

SECTION 3

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## Notes

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| Bore<br>(inch) | Stroke<br>(inch) | Displ.<br>(cu.<br>inch) | Cleveland<br>P/N | Installed<br>Length<br>(inch) | Type | Port Size                                  | Wt.<br>(lbs) | Comments                                                                                                 |
|----------------|------------------|-------------------------|------------------|-------------------------------|------|--------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------|
| .552           | 1.94             | .43                     | 10-30            | 7.63                          | Push | 1/8-27 N.P.T.                              | .58          | Ports in-line, no fittings, extruded aluminum body. Upgrade to 10-30D per SB7093 for Grob Aircraft only. |
| .552           | 1.96             | .46                     | 10-30A           | 8.41                          | Push | 1/8-27 N.P.T.                              | .58          | Same as 10-30, but uses rod end clevis.                                                                  |
| .552           | 2.00             | .43                     | 10-30B           | 7.50                          | Push | 1/8-27 N.P.T.                              | .58          | Obsolete design, superseded by 10-30D per SB7093.                                                        |
| .552           | 1.25             | .278                    | 10-30C           | 6.81                          | Push | 1/8-27 N.P.T.                              | .73          | Uses a custom mount with pivot pins on the side of the housing, adjacent to the inlet fitting.           |
| .552           | 2.00             | .43                     | 10-30D           | 7.528                         | Push | 1/8-27 N.P.T.                              | .58          | Upgrades 10-30. Supersedes 10-30B.                                                                       |
| .562           | 1.25             | .31                     | 10-5B            | 8.37                          | Push | 7/16-20                                    | .65          | Without parking valve, ports 180° apart, fitting 45°.                                                    |
| .562           | 1.25             | .31                     | 10-5C            | 8.37                          | Push | 7/16-20                                    | .65          | With parking valve, ports 180° apart, fitting 45° and 90°.                                               |
| .562           | 1.25             | .278                    | 10-5E            | 8.37                          | Push | 7/16-20                                    | .65          | With parking valve, ports 180° apart, fitting 45°                                                        |
| .563           | 1.29             | .31                     | 10-5             | 8.35                          | Push | Outlet, 7/16-20<br>Inlet, 1/8-27<br>N.P.T. | .63          | With parking valve, ports 90° apart, fitting 45°.                                                        |
| .563           | 1.64             | .39                     | 10-19 (1)        | 8.35                          | Push | 7/16-20                                    | .58          | Ports in-line, fittings 90°, extruded aluminum body. See note 1.                                         |
| .563           | 1.64             | .39                     | 10-19D (1)       | 8.35                          | Push | 1/8-27 N.P.T.                              | .53          | Ports in-line, no fittings, extruded aluminum body. See note 1.                                          |
| .563           | 1.64             | .39                     | 10-19F (1)       | 8.35                          | Push | Outlet, 7/16-20<br>Inlet, 1/8-27<br>N.P.T. | .55          | Ports in-line, straight fitting, extruded aluminum body. See note 1.                                     |
| .563           | 1.64             | .39                     | 10-19G (1)       | 8.01                          | Push | 1/8-27 N.P.T.                              | .53          | Ports in-line, no fittings, extruded aluminum body. See note 1.                                          |
| .563           | 1.64             | .39                     | 10-19H (1)       | 8.36                          | Push | 1/8-27 N.P.T.                              | .58          | Ports in-line, fittings 90°, extruded aluminum body. See note 1.                                         |
| .563           | 1.64             | .39                     | 10-19J (1)       | 8.33                          | Push | 1/8-27 N.P.T.                              | .53          | Ports in-line, no fittings, extruded aluminum body. See note 1.                                          |
| .563           | 1.64             | .39                     | 10-20            | 7.48                          | Push | 1/8-27 N.P.T.                              | .52          | Ports in-line, no fittings, no rod clevis, extruded aluminum body.                                       |
| .563           | 1.64             | .39                     | 10-20A           | 7.37                          | Push | 1/8-27 N.P.T.                              | .52          | Ports in-line, no fittings, no rod clevis, extruded aluminum body.                                       |
| .62            | .875             | .26                     | 010-05701        | 8.610                         | Push | 7/16-20                                    | .65          | Reservoir - capacity: 3.0 cu. in. Bell P/N 222-380-011-103.                                              |
| .625           | 1.09             | .306                    | 10-34            | 7.96                          | Push | 1/8-27 N.P.T.                              | .59          | Reservoir - capacity: 3.41 cu. in., mounting hole: .190 Dia.                                             |
| .625           | 1.09             | .306                    | 10-35            | 7.96                          | Push | 1/8-27 N.P.T.                              | .59          | Reservoir - capacity: 3.41 cu.in., mounting hole: .250 Dia.                                              |
| .6245          | 1.25             | .36                     | 10-38            | 7.85                          | Push | 1/8-27 N.P.T.                              | .59          | Reservoir - capacity: 3.0 cu.in                                                                          |
| .625           | 1.20             | .36                     | 10-39            | 7.82                          | Push | 1/8-27 N.P.T.                              | .60          | Reservoir - capacity: 3.0 cu.in                                                                          |
| .625           | 1.20             | .36                     | 10-45            | 7.45                          | Push | 1/8-27 N.P.T.                              | .52          | Reservoir - capacity: 3.0 cu. in., mounting hole: .190 Dia.                                              |
| .625           | 1.50             | .46                     | 10-46            | 7.34                          | Push | 1/8-27 N.P.T.                              | .48          | Ports in-line, no fittings.                                                                              |
| .625           | 1.50             | .46                     | 10-49            | 8.30                          | Push | 1/8-27 N.P.T.                              | .60          | Ports in-line, no fittings.                                                                              |

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| Bore<br>(inch) | Stroke<br>(inch) | Displ.<br>(cu.<br>inch) | Cleveland<br>P/N | Installed<br>Length<br>(inch) | Type | Port Size                                  | Wt.<br>(lbs) | Comments                                                               |
|----------------|------------------|-------------------------|------------------|-------------------------------|------|--------------------------------------------|--------------|------------------------------------------------------------------------|
| .625           | 1.50             | .46                     | 10-50            | 8.75                          | Push | 1/8-27 N.P.T.                              | .53          | Beech P/N 96-380034-25.                                                |
| .625           | 1.50             | .46                     | 10-55A           | 7.90                          | Push | 1/8-27 N.P.T.                              | .50          | Ports in-line, no fittings.                                            |
| .625           | 1.50             | .46                     | 10-55B           | 7.68                          | Push | 1/8-27 N.P.T.                              | .46          | Ports in-line, no fittings.                                            |
| .625           | 1.50             | .46                     | 10-58D           | 8.28                          | Push | 1/8-27 N.P.T.                              | .48          | Obsolete design, superseded by 10-58E.                                 |
| .625           | 1.50             | .46                     | 10-58E           | 8.28                          | Push | 7/16-20                                    | .44          | Supersedes 10-58D.                                                     |
| .625           | 1.50             | .46                     | 10-58F           | 8.28                          | Push | 7/16-20                                    | .46          | Upgrade from 10-58E per SB7068.                                        |
| .625           | 1.43             | .46                     | 10-73            | 9.80                          | Push | 3/8-24                                     |              | Piper P/N 82805-3-F.                                                   |
| .625           | 1.50             | .42                     | 10-88            | 6.83                          | Push | 1/8-27 N.P.T.                              | .42          | Ports in-line, no fittings.                                            |
| .626           | 1.62             | .47                     | 10-54            | 7.88                          | Push | 1/8-27 N.P.T.                              | .45          | Ports in-line, no fittings.                                            |
| .626           | 1.62             | .47                     | 10-55            | 7.90                          | Push | 1/8-27 N.P.T.                              | .45          | Beech P/N 169-380100-3.                                                |
| .6265          | 1.53             | .45                     | 10-54A           | 7.37                          | Push | 1/8-27 N.P.T.                              | .45          | Same as 10-54, except for shorter installed length.                    |
| .690           | 1.384            | .516                    | 10-36            | 7.95                          | Push | 7/16-20                                    | .59          | Reservoir - capacity: 3.41 cu. in.,<br>mounting hole: .250 & .190 Dia. |
| .750           | 1.25             | .55                     | 10-70            | 7.37                          | Push | 7/16-20                                    | .69          | Beech P/N 104-384061-1.                                                |
| .750           | 1.25             | .55                     | 10-70A           | 7.37                          | Push | 7/16-20                                    | .63          | Beech P/N 104-384061-3.                                                |
| .750           | 1.38             | .60                     | 10-70B           | 7.50                          | Push | 7/16-20                                    | .85          | Ports in-line, no fittings.                                            |
| .751           | 1.52             | .66                     | 10-24D           | 8.41                          | Push | 1/8-27 N.P.T.                              | .53          | Same as 10-24C, except body mounts are rotated<br>90°.                 |
| .750           | 1.50             | .66                     | 10-52            | 7.50                          | Push | 1/8-27 N.P.T.                              | .50          | Ports in-line, no fittings.                                            |
| .750           | 1.50             | .662                    | 10-89            | 11.06                         | Push | 1/8-27 N.P.T.                              |              | Ports in-line, no fittings.                                            |
| .750           | 1.59             | .68                     | 10-22B           | 7.26                          | Push | Outlet, 7/16-20<br>Inlet, 1/8-27<br>N.P.T. | .50          | Ports 180° apart.                                                      |
| .750           | 1.75             | .77                     | 10-21            | 12.87                         | Push | 1/8-27 N.P.T.                              | 1.05         | Reservoir - capacity: 2.88 cu. in., with parking lever.                |
| .750           | 1.75             | .77                     | 10-21A           | 12.87                         | Push | 1/8-27 N.P.T.                              | .98          | Reservoir - capacity: 2.88 cu. in., no parking brake.                  |
| .750           | 1.59             | .68                     | 10-22            | 7.25                          | Push | 1/8-27 N.P.T.                              | .50          | Inlet - 90°, .250 Dia. hole.                                           |
| .750           | 1.75             | .77                     | 10-22A           | 7.20                          | Push | 1/8-27 N.P.T.                              | .50          | No fittings.                                                           |
| .751           | 1.52             | .63                     | 10-24C           | 8.20                          | Push | 1/8-27 N.P.T.                              | .53          | Ports in-line, no fittings, extruded aluminum body.                    |
| .801           | 1.00             | .50                     | 010-06500        | 10.69                         | Push | 7/16-20                                    | .90          | Reservoir - capacity: 2.15 cu. in.,<br>Bell P/N 214-076-320-101.       |

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| Bore<br>(inch) | Stroke<br>(inch) | Displ.<br>(cu.<br>inch) | Cleveland<br>P/N | Installed<br>Length<br>(inch) | Type | Port Size        | Wt.<br>(lbs) | Comments                                                           |
|----------------|------------------|-------------------------|------------------|-------------------------------|------|------------------|--------------|--------------------------------------------------------------------|
| .801           | 1.00             | .50                     | 010-06600        | 10.69                         | Push | 7/16-20          | .83          | Bell P/N 214-076-327-101.                                          |
| .810           | 1.50             | .77                     | 10-78            | 11.535                        | Push | 7/16-20          | .80          | 90° male ports.                                                    |
| .812           | 1.50             | .74                     | 10-78A           | 11.535                        | Push | 7/16-20          | .80          | 90° male ports.                                                    |
| .812           | 1.50             | .74                     | 10-78B           | 11.535                        | Push | 7/16-20          | .74          | 90° male ports.                                                    |
| .864           | 1.408            | .824                    | 10-69            | 7.88                          | Push | 7/16-20          | .59          | Reservoir - capacity: 3.41 cu. in.                                 |
| .875           | 1.23             | .59                     | 10-17 (2)        | 5.25                          | Pull | 7/16-20          | .62          | Ports in-line, no fittings, extruded aluminum body.<br>See note 2. |
| .875           | 1.25             | .66                     | 010-06000        | 8.61                          | Push | 7/16-20          | .65          | Bell P/N 222-380-012-101.                                          |
| .925           | 1.25             | .69                     | 10-75            | 5.25                          | Pull | 7/16-20          | .62          | Piper P/N 465-705.                                                 |
| .927           | 1.25             | .75                     | 10-23            | 5.25                          | Pull | 7/16-20          | .65          | No fittings.                                                       |
| .927           | 1.22             | .67                     | 10-23A           | 5.21                          | Pull | 7/16-20          | .65          | Same as 10-23, except with extruded aluminum body.                 |
| .927           | 1.25             | .71                     | 10-23C           | 5.25                          | Pull | 7/16-20          | .60          | Extruded aluminum body.                                            |
| .927           | 1.195            | .71                     | 10-23F           | 6.25                          | Pull | 7/16-20          | .81          | Equipped with high strength clevis.                                |
| 1.00           | 1.35             | 1.015                   | 10-95            | 7.50                          | Push | 3/8-24           |              | Ports in-line, no fittings, extruded aluminum body.                |
| 1.0025         | 1.30             | .95                     | 010-05101        |                               | Push | M10 x 1 (metric) | .32          | Flange mount.                                                      |
| 1.117          | 1.06             | .94                     | 10-86            | 5.25                          | Pull | 7/16-20          | 1.0          | Large bore version of 10-23 series.                                |
| 1.117          | 1.10             | .94                     | 10-86A           | 6.25                          | Pull | 7/16-20          | .90          | Equipped with high strength clevis.                                |

**Notes:**

- (1) The 10-19 Series master cylinders have been redesigned from a steel body configuration to an extruded aluminum configuration. Listed Design Information is for the extruded aluminum body master cylinder. Design Information for the steel body master cylinder is the same except for the following:

Stroke = 1.25 inches  
 Displacement = .31 cubic inches  
 Weight = .50 lbs.

