

Section 1 - Level 1

Maintenance and Troubleshooting Tools

Level 1 includes all those tools necessary to perform routine tasks on Cummins engines. These functions do not include the removal or replacement of any major component. The tool requirements list for Level 1 is broken down by tool number, function description and engine model.

The tools are arranged in part by part number sequence, where possible. In many cases, similar function tools are grouped together so they are easier to find.

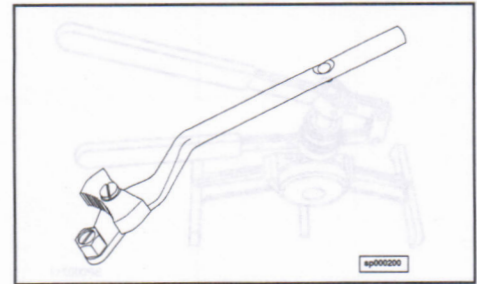
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Barring Tools

ST 747 Barring Tool

Engine Series: C & J, NH, NT, V28

ST 747 Barring Tool provides a way of barring over most engines when making valve and injector adjustments or checking engine timing. The hex stop is positioned in relation to the pivoting shoe to fit over a pulley with the drive belt in place.

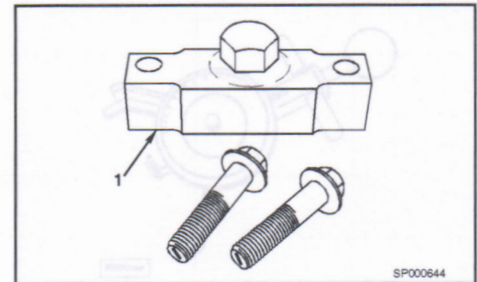


3163160 Engine Barring Adapter Kit

Engine Series: Signature/ISX

This tool is required to rotate the engine when the air compressor drive is removed. Two cap screws are provided with the adapter to be used when the damper and pulley are in position.

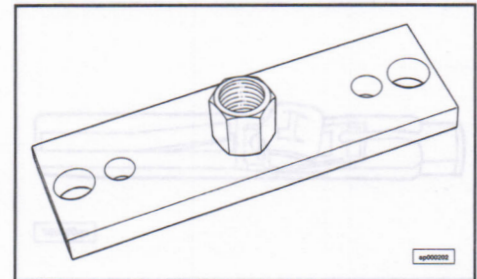
Ref. No.	Part No.	Description
1	3163525	Barring Adapter Hex Head Cap Screw



3824270 Barring Tool

Engine Series: L10, M11

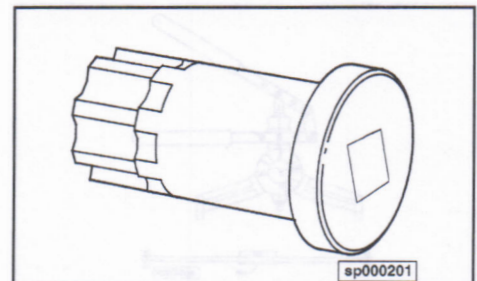
This tool is designed to attach to the flywheel end of the crankshaft to rotate the crankshaft by hand. The tool can also be attached to the accessory drive pulley. A slide hammer puller is attached to the puller for pulley removal.



3824591 Barring Tool

Engine Series: B and C Series

Insert this barring gear into the flywheel housing to engage the flywheel ring gear. The engine can then be rotated by hand using a 1/2 inch drive ratchet or breaker bar.



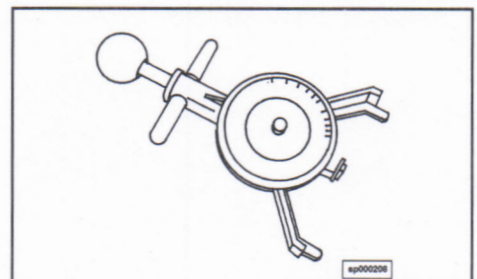
Belt Tension Gauges

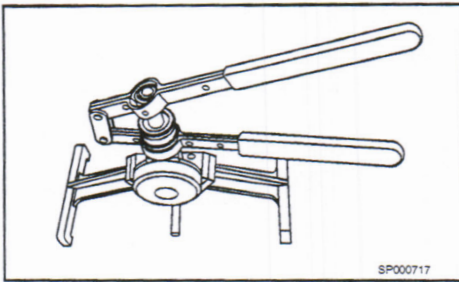
ST 1138 Belt Tension Gauge

Engine Series: See Below

ST 1138 Belt Tension Gauge is used to check the belt tension on 1/2 to 7/8 width "V" belts. (50 to 200 #)

ST 1293 Belt Tension Gauge is used to check the belt tension on "K" type V ribbed belt with 6 to 9 ribs. L10 and K19 engines. (50 to 200 #)

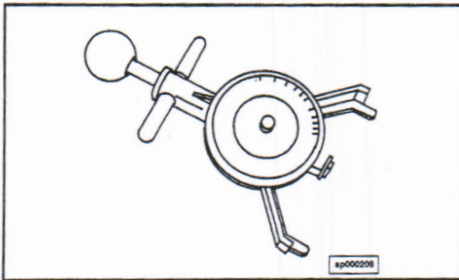




3163569
Belt Tension Gauge

Engine Series: QSK 45/60

Used for checking 23-rib fan belt tension. The gauge has a range from 2000 to 8500 N (Newton Force).

