

FRAME

All Models

1. Lifting Eye Bolts
2. Cap Screw
3. Bearing Cap
4. Gib Adjusting Screw
5. Gib Adjusting Nut
6. Bolster Plate
7. Counterbalance (optional) (See separate Parts List)
8. Drive Assembly (See separate Parts List)
9. Connection (See separate Parts List)
10. Slide (See separate Parts List)
11. Front Frame Cover
12. Connection Cover

Inclinable Models Only

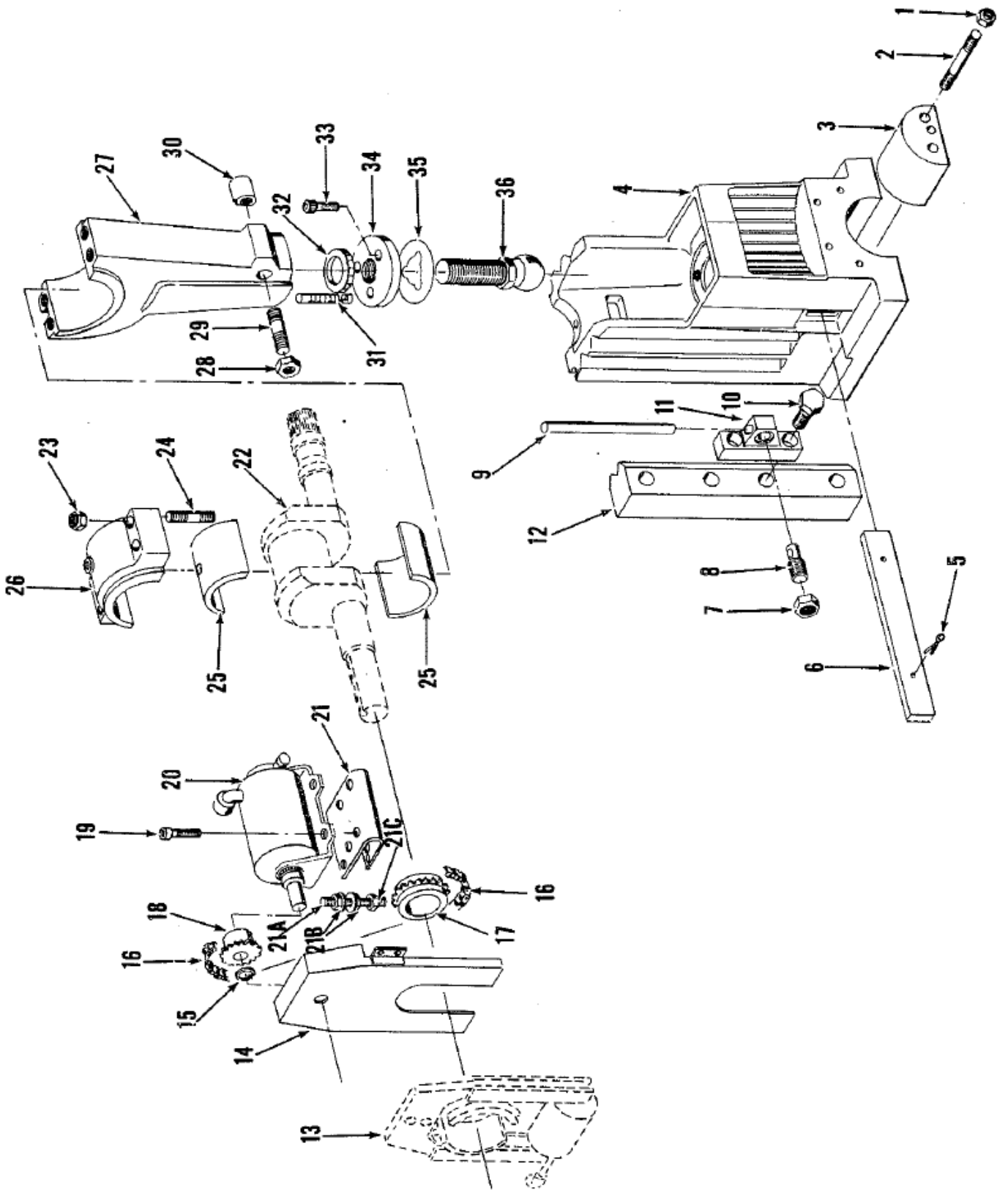
13. Frame
14. Leg
- 14-A Leg Pivot
15. Tie Rod
16. Tie Rod Nut
17. Rear Leg Stud
- 17-A Locking Collar
- 17-B Nut

Inclinable Options

18. Inclining Bracket
 19. Bracket Stud
 20. Nut
 21. Inclining Screw Pin
 22. Retainer Ring
 23. Inclining Screw
 24. Inclining Screw Nut
 25. Thrust Bearing
 26. Adjusting Motor
 27. Worm Gear Jack
 28. Valve Bracket
 29. Hand Operated Valve
- Power Only

Adjustable Bed Models Only

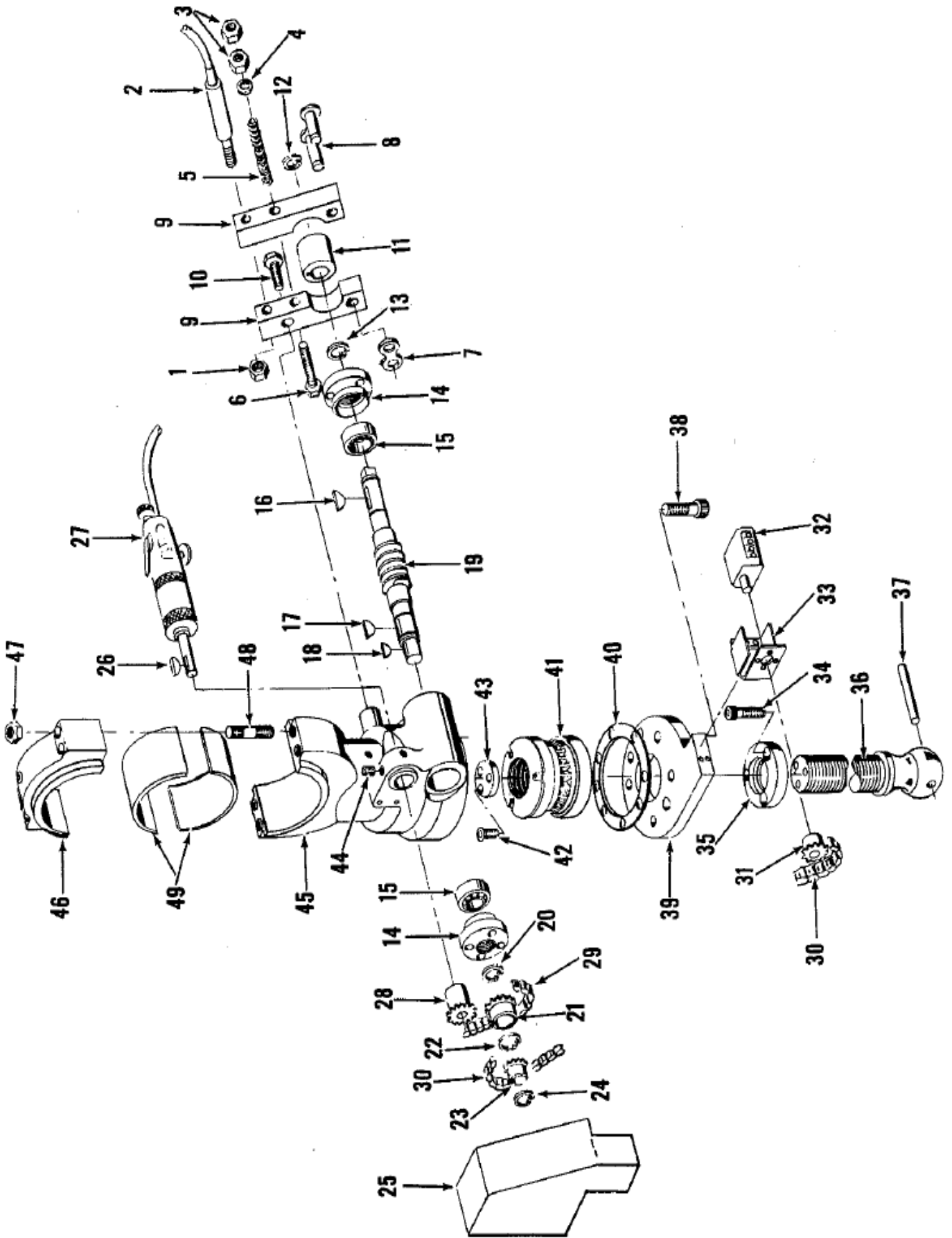
30. Frame
31. Table
32. Adjusting Screw
33. Jam Nut
34. Clamp Screw
35. Clamp Bar
36. Clamp Nut