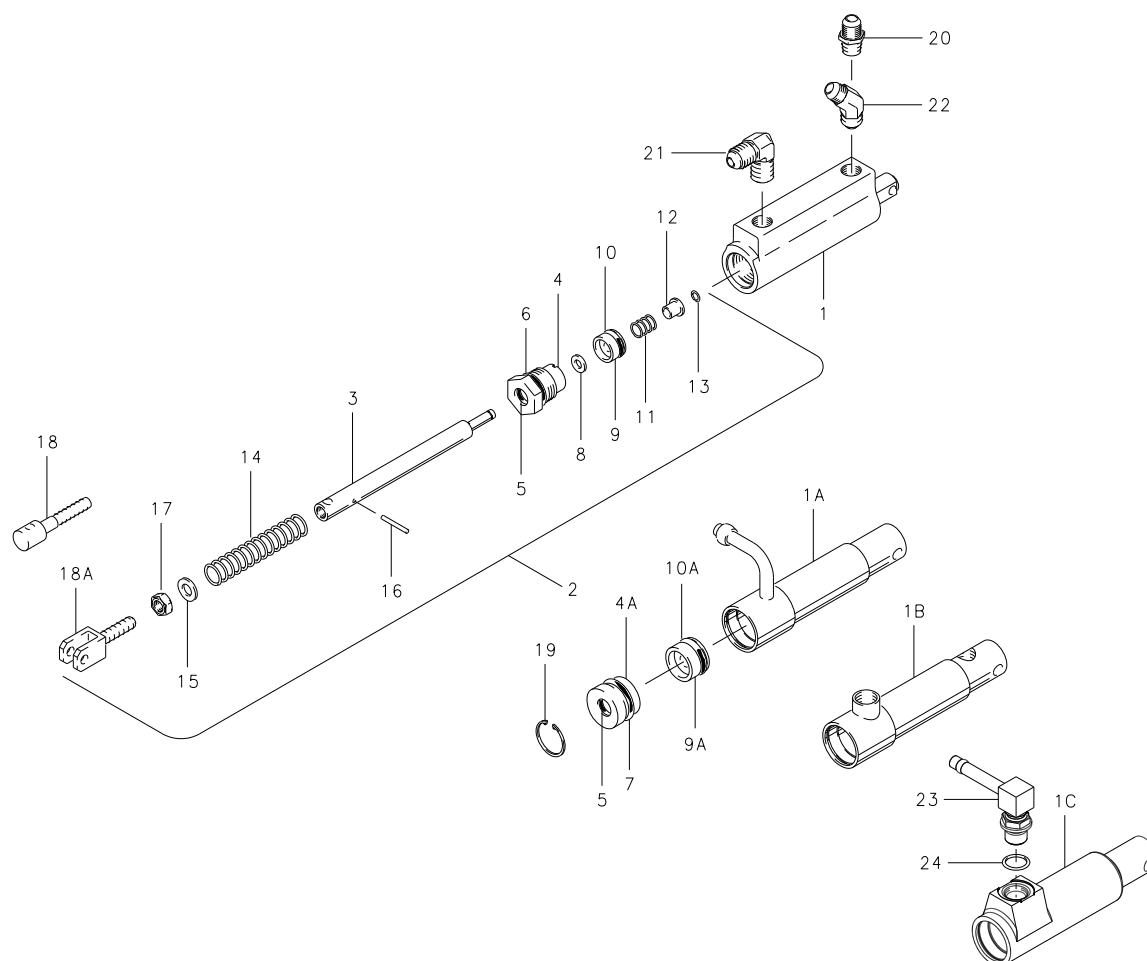
- (2) The 10-17 master cylinder has been redesigned from a steel body configuration to an extruded aluminum configuration. Listed Design Information is for the extruded aluminum body master cylinder. Design Information for the steel body master cylinder is the same except for the following:

Stroke = 1.25 inches  
 Displacement = .75 cubic inches  
 Weight = .70 lbs.

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NOTE: Parts list for reference only. Contact airframe manufacturer to order master cylinders and components listed.

| FIG. | PART NO.  | DESCRIPTION       | PER ASSY. |            |            |        |        |        |        |        |       |        |       |        |        |
|------|-----------|-------------------|-----------|------------|------------|--------|--------|--------|--------|--------|-------|--------|-------|--------|--------|
|      |           |                   | 10-19     | 10-19A (1) | 10-19B (1) | 10-19D | 10-19F | 10-19G | 10-19H | 10-19J | 10-20 | 10-20A | 10-22 | 10-22A | 10-22B |
| 1    | 144-01204 | Cylinder Body (3) | 1         |            |            | 1      |        |        |        |        |       |        |       |        |        |
|      | 144-01206 | Cylinder Body (4) |           |            |            |        | 1      | 1      | 1      |        |       |        |       |        |        |
|      | (2)       | Cylinder Assembly |           | 1          | 1          |        |        |        |        |        |       |        |       |        |        |
|      | 144-01201 | Cylinder Body     |           |            |            |        |        |        |        |        |       | 1      |       |        |        |
|      | 144-01203 | Cylinder Body     |           |            |            |        |        |        |        | 1      | 1     |        |       |        |        |
| 1A   | 189-00900 | Cylinder Assembly |           |            |            |        |        |        |        |        |       |        | 1     |        |        |
| 1B   | 189-00901 | Cylinder Assembly |           |            |            |        |        |        |        |        |       |        |       | 1      |        |
| 1C   | 144-13600 | Cylinder Body     |           |            |            |        |        |        |        |        |       |        |       |        | 1      |

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## Illustrated Parts List

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| FIG.    | PART NO.  | DESCRIPTION                 | PER ASSY. |            |            |        |        |        |        |        |       |        |       |        |        |
|---------|-----------|-----------------------------|-----------|------------|------------|--------|--------|--------|--------|--------|-------|--------|-------|--------|--------|
|         |           |                             | 10-19     | 10-19A (1) | 10-19B (1) | 10-19D | 10-19F | 10-19G | 10-19H | 10-19J | 10-20 | 10-20A | 10-22 | 10-22A | 10-22B |
| 2       | 182-00300 | Piston Rod Assembly         | 1         | 1          | 1          | 1      |        |        |        |        |       |        |       |        |        |
|         | 182-00700 | Piston Rod Assembly         |           |            |            |        |        |        |        |        |       |        | 1     | 1      | 1      |
|         | 182-02600 | Piston Rod Assembly         |           |            |            |        | 1      |        | 1      | 1      |       |        |       |        |        |
|         | 182-04100 | Piston Rod Assembly         |           |            |            |        |        | 1      |        |        |       |        |       |        |        |
| 3       | 142-00500 | Rod-Piston                  | 1         | 1          | 1          | 1      | 1      |        | 1      | 1      |       |        |       |        |        |
|         | 142-00800 | Rod-Piston                  |           |            |            |        |        |        |        |        | 1     | 1      |       |        |        |
|         | 142-00900 | Rod-Piston                  |           |            |            |        |        |        |        |        |       |        | 1     | 1      | 1      |
|         | 142-02800 | Rod-Piston                  |           |            |            |        |        | 1      |        |        |       |        |       |        |        |
| 4       | 141-00500 | End Gland                   | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      |       |        |        |
| 4A      | 141-01000 | End Gland                   |           |            |            |        |        |        |        |        |       |        | 1     | 1      | 1      |
| 5       | 101-00700 | O-Ring (MS28775-012)        | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      | 1     | 1      | 1      |
| 6       | 101-01100 | O-Ring (MS28775-113)        | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      |       |        |        |
| 7       | 101-01200 | O-Ring (MS28775-114)        |           |            |            |        |        |        |        |        |       |        | 1     | 1      | 1      |
| 8       | 095-01100 | Washer-Seal                 | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      | 1     | 1      | 1      |
| 9       | 148-00900 | Piston                      | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      |       |        |        |
| 9A      | 148-01000 | Piston                      |           |            |            |        |        |        |        |        |       |        | 1     | 1      | 1      |
| 10      | 101-00800 | O-Ring-Piston (MS28775-110) | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      |       |        |        |
| 10A     | 101-01100 | O-Ring-Piston (MS28775-113) |           |            |            |        |        |        |        |        |       |        | 1     | 1      | 1      |
| 11      | 082-00800 | Spring-Piston               | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      | 1     | 1      | 1      |
| 12      | 145-01500 | Bushing                     | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      | 1     | 1      | 1      |
| 13      | 155-00500 | Snap Ring                   | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      | 1     | 1      | 1      |
| 14      | 082-00900 | Spring-Return               | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      | 1     | 1      | 1     | 1      | 1      |
| 15      | 095-10200 | Washer (AN960-416L)         | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      |       |        |       |        |        |
|         | 095-10600 | Washer (AN960-616)          |           |            |            |        |        |        |        |        | 1     | 1      | 1     | 1      | 1      |
| 16      | 223-00100 | Roll-Pin                    |           |            |            |        |        |        |        |        | 1     | 1      | 1     | 1      | 1      |
| 17      | 094-03000 | Nut-Check (AN316-4)         | 1         | 1          | 1          | 1      | 1      | 1      | 1      | 1      |       |        |       |        |        |
| 18      | 143-00400 | Clevis                      | 1         | 1          |            | 1      |        |        |        |        |       |        |       |        |        |
| 18A     | 143-00900 | Clevis                      |           |            |            |        | 1      | 1      | 1      | 1      |       |        |       |        |        |
| 19      | 155-01000 | Snap Ring                   |           |            |            |        |        |        |        |        |       |        | 1     | 1      | 1      |
| 20      | 104-00300 | Tube Fitting (AN816-4D)     |           |            |            |        | 1      |        |        |        |       |        |       |        |        |
| 21      | 104-00400 | Tube Fitting (MS20822-4D)   | 2         | 2          | 1          |        |        |        | 2      |        |       |        |       |        |        |
| 22      | 104-00500 | Tube Fitting (MS20823-4D)   |           |            | 1          |        |        |        |        |        |       |        |       |        |        |
| 23      | 104-06900 | Fitting                     |           |            |            |        |        |        |        |        |       |        |       |        | 1      |
| 24      | 101-20400 | O-Ring                      |           |            |            |        |        |        |        |        |       |        |       |        | 1      |
| 199-505 |           |                             | 1         | 1          |            | 1      | 1      | 1      | 1      | 1      | 1     | 1      |       |        |        |
| 199-507 |           |                             |           |            |            |        |        |        |        |        |       |        | 1     | 1      | 1      |

## NOTES:

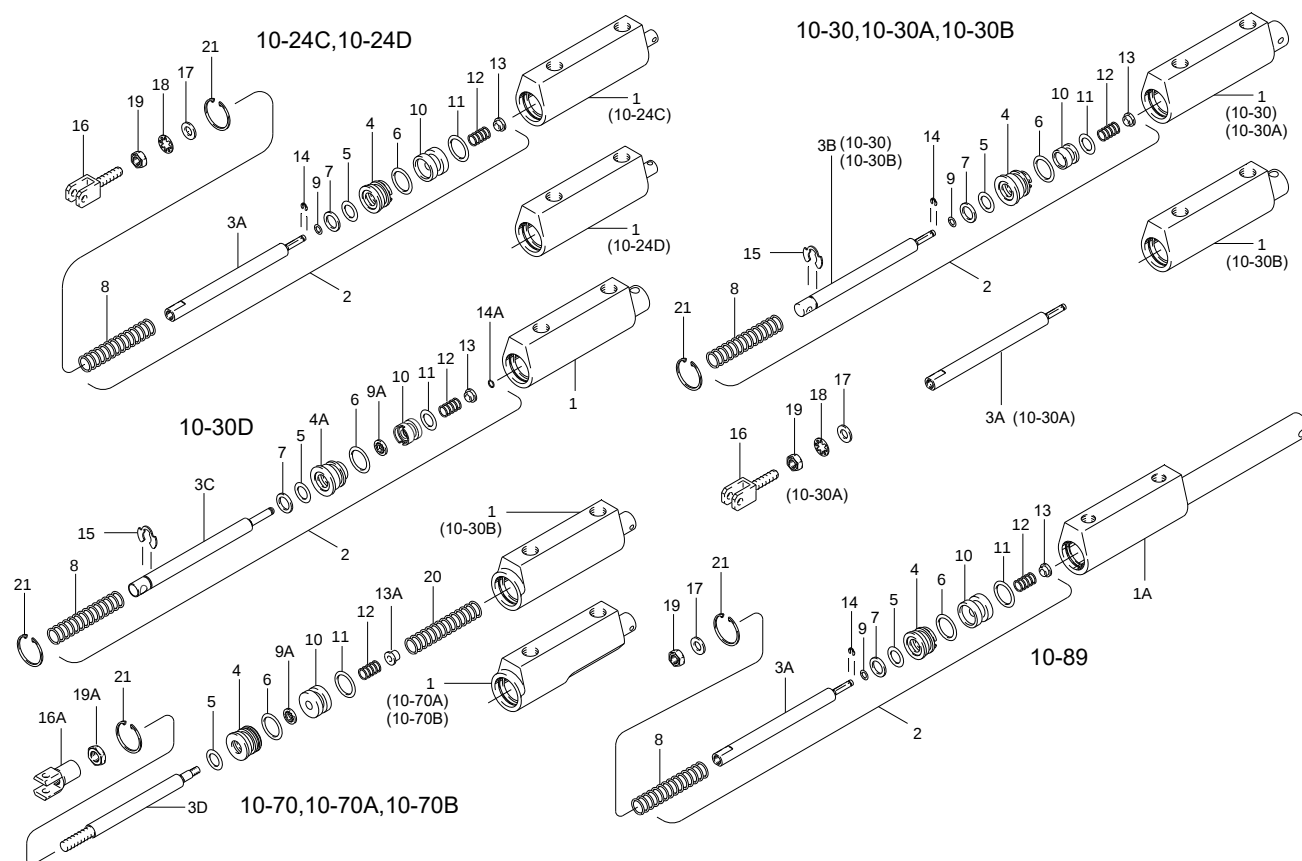
- (1) Inactive Assembly - Spares support only for parts listed.
- (2) Inactive Part - No longer available for spares support.
- (3) Extruded body – formerly used steel body P/N 189-00500 which is no longer available.
- (4) Extruded body – formerly used steel body P/N 189-00501 which is no longer available.

