

# Section 6 - Level 3 Group 4

## Fuel Pump Component Rebuild Tools Group

This section contains major component rebuild tools for the Fuel Pump Group family. See below for a general description of contents for this grouping of tools.

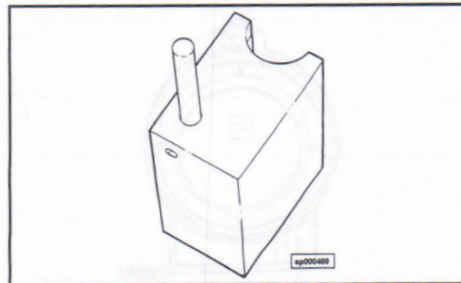
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## Adjusting and Timing Tools

### ST 589 PTR Gauge Fixture

Engine Series: NH

This fixture is required to accurately set the by-pass valve travel in the pressure regulator assembly on older model fuel fuel pumps. Use **3376050 Dial Indicator** or equivalent.

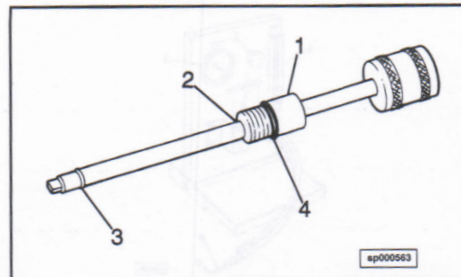


### 3162887 Fuel Pump Idle Adjust Tool

Engine Series: All Except B & C Series

These tools are used to adjust the idle speed while the engine is running or on the fuel pump test stand.

| Ref. No. | Part No.       | Description   |
|----------|----------------|---|
|          | <b>3162887</b> | Idle Adjust Tool (All with 1/8 NPT Thread in Spring Pack Cover) |
| 1        | 3822506        | Male Connector (1/8 NPT)  |
| 2        | 3822478        | O'Ring  |
| 3        | 3376797        | Retaining Ring  |
|          | <b>3162888</b> | Idle Adjust Tool (All with 3/8-24 Thread in Spring Pack Cover)  |
| 1        | 3823481        | Male Connector (3/8-24)   |
| 2        | 3822478        | O'Ring  |
| 3        | 3376797        | Retaining Ring  |
| 4        | 3823482        | O'Ring  |

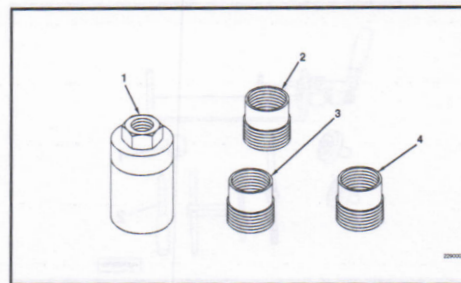


### 3163611 Fuel Pump Timing Tool

Engine Series: B

This tool is used with 3162853 or 3377259 to set the timing of the Bosch P7100, MW, or A fuel pumps while on the engine. With this tool the engine remains at TDC and the pump is rotated to achieve timing.

| Ref. No. | Part No. | Description |
|----------|----------|-------------|
| 1        | 3163612  | Body        |
| 2        | 3163613  | Adapter     |
| 3        | 3163614  | Adapter     |
| 4        | 3163615  | Adapter     |

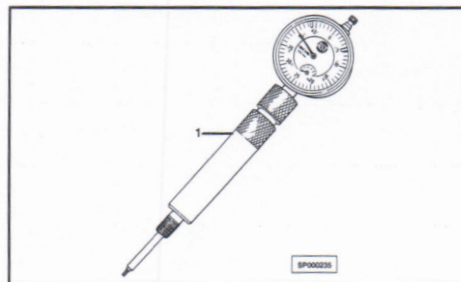


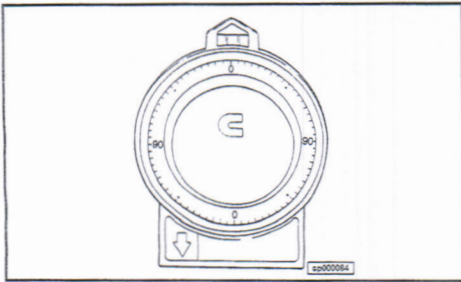
### 3377259 Fuel Pump Timing Tool

Engine Series: B Series

This timing indicator and adapter are required to set the Bosch fuel pump timing.

| Ref. No. | Part No. | Description               |
|----------|----------|---------------------------|
| 1        | 3824419  | Timing Body/Stem Assembly |

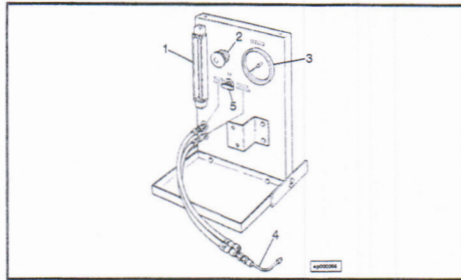




**3375855**  
**Angle/Level Indicator**

**Engine Series:** All

This angle indicator is used to set and/or adjust the fuel pump throttle lever angle. It can also be used to set a remote governor throttle lever angle or check drive line angles etc.



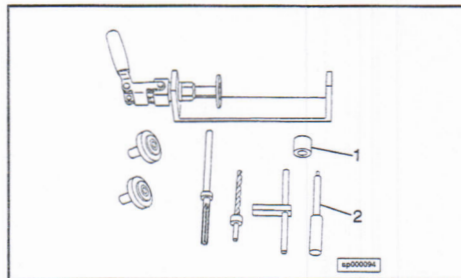
**AFC Fuel Pump Tools**

**3375934**  
**ASA/AFC Aneroid Test Stand**

**Engine Series:** All Except C & J, B and C Series

This test stand is used to test aneroids, ASA valve flow and the fuel pump AFC cavity for air leaks. This test stand is portable that can be taken to a job site for trouble shooting suspected AFC problems. The stand can simulate fuel pump test stand parameters.

| Ref. No. | Part No.   | Description                   |
|----------|------------|-------------------------------|
| 1        | ST 990-46  | Flowmeter                     |
| 2        | 3375134    | Air Pressure Regulator        |
| 3        | 3375278    | Pressure Gauge (0-75 in. Hg.) |
| 4        | 3375844    | Tube                          |
| 5        | 3375921    | Valve                         |
|          | 3824403    | Mini Air Filter               |
|          | ST 990-127 | Large Air Filter              |



**3376035**  
**No-Air Seat Insert Tool**

**Engine Series:** All Except C & J, B and C Series

This tool contains the special bushings, clamps drills etc. to install a no-air insert into the AFC fuel pump as required.

**NOTE:** This replacement seat goes in the bottom of the no-air screw threaded hole.

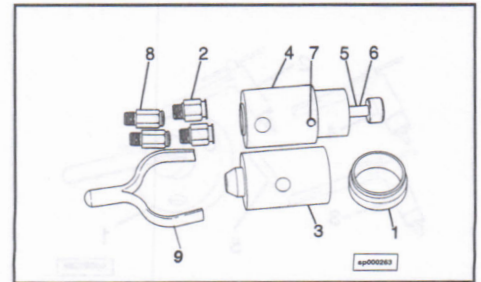
| Ref. No. | Part No. | Description             |
|----------|----------|-------------------------|
| 1        | 3376036  | Orifice Insert (Qty 50) |
| 2        | 3376179  | Insert Driver           |

**3822378**  
**AFC Barrel/Plunger Leakage Tester**

**Engine Series:** All With AFC

This tester is used in conjunction with **3375375 Leakage Tester** to check the leakage of the new class fit AFC barrel and plunger assembly for overhead tank configuration.

| Ref. No. | Part No.       | Description                        |
|----------|----------------|------------------------------------|
| 1        | 3822379        | Injector Locator Adapter           |
| 2        | ST 790-333     | Female Coupling (For ST 790)       |
| 3        | <b>3822618</b> | <b>Barrel/Plunger Leakage Pot</b>  |
|          | 3822937        | Pot                                |
|          | 3822941        | Large O'Ring                       |
| 4        | 3822939        | Main Body                          |
| 5        | 3822940        | Plunger Adjusting Tool             |
| 6        | 3822942        | O'Ring                             |
| 7        | 3822943        | C'Sunk Hex Set Screw               |
| 8        | 3822777        | Female Quick Connect (For 3375375) |
| 9        | 3163638        | Support                            |

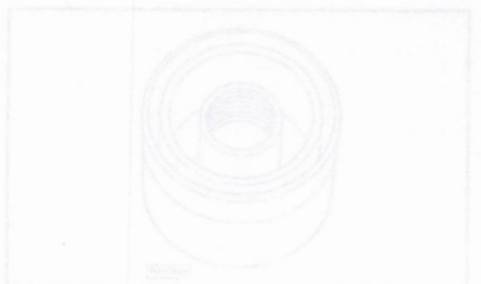
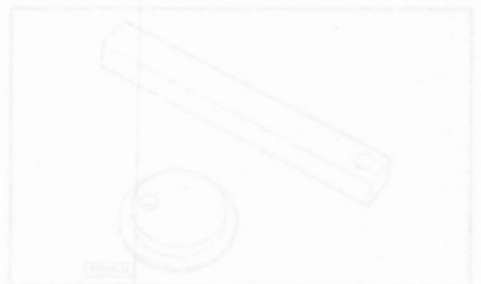
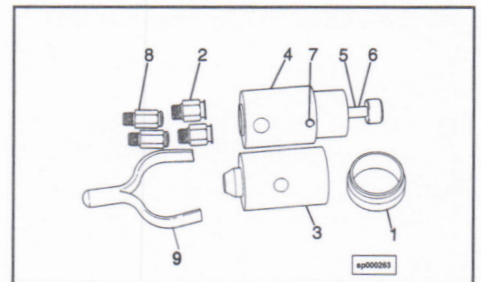


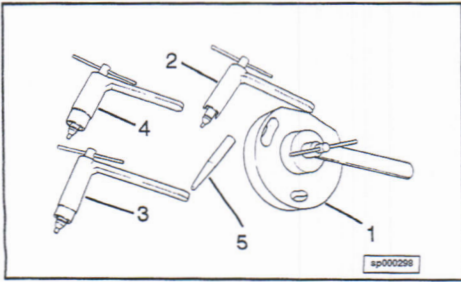
**3822611**  
**AFC Barrel/Plunger Tester 2 Spring**

**Engine Series:** All With 2 Spring AFC

This tester is used in conjunction with **3375375 Leakage Tester** to check leakage between the barrel and plunger of the 2 spring AFC.

| Ref. No. | Part No.       | Description                       |
|----------|----------------|-----------------------------------|
| 1        | 3822379        | Injector Locator Adapter          |
| 2        | ST 790-333     | Female Coupling                   |
| 3        | <b>3822618</b> | <b>Barrel/Plunger Leakage Pot</b> |
| 4        | 3822944        | Plunger Leakage Main Body         |
| 5        | 3822945        | Plunger Adjustment Tool           |
| 6        | 3822946        | O'Ring                            |
| 7        | 3822943        | C'Sunk Hex Set Screw              |
| 8        | 3822777        | Kwik Connect Fitting              |
| 9        | 3163638        | Support                           |



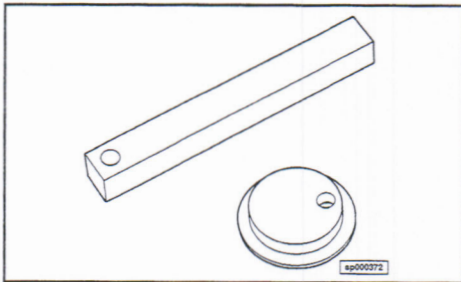


**3823114  
Fuel Pump AFC Adjusting Kit**

**Engine Series:** All With AFC

This special kit is used to make necessary adjustments to the Air-Fuel-Control (AFC). Also a special o'ring installation tool is provided so that o'ring is not damaged during assembly to the no-air adjusting screw.