SLIDE & CONNECTION

Manually Adjusted Connection Only

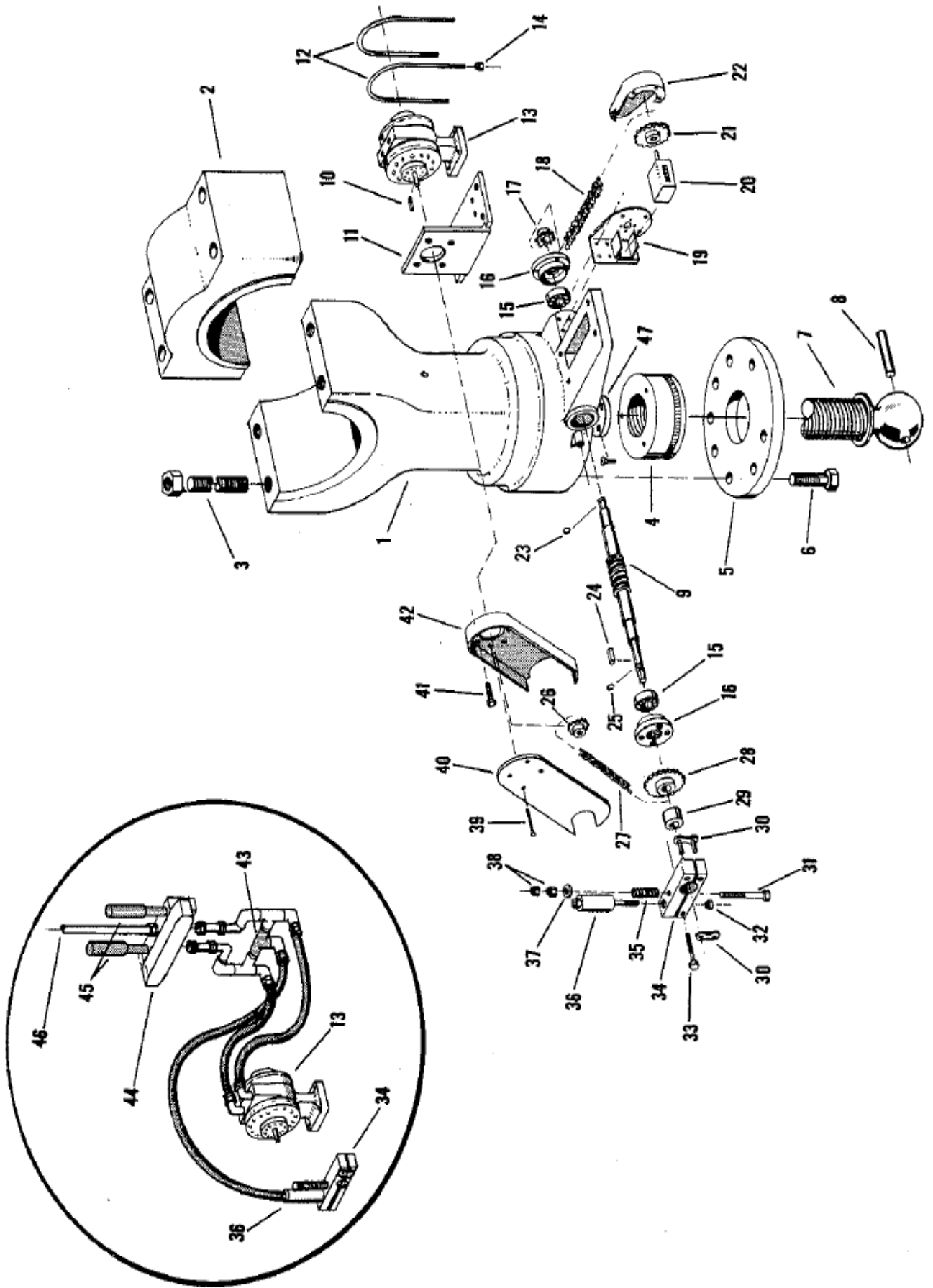
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| <ol style="list-style-type: none"> 1. Nut 2. Breech Block Stud 3. Breech Block 4. Slide (Ram) 5. Cotter Pin 6. Knockout Bar 7. Clamp Nut 8. Knockout Clamp 9. Knockout Pin 10. Bracket Mounting Screw 11. Knockout Bracket 12. Gib 13. Air Releasing Brake (See separate Parts List) 14. L.S. Chain Guard 15. Retainer Ring 16. L.S. Chain 17. Crankshaft Sprocket 18. L.S. Sprocket 19. L.S. Mounting Screw 20. Rotary Limit Switch 21. L.S. Bracket 21-A Adjusting Stud 21-B Adjusting Nuts 21-C Locknut 22. Crankshaft (See separate Parts List) | <ol style="list-style-type: none"> 23. Nut 24. Connection Cap Stud 25. Connection Bushing 26. Connection Cap } sold as unit 27. Connection } 28. Clamp Plug Nut } 29. Clamp Plug Stud } Sold as unit -- not machined. 30. Clamp Plug } 31. Slide Indicator Scale 32. Slide Indicator Gage 33. Cap Screw 34. Connection Ball Cap 35. Cap Shim 36. Connection Ball Screw |
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POWER OPERATED SLIDE ADJUSTMENT (Optional, M-60)

