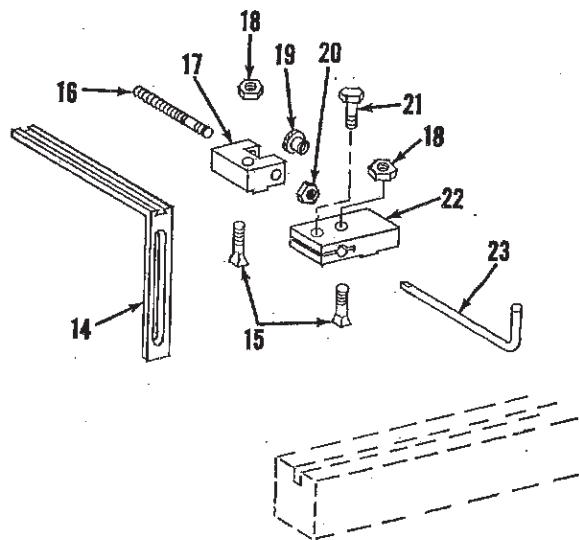
**AIR COUNTERBALANCE AND TANK
(OPTIONAL)**

1. Tie Rod Nut
2. Upper Cylinder Cap
3. Counterbalance Cylinder
4. Piston Rod Nut
5. Piston
6. Piston Rod
7. Die Rod
8. Lower Cylinder Cap
9. Sleeve
10. Lock Nut
11. Compression Nut
12. Clevis
13. Retainer Ring Pin
14. Air Tank
15. Tank Rod
16. Tank Bracket
17. Safety Valve
18. Bushing
19. Air Supply Line
20. Petcock
21. Stuffing Box Packing
22. Piston Packing
23. Velumoid Gasket

STANDARD BACKGAGE



MICROMETER TYPE BACKGAGE



STANDARD PACKAGE

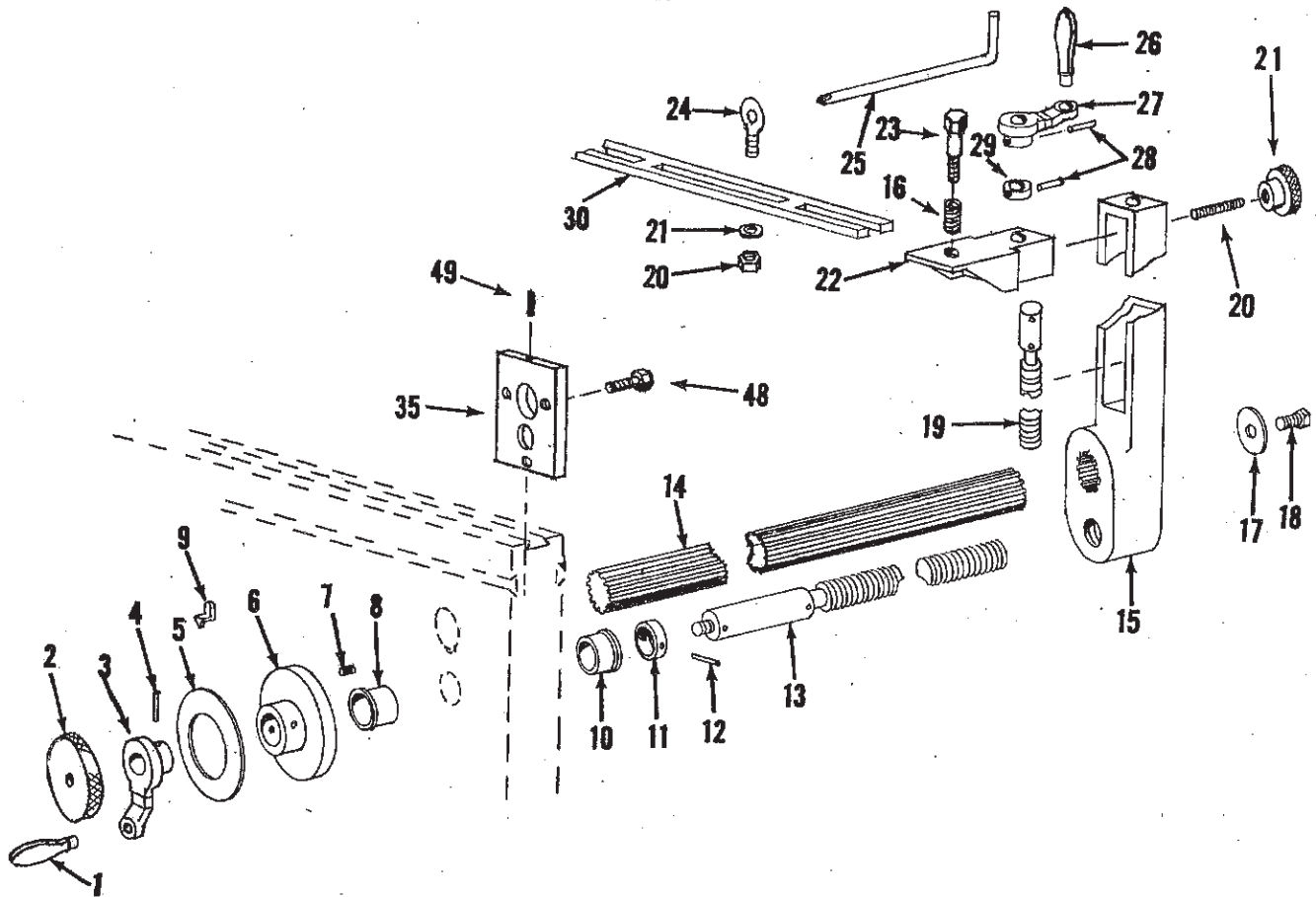
1. Backgage Bracket
2. Backgage Finger
3. Finger Support
4. Backgage Base
5. "V" Head Bolt
6. Tee Bolt