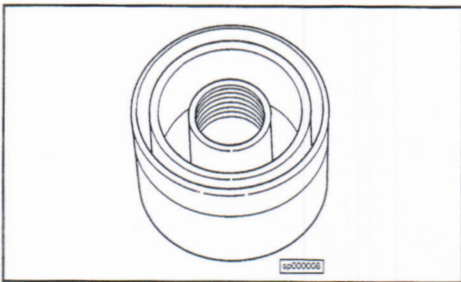
| Ref. No. | Part No.       | Description  |
|----------|----------------|--|
| 1        | <b>3375137</b> | <b>AFC Adjusting Tool (All)</b>  |
|          | 3823863        | Plunger/Allen Wrench   |
|          | 3822949        | Retaining Ring   |
|          | 3822952        | Spanner Socket   |
|          | 3375139        | O'Ring Kit   |
| 2        | <b>3822950</b> | <b>No-Air Adjust Tool (Special for Yellow Freight)</b>                           |
|          | 3823865        | Plunger/Allen Wrench   |
|          | 3822949        | Retaining Ring   |
|          | 3822947        | Spanner Socket   |
| 3        | <b>3823113</b> | <b>No-Air Adjust Tool (Pumps with Dual Spring and Secondary Adjusting Screw)</b> |
|          | 3823864        | Plunger/Allen Wrench   |
|          | 3822949        | Retaining Ring   |
|          | 3822952        | Spanner Socket   |
| 4        | <b>3377247</b> | <b>No-Air Adjust Tool (Standard No-Air Screw)</b>                                |
|          | 3823864        | Plunger/Allen Wrench   |
|          | 3822951        | Spanner Socket   |
|          | 3822949        | Retaining Ring   |
| 5        | <b>3375148</b> | <b>No-Air Screw O'Ring Installation Tool</b>                                     |



**3824045  
Dual Spring AFC Height Gauge**

**Engine Series:** N14

These special tools are used to facilitate checking for proper shimmed height of AFC springs in dual spring AFC's. The disc is a go/no go gauge.



**Fuel Pump Test Stands**

**3375014  
Fuel Filter Adapter**

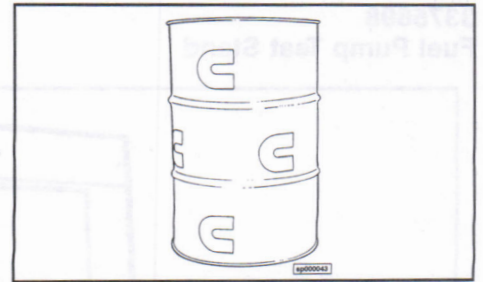
**Engine Series:** C & J, K19, K38, K50, NH, NT, V28, L10

This adapter is required when testing fuel pumps, on the fuel pump test stand, that have "pump mounted" filter. The adapter screws on in place of the fuel filter. **3375015 Gasket** is available for service replacement.

**3375364**  
**Calibration Fluid**

**Engine Series:** All Except B and C Series

This is the only calibration fluid that is authorized to calibrate or test the Cummins fuel systems products. Any other kind of calibration fluid will cause erroneous readings and therefore will not permit the proper calibration to factory specifications.

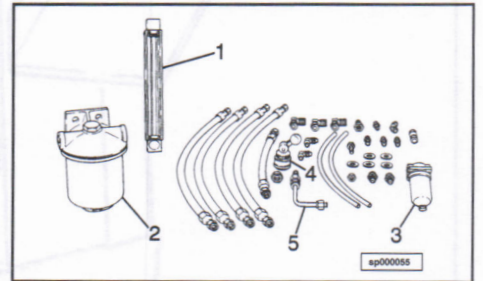


| Part No. | Description  |
|----------|--|
| 3375364  | Calibration Fluid (55 Gallon Drum<br>Size: 23 in. dia. x 34 in.<br>Weight: 414 Lbs.) |
| 3375365  | Calibration Fluid (30 Gallon Drum<br>Size: 19 in. dia. x 29 in.<br>Weight: 225 Lbs.) |

**3375685**  
**ASA/Thread Leakage Kit**

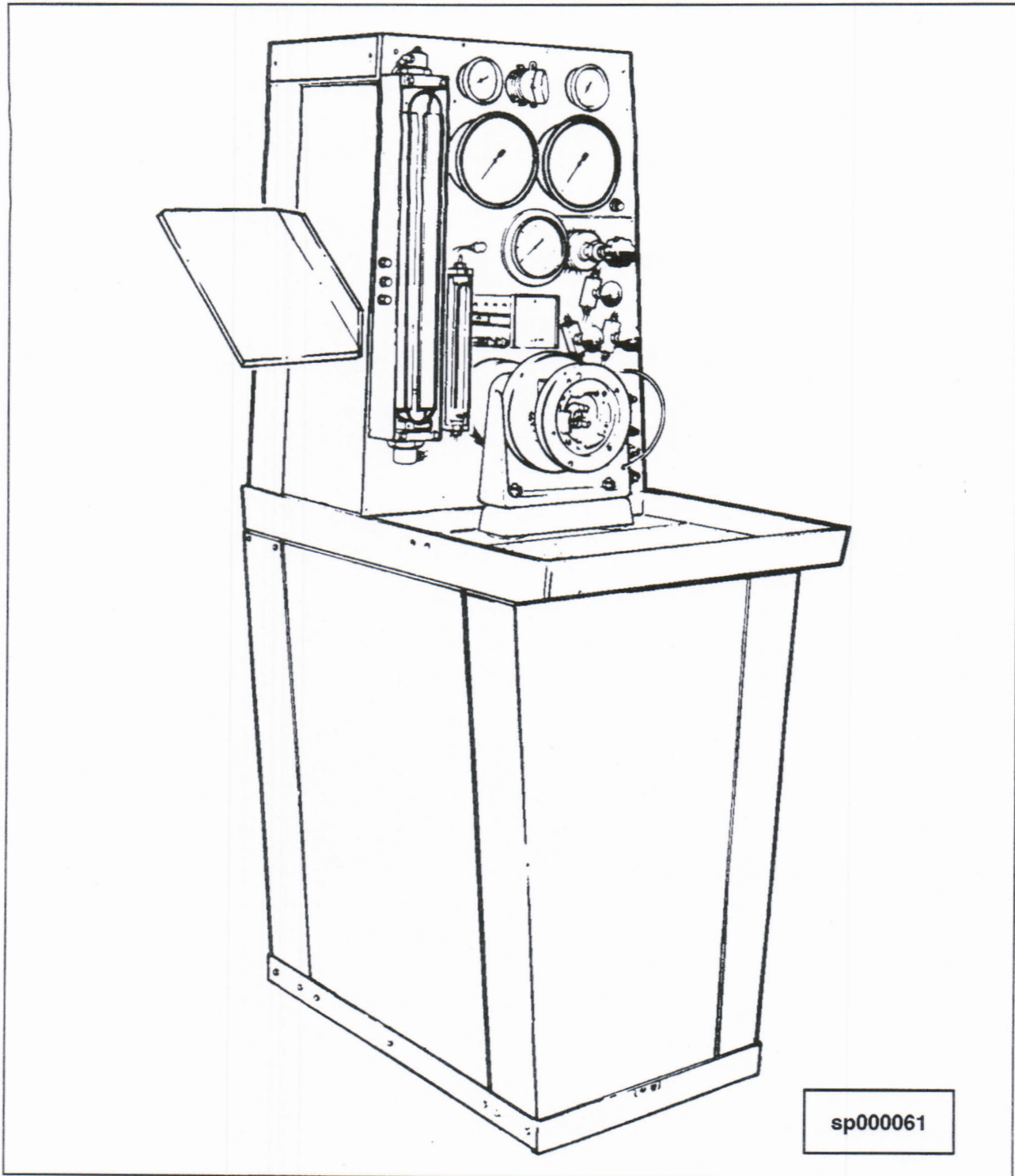
**Engine Series:** All Except C & J, B and C Series

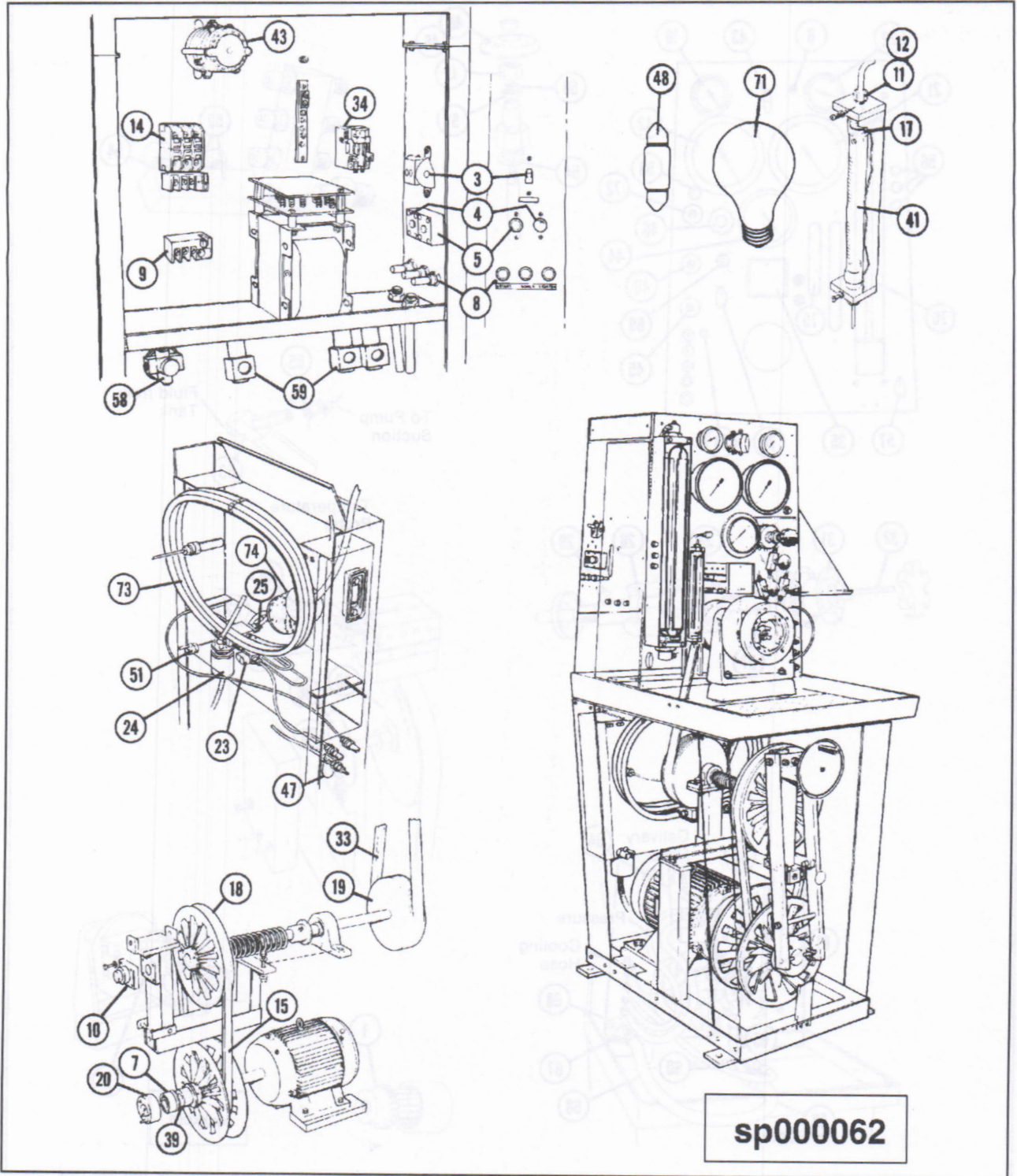
This kit is released to update older fuel pump test stands so that they will have the capability of testing the ASA valve thread leakage.