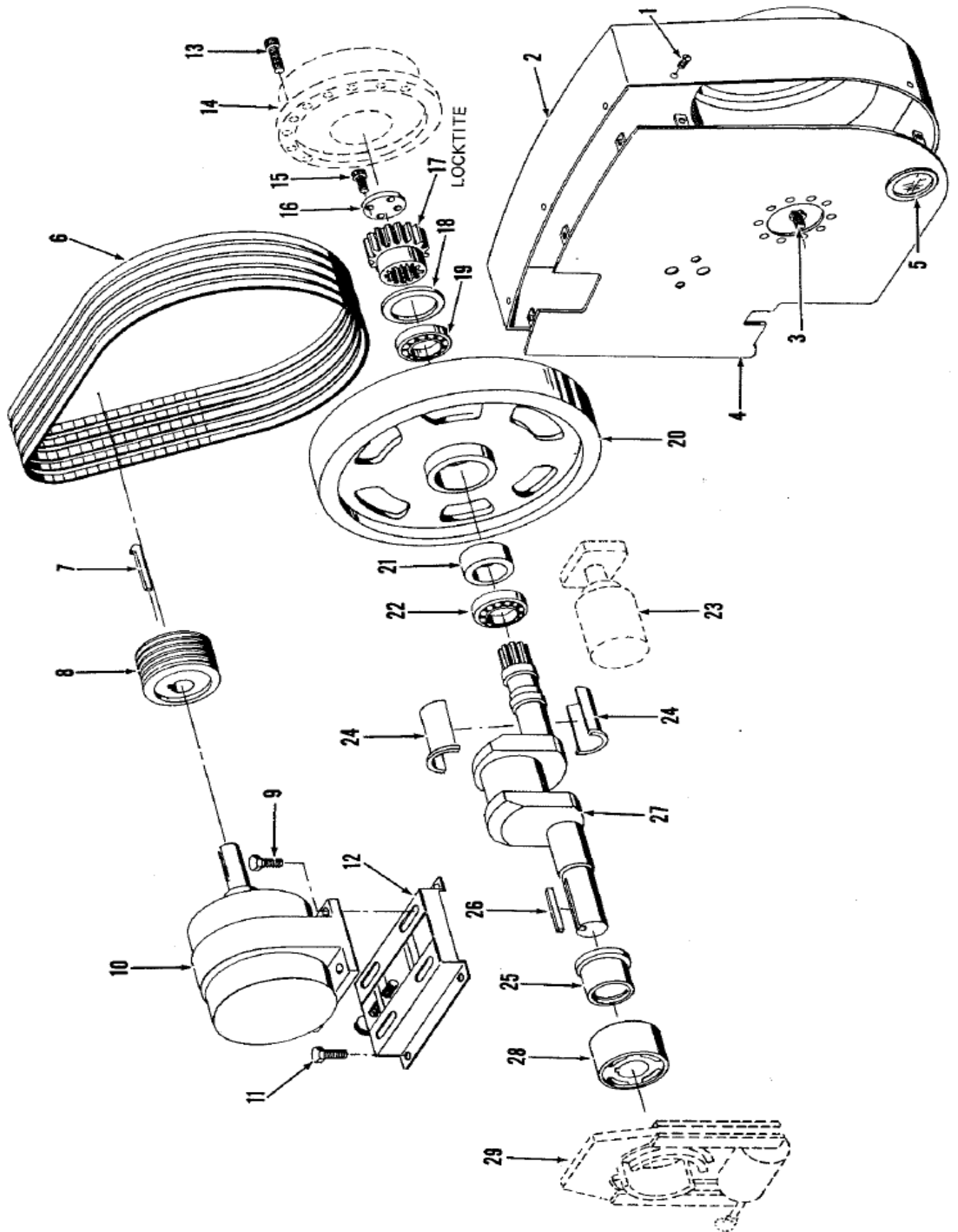
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| <ol style="list-style-type: none"> 1. Cylinder Nut 2. Air Cylinder 3. Nut 4. Washer 5. Brake Spring 6. Brake Spring Bolt 7. Connector 8. Connecting Link 9. Brake Strap 10. Brake Mounting Screw 11. Brake Collar 12. Retainer Ring 13. Retainer Ring 14. Bearing Retainer 15. Bearing 16. Brake Collar Key 17. Sprocket Key 18. Sprocket Key 19. Adjusting Worm Shaft 20. Retainer Ring 21. Sprocket 22. Retainer Ring 23. Sprocket 24. Retainer Ring 25. Chain Guard | <ol style="list-style-type: none"> 26. Sprocket Key 27. Air Motor (Reversing - Direct Control) 28. Sprocket 29. Driving Chain 30. Counter Chain 31. Counter Sprocket 32. Counter 33. Counter Bracket 34. Cap Screw 35. Ball Screw Cap 36. Connection Ball Screw 37. Ball Screw Pin 38. Retainer Fastening Screw 39. Worm Gear Retainer 40. Retainer Shim 41. Worm Gear 42. Plate Fastening Screw 43. Stop Plate 44. Set Screw 45. Connection 46. Connection Cap 47. Nut 48. Connection Stud 49. Connection Bushing |
|---|--|

} Sold as unit



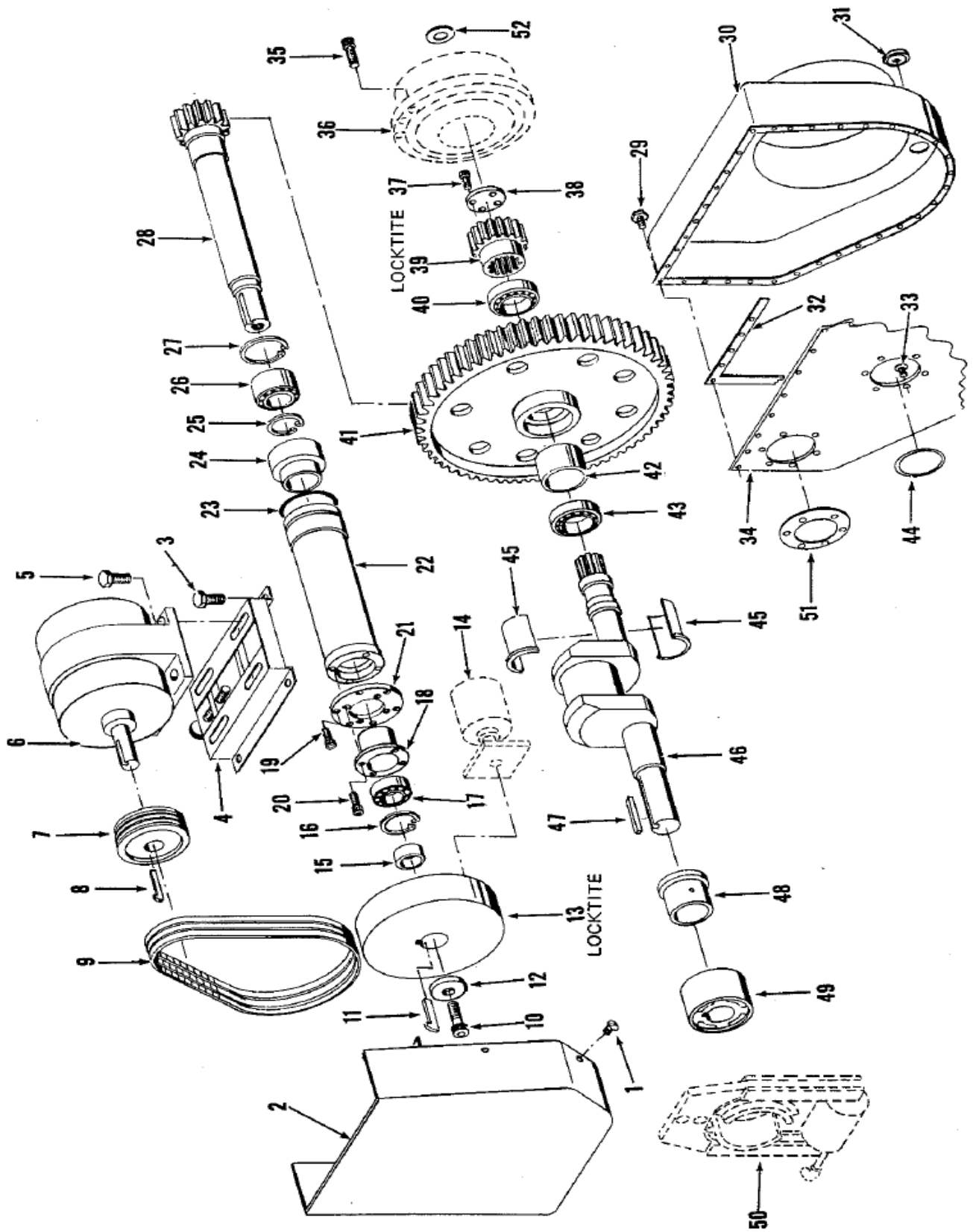
POWER OPERATED SLIDE ADJUSTMENT (Optional, M-75 up)

- | | | |
|-------------------------------------|---|--------------|
| 1. Connection | } | Sold as unit |
| 2. Connection Cap | | |
| 3. Cap Stud and Nut | | |
| 4. Worm Gear | | |
| 5. Worm Gear Retainer | | |
| 6. Retainer Screws | | |
| 7. Ball Connection Screws | | |
| 8. Ball Screw Pin | | |
| 9. Slide Adjustment Worm Shaft | | |
| 10. Motor Key | | |
| 11. Motor Bracket | | |
| 12. Motor Straps | | |
| 13. Air Motor | | |
| 14. Motor Strap Nuts | | |
| 15. Bearings | | |
| 16. Bearing Retainers | | |
| 17. Sprocket | | |
| 18. Counter Chain | | |
| 19. Counter Bracket | | |
| 20. Counter | | |
| 21. Counter Sprocket | | |
| 22. Counter Chain Guard | | |
| 23. Retainer Ring | | |
| 24. Worm Key | | |
| 25. Retainer Ring | | |
| 26. Motor Sprocket | | |
| 27. Drive Chain | | |
| 28. Sprocket | | |
| 29. Brake Collar | | |
| 30. Connecting Link | | |
| 31. Brake Pin Screw | | |
| 32. Air Cylinder Nut | | |
| 33. Brake Mounting Screw | | |
| 34. Brake Straps | | |
| 35. Brake Spring | | |
| 36. Air Cylinder | | |
| 37. Spring Washer | | |
| 38. Spring Adjusting Nuts | | |
| 39. Cover Plate Screws | | |
| 40. Cover Plate | | |
| 41. Chain Guard Screw | | |
| 42. Chain Guard | | |
| 43. Shuttle Valve | | |
| 44. Dual Solenoid Valve | | |
| 45. Muffler | | |
| 46. Air Line Lubricator (Not shown) | | |
| 47. Positive Stop Plate | | |