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Push Type****Illustrated Parts List****10-24C, 10-24D, 10-30, 10-30A, 10-30B, 10-30D, 10-70, 10-70A, 10-70B, 10-89****NOTE:** Parts list for reference only. Contact the airframe manufacturer to order master cylinders and components listed.

| FIG. | PART NO.  | DESCRIPTION         | PER ASSY. |        |              |        |                   |        |       |        |        |       |
|------|-----------|---------------------|-----------|--------|--------------|--------|-------------------|--------|-------|--------|--------|-------|
|      |           |                     | 10-24C    | 10-24D | 10-30<br>(2) | 10-30A | 10-30B<br>(1) (2) | 10-30D | 10-70 | 10-70A | 10-70B | 10-89 |
| 1    | 144-03200 | Cylinder Body       |           |        | 1            | 1      |                   |        |       |        |        |       |
|      | 144-03700 | Cylinder Body       | 1         |        |              |        |                   |        |       |        |        |       |
|      | 144-03701 | Cylinder Body       |           | 1      |              |        |                   |        |       |        |        |       |
|      | 144-06800 | Cylinder Body       |           |        |              |        |                   |        | 1     |        |        |       |
|      | 144-07300 | Cylinder Body       |           |        |              |        |                   |        |       | 1      | 1      |       |
|      | 144-11900 | Cylinder Body       |           |        |              |        | 1                 | 1      |       |        |        |       |
| 1A   | 144-11500 | Cylinder Body       |           |        |              |        |                   |        |       |        |        | 1     |
| 2    | 182-02000 | Piston Rod Assembly | 1         | 1      |              |        |                   |        |       |        |        |       |
|      | 182-02200 | Piston Rod Assembly |           |        | 1            |        |                   |        |       |        |        |       |
|      | 182-07500 | Piston Rod Assembly |           |        |              |        |                   |        |       |        |        | 1     |
|      | (3)       | Piston Rod Assembly |           |        |              |        | 1                 |        |       |        |        |       |
|      | 182-08500 | Piston Rod Assembly |           |        |              |        |                   | 1      |       |        |        |       |
| 3A   | 142-03700 | Rod-Piston          | 1         | 1      |              | 1      |                   |        |       |        |        | 1     |
| 3B   | 142-03900 | Rod-Piston          |           |        | 1            |        |                   |        |       |        |        |       |
|      | (3)       | Rod-Piston          |           |        |              |        | 1                 |        |       |        |        |       |

(Continued on next page)

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Push Type****Illustrated Parts List****10-24C, 10-24D, 10-30, 10-30A, 10-30B, 10-30D, 10-70, 10-70A, 10-70B, 10-89**

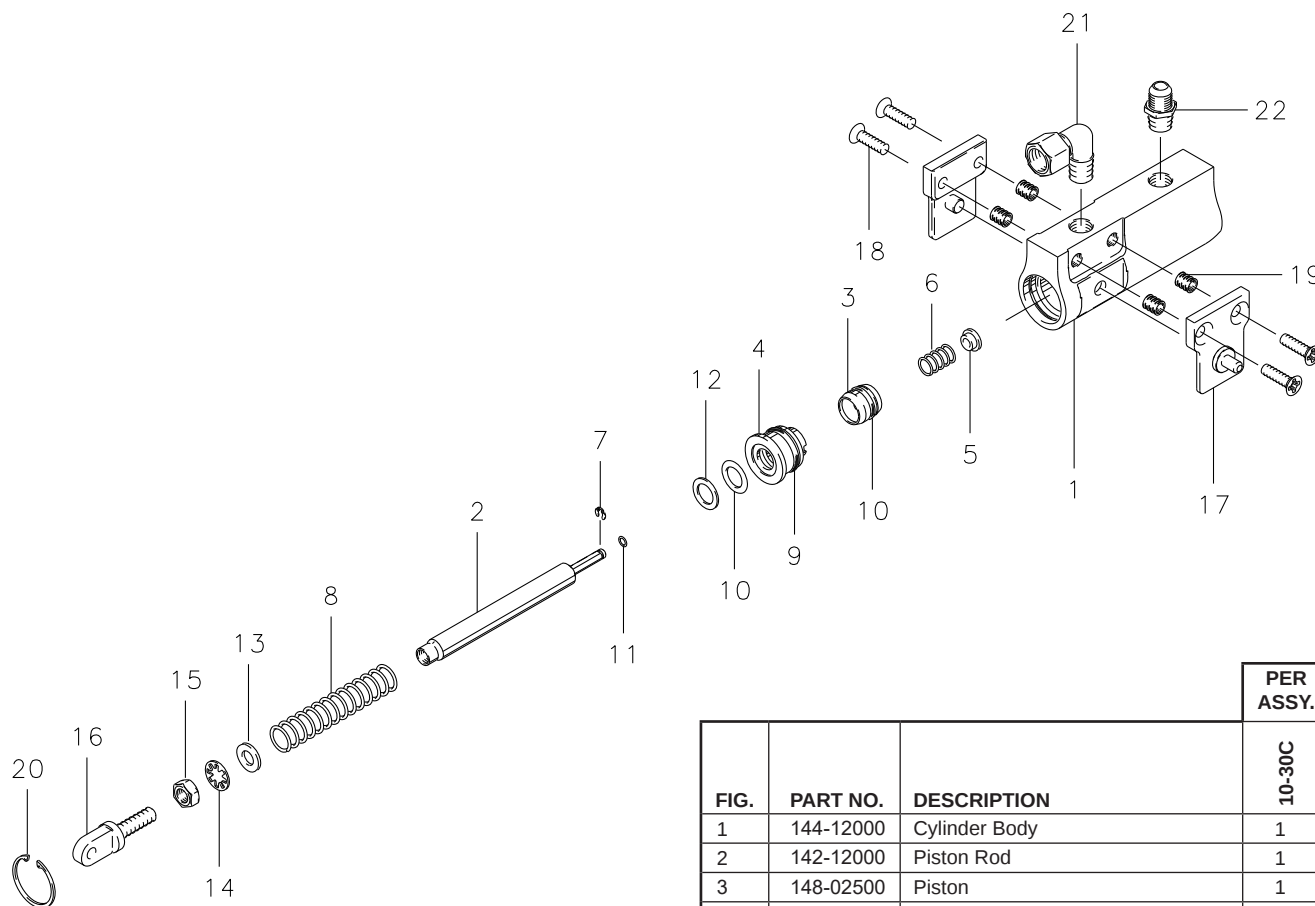
(Continued from previous page)

| FIG. | PART NO.  | DESCRIPTION                                  | PER ASSY. |        |              |        |                   |        |       |        |        |       |
|------|-----------|----------------------------------------------|-----------|--------|--------------|--------|-------------------|--------|-------|--------|--------|-------|
|      |           |                                              | 10-24C    | 10-24D | 10-30<br>(2) | 10-30A | 10-30B<br>(1) (2) | 10-30D | 10-70 | 10-70A | 10-70B | 10-89 |
| 3C   | 142-13700 | Rod-Piston                                   |           |        |              |        |                   | 1      |       |        |        |       |
| 3D   | 142-07900 | Rod-Piston                                   |           |        |              |        |                   |        | 1     | 1      | 1      |       |
| 4    | 141-01200 | End Gland                                    | 1         | 1      |              |        |                   |        |       |        |        | 1     |
|      | 141-02500 | End Gland                                    |           |        | 1            | 1      | 1                 |        |       |        |        |       |
|      | 141-04400 | End Gland                                    |           |        |              |        |                   |        | 1     | 1      |        |       |
|      | 141-04401 | End Gland                                    |           |        |              |        |                   |        |       |        | 1      |       |
|      | 141-09000 | End Gland                                    |           |        |              |        |                   | 1      |       |        |        |       |
| 5    | 101-00700 | O-Ring (MS28775-012)                         | 1         | 1      |              |        |                   |        | 1     | 1      | 1      | 1     |
|      | 101-00800 | O-Ring (MS28775-110)                         |           |        | 1            | 1      | 1                 | 1      |       |        |        |       |
| 6    | 101-01100 | O-Ring (MS28775-113)                         | 1         | 1      | 1            | 1      | 1                 | 1      | 1     | 1      | 1      | 1     |
| 7    | 095-01300 | Washer-Wiper                                 | 1         | 1      | 1            | 1      | 1                 | 1      |       |        |        | 1     |
| 8    | 082-00900 | Spring-Return                                |           |        |              | 1      | 1                 |        |       |        |        |       |
|      | 082-05200 | Spring-Return                                | 1         | 1      |              |        |                   |        |       |        |        | 1     |
|      | 082-14500 | Spring-Return                                |           |        | 1            |        |                   | 1      |       |        |        |       |
| 9    | 101-00100 | O-Ring                                       | 1         | 1      | 1            | 1      | 1                 |        |       |        |        | 1     |
| 9A   | 095-02600 | Washer-Seal                                  |           |        |              |        |                   | 1      | 1     | 1      | 1      |       |
| 10   | 148-02300 | Piston                                       | 1         | 1      |              |        |                   |        |       |        |        | 1     |
|      | 148-02500 | Piston                                       |           |        | 1            | 1      | 1                 |        |       |        |        |       |
|      | 148-03800 | Piston                                       |           |        |              |        |                   |        | 1     | 1      | 1      |       |
|      | 148-09200 | Piston                                       |           |        |              |        |                   | 1      |       |        |        |       |
| 11   | 101-00800 | O-Ring (MS28775-110)                         |           |        | 1            | 1      | 1                 | 1      |       |        |        |       |
|      | 101-01100 | O-Ring (MS28775-113)                         | 1         | 1      |              |        |                   |        | 1     | 1      | 1      | 1     |
| 12   | 082-02100 | Spring-Piston                                | 1         | 1      | 1            | 1      | 1                 | 1      |       |        |        | 1     |
|      | 082-05600 | Spring-Piston                                |           |        |              |        |                   |        | 1     | 1      | 1      |       |
| 13   | 145-01500 | Spring Guide                                 |           |        |              |        |                   | 1      |       |        |        |       |
|      | 145-05800 | Bushing                                      | 1         | 1      | 1            | 1      | 1                 |        |       |        |        | 1     |
| 13A  | 145-06500 | Spring Guide                                 |           |        |              |        |                   |        | 1     | 1      | 1      |       |
| 14   | 155-04800 | Snap Ring                                    | 1         | 1      | 1            | 1      | 1                 |        |       |        |        | 1     |
| 14A  | 155-00500 | Snap Ring                                    |           |        |              |        |                   | 1      |       |        |        |       |
| 15   | 155-05000 | Snap Ring-Rod                                |           |        | 1            |        | 1                 | 1      |       |        |        |       |
| 16   | 143-00400 | Clevis                                       | 1         | 1      |              | 1      |                   |        |       |        |        |       |
| 16A  | 143-01300 | Clevis                                       |           |        |              |        |                   |        | 1     | 1      | 1      |       |
| 17   | 095-10100 | Washer (AN960-616L)                          | 1         | 1      |              | 1      |                   |        |       |        |        |       |
|      | 095-10200 | Washer (AN960-416L)                          |           |        |              |        |                   |        |       |        |        | 1     |
| 18   | 095-15600 | Washer-Star (MS35333-40)                     | 1         | 1      |              | 1      |                   |        |       |        |        |       |
| 19   | 094-03000 | Nut-Check (AN316-4)                          | 1         | 1      |              | 1      |                   |        |       |        |        | 1     |
| 19A  | 094-04300 | Nut-Check (AM316-5)                          |           |        |              |        |                   |        | 1     | 1      | 1      |       |
| 20   | 082-07400 | Spring-Return                                |           |        |              |        |                   |        | 1     | 1      | 1      |       |
| 21   | 155-01200 | Snap Ring                                    | 1         | 1      |              |        |                   |        |       |        |        | 1     |
|      | 155-04700 | Snap Ring                                    |           |        | 1            | 1      | 1                 | 1      |       |        |        |       |
|      | 155-05500 | Snap Ring                                    |           |        |              |        |                   |        | 1     | 1      | 1      |       |
|      | 199-510   | Repair Kit (5, 6, 9)                         | 1         | 1      |              |        |                   |        |       |        |        |       |
|      | 199-512   | Repair Kit (5, 6, 7, 9, 9A, 12, 14, 14A, 15) |           |        | 1            | 1      | 1                 | 1      |       |        |        |       |
|      | 199-521   | Repair Kit (5, 6, 9A)                        |           |        |              |        |                   |        | 1     | 1      | 1      |       |

## NOTES:

- (1) Inactive Assembly - Spares support only for parts listed.  
 (2) SB7093-1 Service Bulletin Kit upgrades 10-30 and 10-30B to 10-30D configuration per SB7093.  
 (3) Inactive Part - No longer available for spares support.

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**Master Cylinder  
Push Type****10-30C****NOTES:**

- (1) Master Cylinder 10-30C is FAA PMA Approved for use on Slingsby Aviation Ltd. Aircraft Models T67 GRP series. The master cylinder and all components listed are available for sale thru distribution.

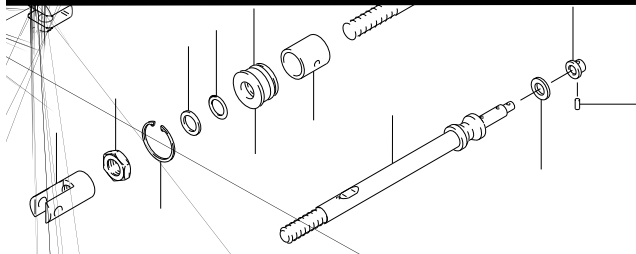
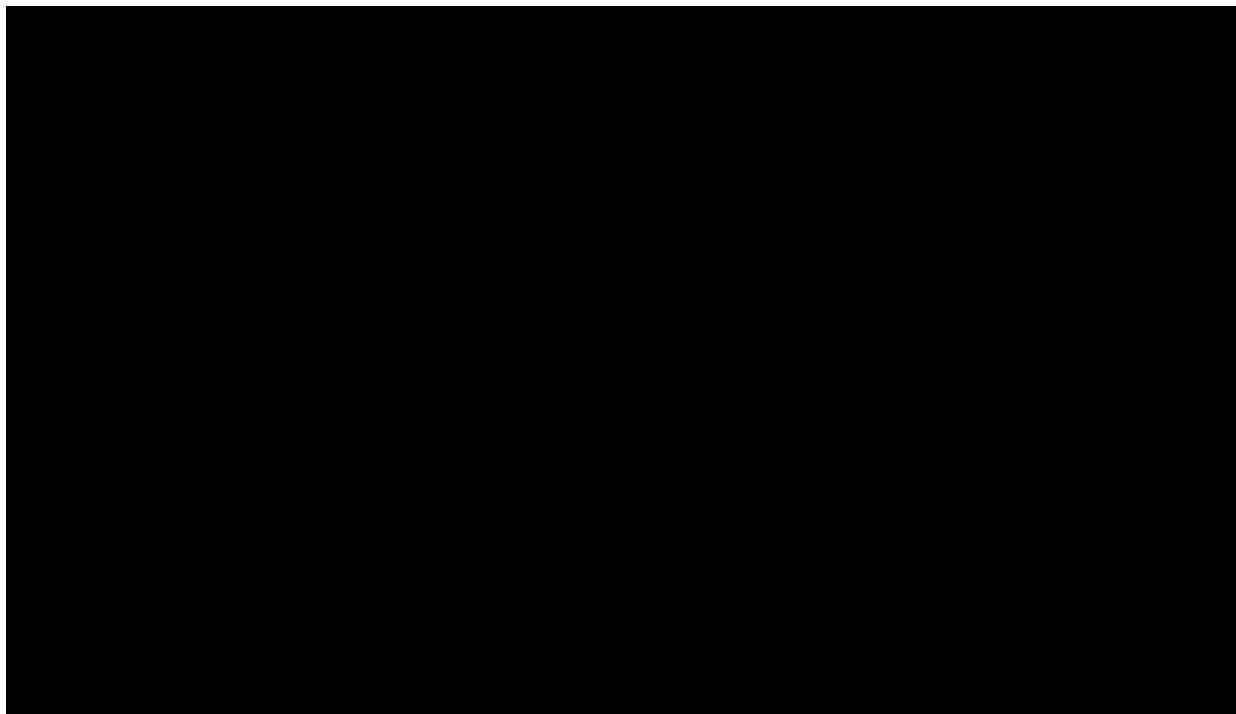
|      |           |                                 | PER<br>ASSY. |
|------|-----------|---------------------------------|--------------|
| FIG. | PART NO.  | DESCRIPTION                     | 10-30C       |
| 1    | 144-12000 | Cylinder Body                   | 1            |
| 2    | 142-12000 | Piston Rod                      | 1            |
| 3    | 148-02500 | Piston                          | 1            |
| 4    | 141-02500 | End Gland                       | 1            |
| 5    | 145-05800 | Bushing                         | 1            |
| 6    | 082-02100 | Spring                          | 1            |
| 7    | 155-04800 | Retaining Ring                  | 1            |
| 8    | 082-13700 | Spring                          | 1            |
| 9    | 101-01100 | O-Ring (MS28775-113)            | 1            |
| 10   | 101-00800 | O-Ring (MS28775-110)            | 2            |
| 11   | 101-00100 | O-Ring                          | 1            |
| 12   | 095-01300 | Washer, Wiper                   | 1            |
| 13   | 095-10100 | Washer (AN960-616L)             | 1            |
| 14   | 095-15600 | Washer, Star (MS35333-40)       | 1            |
| 15   | 094-03000 | Nut, Jam (AN316-4)              | 1            |
| 16   | 143-03100 | Clevis                          | 1            |
| 17   | 111-10900 | Bracket Assembly                | 2            |
| 18   | 102-17500 | Screw (MS24694-S49)             | 4            |
| 19   | 230-05500 | Insert, Locking (MS21209F1-15L) | 4            |
| 20   | 155-04700 | Ring, Retaining                 | 1            |
| 21   | 104-09300 | Elbow, Male                     | 1            |
| 22   | 104-00300 | Tube Fitting (AN816-4D)         | 1            |