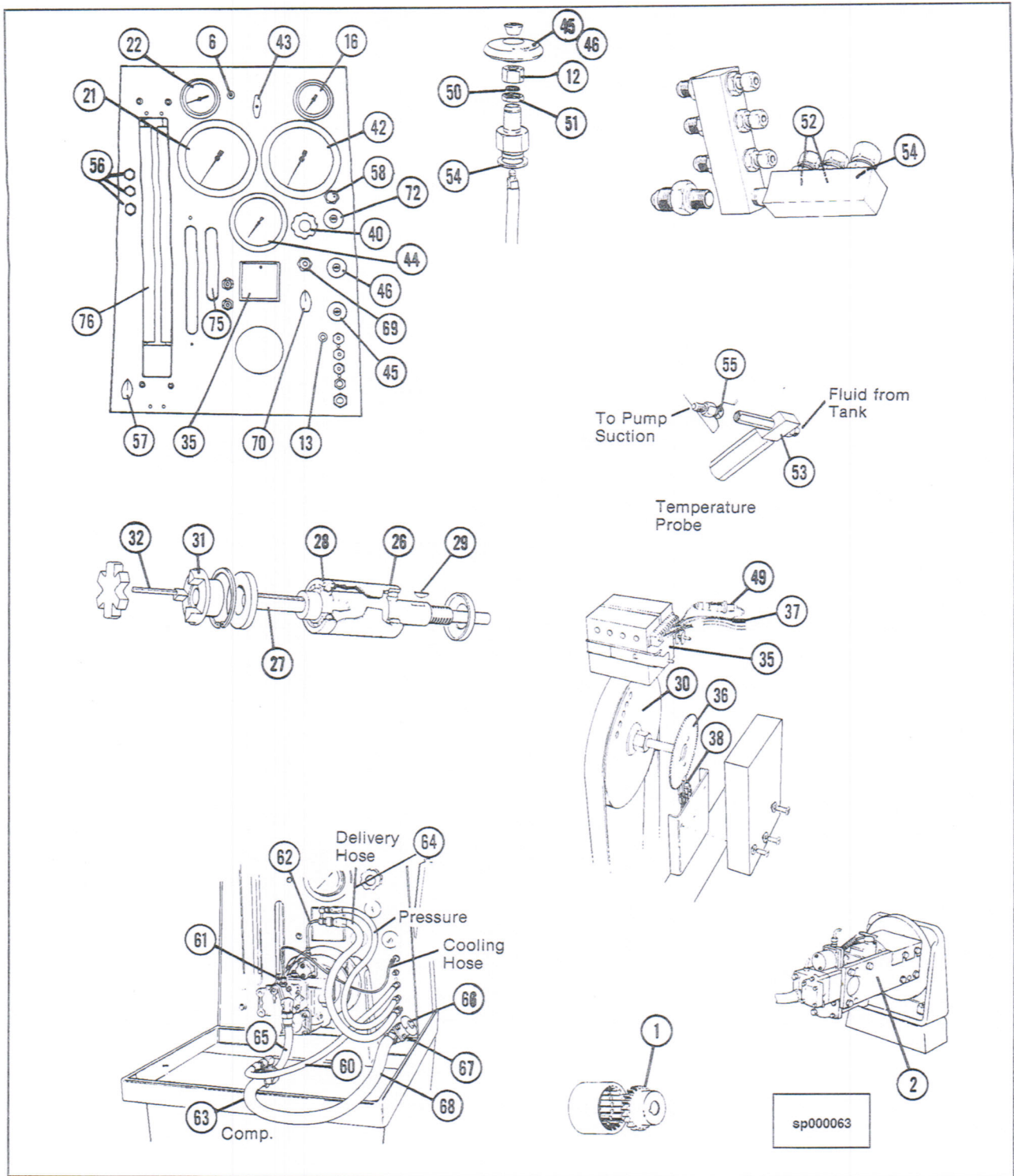
| Ref. No. | Part No.   | Description  |
|----------|------------|--------------|
| 1        | ST 990-46  | Flowmeter    |
| 2        | ST 990-127 | Large Filter |
| 3        | ST 990-97  | Small Filter |
| 4        | 3375390    | Air Switch   |
| 5        | 3375844    | Adapter Tube |

3375698  
Fuel Pump Test Stand





Special Cummins Calibration Fluid must be used with these test stands. The fluid is available in 55 gallon (327584 Calibration Fluid) or 30 gallon (327588 Calibration Fluid).  
The fuel pump test stand is used to calibrate and test all Cummins Engine PT fuel pumps. The fuel pump being tested is mounted onto the test stand. The test stand motor drives the pump through a variable speed drive having a speed range of 400 to 4250 rpm.  
Engines Covered: All Except B and C Series



**Engine Series:** All Except B and C Series

The fuel pump test stand is used to calibrate and test all Cummins Engine PT fuel pumps. The fuel pump being tested is mounted onto the test stand. The test stand motor drives the pump through a variable speed drive having a speed range of 450 to 4250 rpm.

Special Cummins Calibration Fluid must be used with these test stands. The fluid is available in 55 gallons (3375364 Calibration Fluid) or 30 gallons (3375365 Calibration Fluid).

Order one of the following test stand part numbers according to your electrical requirements.

|         |  |
|---------|--|
| 3375698 | Fuel Pump Test Stand (220 Volt, 3 Phase, 60 Hz.) |
| 3375699 | Fuel Pump Test Stand (220 Volt, 3 Phase, 50 Hz.) |
| 3375700 | Fuel Pump Test Stand (440 Volt, 3 Phase, 60 Hz.) |
| 3375701 | Fuel Pump Test Stand (440 Volt, 3 Phase, 50 Hz.) |

| Ref. No. | Part No. | Description  |
|----------|----------|--|
| 1        | 3375865  | Spline Drive   |
| 2        | 3375866  | Side Mount Bracket   |
| 3        | 3375867  | Heater Switch  |
| 4        | 3375868  | Stop Button  |
| 5        | 3375869  | Start Button   |
| 6        | 3375870  | Bulb (12 Volt)   |
| 6        | 3376458  | Warning Light (24 VAC)   |
| 6        | 3376459  | Warning Light Holder   |
| 7        | 3375871  | Bearing, Vari Drive  |
| 8        | 3375924  | Fuse   |
| 9        | 3375872  | Overload (190-220 V)   |
| 9        | 3376335  | Heavy Duty Overload (for stands with Delta or Phase Changer volts) |
| 10       | 3375873  | Bearing, Vari Drive  |
| 11       | 3375874  | Ferrule, Tube (cc Flowmeter)                                       |
| 12       | 3375875  | Nut, Tube (cc Flowmeter)   |
| 13       | 3375876  | Grommet  |
| 14       | 3375877  | Starter  |
| 15       | 3375878  | Belt, Vari Drive   |
| 16       | 3375879  | Gauge (0-600 psi)  |
| 17       | 3375880  | O'ring (cc Flowmeter)  |
| 18       | 3375881  | Upper Pulley & Shaft   |
| 19       | 3375882  | Drive Pulley, Poly V   |
| 20       | 3375883  | Bearing Housing  |
| 21       | 3375884  | Gauge (0-400 psi)  |
| 22       | 3375885  | Temperature Gauge  |
| 23       | 3375886  | Solenoid Valve (24V, 60 Hz.)                                       |
| 24       | 3375887  | Heater Assembly  |
| 25       | 3375888  | Thermostat   |
| 26       | 3375889  | Bearing, Fuel Pump Drive   |
| 27       | 3375890  | Shaft, Fuel Pump Drive   |
| 28       | 3375891  | Bearing, Fuel Pump Drive   |
| 29       | 3375892  | Drive Key, F.P. Drive  |
| 30       | 3375893  | Pulley (60 Hz.)  |
| 31       | 3375894  | Coupling Half  |
| 32       | 3375895  | Drive Key  |
| 33       | 3375896  | Belt, Poly Vee   |
| 34       | 3375897  | Relay  |
| 35       | 3375898  | Tachometer, Digital (24 V.)  |
| 36       | 3375899  | Timing Disc  |
| 38       | 3375901  | Optically Coupled Module Ass'y                                     |
| 39       | 3375902  | Shaft Sub Assembly   |
| 40       | 3375903  | Valve, Pressure Regulator  |
| 41       | 3825163  | Flowmeter Ass'y (760 cc)   |
| 42       | 3375905  | Gauge (0-30 psi.)  |
| 43       | 3375906  | Rotary Switch  |
| 44       | 3375907  | Gauge (0-30 In. Hg. Vacuum)  |

| Ref. No. | Part No.  | Description                        |
|----------|-----------|------------------------------------|
| 45       | 3375909   | Valve, Throttle Leakage            |
| 46       | 3375910   | Valve, Idle Orifice                |
| 47       | 3375911   | Air Filter                         |
| 48       | 3375912   | Bulb                               |
| 49       | 3375913   | Fuse, Tachometer                   |
| 50       | 3375914   | O'ring, Valve                      |
| 51       | 3375915   | Locknut                            |
| 52       | 3375916   | Washer, Fibre                      |
| 53       | 3375917   | Washer, Copper                     |
| 54       | 3375918   | Washer, Copper                     |
| 55       | 3375919   | Nut                                |
| 57       | 3375921   | Valve, 3 Way                       |
| 58       | 3375922   | Regulator                          |
| 59       | 3375923   | Solenoid Valve, AFC Air            |
|          | 3376389   | Replacement Coil for 3375923 Valve |
| 60       | 3375941   | Hose Assembly                      |
| 61       | 3375942   | Pipe Assembly                      |
| 62       | 3375943   | Adapter Assembly                   |
| 63       | 3375944   | Supply Pipe                        |
| 64       | 3375945   | Hose                               |
| 65       | 3376042   | Supply Pipe Adapter                |
| 66       | 3376175   | Suction Valve                      |
| 68       | 3376199   | Suction Hose, Fuel Supply          |
| 69       | 3376319   | Air Switch, 2 Way                  |
| 70       | 3376320   | Air Switch, 3 Way                  |
| 71       | 3376321   | Light Bulb (24 Volt, 60 Watts)     |
| 72       | 3376322   | Valve, Flow Control                |
| 73       | 3376254   | Cooler Element                     |
| 74       | 3375468   | Filter Element                     |
| 75       | ST 990-46 | Flowmeter                          |
| 76       | 3822469   | Flowrater (60-2200 Lb/Hr)          |
|          | 3376460   | Spring, Gauge Panel                |

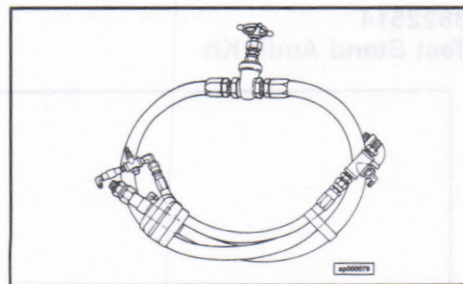
Note 1: 3375794 Update Kit is required to test K38 and K50 Fuel Pumps.

**3375793  
 Fuel Pump Test Stand Update Kit**

**Engine Series:** K38, K50

These kits are released to update older model fuel pump test stands that do not have the proper hose size to test K38 and K50 series engines. These engines require more fuel flow than the lower horsepower engines. These hose kits provided the recommended hose size so that there is no restriction affecting the performance of the fuel calibration procedure.