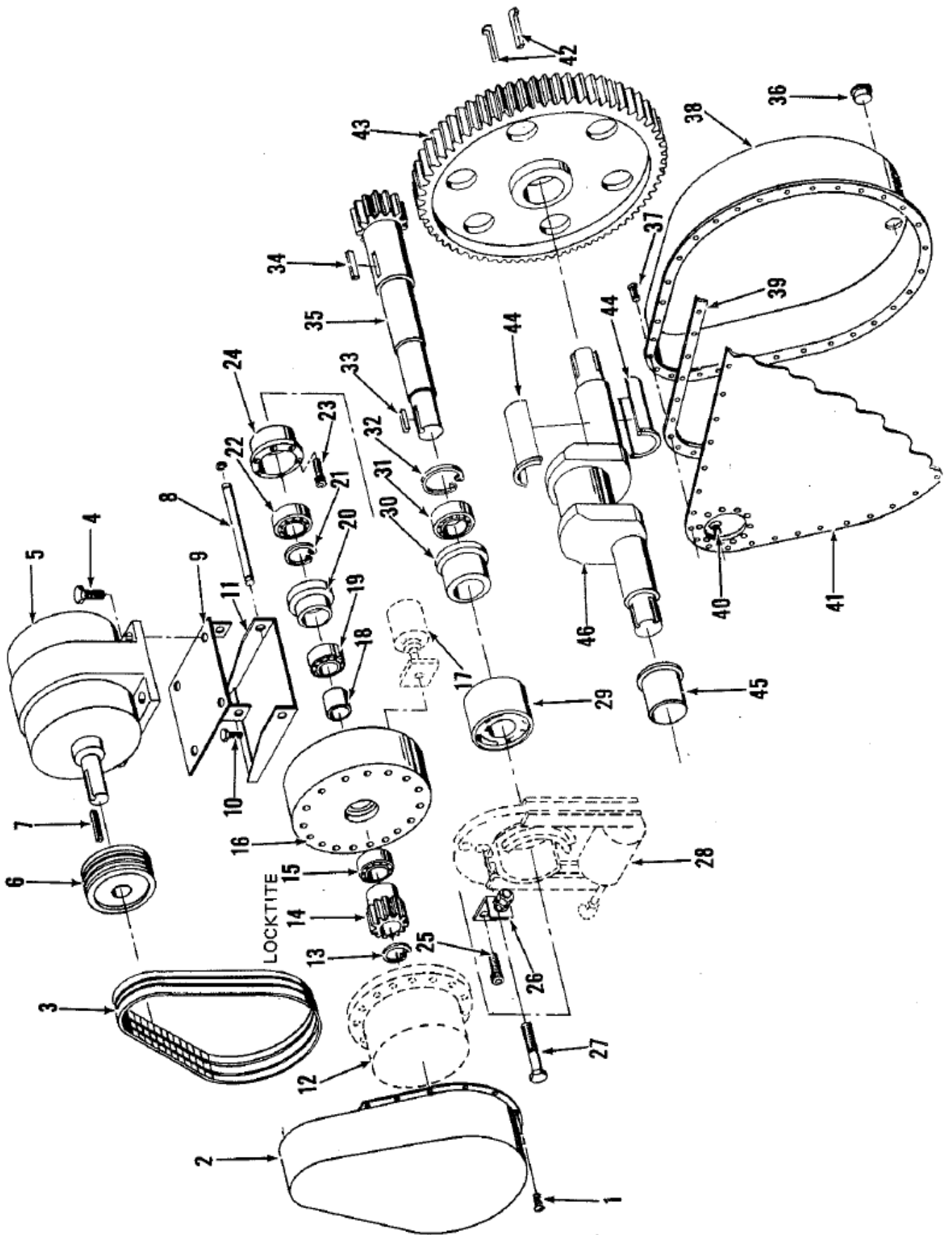
PLAIN PRESS DRIVE (All Models)

1. Guard Fastening Screw
2. Flywheel Guard
3. Plate Mounting Screw
4. Guard Plate
5. Rotation Sight Window
6. Driving Belt
7. Motor Key
8. Sheave
9. Motor Mounting Screw
10. Main Motor
11. Base Mounting Screw
12. Adjustable Motor Base
13. Clutch Mounting Screw
14. Air Friction Clutch (See separate Parts List)
15. Plate Mounting Screw
16. Driving Hub Retainer Plate
17. Driving Hub
18. Grease Retainer (M-35 only)
19. Flywheel Bearing
20. Flywheel
21. Bearing Spacer
22. Flywheel Bearing
23. Flywheel Brake (optional)
24. R.H. Split Bushing
25. L.H. Bushing
26. Brake Collar Key
27. Crankshaft
28. Brake Collar
29. Air Releasing Brake (See separate Parts List)



GEARED PRESS (Up to M-90)

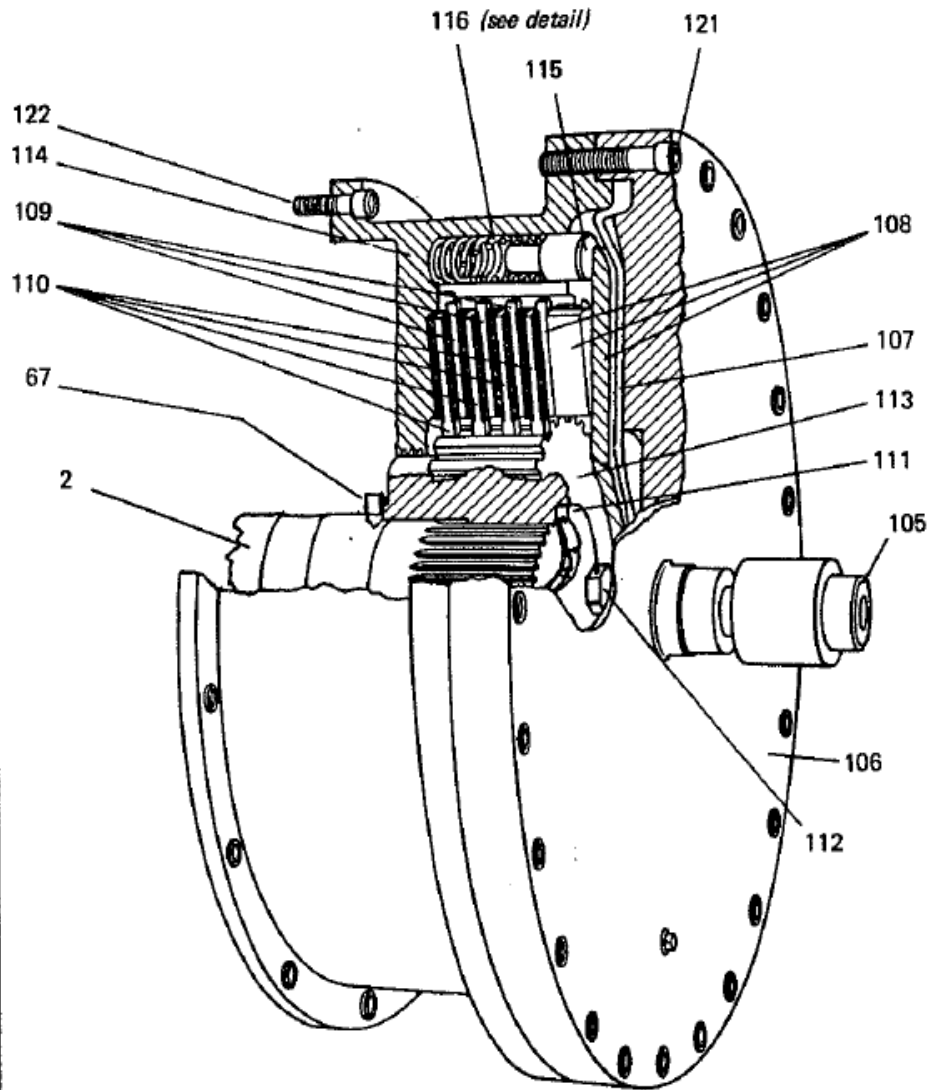
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| <ol style="list-style-type: none"> 1. Guard Mounting Screw 2. Flywheel Guard 3. Base Mounting Screw 4. Adjustable Motor Base 5. Motor Mounting Screw 6. Main Motor 7. Sheave 8. Motor Key 9. Driving Belt 10. Washer Mounting Screw 11. Flywheel Key 12. Clamp Washer 13. Flywheel 14. Flywheel Brake (optional) (See separate Parts List) 15. L.H. Bearing Spacer 16. Retainer Ring (not on M-22) 17. L.H. Bearing 18. L.H. Bearing Bracket (not on M-22) 19. Tube Mounting Screw (M-22 only) 20. Frame Mounting Screw 21. Tube Mounting Collar (M-22 only) 22. Drive Shaft Tube (M-22 only) 23. "O" Ring (M-22 only) 24. R.H. Bearing Bracket (not on M-22) 25. Retainer Ring 26. R.H. Bearing | <ol style="list-style-type: none"> 27. Retainer Ring 28. Driveshaft 29. Gear Guard Mounting Screw 30. Gear Guard 31. Oil Sight Window 32. Guard Gasket 33. Plate Mounting Screw 34. Gear Guard Plate 35. Clutch Mounting Screw 36. Air Friction Clutch (See separate Parts List) 37. Plate Mounting Screw 38. Driving Hub Retainer Plate 39. Driving Hub 40. Gearwheel Bearing 41. Gearwheel 42. Bearing Spacer 43. Gearwheel Bearing 44. Seal 45. R.H. Split Bushing 46. Crankshaft 47. Brake Collar Key 48. L.H. Bushing 49. Brake Collar 50. Air Releasing Brake (See separate Parts List) 51. Gasket 52. Oil Slinger (M-22 only) |
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GEARED PRESS DRIVE (M-110 & M-150)