|         |                        |   |
|---------|------------------------|---|
| 199-512 | Repair Kit (9, 10, 11) | 1 |
|---------|------------------------|---|

**Cleveland**  
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10-46, 10-51, 010-05101, 10-52, 10-58D, 10-58E, 10-58F, 10-95



NOTE: Parts list for reference only. Contact the airframe manufacturer to order master cylinders and components listed.

| FIG. | PART NO.  | DESCRIPTION         | PER ASSY. |           |           |       |                       |            |        |       |
|------|-----------|---------------------|-----------|-----------|-----------|-------|-----------------------|------------|--------|-------|
|      |           |                     | 10-46     | 10-51 (1) | 010-05101 | 10-52 | 10-58D<br>(1) (2) (4) | 10-58E (6) | 10-58F | 10-95 |
| 1    | 144-04600 | Cylinder Body       | 1         |           |           |       | 1                     |            |        |       |
|      | 144-04601 | Cylinder Body       |           |           |           |       |                       | 1          | 1      |       |
|      | 144-05000 | Cylinder Body       |           |           |           | 1     |                       |            |        |       |
| 1A   | 144-04900 | Cylinder Body       |           | 1         | 1         |       |                       |            |        |       |
| 1B   | 144-13100 | Cylinder Body       |           |           |           |       |                       |            |        | 1     |
| 2    | 111-04700 | Piston Rod Assembly | 1         |           |           |       |                       |            |        |       |
|      | 111-04900 | Piston Rod Assembly |           |           |           | 1     |                       |            |        |       |
|      | 111-05400 | Piston Rod Assembly |           |           |           |       | 1                     | 1          |        |       |
|      | 182-03700 | Piston Rod Assembly |           | 1         | 1         |       |                       |            |        |       |
| 2A   | 142-08201 | Piston Rod          |           |           |           |       |                       |            | 1      |       |
| 2B   | 142-13200 | Piston Rod          |           |           |           |       |                       |            |        | 1     |
| 3    | 141-02600 | End Gland           | 1         |           |           |       | 1                     | 1          | 1      |       |
|      | 141-02800 | End Gland           |           |           |           | 1     |                       |            |        |       |
|      | 141-04000 | End Gland           |           |           | 1         |       |                       |            |        | 1     |
|      | (3)       | End Gland           |           | 1         |           |       |                       |            |        |       |

(Continued on next page)

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Push Type****Illustrated Parts List****10-46, 10-51, 010-05101, 10-52, 10-58D, 10-58E, 10-58F, 10-95**

(Continued from previous page)

| FIG. | PART NO.  | DESCRIPTION               | PER ASSY. |           |           |       |                        |                        |             |       |
|------|-----------|---------------------------|-----------|-----------|-----------|-------|------------------------|------------------------|-------------|-------|
|      |           |                           | 10-46     | 10-51 (1) | 010-05101 | 10-52 | 10-58D (1) (2) (4) (7) | 10-58E (6) (7) (8) (9) | 10-58F (10) | 10-95 |
| 4    | 101-26800 | O-Ring                    |           | 1         | 1         |       |                        |                        |             | 1     |
|      | 101-00600 | O-Ring (MS28775-011)      | 1         |           |           | 1     | 1                      | 1                      | 1           |       |
| 5    | 100-20006 | Ring, Back Up (MS28782-6) |           |           | 1         |       |                        |                        |             | 1     |
| 6    | 101-20200 | O-Ring (MS28775-014)      | 1         |           |           |       | 1                      | 1                      | 1           |       |
|      | 101-27000 | O-Ring                    |           | 1         | 1         |       |                        |                        |             | 1     |
|      | 101-50343 | O-Ring (MS28775-016)      |           |           |           | 1     |                        |                        |             |       |
| 7    | 155-05100 | Snap Ring                 | 2         | 1         | 1         | 1     | 2                      | 2                      |             | 1     |
| 7A   | 155-07200 | Snap Ring                 |           | 1         | 1         |       |                        |                        |             |       |
| 8    | 067-05000 | Spacer                    | 1         |           |           |       |                        |                        |             |       |
|      | 067-05400 | Spacer                    |           |           |           | 1     |                        |                        |             |       |
|      | 067-05500 | Spacer                    |           | 1         | 1         |       |                        |                        |             | 1     |
|      | 067-07300 | Spacer                    |           |           |           |       | 1                      | 1                      |             |       |
|      | 067-19100 | Spacer                    |           |           |           |       |                        |                        | 1           |       |
| 9    | 101-00300 | O-Ring (MS28775-008)      | 1         |           |           | 1     |                        |                        |             |       |
|      | 101-26700 | O-Ring                    |           | 1         | 1         |       |                        |                        |             | 1     |
| 10   | 148-02800 | Piston                    | 1         |           |           |       |                        |                        |             |       |
|      | 148-03700 | Piston                    |           |           |           | 1     |                        |                        |             |       |
|      | 148-04500 | Piston                    |           |           | 1         |       |                        |                        |             | 1     |
|      | (3)       | Piston                    |           | 1         |           |       |                        |                        |             |       |
|      | 148-04900 | Piston                    |           |           |           |       | 1                      | 1                      | 1           |       |
| 11   | 095-03400 | Washer Seal               |           |           |           |       | 1                      | 1                      |             |       |
| 11A  | 095-03401 | Washer Seal               |           |           |           |       |                        |                        | 1           |       |
| 12   | 101-00900 | O-Ring (MS28775-111)      | 1         |           |           |       | 1                      | 1                      | 1           |       |
|      | 101-26900 | O-Ring                    |           |           | 1         |       |                        |                        |             | 1     |
|      | 101-01100 | O-Ring (MS28775-113)      |           |           |           | 1     |                        |                        |             |       |
|      | (3)       | O-Ring                    |           | 1         |           |       |                        |                        |             |       |
| 13   | 082-05500 | Spring, Piston            | 1         | 1         | 1         | 1     |                        |                        |             | 1     |
|      | 082-05501 | Spring, Piston            |           |           |           |       | 1                      | 1                      | 1           |       |
| 14   | 095-10200 | Washer (AN960-416L)       |           |           | 1         |       |                        |                        |             | 1     |
| 15   | 082-06000 | Spring, Return            | 1         |           |           | 1     | 1                      |                        |             |       |
|      | 082-06001 | Spring, Return            |           |           |           |       |                        | 1                      | 1           |       |
|      | 082-06300 | Spring, Return            |           | 1         | 1         |       |                        |                        |             | 1     |
| 16   | 067-07100 | Spacer                    |           |           |           |       | 1                      | 1                      | 1           |       |
| 17   | 155-01200 | Snap Ring                 |           |           |           | 1     |                        |                        |             |       |
|      | 155-01300 | Snap Ring                 |           | 1         | 1         |       |                        |                        |             | 1     |
|      | 155-05400 | Snap Ring                 | 1         |           |           |       | 1                      | 1                      | 1           |       |
| 18   | 094-04300 | Nut, Lock (AN316-5)       |           | 1         | 1         | 1     |                        |                        |             |       |
| 18A  | 094-03000 | Nut                       |           |           |           |       |                        |                        |             | 1     |
| 19   | 143-01000 | Clevis                    |           |           |           | 1     |                        |                        |             |       |
| 19A  | 143-01400 | Clevis                    |           |           | 1         |       |                        |                        |             |       |
| 19B  | 143-03500 | Clevis                    |           |           |           |       |                        |                        |             | 1     |
| 20   | 223-03200 | Pin, Roll                 |           |           |           |       |                        |                        | 1           |       |
| 21   | 200-03500 | Retainer, Spring          |           |           |           |       |                        |                        | 1           |       |

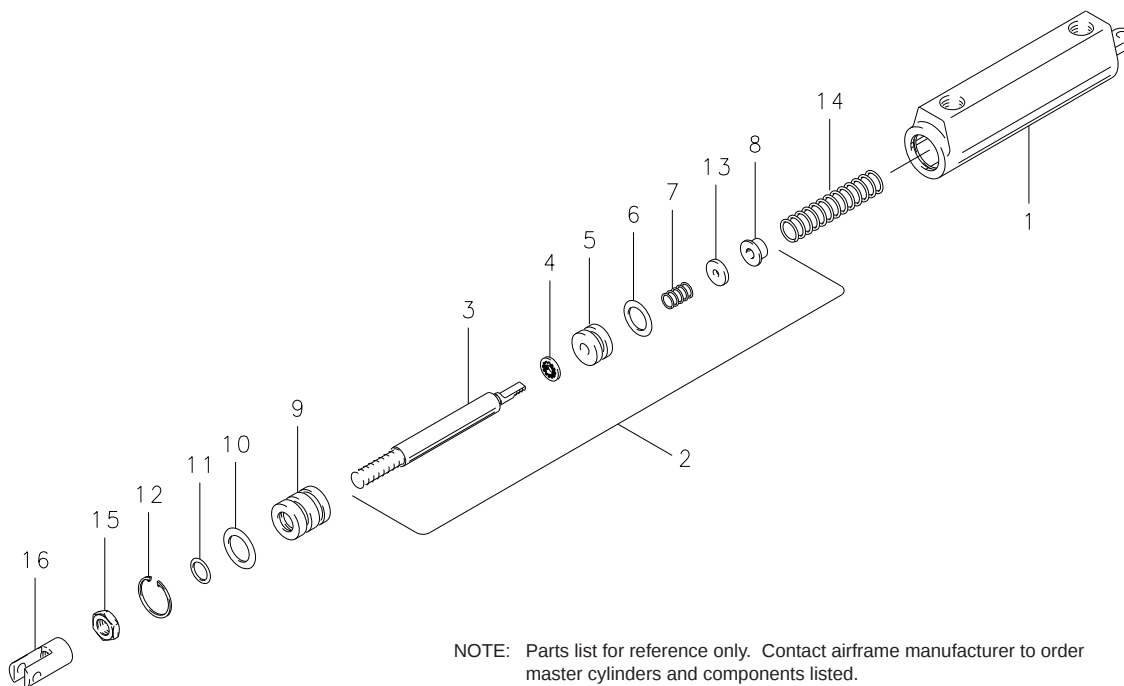
## NOTES:

- (1) Inactive assembly - spares support only for parts listed.
- (2) 10-58C replaced by 10-58D.
- (3) Inactive part - No longer available for spares support.
- (4) 10-58D superseded by 10-58E.
- (5) The following Cleveland Master Cylinders were formerly manufactured by Gerdes Product Co.  

|               |               |
|---------------|---------------|
| C.W.B. NUMBER | GERDES NUMBER |
| 10-46         | A-110-27      |
| 10-51         | A-110-18      |
| 10-52         | A-110-12      |
- (6) SB7068-1 Service Bulletin Kit Parts List is obsolete. Refer to SB7117.
- (7) The 10-58C, 10-58D, and 10-58E are obsolete. The 10-58F supersedes and is to be used as spares for 10-58C, 10-58D, and 10-58E. The 10-58F uses O-ring fittings, contact the airframe manufacturer for the required plumbing attachment fitting changes.
- (8) 10-58E is upgraded to 10-58F per SB7117.
- (9) 10-58E (previously upgraded into the 10-58F configuration per SB7068, Rev A) is upgraded into the latest 10-58F configuration per SB7117.
- (10) 10-58F with manufacturing date of 11/14 and earlier is upgraded into the latest 10-58F configuration per SB7117.

|          |                                    |   |  |   |   |   |  |   |   |   |
|----------|------------------------------------|---|--|---|---|---|--|---|---|---|
| 199-515  | Repair Kit (4, 6, 9, 12)           | 1 |  |   |   |   |  |   |   |   |
| 199-518  | Repair Kit (4, 5, 6, 7, 7A, 9, 12) |   |  | 1 |   |   |  |   |   | 1 |
| 199-523  | Repair Kit (4, 6, 9, 12)           |   |  |   | 1 |   |  |   |   |   |
| 199-524  | Repair Kit (4, 6, 7, 11, 12)       |   |  |   |   | 1 |  | 1 |   |   |
| 199-524A | Repair Kit (4, 6, 11A, 12, 20)     |   |  |   |   |   |  |   | 1 |   |

**Cleveland**  
Wheels & Brakes

**Illustrated Parts List****10-49, 10-50, 10-54, 10-54A, 10-55, 10-55A, 10-55B, 10-88**

NOTE: Parts list for reference only. Contact airframe manufacturer to order master cylinders and components listed.