**NOTE:** If Number 16 Suction hose is to be left on the test stand, order **3375807 Adapter** that is a reducer from No. 16 to No. 12 SAE fitting.



| Part No. | Description |
|----------|-------------|
|----------|-------------|

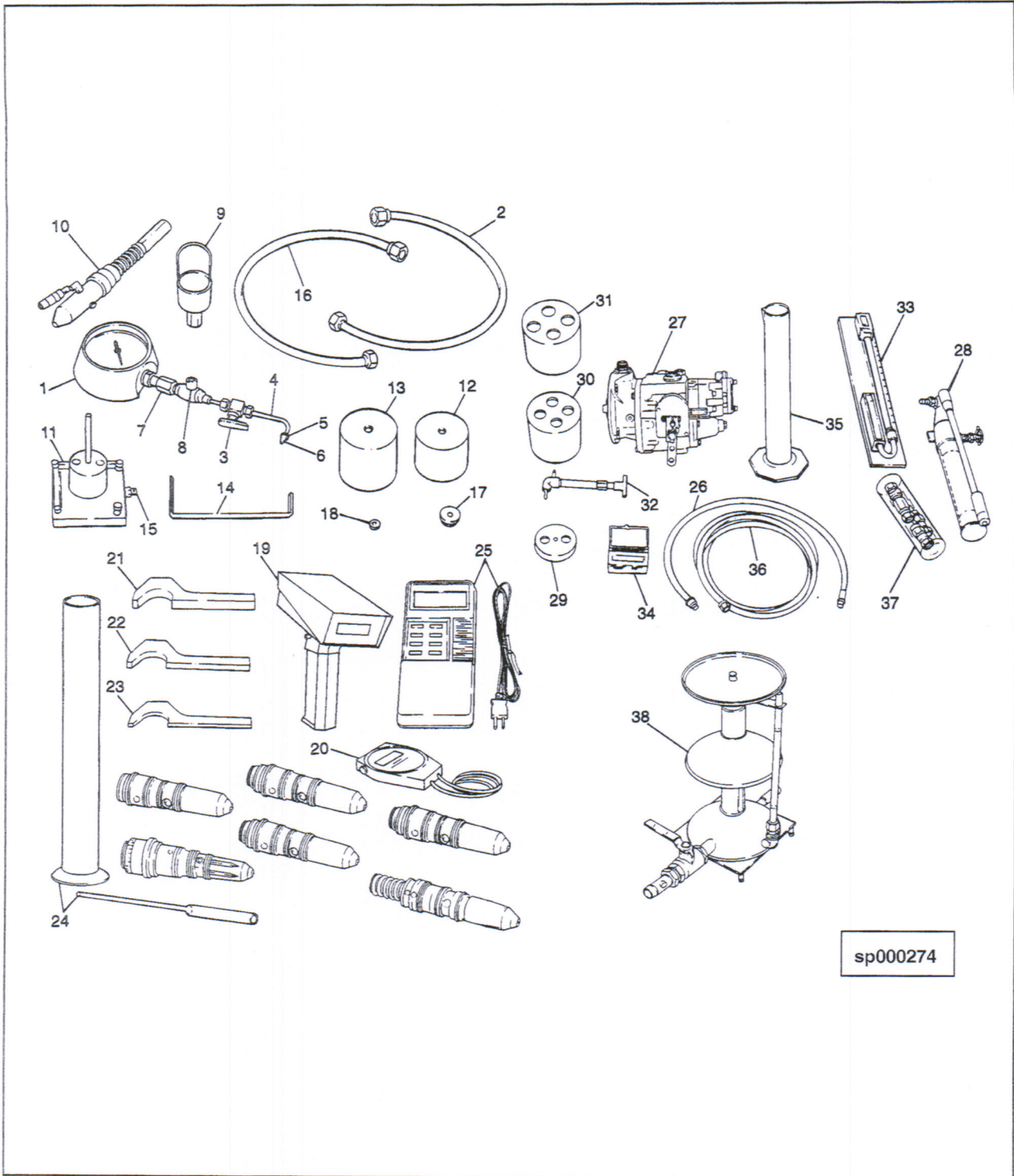
|         |  |
|---------|--|
| 3375793 | Update Kit (for ST 848)  |
| 3375794 | Fuel Pump Test Stand Update Kit (for 3375698, 699, 700, & 701) |

The following parts are common to both kits.

|         |   |
|---------|---|
| 3375806 | Hose Adapter                              |
| 3375809 | Filter Adapter                            |
| 3375833 | Tube Assembly (1/2 tube fuel pump outlet) |

Equipment required to perform a self audit of these test stands. All contents come in 4 bulkcases with syngrom liner.  
 The kit contains of the necessary special calibration equipment and testers to complete a self audit on the injector.  
 Engine Series: All Except B and C Series

3822514  
Test Stand Audit Kit



sp000274

**Engine Series:** All Except B and C Series

This kit contains all the necessary special calibrated equipment and testers to complete a self audit on the Injector Test Stand and Fuel Pump Test Stand. Included are master injectors, master fuel pump and various other master equipment required to perform a self audit of these test stands. All contents come in 4 suitcases with styrofoam liners.

Bulletin No. 3377596 Fuel Systems Self Audit Kit Instruction Manual is used to provide step by step instructions.

| Ref. No.  | Part No.       | Description                          |
|---|----------------|--------------------------------------|
| Suitcase 1 <b>3822974 Audit Kit</b> contains the following: |                |                                      |
|   | <b>3375454</b> | <b>Fuel Pressurizing Valve Ass'y</b> |
| 1   | 3375451        | Pressure Gauge (600 psi)             |
| 2   | 3376490        | Hose Assembly                        |
| 3   | 3376491        | Ball Valve                           |
| 4   | 3376492        | Steel Tube                           |
| 5   | 3376080        | Tube Nut (6 mm)                      |
| 6   | 3376079        | Tube Nut Ferrule (6 mm)              |
| 7   | 3822693        | Gauge Snubber                        |
| 8   | 3376493        | Cap Plug                             |
| 9   | 3375399        | Viscometer                           |
| 10  | 3375449        | Dummy Injector                       |
|   | <b>3375450</b> | <b>Dead Weight Tester</b>            |
| 11  | 3822664        | Deadweight Base Plate                |
| 12  | 3822653        | Deadweight (73.4 psi)                |
| 13  | 3822654        | Deadweight (99.9 psi)                |
| 14  | 3822657        | Deadweight Travel Bracket            |
| 15  | 3822692        | Male Connector                       |
| 16  | 3376494        | Hose Assembly                        |
|   | 3376079        | Tube Nut Ferrule (6 mm)              |
|   | 3376080        | Tube Nut (6 mm)                      |
| 17  | 3822656        | Trim Weight (1.0 psi)                |
| 18  | 3822655        | Trim Weight (0.2 psi)                |
|   | <b>3822969</b> | <b>Case &amp; Foam Insert Ass'y</b>  |
|   | 3822690        | Tool Case                            |
|   | 3822964        | Foam Insert                          |

Suitcase 2 - **3822658 Audit Kit** contains the following:

|    |                |  |
|----|----------------|--|
| 19 | 3377462        | Digital Optical Tachometer                   |
| 20 | 3822659        | Digital Stop Watch                           |
| 21 | 3822660        | Dial Indicator Gauge Block (130 mm3)         |
| 22 | 3822661        | Dial Indicator Gauge Block (230 mm3)         |
| 23 | 3822662        | Dial Indicator Gauge Block (300 mm3)         |
| 24 | 3822442        | Specific Gravity Test Kit                    |
| 25 | 3822666        | Digital Thermometer Kit                      |
|    | 3822710        | Master Leakage Injector                      |
|    | 3822711        | Master Top Stop Injector                     |
|    | ST 1262        | Master Injector (214.5/216.5 mm3) (.310 cam) |
|    | ST 1306        | Master Injector (204.5/206.5 mm3) (.189 cam) |
|    | 3822663        | Master Injector (154.156 mm3) (.230 cam)     |
|    | 3823960        | Master Injector (220 mm3) (.248 cam)         |
|    | 3823961        | Master Injector (119 mm3) (.169 cam)         |
|    | 3823962        | Master Injector (170 mm3) (.272 cam)         |
|    | <b>3822970</b> | <b>Case &amp; Foam Insert Ass'y</b>          |
|    | 3822690        | Tool Case                                    |
|    | 3822965        | Foam Insert                                  |

Note: 3822658 Kit may be used to update 3375366 Audit Kit to the equivalent of 3822652.

Suitcase 3 - **3822976 Audit Kit** contains the following:

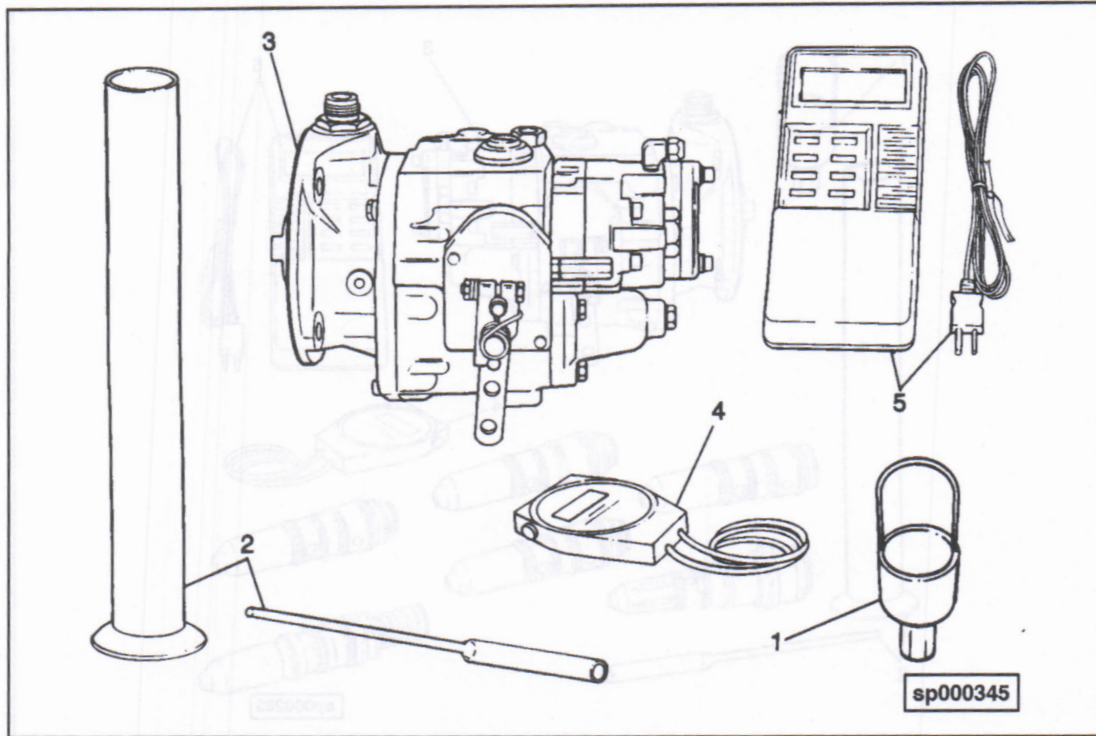
|    |         |                         |
|----|---------|-------------------------|
| 26 | 3376490 | Pressurizing Valve Tube |
| 27 | 3822515 | Master Fuel Pump        |
| 28 | 3822516 | Hydraulic Pump          |

| Ref. No. | Part No.       | Description                          |
|----------|----------------|--------------------------------------|
| 29       | 3822517        | Deadweight (30 psi)                  |
| 30       | 3822518        | Deadweight (150 psi)                 |
| 31       | 3822519        | Deadweight (200 psi)                 |
| 32       | 3822520        | Pressure/Vacuum Pump                 |
| 33       | 3822521        | Well Type Manometer                  |
| 34       | 3822522        | Gage Hand Puller Kit                 |
| 35       | 3823705        | Graduated Beaker                     |
| 36       | 3822713        | Tube Ass'y (1/4 x 72 in.)            |
| 37       | <b>3823387</b> | <b>Miscellaneous Fitting Kit</b>     |
|          | 3823388        | Male Hose Fitting (1/8 NPT x No. 4)  |
|          | 3823389        | Pipe Coupling (1/8 NPT)              |
|          | 3823390        | Male Hose Fitting (1/8 NPT x No. 5)  |
|          | 3822692        | Male Tube Connector (1/8 NPT x 1/4)  |
|          | 3823391        | Male Tube Connector (1/8 NPT x 3/16) |
|          | 3823000        | Male Tube Connector (3/4 NPT x 1/2)  |
|          | 3823001        | Male Tube Connector (1/2 NPT x 1/2)  |
|          | 3823392        | Male Branch Tee (1/4 Tube)           |
|          | 3823393        | End Cap (1/2 Tube)                   |
|          | 3823394        | Pipe Tee (1/8 NPT)                   |
|          | <b>3822971</b> | <b>Case &amp; Foam Insert Ass'y</b>  |
|          | 3822716        | Tool Case                            |
|          | 3822966        | Foam Insert                          |

Suitcase 4 - **3822977 Audit Kit** contains the following:

|    |                |                                     |
|----|----------------|-------------------------------------|
|    | 3822978        | Flow Vessel Tube (1/2 x 84 in.)     |
| 38 | 3822717        | Flow Vessel                         |
|    | <b>3822972</b> | <b>Case &amp; Foam Insert Ass'y</b> |
|    | 3823112        | Case                                |
|    | 3822967        | Foam Insert                         |