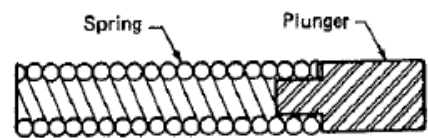
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| <ol style="list-style-type: none"> 1. Belt Guard Screw 2. Belt Guard 3. Driving Belt 4. Motor Mounting Screw 5. Main Motor 6. Driving Sheave 7. Motor Key 8. Pivot Pin 9. Motor Plate 10. Adjusting Screw 11. Motor Bracket 12. Friction Clutch (See separate Parts List) 13. Retainer Ring 14. Driving Hub 15. Flywheel Bearing 16. Flywheel 17. Flywheel Brake (optional) (See separate Parts List) 18. Spacer 19. Flywheel Bearing 20. L.H. Bearing Spacer 21. Retainer Ring 22. L.H. Bearing 23. Mounting Screw | <ol style="list-style-type: none"> 24. L.H. Bearing Bracket 25. Brake Stop Mounting Screw 26. Brake Stop & Adjusting Screw 27. Brake Mounting Screw 28. Air Releasing Brake (See separate Parts List) 29. Brake Collar 30. R.H. Bearing Bracket 31. R.H. Bearing 32. Retainer Ring 33. Driving Hub Key 34. Brake Collar Key 35. Drive Shaft 36. Oil Sight Window 37. Gear Guard Screw 38. Gear Guard 39. Gasket 40. Plate Screw 41. Gear Guard Plate 42. Main Gear Key 43. Main Gear 44. R.H. Split Bushing 45. L.H. Bushing 46. Crank Shaft |
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AIR FRICTION CLUTCH – TYPE LI-E
 (All plain presses and geared presses to M-90)

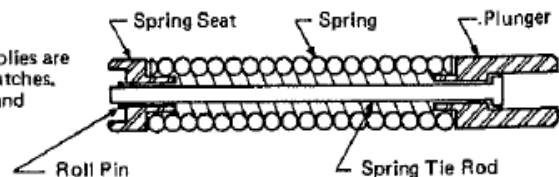


- 2. Crank Shaft
- 37. Spacer *(not all machines)*
- 35. Rotary Air Seal
- 36. Clutch Cylinder
- 37. Clutch Diaphragm
- 38. Push Plate Assembly
- 39. Outer Clutch Plates
- 40. Inner Clutch Plates w/Bonded Linings
- 11. Driving Hub Retainer
- 12. Hex Head Capscrew
- 13. Driving Hub
- 14. Clutch Housing
- 15. Spring Plungers
- 16. Springs *(see detail drawings)*
- 21. Cylinder Screws
- 22. Clutch Housing Screws

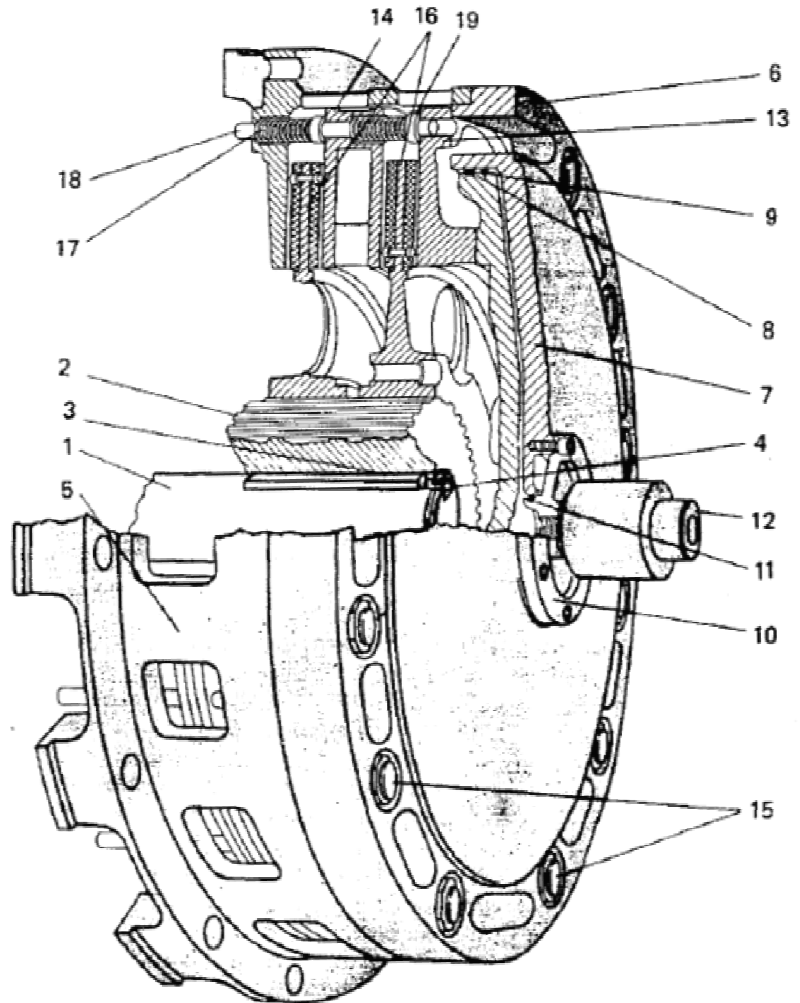
Two piece spring plunger assemblies are used on clutches up to and including LI-E-12-2 clutch. (On M-22, M-35, M-45 non-geared presses and M-22, M-35 geared presses.)