**NOTES:**

- (1) The following Cleveland master cylinders were formerly manufactured by Gerdes Products Co.

| C.W.B.<br>NUMBER | GERDES<br>NUMBER |
|------------------|------------------|
| 10-49            | A-110-37         |
| 10-50            | A-110-39         |
| 10-54            | A-110-10         |

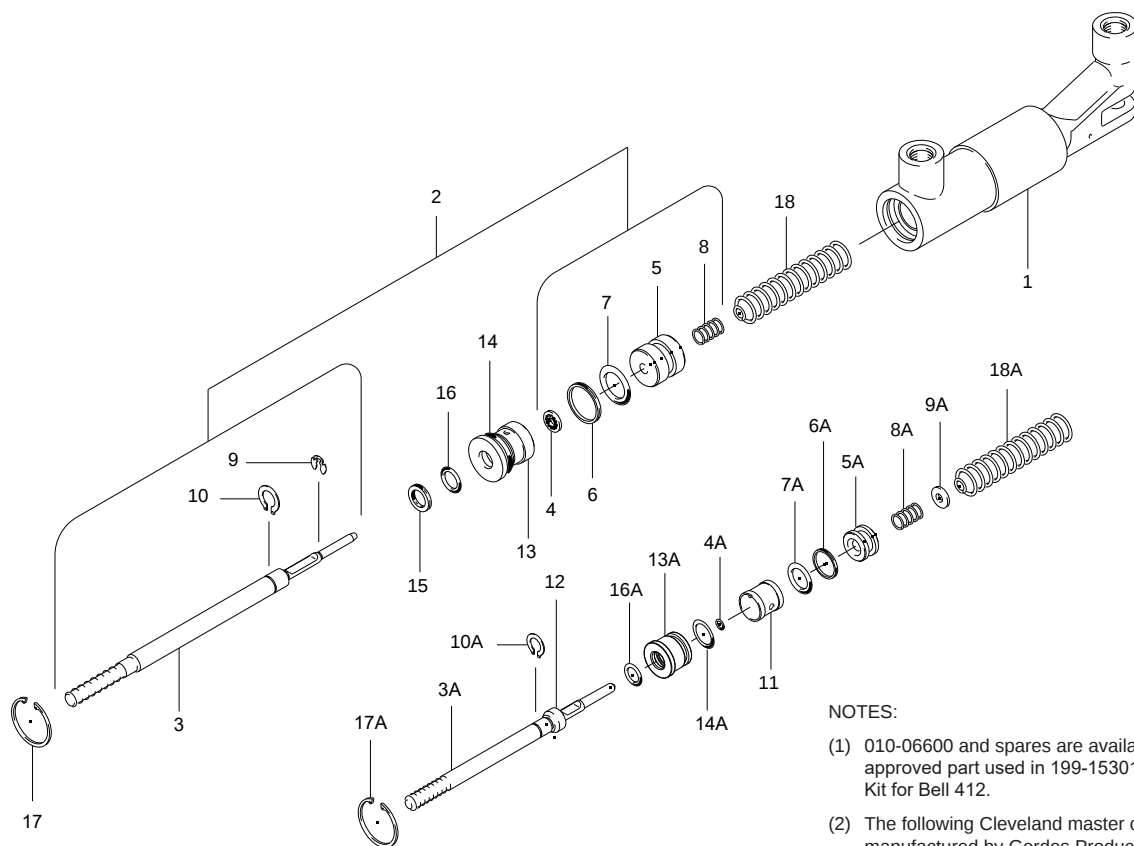
- (2) Master Cylinder 10-55B replaces 10-55A. Both are FAA PMA Approved for use on General Avia Aircraft Model F22. The master cylinder and all components listed are available thru distribution.

| FIG.                              | PART NO.  | DESCRIPTION          | PER ASSY. |       |       |        |                     |            |       |  |
|-----------------------------------|-----------|----------------------|-----------|-------|-------|--------|---------------------|------------|-------|--|
|                                   |           |                      | 10-49     | 10-50 | 10-54 | 10-54A | 10-55<br>10-55A (2) | 10-55B (2) | 10-88 |  |
| 1                                 | 144-04700 | Cylinder Body        | 1         |       | 1     | 1      |                     |            |       |  |
|                                   | 144-04800 | Cylinder Body        |           | 1     |       |        | 1                   | 1          | 1     |  |
| 2                                 | 182-02800 | Piston Rod Assembly  | 1         |       |       |        |                     |            |       |  |
|                                   | 182-02801 | Piston Rod Assembly  |           |       |       |        |                     |            | 1     |  |
|                                   | 182-02802 | Piston Rod Assembly  |           |       |       |        |                     | 1          |       |  |
| 3                                 | 142-05500 | Piston Rod           | 1         |       |       | 1      |                     |            | 1     |  |
|                                   | 142-05300 | Piston Rod           |           | 1     |       |        |                     |            |       |  |
|                                   | 142-05400 | Piston Rod           |           |       | 1     |        | 1                   |            |       |  |
|                                   | 142-05502 | Piston Rod           |           |       |       |        |                     | 1          |       |  |
| 4                                 | 095-02600 | Stat-O-Seal          | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 5                                 | 148-03400 | Piston               | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 6                                 | 101-00900 | O-Ring (MS28775-111) | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 7                                 | 082-05600 | Spring               | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 8                                 | 145-06500 | Guide-Spring         | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 13                                | 067-13300 | Spacer               |           |       |       | 1      |                     |            | 1     |  |
| 9                                 | 141-02700 | Gland-End            | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 10                                | 101-01000 | O-Ring (MS28775-112) | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 11                                | 101-00700 | O-Ring (MS28775-012) | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 12                                | 155-05400 | Snap Ring            | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 14                                | 082-06100 | Spring-Return        | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 15                                | 094-04300 | Nut-Check (AN316-5)  | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |
| 16                                | 143-01000 | Clevis               |           |       | 1     | 1      | 1                   | 1          |       |  |
|                                   | 143-01200 | Clevis               | 1         |       |       |        |                     |            |       |  |
|                                   | 143-01300 | Clevis               |           | 1     |       |        |                     |            |       |  |
| 199-516 Repair Kit (4, 6, 10, 11) |           |                      | 1         | 1     | 1     | 1      | 1                   | 1          | 1     |  |

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Push Type****010-06000, 010-06600****NOTES:**

- (1) 010-06600 and spares are available thru distribution; PMA approved part used in 199-15301 Wheeled Landing Gear Kit for Bell 412.
- (2) The following Cleveland master cylinders were formerly manufactured by Gerdes Product Co.

|           |          |
|-----------|----------|
| C.W.B.    | GERDES   |
| NUMBER    | NUMBER   |
| 010-06000 | A-2160-1 |

NOTE: Parts list for reference only. Contact airframe manufacturer to order master cylinders and components listed.

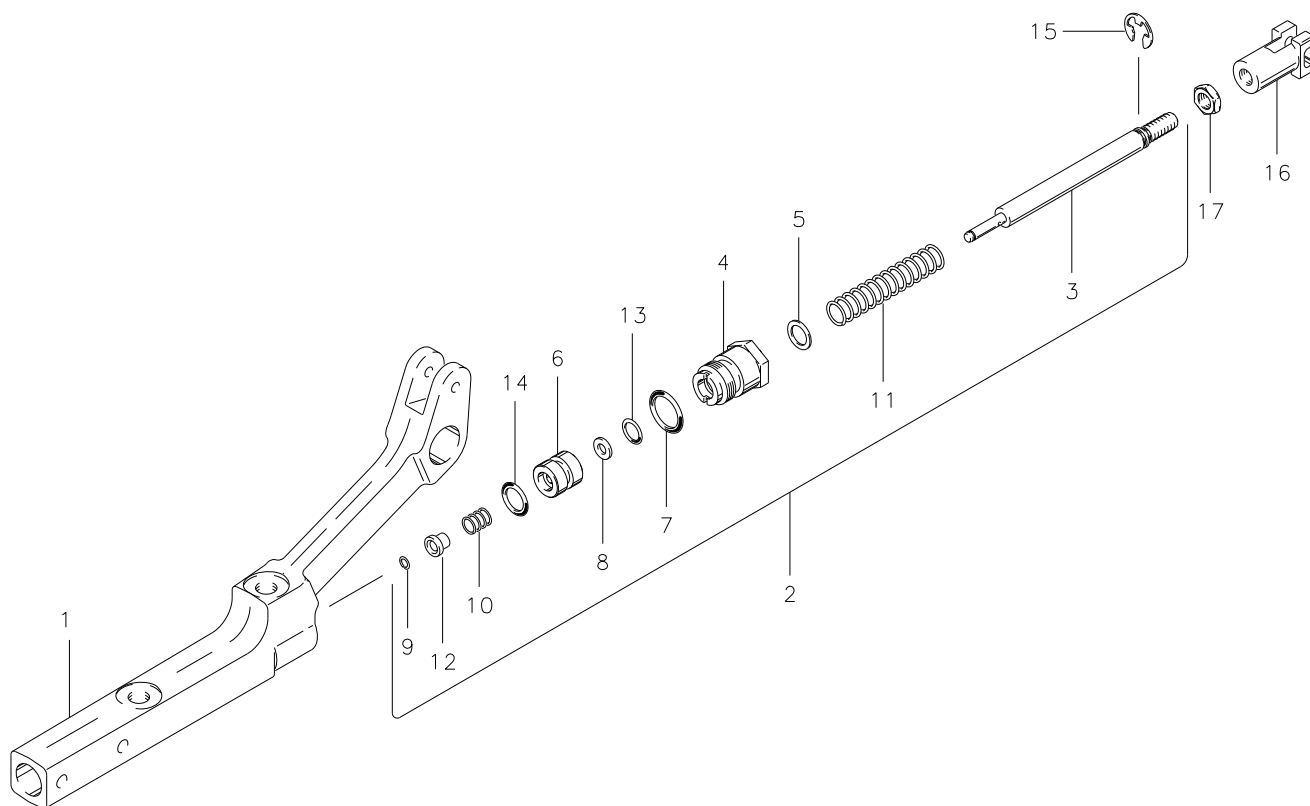
| FIG. | PART NO.  | DESCRIPTION                | PER ASSY. |               |
|------|-----------|----------------------------|-----------|---------------|
|      |           |                            | 010-06000 | 010-06600 (1) |
| 1    | 144-05300 | Housing Assembly           | 1         |               |
|      | 189-09400 | Body Assembly              |           | 1             |
| 2    | 182-03000 | Piston Rod Assembly        |           | 1             |
| 3    | 142-07500 | Rod Piston                 |           | 1             |
| 3A   | 142-05900 | Shaft                      | 1         |               |
| 4    | 095-02600 | Stat-O-Seal                |           | 1             |
| 4A   | 101-50349 | O-Ring (MS28775-007)       | 1         |               |
| 5    | 148-04400 | Piston                     |           | 1             |
| 5A   | 148-03900 | Piston                     | 1         |               |
| 6    | 100-20012 | Back Up Ring (MS28782-12)  |           | 1             |
| 6A   | 100-10143 | Back Up Ring (MS28774-111) | 1         |               |
| 7    | 101-50357 | O-Ring (MS28775-114)       |           | 1             |
| 7A   | 101-00900 | O-Ring (MS28775-111)       | 1         |               |
| 8    | 082-07100 | Spring                     |           | 1             |
| 8A   | 082-05500 | Spring                     | 1         |               |
| 9    | 155-07100 | Snap Ring                  |           | 1             |
| 9A   | 095-13100 | Washer (AN960C10)          | 1         |               |

| FIG. | PART NO.  | DESCRIPTION             | PER ASSY. |               |
|------|-----------|-------------------------|-----------|---------------|
|      |           |                         | 010-06000 | 010-06600 (1) |
| 10   | 155-06500 | Snap Ring               |           | 1             |
| 10A  | 155-05700 | Snap Ring               | 1         |               |
| 11   | 067-05600 | Spacer                  | 1         |               |
| 12   | 139-06200 | Thrust Collar           | 1         |               |
| 13   | 141-03400 | End Gland               |           | 1             |
| 13A  | 141-03200 | End Gland               | 1         |               |
| 14   | 101-50369 | O-Ring (MS28775-017)    |           | 1             |
| 14A  | 101-20200 | O-Ring (MS28775-011)    | 1         |               |
| 15   | 100-20008 | Backup Ring (MS28782-8) |           | 1             |
| 16   | 101-00800 | O-Ring (MS28775-110)    |           | 1             |
| 16A  | 101-50341 | O-Ring (MS28775-011)    | 1         |               |
| 17   | 155-06700 | Snap Ring               |           | 1             |
| 17A  | 155-05400 | Snap Ring               | 1         |               |
| 18   | 082-06900 | Spring-Return           |           | 1             |
| 18A  | 082-06400 | Spring-Return           | 1         |               |

|         |                                        |   |   |
|---------|----------------------------------------|---|---|
| 199-532 | Repair Kit (4, 6, 7, 14, 15, 16)       |   | 1 |
| 199-569 | Repair Kit (4A, 6A, 7A, 14A, 16A, 17A) | 1 |   |

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**Master Cylinder  
Push Type****Illustrated Parts List****10-73**