3823720  
 Test Stand Audit Kit - Fuel Pump



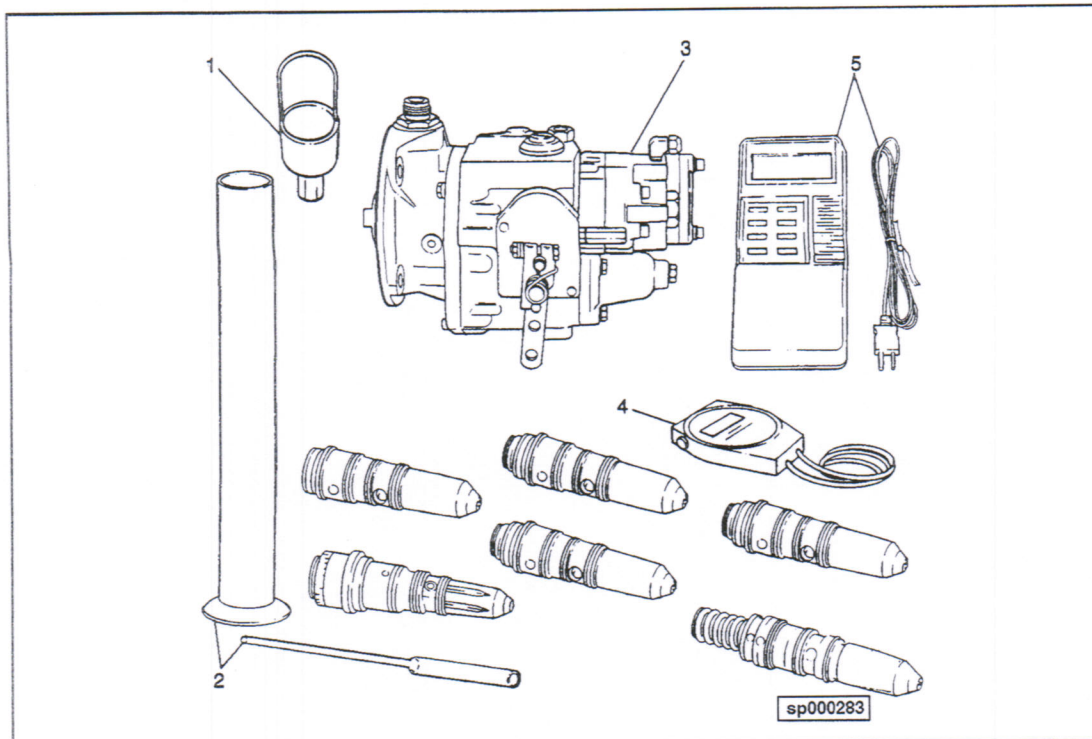
**Engine Series:** All Except B and C Series

Use this kit for monthly audits of the fuel pump test stands. A master fuel pump and other supportive tools will determine the flowmeter and gauges calibration accuracy as required on a monthly audit basis.

**3823720 Audit Kit** contains the following:

| Ref. No. | Part No.       | Description                   |
|----------|----------------|-------------------------------|
| 1        | 3375399        | Viscometer                    |
| 2        | 3822442        | Specific Gravity Test Kit     |
| 3        | 3822515        | Master Fuel Pump              |
| 4        | 3822659        | Digital Stopwatch             |
| 5        | 3822666        | Digital Thermometer           |
|          | <b>3822973</b> | <b>Case &amp; Foam Insert</b> |
|          | 3822716        | Case                          |
|          | 3822968        | Foam Insert                   |

3822734  
Test Stand Audit Kit - Monthly



**Engine Series:** All Except B and C Series

Use this kit for monthly audits of the fuel pump test stand and injector test stands. Master injectors and master fuel pump are provided so that the test stands calibration performance can be checked as required on a monthly audit basis.

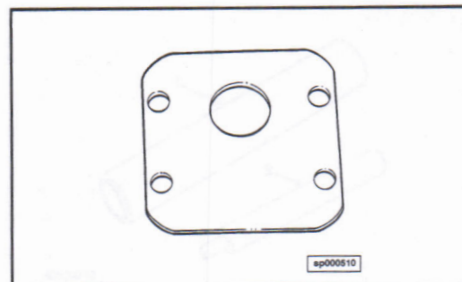
| Ref. No. | Part No.       | Description   |
|----------|----------------|---|
| 1        | 3375399        | Viscometer  |
| 2        | 3822442        | Specific Gravity Test Kit                                 |
| 3        | 3822515        | Master Fuel Pump  |
| 4        | 3822659        | Digital Stopwatch   |
| 5        | 3822666        | Digital Thermometer                                       |
|          | 3822710        | Master Leakage Injector                                   |
|          | 3822711        | Master Top Stop Injector                                  |
|          | ST 1262        | Master Injector (214.5/216.5 mm <sup>3</sup> ) (.310 cam) |
|          | ST 1306        | Master Injector (204.5/206.5 mm <sup>3</sup> ) (.189 cam) |
|          | 3822663        | Master Injector (154/156 mm <sup>3</sup> ) (.230 cam)     |
|          | 3823960        | Master Injector (219/221 mm <sup>3</sup> ) (.248 cam)     |
|          | 3823961        | Master Injector (118/120 mm <sup>3</sup> ) (.169 cam)     |
|          | 3823962        | Master Injector (169/171 mm <sup>3</sup> ) (.272 cam)     |
|          | <b>3822973</b> | <b>Tool Case &amp; Foam Insert</b>                        |
|          | 3822716        | Tool Case   |
|          | 3822968        | Foam Insert   |

## Gear Pump Tools

### ST 844 Gear Pump Test Plate

**Engine Series:** All Except B and C Series

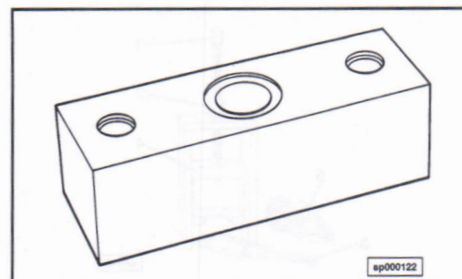
This thin test plate is mounted between the gear pump and the fuel pump housing to check the flow of fuel through the gear pump.



### 3376330 Gear Pump Flow Adapter

**Engine Series:** All Except B and C Series

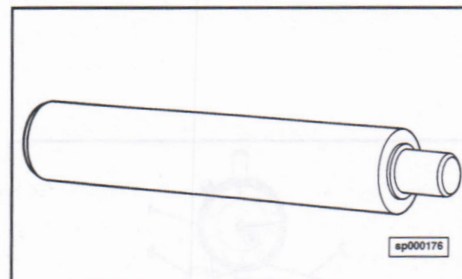
This tool is used in place of the pulsation damper and the **ST 844 Gear Pump Test Plate** to check gear pump flow capacity. It is used to support the revised gear pump testing standard.



### 3376919 Fuel Pump Bushing Driver

**Engine Series:** K38, K50

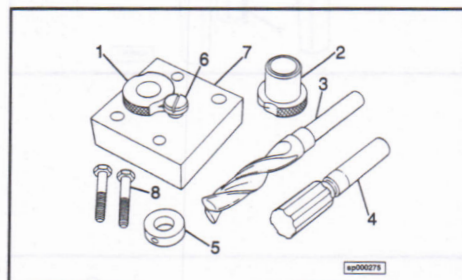
This driver is designed to install carbon graphite gear pump bushings in 1 1/4 inch PTG gear pumps.



### 3822635 Gear Pump Cover Ream Fixture

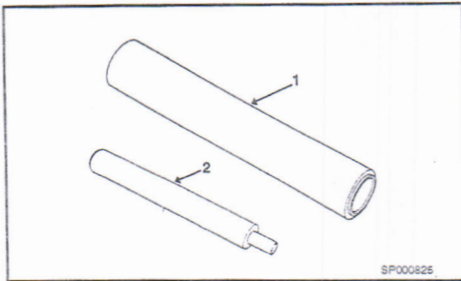
**Engine Series:** All Except B and C Series

This fixture and components are required to convert non-pressurized gear pumps to pressurized gear pumps. The fixture is used to properly position and guide the drill and reamer so that a pressurizing valve can be installed in the gear pump cover.



| Ref. No. | Part No. | Description    |
|----------|----------|----------------|
| 1        | 3822636  | Drill Bushing  |
| 2        | 3822637  | Reamer Bushing |
| 3        | 3822638  | Drill          |
| 4        | 3822631  | Reamer         |
| 5        | 3377113  | Stop Collar    |
| 6        | 3822399  | Lockscrew      |
| 7        | 3822400  | Fixture        |
| 8        | 3822401  | Capscrew       |

**NOTE:** 3822641 Update kit will update the now obsolete 3377448. The kit contains the above items 1, 2, 3 and 4.

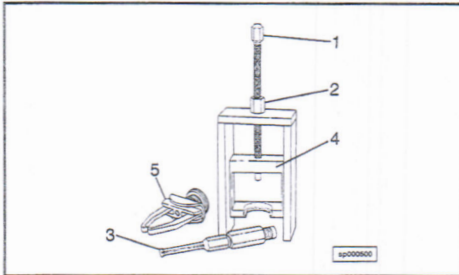


**3822640  
Fuel Pump Valve Driver**

**Engine Series:** All Except B and C Series

These drivers are used to install and remove the pressurizing valve in the gear pump cover.

(1) **3822640 Driver** installs the pressurizing valve and (2) **3822398 Driver** is used to remove the valve.



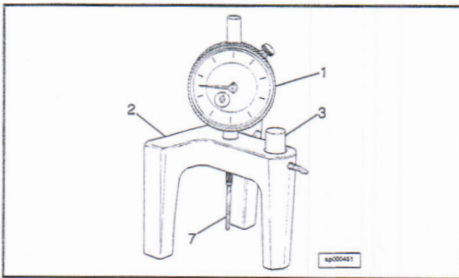
**Governor and Weight Tools**

**ST 709  
Governor Weight Puller**

**Engine Series:** All Except B and C Series

This puller arrangement is used to remove the governor weight from the front cover of the PT pumps. A bushing puller is also provided to remove the bushing from the cover which fails to come out with the carrier.

| Ref. No. | Part No. | Description            |
|----------|----------|------------------------|
| 1        | ST 709-1 | Puller Screw           |
| 2        | ST 709-2 | Hex Nut                |
| 3        | 3375108  | Bushing Puller         |
| 4        | 3375360  | Governor Weight Puller |
| 5        | 3377366  | Drive Coupling Puller  |

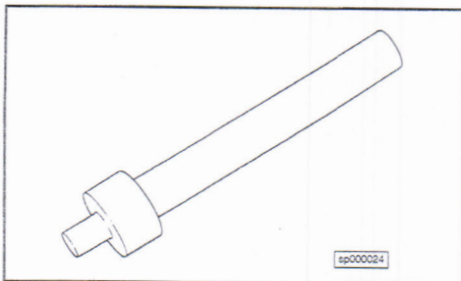


**ST 1241  
Weight Assist Checking Tool**

**Engine Series:** All Except B and C Series

This tool is used to check the governor weight assist plunger protrusion during assembly of the fuel pump. The special dial indicator is required to measure the position of the plunger accurately, without compressing the weight assist spring.

| Ref. No. | Part No.  | Description     |
|----------|-----------|-----------------|
| 1        | ST 1241-1 | Dial Indicator  |
| 2        | ST 1241-2 | Bracket         |
| 3        | ST 1241-3 | Setting Dowel   |
| 4        | ST 1241-4 | Locating Dowel  |
| 7        | ST 1241-7 | Indicator Point |



**3375230  
Governor Weight Tool**

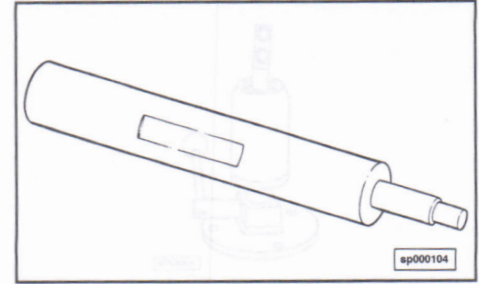
**Engine Series:** All Except B and C Series

This tool is required to install the cast weight governor carrier in the fuel pump front cover without moving the carrier on the shaft.