MICROMETER TYPE BACKGAGE

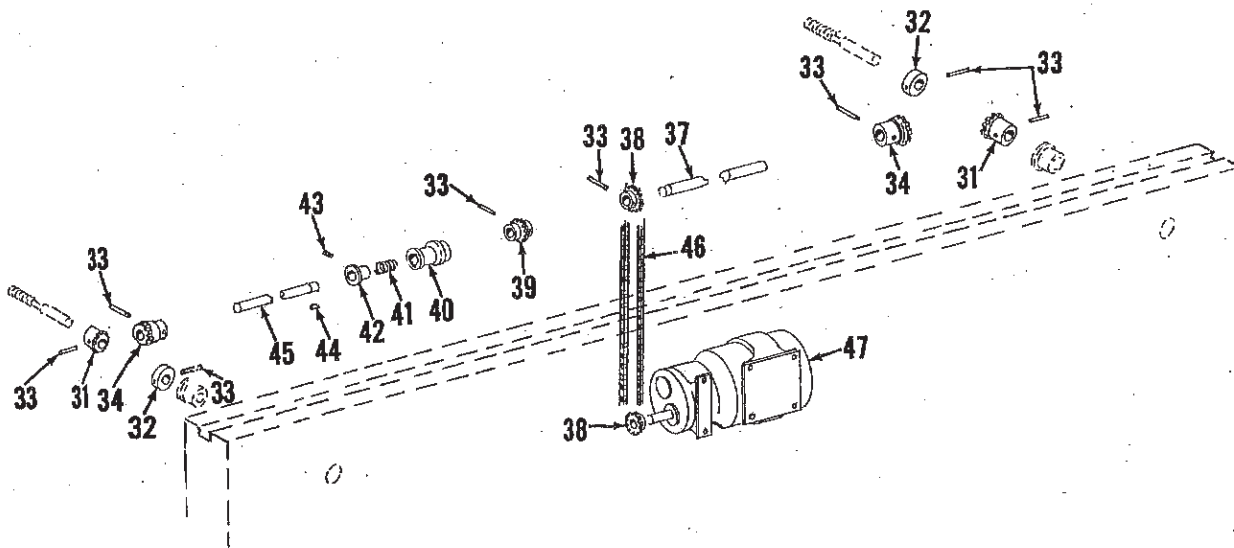
(OPTIONAL)

14. Bracket
15. Tee Bolt
16. Micrometer Stud
17. Micrometer Support
18. Nut
19. Micrometer Nut
20. Jam Nut
21. Hex HD Cap Screw
22. Finger Support
23. Finger

FRONT OPERATED MICROMETER BACKGAGE



FRONT OPERATED-POWER DRIVEN-MICROMETER BACKGAGE



(OPTIONAL)

- | | |
|------------------------|---|
| 1. Handle | 18. Capscrew |
| 2. Hand Knob | 19. Upright Adjusting Screw |
| 3. Hand Crank | 20. Stud |
| 4. Roll Pin | 21. Knurled Knob |
| 5. Handwheel Dial Face | 22. Support Arm |
| 6. Dial | 23. Shoulder Bolt |
| 7. Set Screw | 24. Finger Bolt |
| 8. Bushing | 25. Finger |
| 9. Pointer | 26. Handle |
| 10. Bushing | 27. Hand Crank |
| 11. End Collar | 28. Roll Pin |
| 12. Roll Pin | 29. End Collar |
| 13. Adjusting Screw | 30. Finger Rest |
| 14. Splined Shaft | 35. R.H. Support Bracket |
| 15. Upright | 36. L.H. Support Bracket (Not Shown) |
| 16. Spring | 48. Capscrew |
| 17. Washer | 49. Set Screw |

FRONT OPERATED-POWER DRIVEN-MICROMETER BACKGAGE
(OPTIONAL)

- | | |
|---------------------|------------------|
| 31. Bevel Gear | 41. Spring |
| 32. End Collar | 42. Collar |
| 33. Roll Pin | 43. Set Screw |
| 34. Bevel Gear | 44. Woodruff Key |
| 37. Shaft | 45. Shaft |
| 38. *Sprocket | 46. *Chain |
| 39. Coupling Gear | 47. *Motor |
| 40. Coupling Sleeve | |

*SUPPLIED WHEN MOTOR OPERATED ONLY