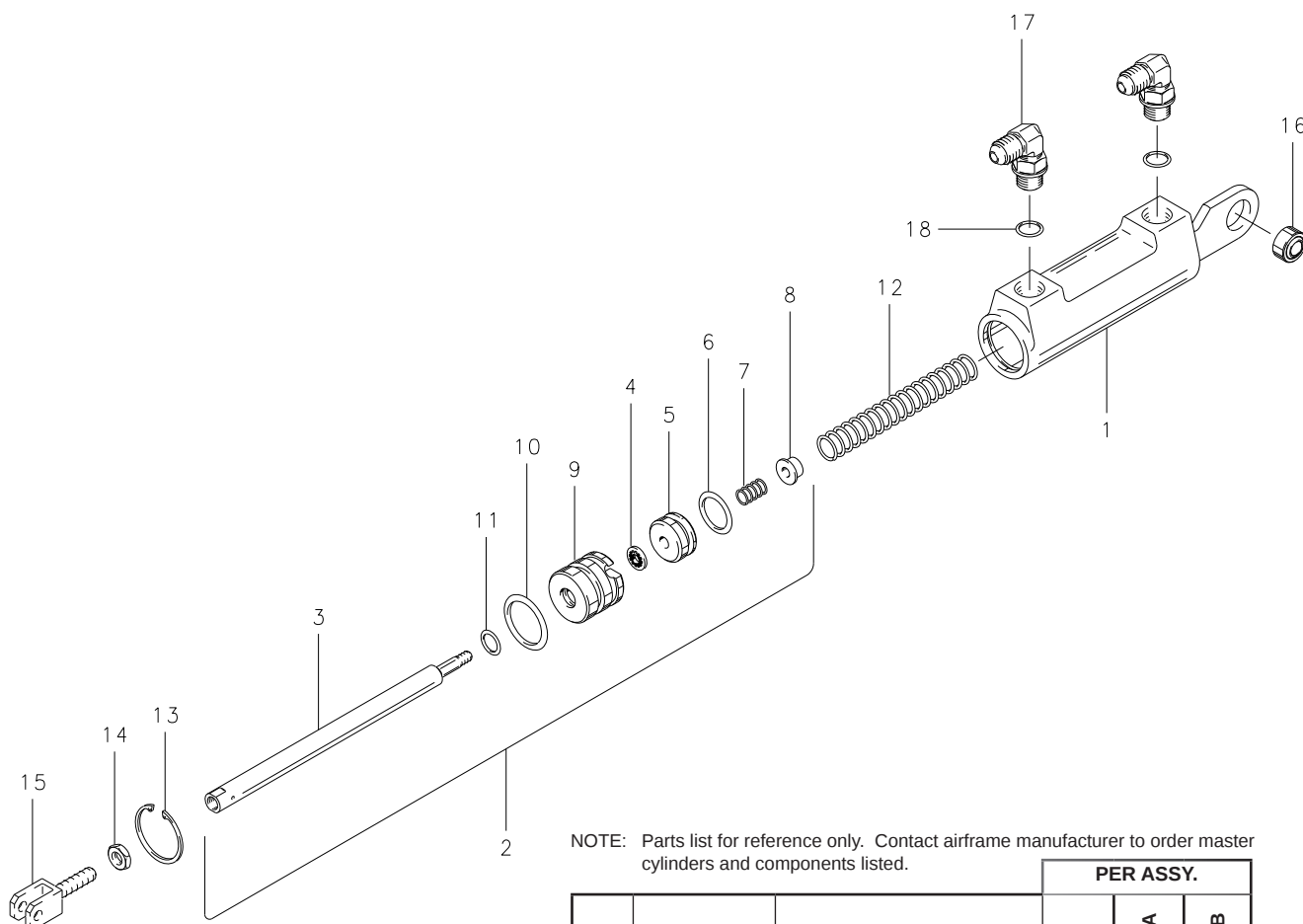
NOTE: Parts list for reference only. Contact airframe manufacturer to order master cylinders and components listed.

| FIG. | PART NO.  | DESCRIPTION          | PER ASSY.<br>10-73 |
|------|-----------|----------------------|--------------------|
| 1    | 144-08800 | Cylinder Body        | 1                  |
| 2    | 182-04300 | Piston Rod Assembly  | 1                  |
| 3    | 142-09100 | Piston Rod           | 1                  |
| 4    | 141-05200 | Packing Gland        | 1                  |
| 5    | 095-04000 | Washer               | 1                  |
| 6    | 148-05300 | Piston               | 1                  |
| 7    | 101-01200 | O-Ring (MS28775-114) | 1                  |
| 8    | 095-01100 | Washer-Seal          | 1                  |
| 9    | 155-00500 | Snap Ring            | 1                  |
| 10   | 082-00800 | Spring               | 1                  |
| 11   | 082-00900 | Spring               | 1                  |
| 12   | 145-01500 | Bushing              | 1                  |
| 13   | 101-00700 | O-Ring (MS28775-012) | 1                  |
| 14   | 101-00900 | O-Ring (MS28775-011) | 1                  |
| 15   | 155-09000 | Retainer Ring        | 1                  |
| 16   | 143-02000 | Clevis               | 1                  |
| 17   | 094-04300 | Nut (AN316-5)        | 1                  |

|         |                           |   |
|---------|---------------------------|---|
| 199-548 | Repair Kit (7, 8, 13, 14) | 1 |
|---------|---------------------------|---|

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**Master Cylinder  
Push Type****10-78, 10-78A, 10-78B**

NOTE: Parts list for reference only. Contact airframe manufacturer to order master cylinders and components listed.

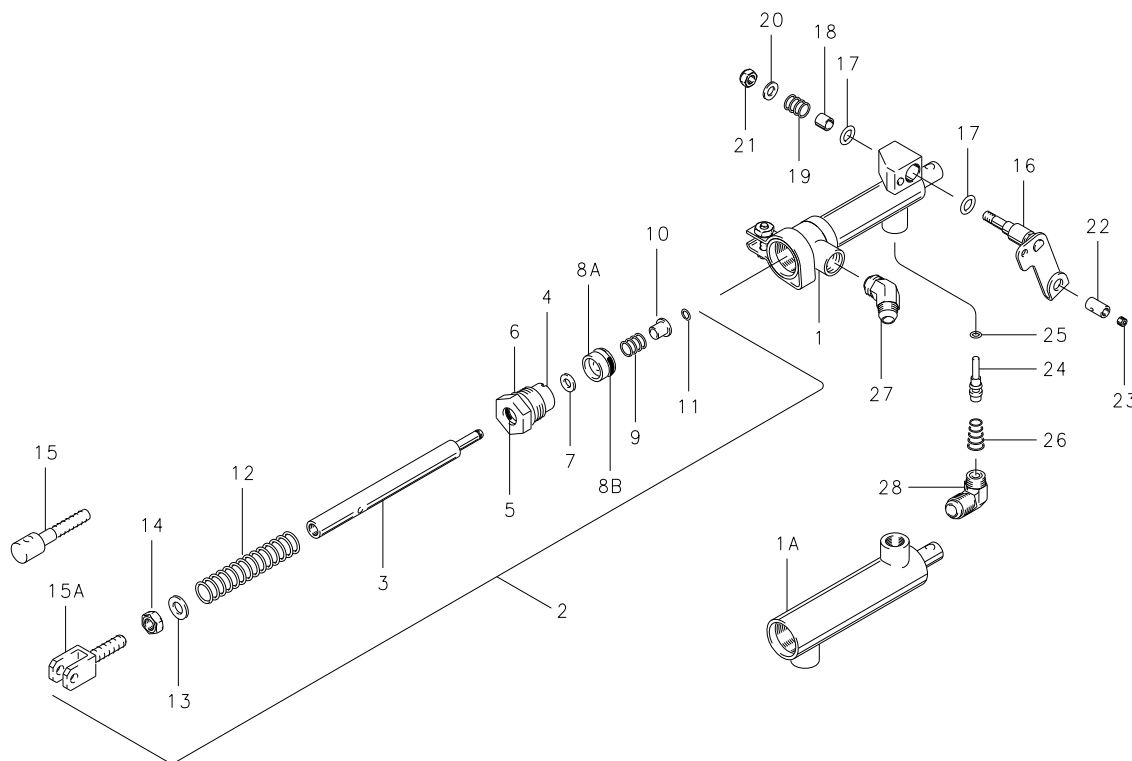
| FIG. | PART NO.  | DESCRIPTION          | PER ASSY. |        |        |
|------|-----------|----------------------|-----------|--------|--------|
|      |           |                      | 10-78     | 10-78A | 10-78B |
| 1    | 189-04100 | Cylinder Body        | 1         | 1      | 1      |
| 2    | 182-04800 | Piston Rod Assembly  | 1         | 1      | 1      |
| 3    | 142-10400 | Piston Rod           | 1         | 1      | 1      |
| 4    | 095-02600 | Stat-O-Seal          | 1         | 1      | 1      |
| 5    | 148-04100 | Piston               | 1         | 1      | 1      |
| 6    | 101-01200 | O-Ring (MS28775-114) | 1         | 1      | 1      |
| 7    | 082-05600 | Spring-Piston        | 1         | 1      | 1      |
| 8    | 145-06500 | Spring Guide         | 1         | 1      | 1      |
| 9    | 141-03000 | End Gland            | 1         | 1      | 1      |
| 10   | 101-50117 | O-Ring (MS28775-117) | 1         | 1      | 1      |
| 11   | 101-00700 | O-Ring (MS28775-012) | 1         | 1      | 1      |
| 12   | 082-06100 | Return Spring        | 1         | 1      | 1      |
| 13   | 155-05500 | Retaining Ring       | 1         | 1      | 1      |
| 14   | 094-03000 | Nut, Jam (AN316-4)   | 1         | 1      | 1      |
| 15   | 143-02200 | Clevis               | 1         | 1      | 1      |
| 16   | 214-82600 | Spherical Bearing    | 1         | 1      | 1      |
| 17   | 104-03100 | Fitting              | 2         | 2      | 1      |
|      | 104-06900 | Fitting              |           |        | 1      |
| 18   | 101-20400 | O-Ring (MS28778-4)   | 2         | 2      | 1      |

|         |                               |   |  |  |
|---------|-------------------------------|---|--|--|
| 199-555 | Repair Kit (4, 6, 10, 11, 18) | 1 |  |  |
|---------|-------------------------------|---|--|--|

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Push Type with Parking Brake****10-5, 10-5B, 10-5C, 10-5E**

NOTE: Parts list for reference only. Contact airframe manufacturer to order master cylinders and components listed.

| FIG. | PART NO.  | DESCRIPTION                 | PER ASSY. |           |       |       |
|------|-----------|-----------------------------|-----------|-----------|-------|-------|
|      |           |                             | 10-5      | 10-5B (1) | 10-5C | 10-5E |
| 1    | 189-00100 | Hydraulic Cylinder Assembly | 1         |           | 1     |       |
|      | 189-01200 | Hydraulic Cylinder Assembly |           |           |       | 1     |
| 1A   | 189-02300 | Hydraulic Cylinder Assembly |           | 1         |       |       |
| 2    | 182-00300 | Piston Rod Assembly         | 1         | 1         |       |       |
|      | 182-02600 | Piston Rod Assembly         |           |           | 1     | 1     |
| 3    | 142-00500 | Rod                         | 1         | 1         | 1     | 1     |
| 4    | 141-00500 | Gland-End                   | 1         | 1         | 1     | 1     |
| 5    | 101-00700 | O-Ring-Gland (MS28775-012)  | 1         | 1         | 1     | 1     |
| 6    | 101-01100 | O-Ring-Gland (MS28775-113)  | 1         | 1         | 1     | 1     |
| 7    | 095-01100 | Washer-Seal                 | 1         | 1         | 1     | 1     |
| 8A   | 148-00900 | Piston                      | 1         | 1         | 1     | 1     |
| 8B   | 101-00800 | O-Ring (MS28775-110)        | 1         | 1         | 1     | 1     |
| 9    | 082-00800 | Spring                      | 1         | 1         | 1     | 1     |
| 10   | 145-01500 | Bushing                     | 1         | 1         | 1     | 1     |
| 11   | 155-00500 | Ring-Snap                   | 1         | 1         | 1     | 1     |
| 12   | 082-00900 | Spring-Return               | 1         | 1         | 1     | 1     |
| 13   | 095-10200 | Washer (AN960-416L)         | 1         | 1         | 1     | 1     |
| 14   | 094-00300 | Nut-Jam (AN316-4)           | 1         | 1         | 1     | 1     |
| 15   | 143-00400 | Clevis                      | 1         | 1         |       |       |
| 15A  | 143-00900 | Clevis                      |           |           | 1     | 1     |

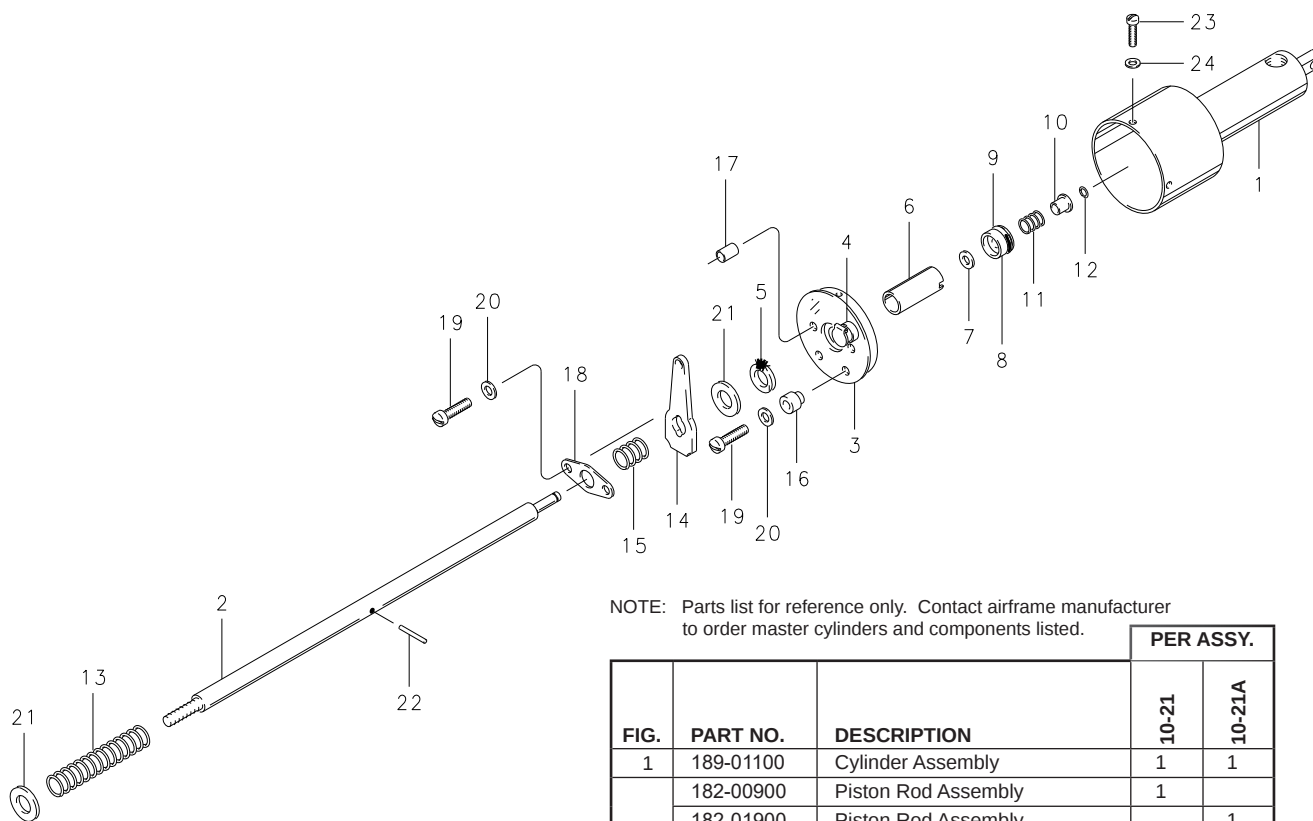
| FIG. | PART NO.  | DESCRIPTION               | PER ASSY. |           |       |       |
|------|-----------|---------------------------|-----------|-----------|-------|-------|
|      |           |                           | 10-5      | 10-5B (1) | 10-5C | 10-5E |
| 16   | 181-00200 | Cam Assembly              | 1         |           | 1     | 1     |
| 17   | 101-00500 | O-Ring (MS28775-010)      | 2         |           | 2     | 2     |
| 18   | 145-00700 | Bushing                   | 1         |           | 1     | 1     |
| 19   | 082-01000 | Spring                    | 1         |           | 1     | 1     |
| 20   | 095-10300 | Washer (AN960-10)         | 1         |           | 1     | 1     |
| 21   | 094-10200 | Nut (AN364-1032)          | 1         |           | 1     | 1     |
| 22   | 145-00900 | Bushing                   | 1         |           | 1     | 1     |
| 23   | 102-00100 | Screw-Set (#8-32x1/8)     | 1         |           | 1     | 1     |
| 24   | 146-00200 | Valve                     | 1         |           | 1     | 1     |
| 25   | 101-00100 | O-Ring                    | 1         |           | 1     | 1     |
| 26   | 082-01100 | Spring                    | 1         |           | 1     | 1     |
| 27   | 104-00500 | Tube Fitting (MS20823-4D) | 2         | 2         | 1     | 2     |
| 28   | 104-00400 | Tube Fitting (MS20822-4D) |           |           | 1     |       |

|         |                                  |   |   |   |   |
|---------|----------------------------------|---|---|---|---|
| 199-502 | Repair Kit (5, 6, 7, 8B, 17, 25) | 1 |   | 1 | 1 |
| 199-503 | Repair Kit (5, 6, 7, 8B, 11, 13) |   | 1 |   |   |

NOTES:

(1) 10-5B does not include Parking Brake.