**3376136**  
**Governor Barrel Lock Clip Driver**

**Engine Series:** All Except B and C Series

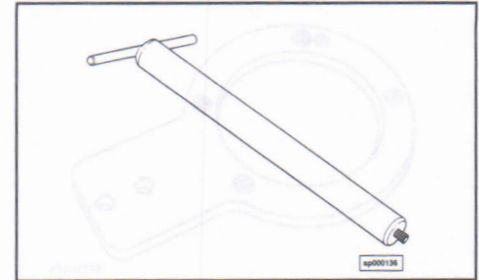
This tool is used to drive the governor barrel lock clip into position in the fuel pump body.



**3376457**  
**Governor Plug Removal Tool**

**Engine Series:** K19, K38, K50, NT, V28, L10

This tool is used to remove or install the special plug for the electronically controlled governor on a generator set engine. The governor is located in the AFC barrel bore on this application.

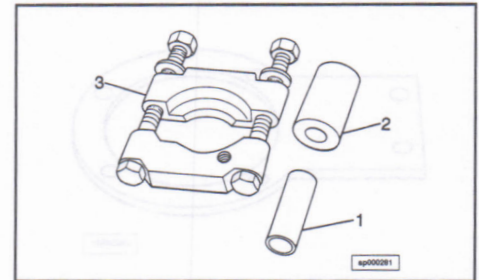


**3822724**  
**Governor Carrier Weight Installation and Removal Tool**

**Engine Series:** All except B & C

This kit contains the necessary tools to remove the gear on the fuel pump cast weight carrier assembly.

| Ref. No. | Part No. | Description                                 |
|----------|----------|---|
| 1        | 3822721  | Governor Carrier Weight Removal Driver      |
| 2        | 3822722  | Governor Carrier Weight Installation Driver |
| 3        | 3822723  | Governor Carrier Weight Gear Separator      |



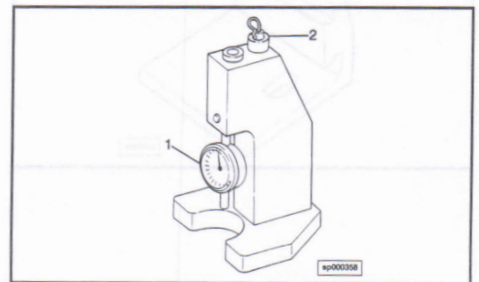
**NOTE:** Use with a 2 jaw puller or bar type puller.

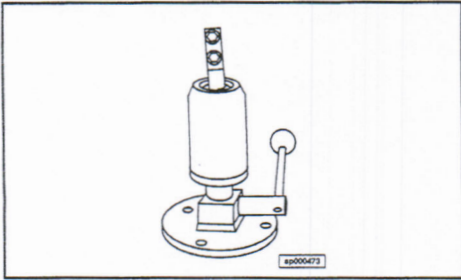
**3823844**  
**Torque Spring Height Gauge**

**Engine Series:** 91N14 and L10 STC

This fixture takes all of the guess work out of setting the governor torque spring height. The dial indicator and the calibrating spacer bushing provide accurate 'set up' of the fixture so that torque spring shims can be added or taken away as desired per specifications.

| Ref. No. | Part No. | Description        |
|----------|----------|--------------------|
| 1        | 3823845  | Dial Indicator     |
| 2        | 3823846  | Calibration Spacer |





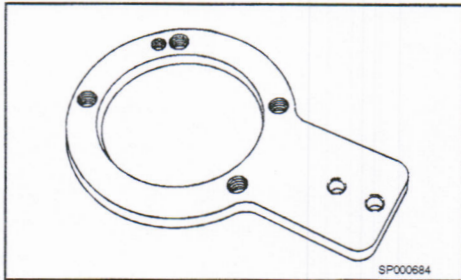
## Holding and Positioning Devices

### ST 302 Ball Joint Vise

**Engine Series:** All Except B and C Series

The ball joint vise is used to hold and/or position fuel pumps turbochargers and or air compressors during rebuild.

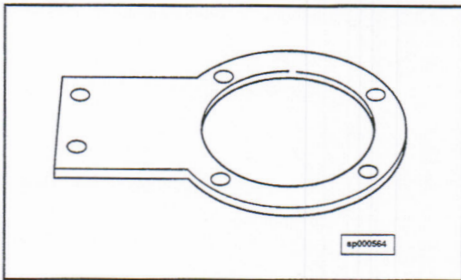
**NOTE:** For PT fuel pumps, **3375133 Adapter plate** must be used. For Capps fuel pumps, **3162897 Adapter plate** must be used.



### 3162897 Fuel Pump Mounting Plate

**Engine Series:** B, C

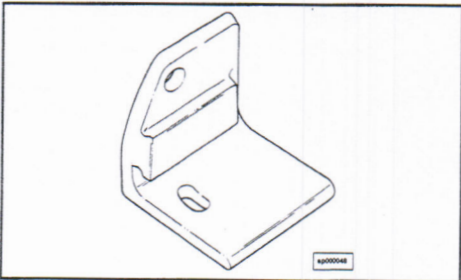
The adapter plate is required to mount the CAPPs fuel pump.



### 3375133 Fuel Pump Mounting Plate

**Engine Series:** All Except B and C Series

This adapter plate is required to hold the PT fuel pump to ST 302 Ball Vise.



### 3375498 AFC Breather Drill Fixture

**Engine Series:** All Except C & J, B and C Series

This fixture is used for drilling the fuel pump housing, on older model engines for a field fix. A 1/8 inch hole is to be added to the housing to install an air breather.

## Hose Adapters

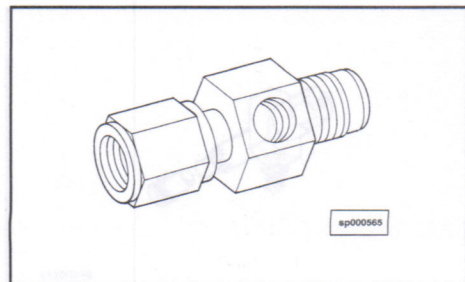
### ST 434-1

#### Hose Adapter Assembly

Engine Series: All Except B and C Series

These hose adapters are used to join the fuel pump suction hose on the fuel pump test stand to the fitting on the fuel pump. These adapters also have the 90 degree elbow to attach the test stand "fuel restriction" hose.

| Part No. | Description   |
|----------|---|
| ST 434-1 | Hose Adapter Assembly (#8 SAE to #8 SAE)                |
| ST 434-2 | Hose Adapter Assembly (#10 SAE to #10 SAE)              |
| 3375845  | Hose Adapter Assembly (#12 SAE to #12 SAE)              |
| 3376719  | Hose Adapter Assembly (#12 JIC to #12 JIC)              |
| 3375806  | Hose Adapter Assembly (#16 JIC to #16 JIC (With Elbow)) |
| 3375807  | Hose Adapter Assembly (#16 JIC to #12 SAE)              |
| 3376922  | Hose Adapter Assembly (#16 JIC to #16 JIC (Less Elbow)) |



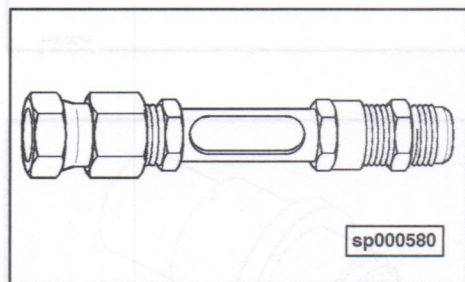
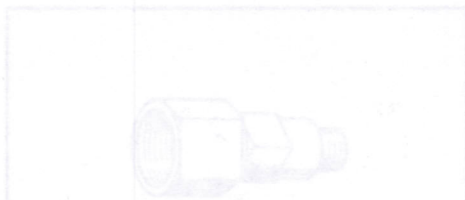
### ST 998

#### Fuel Sight Glass

Engine Series: All

These sight glasses are used to check for air entrainment in the fuel suction hoses. Various sizes are listed below.

| Ref. No. | Part No. | Description                        |
|----------|----------|------------------------------------|
| 1        | ST 998   | Fuel Sight Glass (No. 10 hose SAE) |
| 2        | 3375632  | Fuel Sight Glass (No. 12 hose SAE) |
| 3        | 3376718  | Fuel Sight Glass (No. 12 hose JIC) |
| 4        | 3375808  | Fuel Sight Glass (No. 16 hose JIC) |



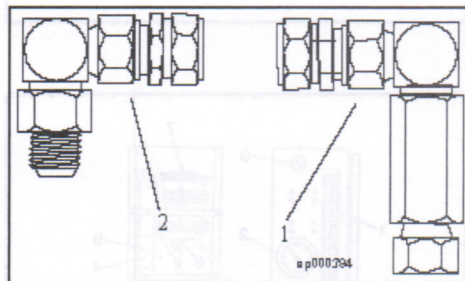
### 3824875

#### Fuel Pump Adapter

Engine Series: QSK19

This kit contains 2 special flat faced "o'ring seal" connections needed to test Quantum K19 series fuel pumps on Cummins fuel pump test stands. Elbow (2) is, #12 o'ring face seal female swivel x #10 SAE male, used to attach the fuel pump stand suction (inlet) hose and elbow (1) is, #10 o'ring face seal female swivel x 3/8 tube inverted flare, used to attach the fuel pressure (outlet) hose.

| Ref. No. | Part No. | Description |
|----------|----------|-------------|
| 1        | 3162244  | Fitting     |
| 2        | 3162243  | Fitting     |



## Miscellaneous

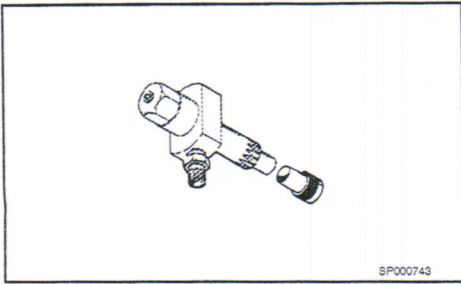
### ST 1175

#### Fuel Pump Countersink Drill

Engine Series: All Except B and C

This special countersink, with pilot, is used to countersink the tamper proof screw holes in the fuel pump spring pack housing and the front cover.



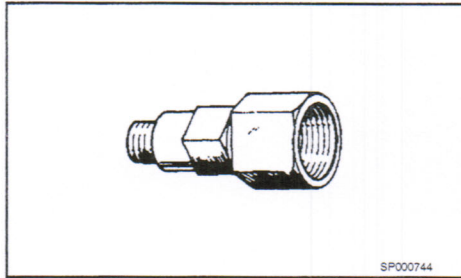


**3162378  
Nozzle Centering Sleeve**

**Engine Series:** J Series

This adapter is for centering nozzle in nozzle holder cap nut during assembly to the nozzle holder.

SP000743

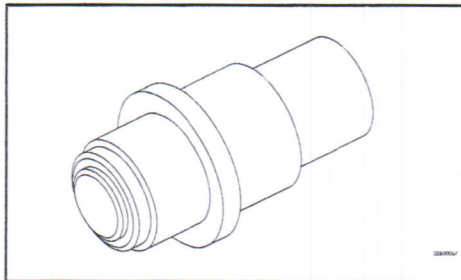


**3162379  
Delivery Valve Test Fixture**

**Engine Series:** J Series with PSUAMBAC Pumps

This adapter checks delivery valve seat for leakage. Used with diesel nozzle tester.

SP000744

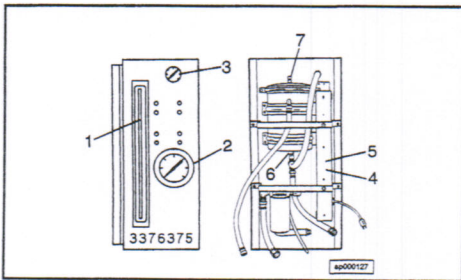


**3163313  
Fuel Pump Adapter Wrench**

**Engine Series:** QST30

This wrench is used to torque tighten the fuel pump drive shaft not on Bosch RP39/P8500 fuel pumps. It is also useful for rotating the pump shaft during timing adjustment.