Five piece spring plunger assemblies are used on LI-E-12-3 and larger clutches. (On M-60, M-75, M-90, M-110 and M-150 non-geared presses)



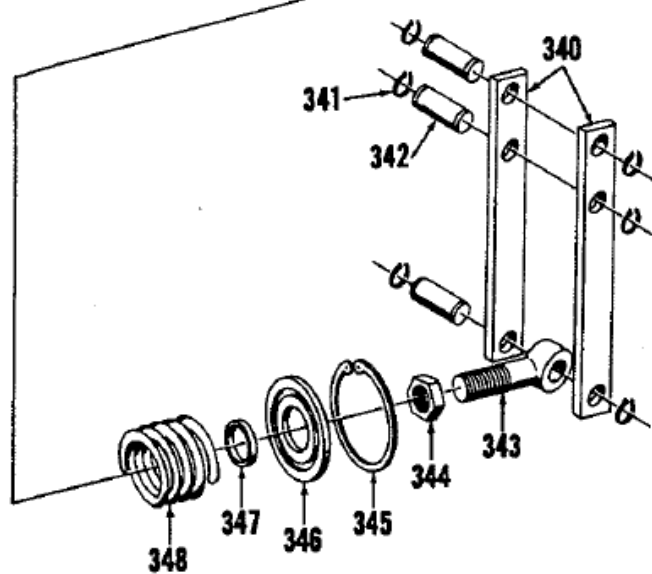
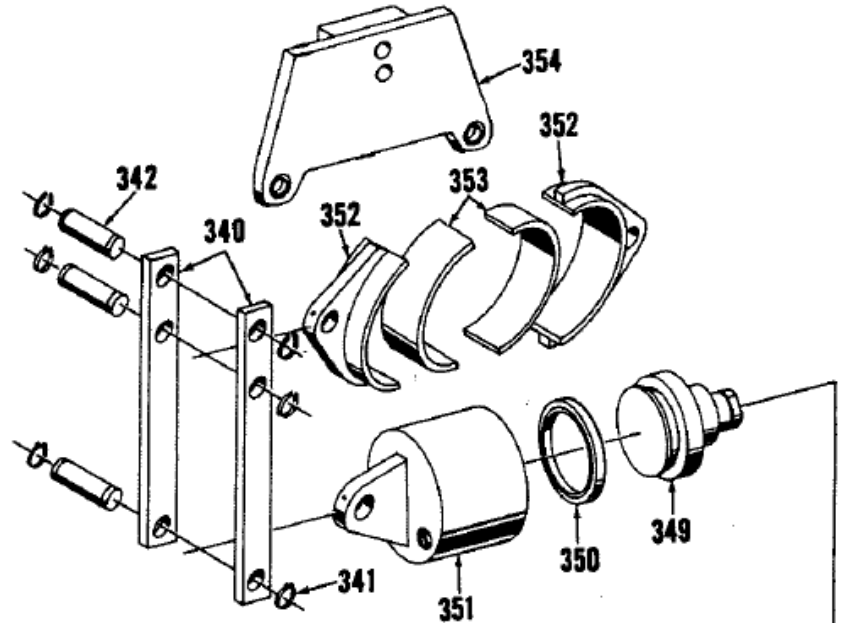
AIR FRICTION CLUTCH – TYPE LI-P
 (Geared presses M-110 & M-150)



1. Driveshaft
2. Driving Hub
3. Key
4. Retainer 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 & Nut
16. Friction Disc
17. Spreader Spring
18. Spring Guide
19. Guide Collar

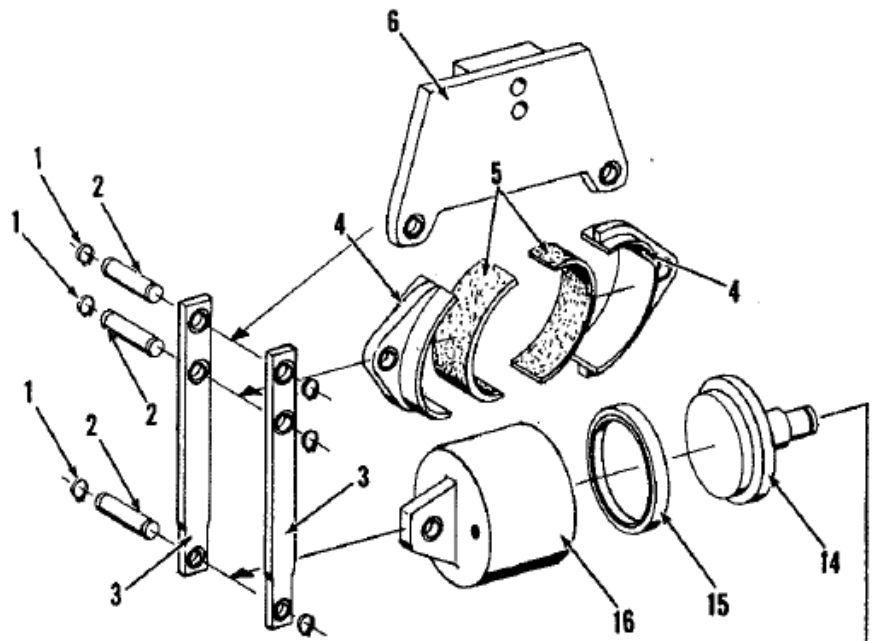
TORQUE VALUES BY FRICTION DISC DIAMETER	
8"	25-30 ft/lbs
10"	30-35 ft/lbs
11"	35-40 ft/lbs
13"	45-50 ft/lbs
17"	70-80 ft/lbs
18"	70-80 ft/lbs
21"	90-100 ft/lbs
25"	110-120 ft/lbs
30"	190-200 ft/lbs
35"	220-230 ft/lbs

AIR RELEASING BRAKE (M-22 to M-75)



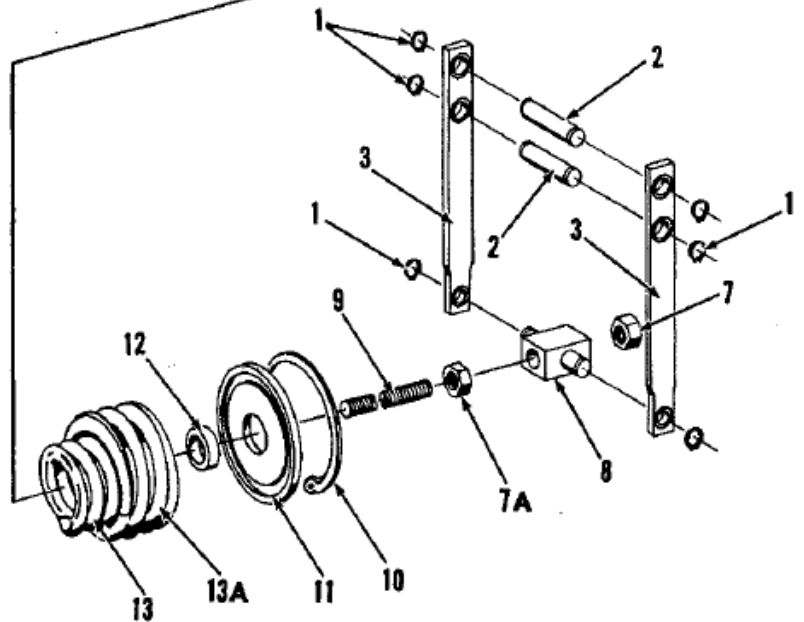
- 340. Arm
- 341. Snap Ring
- 342. Pin
- 343. Rod End
- 344. Locknut
- 345. Retaining Ring
- 346. Spring Retainer Plate
- 347. Oilite Bushing
- 348. Spring
- 349. Piston
- 350. "U" Packing
- 351. Cylinder
- 352. Shoe
- 353. Brake Lining
- 354. Bracket

AIR RELEASING BRAKE (M-90 up)