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**Master Cylinder  
Push Type with Reservoir****10-21, 10-21A**

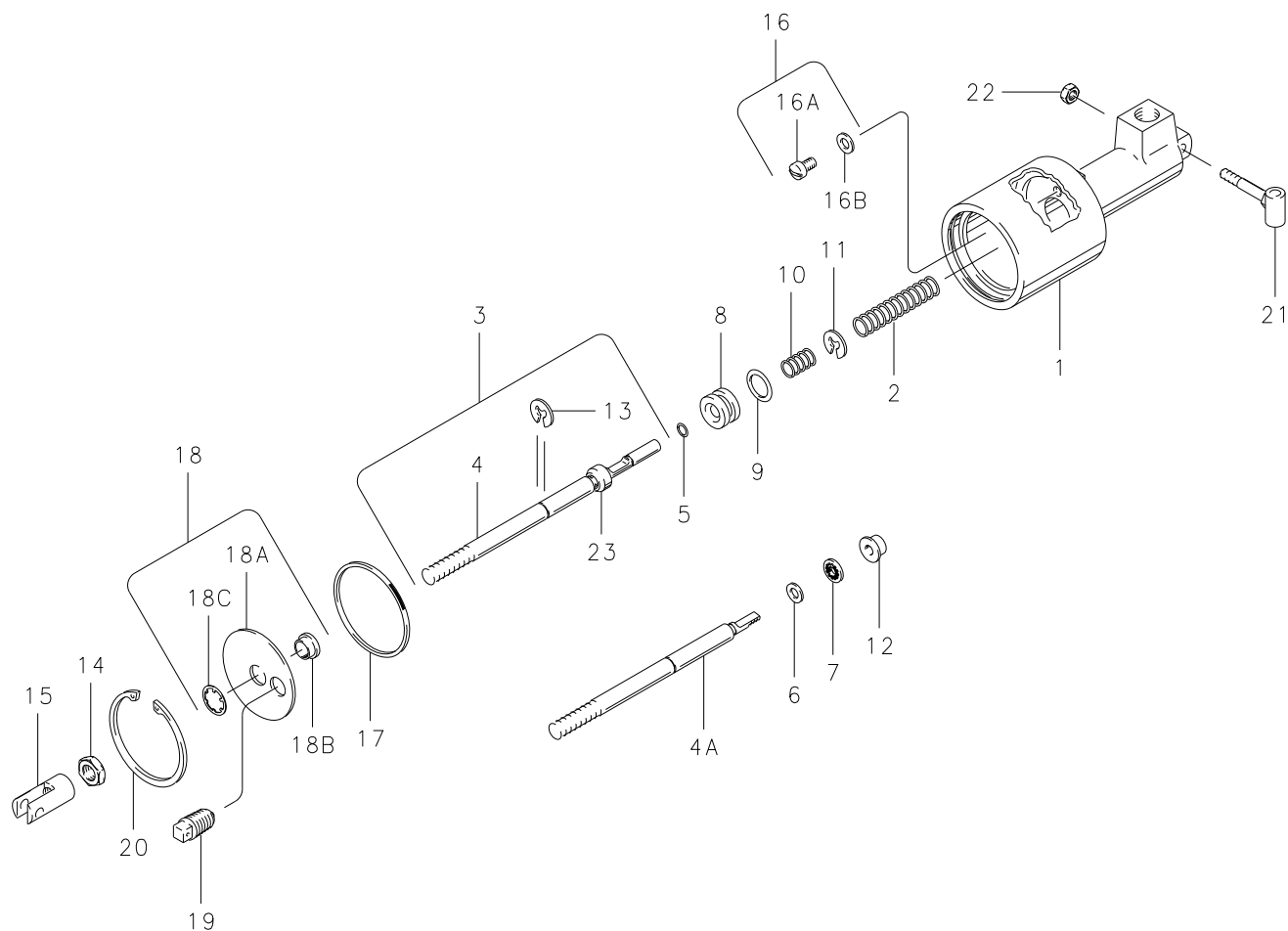
NOTE: Parts list for reference only. Contact airframe manufacturer to order master cylinders and components listed.

| FIG.                         | PART NO.  | DESCRIPTION                  | PER ASSY. |        |
|------------------------------|-----------|------------------------------|-----------|--------|
|                              |           |                              | 10-21     | 10-21A |
| 1                            | 189-01100 | Cylinder Assembly            | 1         | 1      |
|                              | 182-00900 | Piston Rod Assembly          | 1         |        |
|                              | 182-01900 | Piston Rod Assembly          |           | 1      |
| 2                            | 142-03600 | Piston Rod                   |           | 1      |
|                              | 218-00100 | Piston Rod                   | 1         |        |
| 3                            | 141-01100 | End Gland                    | 1         |        |
|                              | 141-01101 | End Gland                    |           | 1      |
| 4                            | 213-00100 | Fitting (Gits 502 "G")       | 1         | 1      |
| 5                            | 154-01500 | Feld-Rod                     | 1         | 1      |
| 6                            | 067-01300 | Spacer-Piston                | 1         | 1      |
| 7                            | 095-01100 | Washer                       | 1         | 1      |
| 8                            | 148-01000 | Piston                       | 1         | 1      |
| 9                            | 101-01100 | O-Ring (MS28775-113)         | 1         | 1      |
| 10                           | 145-01500 | Bushing                      | 1         | 1      |
| 11                           | 082-00800 | Spring                       | 1         | 1      |
| 12                           | 155-00500 | Ring-Snap                    | 1         | 1      |
| 13                           | 082-00900 | Spring                       | 1         | 1      |
| 14                           | 149-00100 | Lever-Parking                | 1         |        |
| 15                           | 082-01800 | Spring                       | 1         |        |
| 16                           | 067-01200 | Spacer                       | 2         |        |
| 17                           | 145-02300 | Bushing                      | 2         |        |
| 18                           | 229-00100 | Plate-Spring Retainer        | 1         |        |
| 19                           | 102-05700 | Screw-Fil. Hd. (AN500-10-10) | 4         |        |
| 20                           | 095-15400 | Washer-Lock (AN936-A10)      | 4         |        |
| 21                           | 095-10600 | Washer (AN960-616)           | 1         | 2      |
| 22                           | 223-00100 | Rollpin                      | 1         | 1      |
| 23                           | 102-05200 | Screw-Fil. Hd. (AN500-6-4)   | 3         | 3      |
| 24                           | 095-16000 | Washer-Lock (MS35338-41)     | 3         | 3      |
| 199-506 Repair Kit (5, 7, 9) |           |                              | 1         | 1      |

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Push Type with Reservoir****10-34, 10-35, 10-36, 10-38, 10-39, 10-45, 10-69****3****Cleveland**  
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Push Type with Reservoir****Illustrated Parts List****10-34, 10-35, 10-36, 10-38, 10-39, 10-45, 10-69**

NOTE: Parts list for reference only. Contact the airframe manufacturer to order master cylinders and components listed.

| FIG. | PART NO.  | DESCRIPTION                  | PER ASSY. |           |           |           |           |           |           |
|------|-----------|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|      |           |                              | 10-34 (2) | 10-35 (2) | 10-36 (2) | 10-38 (2) | 10-39 (2) | 10-45 (2) | 10-69 (1) |
| 1    | 144-03800 | Cylinder Body                | 1         |           |           | 1         |           | 1         |           |
|      | 144-03900 | Cylinder Body                |           | 1         |           |           |           |           |           |
|      | 144-04000 | Cylinder Body                |           |           | 1         |           |           |           |           |
|      | 144-04200 | Cylinder Body                |           |           |           |           | 1         |           |           |
|      | 144-06700 | Cylinder Body                |           |           |           |           |           |           | 1         |
| 2    | 082-05400 | Spring-Return                | 1         | 1         |           | 1         | 1         | 1         |           |
|      | 082-05700 | Spring-Return                |           |           | 1         |           |           |           | 1         |
| 3    | 182-05000 | Piston Rod Assembly          |           |           |           | 1         | 1         | 1         |           |
| 4    | 142-04000 | Piston Rod                   | 1         | 1         |           |           |           |           |           |
| 4A   | 142-04300 | Piston Rod                   |           |           | 1         |           |           |           |           |
|      | 142-08000 | Piston Rod                   |           |           |           |           |           |           | 1         |
| 5    | 101-00300 | O-Ring (MS28775-008)         | 1         | 1         |           | 1         | 1         | 1         |           |
| 6    | 095-12800 | Washer                       |           |           | 1         |           |           |           | 1         |
| 7    | 095-02600 | Stat-O-Seal                  |           |           | 1         |           |           |           | 1         |
| 8    | 148-02800 | Piston                       | 1         | 1         |           | 1         | 1         | 1         |           |
|      | 148-02900 | Piston                       |           |           | 1         |           |           |           |           |
|      | 148-04700 | Piston                       |           |           |           |           |           |           | 1         |
| 9    | 101-00900 | O-Ring, Piston (MS28775-111) | 1         | 1         |           | 1         | 1         | 1         |           |
|      | 101-01300 | O-Ring, Piston (MS28775-115) |           |           |           |           |           |           | 1         |
|      | 101-01000 | O-Ring, Piston (MS28775-112) |           |           | 1         |           |           |           |           |
| 10   | 082-05500 | Spring-Piston                | 1         | 1         |           | 1         | 1         | 1         | 1         |
|      | 082-05600 | Spring-Piston                |           |           | 1         |           |           |           |           |
| 11   | 155-05100 | Snap Ring                    | 1         | 1         |           | 1         | 1         | 1         |           |
| 12   | 145-06500 | Spring Guide                 |           |           | 1         |           |           |           | 1         |
| 13   | 155-07200 | Snap Ring                    | 1         | 1         |           | 1         | 1         | 1         |           |
| 14   | 094-04300 | Nut-Check (AN316-5)          | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 15   | 143-01000 | Clevis-Rod                   | 1         | 1         | 1         | 1         |           |           | 1         |
|      | 143-01100 | Clevis-Rod                   |           |           |           |           | 1         |           |           |
| 16   | 111-04300 | Screw & Washer Assembly      |           |           |           | 1         | 1         | 1         |           |
| 16A  | 102-20200 | Screw                        | 1         | 1         | 1         |           |           |           | 1         |
| 16B  | 095-10300 | Washer                       | 1         | 1         | 1         |           |           |           | 1         |
| 17   | 101-60001 | O-Ring, Reservoir            | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 18   | 111-04600 | Cover Assembly               |           |           | 1         | 1         | 1         | 1         | 1         |
| 18A  | 147-00700 | Cover Plate                  | 1         | 1         |           |           |           |           |           |
| 18B  | 145-06400 | Bushing-Bronze               | 1         | 1         |           |           |           |           |           |
| 18C  | 155-06900 | Retaining Ring               | 1         | 1         |           |           |           |           |           |
| 19   | 140-01900 | Filler Plug                  | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 20   | 155-06300 | Snap Ring                    | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| 21   | 110-05200 | Adapter-Clevis               |           |           |           | 1         |           |           |           |
| 22   | 094-12300 | Nut-Lock (AN365-1031)        |           |           |           | 1         |           |           |           |
| 23   | 139-06200 | Thrust Collar                | 1         | 1         |           | 1         |           |           |           |

|         |                                    |   |   |   |   |   |   |   |
|---------|------------------------------------|---|---|---|---|---|---|---|
| 199-513 | Repair Kit (5, 9, 17)              | 1 | 1 |   | 1 | 1 | 1 |   |
| 199-514 | Repair Kit (6, 7, 9, 16A, 16B, 17) |   |   | 1 |   |   |   |   |
| 199-577 | Repair Kit (7, 9, 17)              |   |   |   |   |   |   | 1 |

## NOTES:

(1) 10-69 and spares are available thru distribution. PMA approved details of 199-115 kit for Cessna 441.