228700



**3376375  
Fuel Measuring Instrument**

**Engine Series:** All Except B and C Series

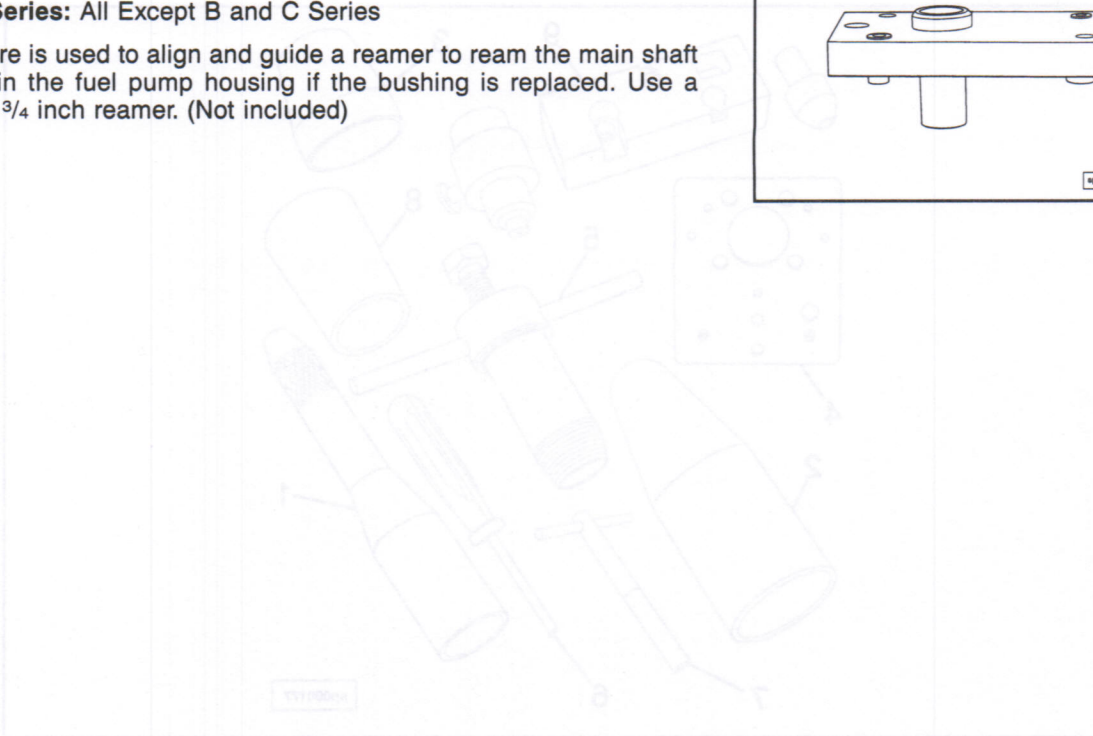
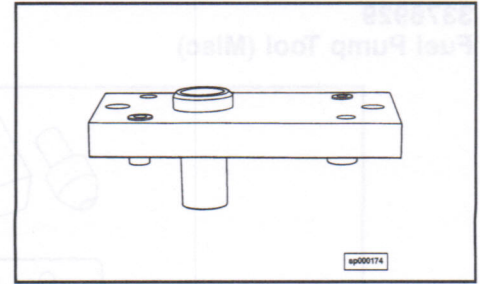
This instrument measures the fuel rate consumption of a Cummins diesel engine. The tool can be used either with a chassis or engine dynamometer. The instrument is connected to the supply tanks and the fuel pump. A return line is routed back to the fuel supply tank. Fuel is circulated through the float tank and passes through the flowmeter to measure actual pounds-per-hour of fuel consumption (fuel rate). The pressure gauge and temperature gauge are also important part of the test parameters.

| Ref. No. | Part No.   | Description       |
|----------|------------|-------------------|
| 1        | ST 1190-46 | Flowmeter         |
| 2        | ST 1190-47 | Pressure Gauge    |
| 3        | ST 1190-80 | Temperature Gauge |
| 4        | ST 1190-43 | Flourescent Bulb  |
| 5        | ST 1190-42 | Light Fixture     |
| 6        | ST 1190-54 | Snubber           |
| 7        | 3013057    | Air Breather      |
|          | 3822388    | Float Valve Ass'y |

**3376903**  
**Ream Fixture**

**Engine Series:** All Except B and C Series

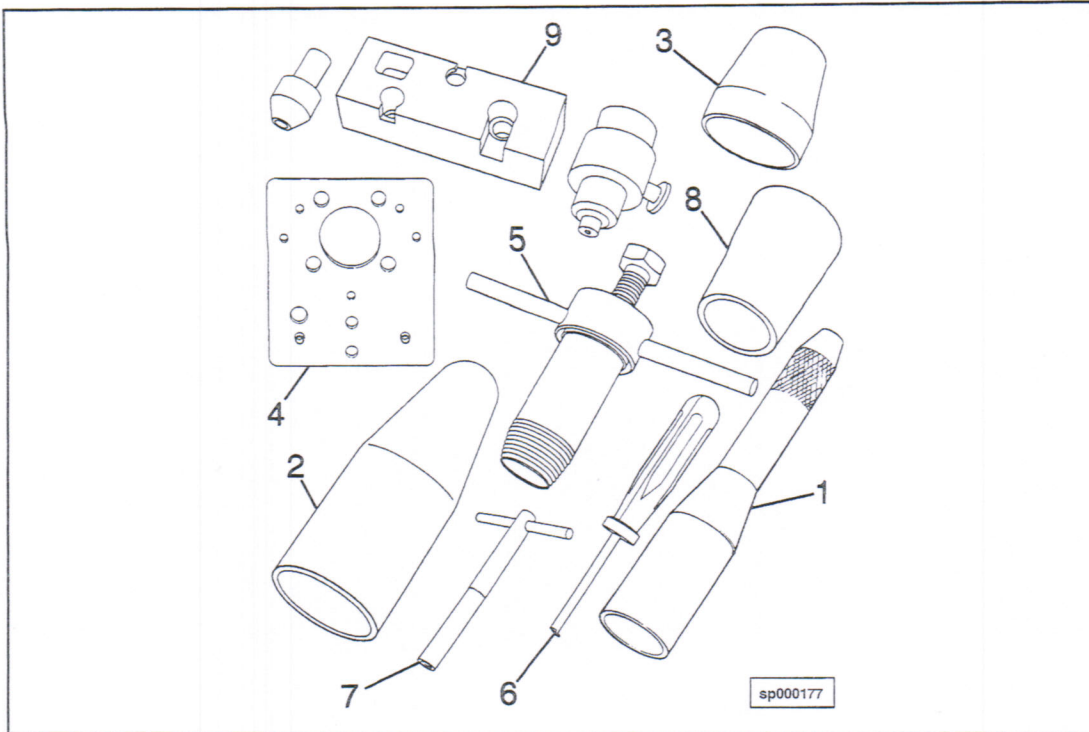
This fixture is used to align and guide a reamer to ream the main shaft bushing in the fuel pump housing if the bushing is replaced. Use a standard 3/4 inch reamer. (Not included)



These are miscellaneous tools to repair the CAV and Bosch fuel pumps.  
Engine Series: B & C Series

| Ref. No. | Part No. | Description                            |
|----------|----------|--|
| 1        | 3378929  | Fuel Pump Seal Protective Sleeve (CAV) |
| 2        | 3378930  | Fuel Pump Seal Protective Sleeve (CAV) |
| 3        | 3378931  | Fuel Pump Seal Protective Sleeve (CAV) |
| 4        | 3378932  | Fuel Pump Mounting Plate (CAV)         |
| 5        | 3378933  | Fuel Pump Seal Puller (Bosch)          |
| 6        | 3378934  | Fuel Pump Gasket Extractor (Bosch)     |
| 7        | 3378935  | Fuel Pump Control Shaft Wrench (Bosch) |
| 8        | 3378936  | Fuel Pump Protective Sleeve (Bosch)    |
| 9        | 3378937  | Fuel Pump Mounting Plate (Bosch)       |

3376929  
Fuel Pump Tool (Misc)



Engine Series: B & C Series

These are miscellaneous tools to repair the CAV and Bosch fuel pumps.

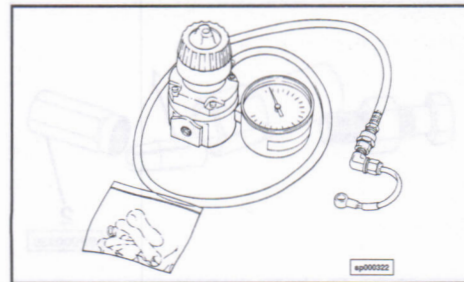
| Ref. No. | Part No. | Description                            |
|----------|----------|--|
| 1        | 3376929  | Fuel Pump Seal Protective Sleeve (CAV) |
| 2        | 3376930  | Fuel Pump Seal Protective Sleeve (CAV) |
| 3        | 3376931  | Fuel Pump Seal Protective Sleeve (CAV) |
| 4        | 3376932  | Fuel Pump Mounting Plate (CAV)         |
| 5        | 3376933  | Fuel Pump Seal Puller (Bosch)          |
| 6        | 3376934  | Fuel Pump Gasket Extractor (Bosch)     |
| 7        | 3376935  | Fuel Pump Control Shaft Wrench (Bosch) |
| 8        | 3376936  | Fuel Pump Protective Sleeve (Bosch)    |
| 9        | 3376937  | Fuel Pump Mounting Plate (Bosch)       |

3824077

**LDA Pretension Checking Kit**

**Engine Series:** B Series

This kit is used to measure the LDA pretension on Bosch VE Pumps having that device. (LDA-Acronym for AFC)



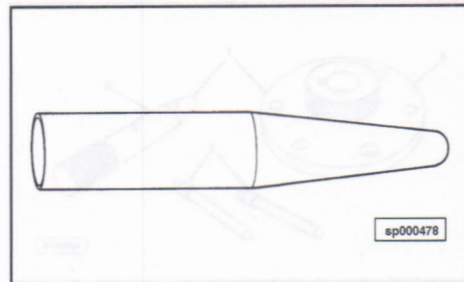
**Removal and Installation Tools**

ST 422

**O'ring Assembly Tool**

**Engine Series:** All Except B and C Series

This expander is used to install the o'ring onto the 5/8 inch throttle shaft. This nylon adapter fits over the throttle shaft and prevents damage to the o'ring as it is assembled. Lubricate the o'ring for easy assembly.



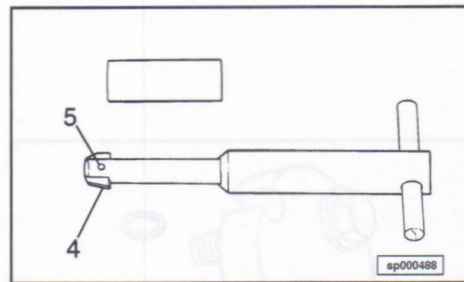
ST 586

**By-Pass Valve Sleeve Puller**

**Engine Series:** NH

This puller is used to remove the pressure regulator valve sleeve from the PTR Fuel Pump used on older model engines.

| Ref. No. | Part No. | Description  |
|----------|----------|--------------|
| 4        | ST 586-4 | Toggle Block |
| 5        | ST 586-6 | Pin          |



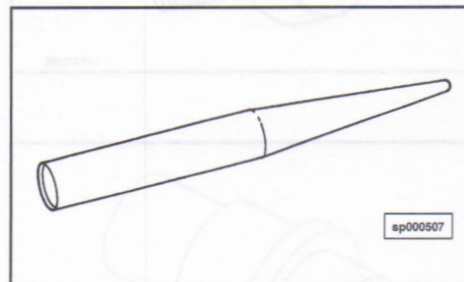
ST 835

**O'ring Assembly Tool**

**Engine Series:** All Except B and C Series

This expander is used to assemble the o'ring onto the 1/2 throttle shaft. The expander fits over the shaft to prevent damage to the o'ring as it is being assembled.