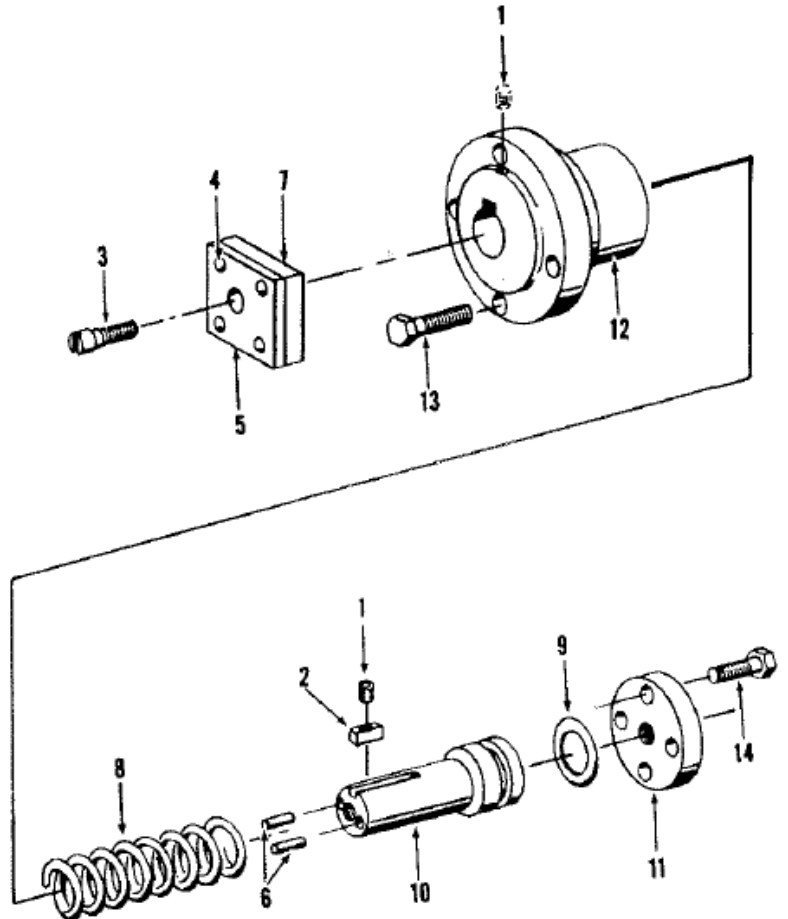


- 1. Retaining Ring
- 2. Pin
- 3. Arm *
- 4. Shoe *
- 5. Brake Lining
- 6. Bracket *
- 7. Adjusting Nut
- 7-A Locknut
- 8. Trunnion
- 9. Stud
- 10. Retainer Ring
- 11. Spring Retainer Plate
- 12. Bushing
- 13. Inner Spring
- 13-A Outer Spring
- 14. Piston
- 15. "U" Packing
- 16. Cylinder *

*With Bushings

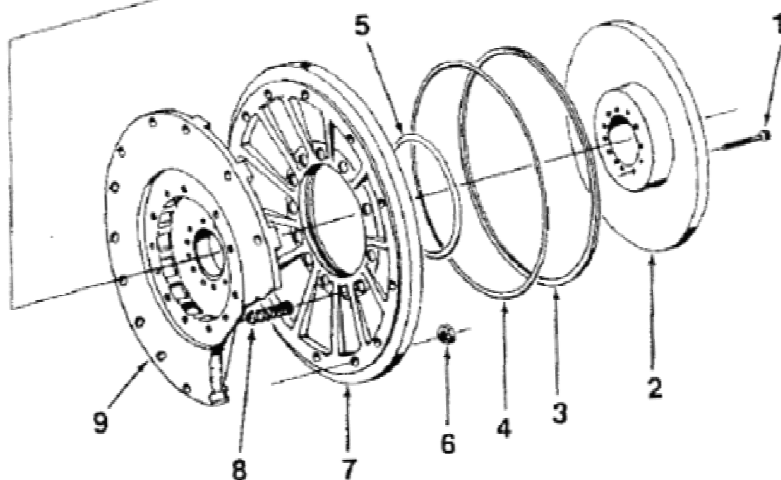
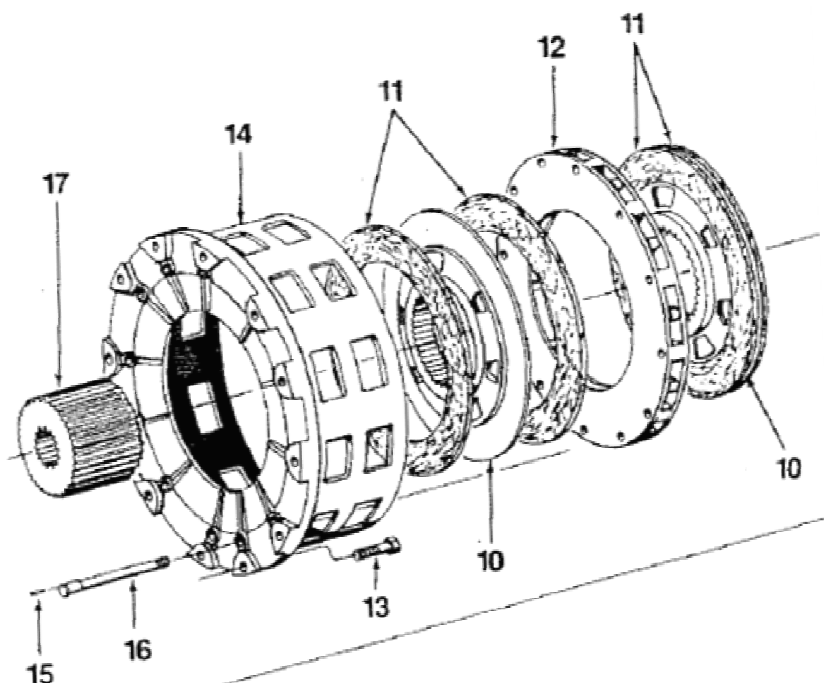


AIR OPERATED FLYWHEEL BRAKE (when furnished)



1. Key Dowel Pin
2. Guide Key
3. Mounting Screw
4. Rivet
5. Brake Lining
6. Dowel Pin
7. Brake Shoe
8. Spring
9. "O" Ring
10. Piston
11. Cylinder Cover
12. Cylinder
13. Cylinder Mounting Screw
14. Cover Mounting Screw

AIR RELEASING DISC BRAKE



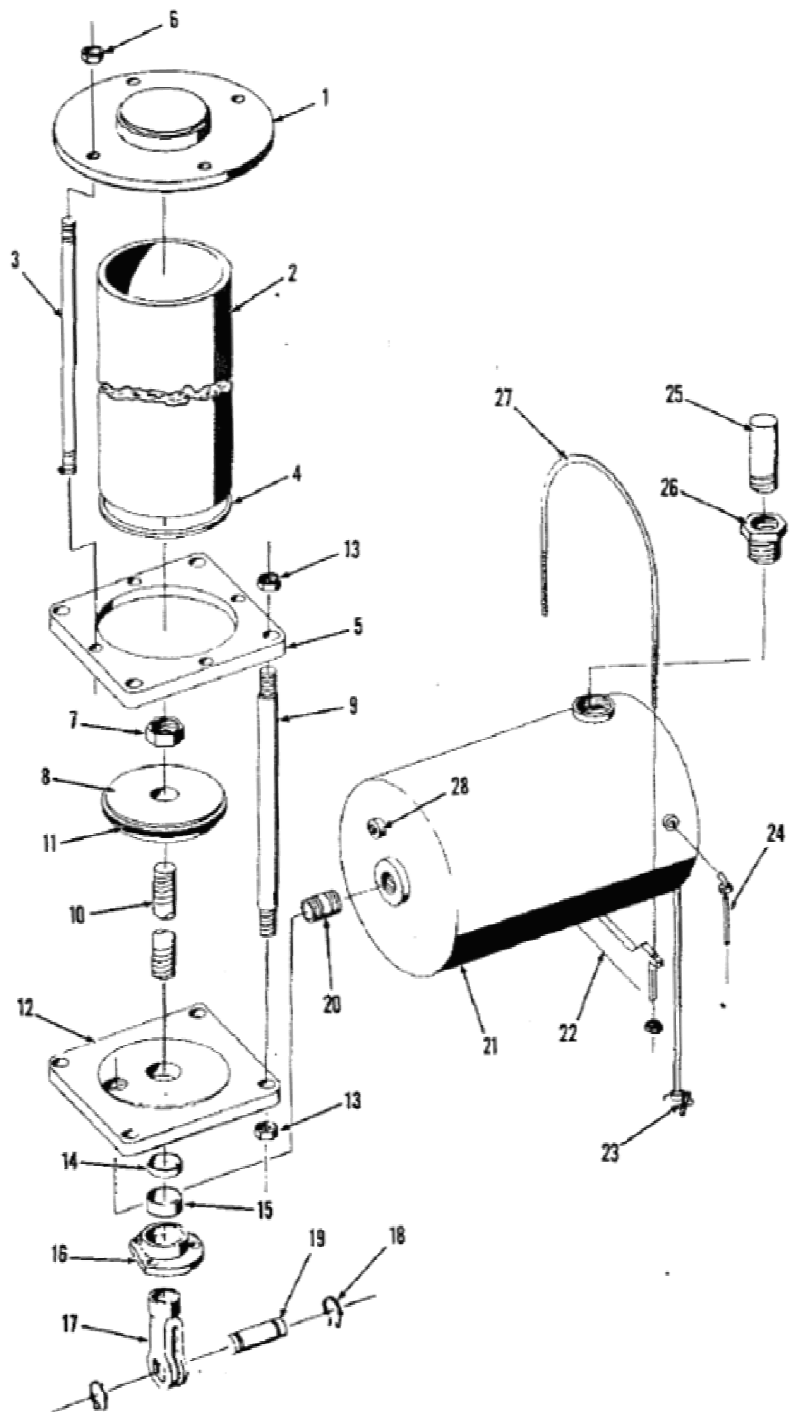
1. Piston Screw (Remove to replace seal and rings.)
2. Piston
3. Piston Dust Seal
4. Piston Ring (outer)
5. Piston Ring (inner)
- *6. Cylinder Stud Nut (Remove to replace linings.)
7. Cylinder
8. Spring
9. Pressure Plate
10. Brake Disc (quantity may vary)
11. Brake Lining (quantity may vary)
12. Center Plate (not used with single disc)
13. Brake Ring Mounting Screw
14. Brake Ring
15. Brake Stud Pin
16. Brake Stud
17. Brake Hub
18. Lining Rivet (not shown)