(2) The following Cleveland master cylinders were formerly manufactured by Gerdes Products Co.

| C.W.B.<br>NUMBER | GERDES<br>NUMBER |
|------------------|------------------|
| 10-34            | A-049-3          |
| 10-35            | A-049-4          |
| 10-36            | A-049-6          |
| 10-38            | A-049-8          |
| 10-39            | A-049-9          |
| 10-45            | A-049-35         |

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010-05700, 010-05701, 010-06500

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Push Type with Reservoir****010-05700, 010-05701, 010-06500**

NOTE: Parts list for reference only. Contact the airframe manufacturer to order master cylinders and components listed.

| FIG. | PART NO.  | DESCRIPTION                 | PER ASSY.            |                      |                  |
|------|-----------|-----------------------------|----------------------|----------------------|------------------|
|      |           |                             | 010-05700<br>(1) (4) | 010-05701<br>(1) (4) | 010-06500<br>(2) |
| 1    | 189-09600 | Hydraulic Cylinder Assembly | 1                    | 1                    |                  |
|      | 189-06500 | Hydraulic Cylinder Assembly |                      |                      | 1                |
| 2    | 182-03300 | Piston Rod Assembly         |                      | 1                    |                  |
| 2A   | 182-02700 | Piston Rod Assembly         |                      |                      | 1                |
| 3    | 142-05800 | Piston Rod                  | 1                    | 1                    |                  |
|      | 142-07600 | Piston Rod                  |                      |                      | 1                |
| 4    | 155-05600 | Snap Ring                   | 1                    | 1                    |                  |
| 4A   | 155-06500 | Snap Ring                   |                      |                      | 1                |
| 5    | 139-06200 | Thrust Collar               | 1                    | 1                    |                  |
| 6    | 101-50349 | O-Ring (MS28775-007)        | 1                    | 1                    |                  |
| 6A   | 095-02600 | Stat-O-Seal                 |                      |                      | 1                |
| 7    | 148-03901 | Piston                      |                      | 1                    |                  |
|      | 148-04200 | Piston                      |                      |                      | 1                |
|      | 148-03900 | Piston                      | 1                    |                      |                  |
| 8    | 101-00900 | O-Ring (MS28775-111)        | 1                    | 1                    |                  |
|      | 101-01200 | O-Ring (MS28775-114)        |                      |                      | 1                |
| 9    | 100-10143 | Back Up Ring (MS28774-111)  | 1                    | 1                    |                  |
|      | 100-20012 | Back Up Ring (MS28782-12)   |                      |                      | 1                |
| 10   | 082-05500 | Spring                      | 1                    | 1                    |                  |
|      | 082-07100 | Spring                      |                      |                      | 1                |
| 11   | 095-13100 | Washer                      | 1                    | 1                    |                  |
| 11A  | 155-07100 | Retaining Ring              |                      |                      | 1                |
| 12   | 147-00700 | Cover Plate                 | 1                    | 1                    |                  |
|      | 147-00900 | Cover Plate                 |                      |                      | 1                |
| 13   | 140-02000 | Plug-Vented                 | 1                    | 1                    | 1                |
| 14   | 141-03101 | Gland                       |                      | 1                    |                  |
|      | (3)       | Gland                       | 1                    |                      |                  |
| 14A  | 145-07100 | Bushing                     |                      |                      | 1                |
| 15   | 155-06900 | Retaining Ring              |                      | 1                    |                  |
|      | 155-07300 | Retaining Ring              |                      |                      | 1                |
| 16   | 101-50341 | O-Ring (MS28775-011)        | 1                    | 1                    |                  |
|      | 101-00800 | O-Ring (MS28775-110)        |                      |                      | 1                |
| 17   | 100-20008 | Back Up Ring (MS28782-8)    |                      |                      | 1                |
| 18   | 101-60001 | O-Ring                      |                      | 1                    | 1                |
| 19   | 155-05200 | Retaining Ring              | 1                    | 1                    |                  |
|      | 155-06300 | Retaining Ring              |                      |                      | 1                |
| 20   | 102-20200 | Button Head Screw           | 1                    | 1                    | 1                |
| 21   | 095-13100 | Washer (AN960-C-10)         | 1                    | 1                    |                  |
|      | 095-10300 | Washer (AN960-10)           |                      |                      | 1                |
| 22   | 111-04500 | Reservoir Valve Assembly    | 1                    | 1                    | 1                |
| 22A  | 101-00300 | O-Ring (MS28775-008)        | 1                    | 1                    | 1                |
| 23   | 101-20800 | O-Ring (MS28778-4)          | 1                    | 1                    | 1                |
| 24   | 082-06400 | Return Spring               | 1                    | 1                    |                  |
|      | 082-06900 | Return Spring               |                      |                      | 1                |

|         |                                               |  |   |   |
|---------|-----------------------------------------------|--|---|---|
| 199-531 | Repair Kit (6, 8, 9, 16, 17, 18, 22A)         |  |   | 1 |
| 199-568 | Repair Kit (6, 8, 9, 15, 16, 18, 19, 22A, 23) |  | 1 |   |

## NOTES:

- (1) Inactive assembly - spares support only for parts listed.
- (2) 010-06500 and spares are available thru distribution; PMA approved part used in 199-15301 Wheeled Landing Gear Kit for Bell 412.
- (3) Inactive part - no longer available for spares support.
- (4) The following Cleveland master cylinders were formerly manufactured by Gerdes Product Co.

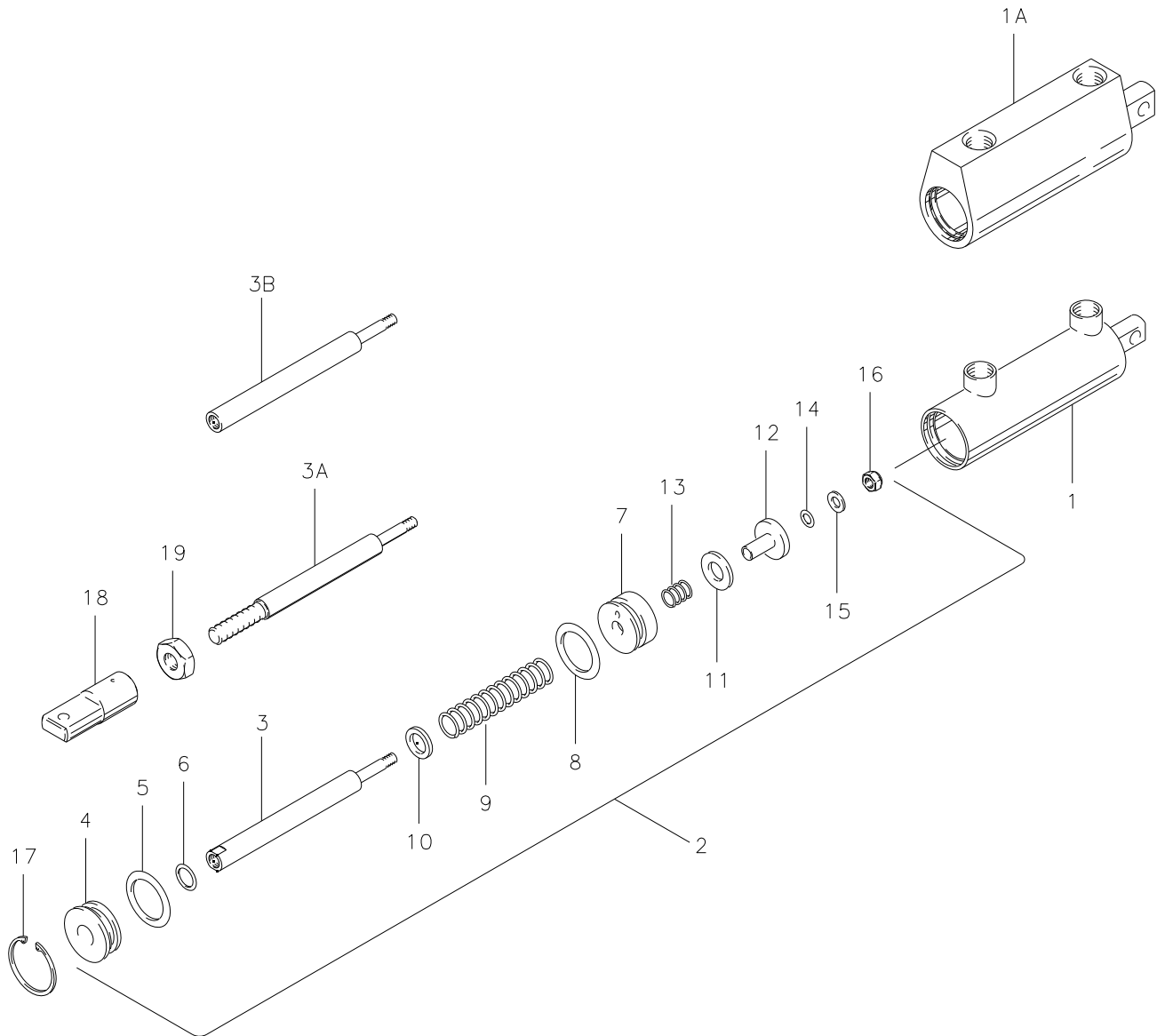
|           |          |
|-----------|----------|
| C.W.B.    | GERDES   |
| NUMBER    | NUMBER   |
| 010-05700 | A-1880-1 |

**Cleveland**

Wheels &amp; Brakes



10-17, 10-23, 10-23A, 10-23C, 10-23F, 10-75, 10-86, 10-86A



3

NOTE: Parts list for reference only. Contact airframe manufacturer to order master cylinders and components listed.

| FIG. | PART NO.  | DESCRIPTION       | PER ASSY. |       |        |        |        |       |       |        |
|------|-----------|-------------------|-----------|-------|--------|--------|--------|-------|-------|--------|
|      |           |                   | 10-17     | 10-23 | 10-23A | 10-23C | 10-23F | 10-75 | 10-86 | 10-86A |
| 1    | 189-02500 | Cylinder Body     |           | 1     |        |        |        |       |       |        |
| 1A   | 144-03600 | Cylinder Body     |           |       | 1      | 1      | 1      |       |       |        |
|      | 144-09400 | Cylinder Body     |           |       |        |        |        | 1     |       |        |
|      | 144-11300 | Cylinder Body     |           |       |        |        |        |       | 1     | 1      |
|      | 144-12300 | Cylinder Body (1) | 1         |       |        |        |        |       |       |        |

(Continued on next page)

NOTES:

- (1) Extruded body – formerly used steel body P/N 189-01000 which is no longer available.

Catalog AWBPC0001-25/USA

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Table of Contents](#)**Master Cylinder  
Pull Type****Illustrated Parts List****10-17, 10-23, 10-23A, 10-23C, 10-23F, 10-75, 10-86, 10-86A**

(Continued from previous page)

| FIG. | PART NO.  | DESCRIPTION          | PER ASSY. |       |        |        |        |       |       |        |
|------|-----------|----------------------|-----------|-------|--------|--------|--------|-------|-------|--------|
|      |           |                      | 10-17     | 10-23 | 10-23A | 10-23C | 10-23F | 10-75 | 10-86 | 10-86A |
| 2    | 182-00800 | Piston Rod Assembly  | 1         |       |        |        |        |       |       |        |
|      | 182-02400 | Piston Rod Assembly  |           | 1     | 1      | 1      |        |       |       |        |
|      | 182-02402 | Piston Rod Assembly  |           |       |        |        | 1      |       |       |        |
|      | 182-04600 | Piston Rod Assembly  |           |       |        |        |        | 1     |       |        |
|      | 182-07300 | Piston Rod Assembly  |           |       |        |        |        |       | 1     |        |
|      | 182-07301 | Piston Rod Assembly  |           |       |        |        |        |       |       | 1      |
| 3    | 142-00700 | Rod-Piston           | 1         | 1     | 1      | 1      |        |       | 1     |        |
|      | 142-09900 | Rod-Piston           |           |       |        |        |        | 1     |       |        |
| 3A   | 142-00702 | Rod-Piston           |           |       |        |        | 1      |       |       | 1      |
| 4    | 141-00800 | End Gland            | 1         | 1     | 1      | 1      | 1      |       |       |        |
|      | 141-06001 | End Gland            |           |       |        |        |        | 1     |       |        |
|      | 141-07600 | End Gland            |           |       |        |        |        |       | 1     | 1      |
| 5    | 101-01400 | O-Ring (MS28775-116) | 1         | 1     | 1      | 1      | 1      |       |       |        |
|      | 101-50117 | O-Ring (MS28775-117) |           |       |        |        |        | 1     |       |        |
|      | 101-50119 | O-Ring (MS28775-119) |           |       |        |        |        |       | 1     | 1      |
| 6    | 101-00700 | O-Ring (MS28775-012) | 1         | 1     | 1      | 1      | 1      |       | 1     | 1      |
|      | 101-50110 | O-Ring (MS28775-110) |           |       |        |        |        | 1     |       |        |
| 7    | 148-00800 | Piston               | 1         |       |        |        |        |       |       |        |
|      | 148-02600 | Piston               |           | 1     | 1      | 1      | 1      | 1     |       |        |
|      | 148-06900 | Piston               |           |       |        |        |        |       | 1     | 1      |
| 8    | 101-01300 | O-Ring (MS28775-115) | 1         |       |        |        |        |       |       |        |
|      | 101-01400 | O-Ring (MS28775-116) |           | 1     | 1      | 1      | 1      |       |       |        |
|      | 101-50116 | O-Ring (MS28775-116) |           |       |        |        |        | 1     |       |        |
|      | 101-27200 | O-Ring (MS28775-212) |           |       |        |        |        |       | 1     | 1      |
| 9    | 082-01900 | Spring-Return        | 1         | 1     | 1      | 1      | 1      | 1     |       |        |
|      | 082-12400 | Spring-Return        |           |       |        |        |        |       | 1     | 1      |
| 10   | 095-10600 | Washer (AN960-616)   | 1         | 1     | 1      | 1      | 1      |       | 1     | 1      |
| 11   | 095-25100 | Washer Seal          | 1         | 1     | 1      | 1      | 1      | 1     | 1     | 1      |
| 12   | 146-00500 | Valve                | 1         | 1     | 1      | 1      | 1      | 1     | 1     | 1      |
| 13   | 082-01000 | Spring               | 1         | 1     | 1      | 1      | 1      | 1     | 1     | 1      |
| 14   | 101-00300 | O-Ring (MS28775-008) | 1         | 1     | 1      | 1      | 1      | 1     | 1     | 1      |
| 15   | 095-10300 | Washer (AN960-10)    | 1         | 1     | 1      | 1      | 1      | 1     | 1     | 1      |
| 16   | 094-10200 | Nut (NASM21083N3)    | 1         | 1     | 1      | 1      |        | 1     | 1     |        |
|      | 094-12300 | Nut (AN365-1032)     |           |       |        |        | 1      |       |       | 1      |
| 17   | 155-01100 | Ring, Snap           | 1         | 1     | 1      | 1      | 1      |       |       |        |
|      | 155-01600 | Ring, Snap           |           |       |        |        |        | 1     |       |        |
|      | 155-12500 | Ring, Snap           |           |       |        |        |        |       | 1     | 1      |
| 18   | 143-03200 | Clevis               |           |       |        |        | 1      |       |       | 1      |
| 19   | 094-04300 | Nut                  |           |       |        |        | 1      |       |       | 1      |

|         |                                      |   |   |   |   |   |   |   |   |
|---------|--------------------------------------|---|---|---|---|---|---|---|---|
| 199-551 | Repair Kit (5, 6, 8, 11, 14, 15, 17) |   |   |   |   |   | 1 |   |   |
| 199-504 | Repair Kit (5, 6, 8, 14)             | 1 |   |   |   |   |   |   |   |
| 199-508 | Repair Kit (5, 6, 14)                |   | 1 | 1 | 1 | 1 |   |   |   |
| 199-567 | Repair Kit (5, 6, 8, 11, 14)         |   |   |   |   |   |   | 1 | 1 |

**Cleveland**  
Wheels & Brakes