**NOTE:** This tool may also be used to install the o'rings on the new style piston cooling nozzles.

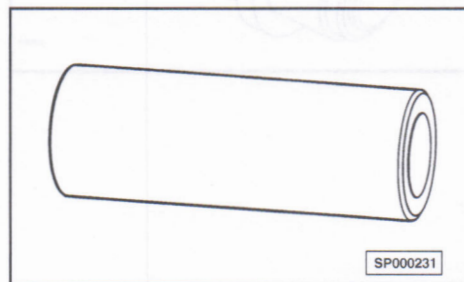


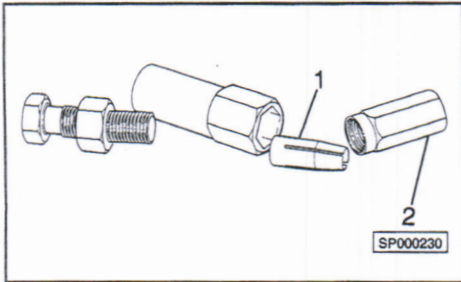
ST 1032

**Tachometer Seal Driver**

**Engine Series:** All Except B and C Series

This driver is used to install the tachometer drive assembly and oil seal into the fuel pump main housing.



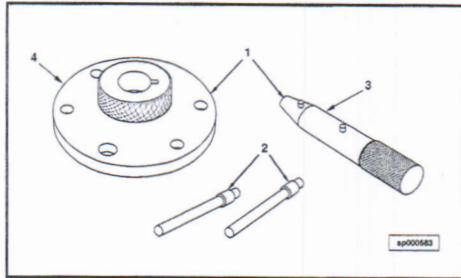


**ST 1326**  
**Tachometer Drive Puller**

**Engine Series:** All Except B and C Series

This puller is used to pull the tachometer drive shaft from the fuel pump housing. This puller will pull the tach drive when the fuel pump is installed on the engine or at a rebuild station.

| Ref. No. | Part No.  | Description |
|----------|-----------|-------------|
| 1        | ST 1326-1 | Collet      |
| 2        | ST 1326-2 | Collar      |

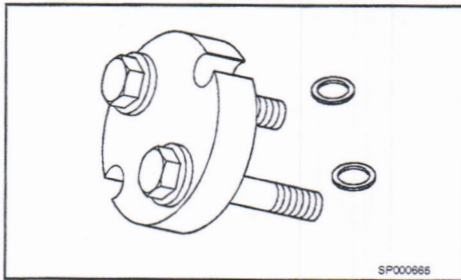


**3163281**  
**Fuel Pump Alignment Tool**

**Engine Series:** ISB

The VP44 fuel pump on the ISB engine uses a key to set timing with the engine drive gear. Due to not being able to see the key in the keyway of the gear, on some applications, the pump may be installed with the key misaligned, causing poor performance or failure. This tool allows the aligning of the pump key and gear keyway without actually being able to see the key in the keyway.

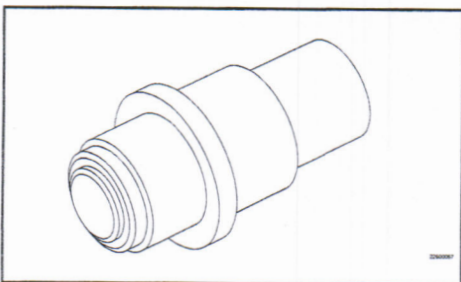
| Ref. No. | Part No. | Description   |
|----------|----------|---------------|
| 1        | 3163262  | Plate         |
| 2        | 3163263  | Guide Pin     |
| 3        | 3163503  | Alignment Pin |
| 4        | 3163504  | Bushing       |



**3163381**  
**Fuel Pump Gear Puller**

**Engine Series:** B and C Series, B, C, ISB, ISC & ISL

This kit is used to pull the gears off the fuel pump shafts of all types of fuel pumps used on the midrange engines.



**3163400**  
**Bushing R&I Tool**

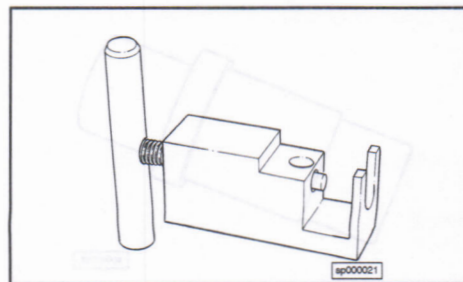
**Engine Series:** QSK45/60

This tool is used to install and remove 3089454 bushing in gear cover and to install 3089409 bushing in fuel pump, water pump and hydraulic pump drive supports for the QSK45/60.

**3375204**  
**Throttle Shaft Ball Tool**

**Engine Series:** All Except B and C Series

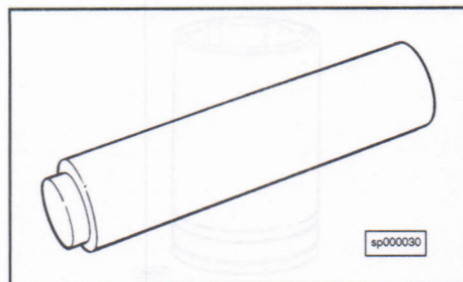
This tool is required to properly install the throttle shaft tamper proof ball, without moving the throttle stop.



**3375271**  
**Tach Drive Cup Plug Driver**

**Engine Series:** All Except B and C Series

This driver is used to install the cup plug into the fuel pump front cover when the tachometer drive is not needed.

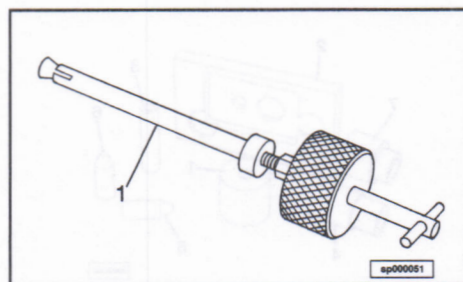


**3375599**  
**AFC Barrel Puller**

**Engine Series:** All Except C & J, B and C Series

This puller has a soft sleeve that expands to pull the AFC barrel from the fuel pump body. The soft sleeve will not damage the precision finish bore of the barrel.

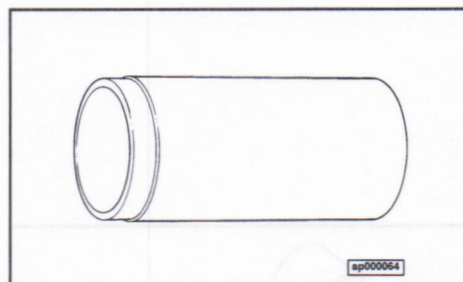
| Ref. No. | Part No. | Description       |
|----------|----------|-------------------|
| 1        | 3375604  | Sleeve (Standard) |
| 1        | 3822787  | Sleeve (.334)     |



**3375703**  
**Piston Installation Sleeve**

**Engine Series:** NT

This sleeve is designed and sized to install the piston into the road speed governor used on older model engines.

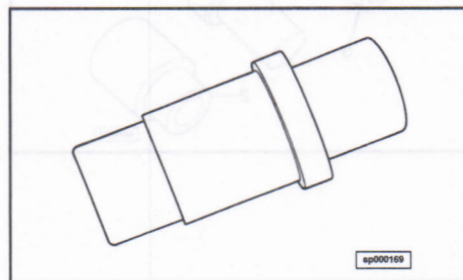


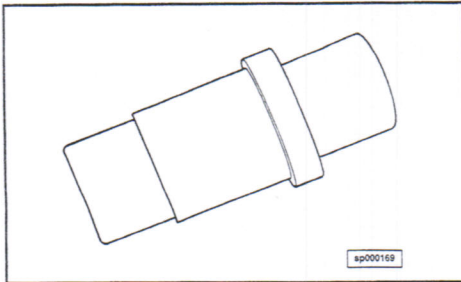
**3376874**  
**Fuel Pump Support Bushing Driver**

**Engine Series:** V903

This special bushing mandrel is used to install the bushings in the fuel pump drive bearing support.

This driver is used to remove or install **3014249 Bushing** in the **3022547 Bearing Support**.



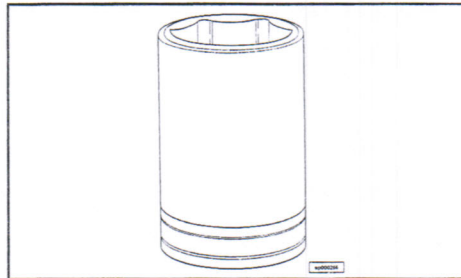


**3376875**  
**Fuel Pump Support Bushing Driver**

**Engine Series:** V903

This special bushing mandrel is used to install the bushings in the fuel pump drive bearing support.

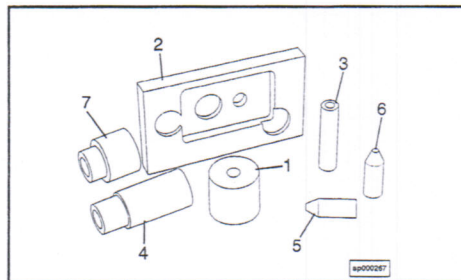
This driver is used to remove or install **3025875 Bushing** in the **3023321 Bearing Housing**.



**3377443**  
**Filter Head Adapter Socket**

**Engine Series:** Big Cam III & IV

This is a special machined socket to remove or install the filter head full flow adapter. (1 1/2 in.)



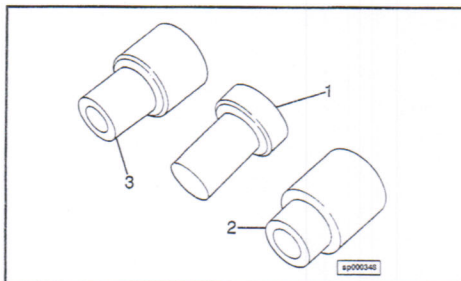
**3822472**  
**Front Cover and Main Shaft Assembly Tool Kit**

**Engine Series:** All Except B & C Series

This kit is used to install and remove seals and main drive shaft assembly in the fuel pump.

| Ref. No. | Part No. | Description                    |
|----------|----------|--------------------------------|
| 1        | 3822474  | Bearing, Gear, Coupling Driver |
| 2        | 3377180  | Front Cover Support Plate      |
| 3        | 3376722  | Tach Seal Driver               |
|          | 3822475  | Shaft Seal Installation Kit    |
| 4        | 3822473  | Main Shaft Seal Driver         |
| 5        | 3822505  | Seal Guide Pin, .635 Bore      |
| 6        | 3822477  | Seal Guide Pin, .565 Bore      |
| 7        | 3824225  | Fuel Pump Shaft Seal Driver    |

**NOTE:** 3824226 Guide Pin made from a "plastic" material is available as an option to 3822477 Guide Pin. Order separately as desired.



**3823755**  
**Fuel Pump Seal Driver Kit**

**Engine Series:** 91N14 and L10 CELECT

This kit contains the necessary seal drivers to remove and install the oil and fuel shaft seals in the fuel pump front cover. This kit is used for seals with seal lips pointing away from each other.

| Ref. No. | Part No. | Description         |
|----------|----------|---------------------|
| 1        | 3823239  | Seal Removal Driver |
| 2        | 3823240  | Fuel Seal Driver    |
| 3        | 3823250  | Oil Seal Driver     |

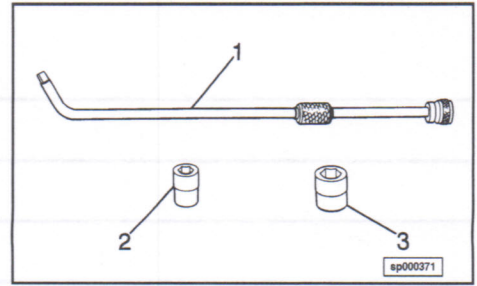
**NOTE:** Use 3823234 Seal Protector Sleeve (not included in kit) when installing shaft through seals during assembly.

**3823956**  
**Fuel Pump Mounting Kit**

**Engine Series:** B and C Series

This is a special kit of 3 tools to make it easier to remove or install the fuel pump mounting capscrews.

| Ref. No. | Part No. | Description            |
|----------|----------|------------------------|
| 1        | 3823957  | Rigid Adjusting Wrench |
| 2        | 3823958  | Socket (13 mm)         |
| 3        | 3823959  | Socket (15 mm)         |



**3824780**  
**Plunger Retainer Expander**

**Engine Series:** N14 CELECT

This special tapered, hardened steel, mandrel is required to install the spiral retainer to the CELECT fuel pump pressure regulator plunger.