* Refer to Table for recommended torque value.

TORQUE VALUES BY FRICTION DISC DIAMETER	
8"	25-30 ft/lbs
10"	30-35 ft/lbs
11"	35-40 ft/lbs
13"	45-50 ft/lbs
17"	70-80 ft/lbs
18"	70-80 ft/lbs
21"	90-100 ft/lbs
25"	110-120 ft/lbs
30"	190-200 ft/lbs
35"	220-230 ft/lbs

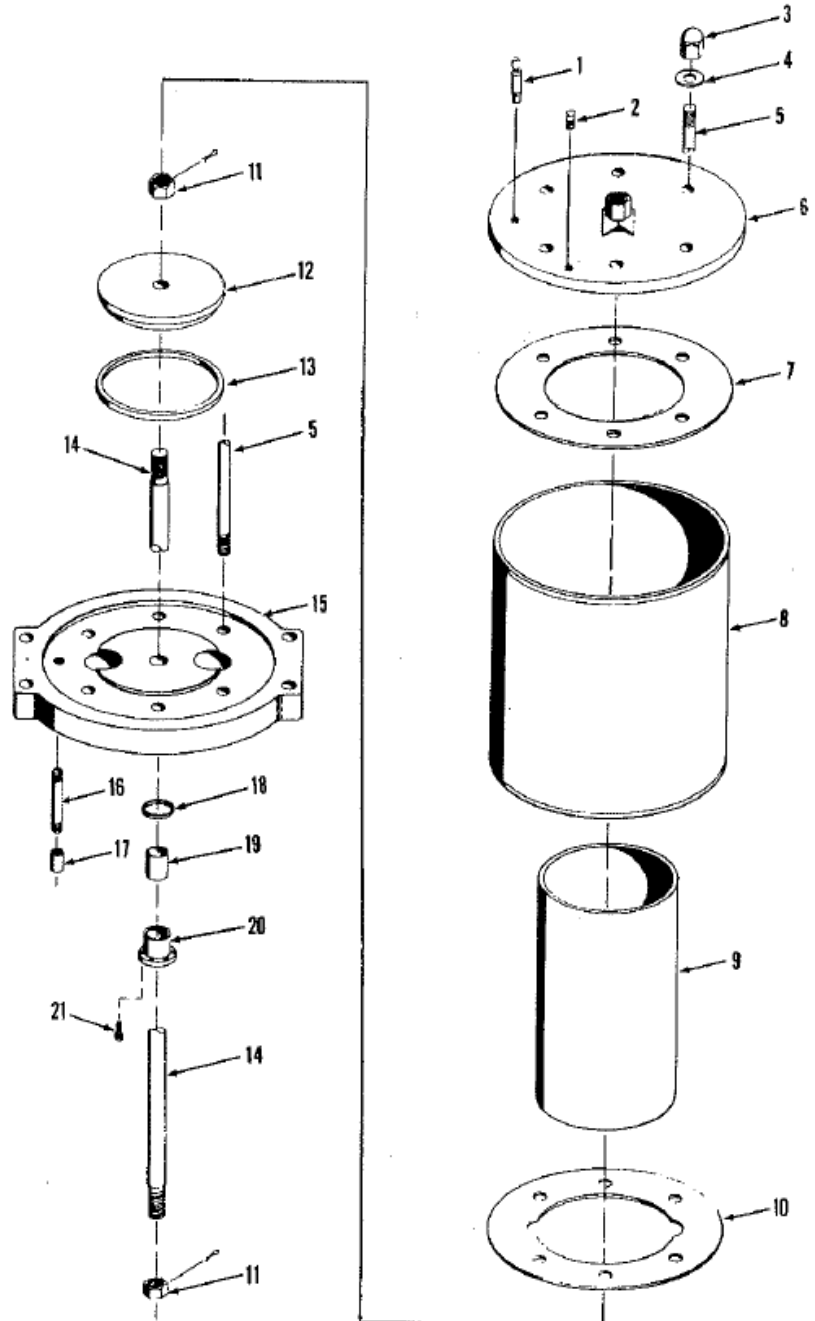
AIR COUNTERBALANCE AND TANK (when furnished)

1. Cylinder Cap
2. Cylinder
3. Stud
4. Seal
5. Mounting Plate
6. Stud Nut
7. Piston Rod Nut
8. Piston
9. Tie Rod
10. Piston Rod
11. Piston Seal
12. Lower Cylinder Cover
13. Tie Rod Nut
14. Seal
15. Bushing
16. Packing Gland
17. Clevis
18. Retaining Ring
19. Clevis Pin
20. Piping
21. Air Tank
22. Tank Bracket
23. Petcock
24. Air Line
25. Safety Valve
26. Bushing
27. Tank Rod
28. Fusible Plug



AIR COUNTERBALANCE, SELF CONTAINED (when furnished)

1. Safety Valve
2. Fusible Plug
3. Acorn Nut
4. Seal Washer
5. Tie Rod
6. Cylinder Cover
7. Upper Gasket
8. Counterbalance Outer Cylinder
9. Counterbalance Cylinder
10. Lower Gasket
11. Counterbalance Rod Nut
12. Piston
13. "U" Packing
14. Counterbalance Rod
15. Lower Cylinder Cap
16. Pipe Nipple
17. Pipe Coupling
18. "U" Packing
19. Bushing
20. Bushing Retainer
21. Bushing Retainer Screw



'C' TYPE CUSHION (when furnished)

WARNING
NEVER APPLY MORE THAN 5 PSI ON
CUSHION WITH BOLSTER OFF PRESS
OR WITH CUSHION OUT OF PRESS.

1. Air Piping (Furnished by Customer)
2. Mounting Plate
3. Lubrication Piping
4. Oil Fitting
5. Cylinder Mounting Screw
6. Cylinder
7. "U" Packing (Split for illustration purposes only)
8. Piston
9. Pressure Plate
10. Pressure Plate Mounting Screw
11. Stop Nut
12. Roll Pin
13. Lubrication Pipe Clip and Screw
14. Positive Stop Stud