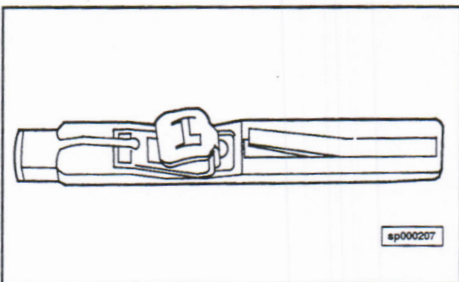


3376344
Belt Tension Gauge

Engine Series: See Below

3376344 Belt Tension Gauge is used to check the belt tension on "L" type ribbed belt with 14 to 18 ribs. V28 engines. (200 to 400 #)

3823138 Belt Tension Gauge is used to check the belt tension on "K" type V ribbed belt with 10 to 15 ribs. L10-bus engines. (200 to 400 #)

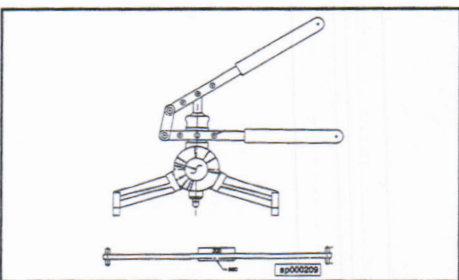


3822524
Belt Tension Gauge (Click Type)

Engine Series: All

3822524 Belt Tension Gauge (Click Type) is used to check the belt tension on $\frac{3}{8}$ to $\frac{7}{8}$ V belts and their metric equivalent and "K" type V ribbed belts with 4 or 5 ribs. 50 to 150 #

3822525 Belt Tension Gauge (Click Type) is used to check the belt tension on "K" type V ribbed belts with 6 to 12 ribs. 100 to 300 #



3823772
Belt Tension Gauge

Engine Series: K38, K50

This heavy duty gauge is used to check the belt tension on "L" type V ribbed belt with 19 to 22 ribs. K38 and K50 engines. (300 to 800 #)

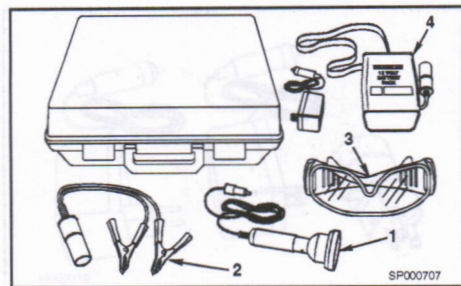
Black Lights

3163337 Black Light Lamp Kit

Engine Series: All

Used to help find the source for leaks in the lubricating and/or cooling system. The black light must be used with special fluorescent dyes. The black light will illuminate the fluorescent dye and help trace the source of a leak. This lamp may also be connected to any standard 12-volt automotive battery using 3163347, 1-foot adapter cord with battery clips.

NOTE: Use 3376891 dye for lubricating oil and use 3377438 dye for coolant system.



Ref. No.	Part No.	Description
1	3163290	Black Light Lamp (100 Watt)
2	3163347	Electrical Adapter Cable
3	3163348	Safety Glasses (Enhances Fluoroscences)
4	3163470	Battery Pack (consists of) 3163344 - Battery (12 Volt) 3163345 - Battery Charger Plastic Carrying Case

Replacement Bulbs/Lens

3163340	Filter Lens 100W/12Volt
3163341	Bulb (100W/12V with "CE" markings)
3824527	Filter Lens for Obs. 3824524 & 3824525
3824526	Bulb (115V/60Hz) for Obs. 3824524 & 3824525
3824756	Bulb (230V/50Hz) for Obs. 3824525
3377270	Bulb for Obs. 3377253 & 3377308
3163343	Bulb for Obs. 3824754
3824757	Battery Pack for Obs. 3824754

3163338 Black Light Lamp Kit

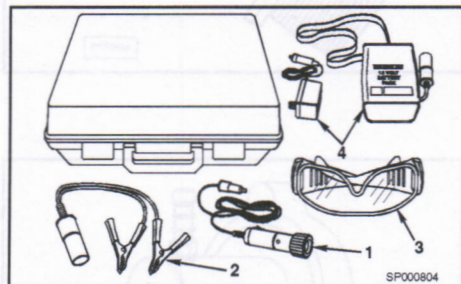
Engine Series: All

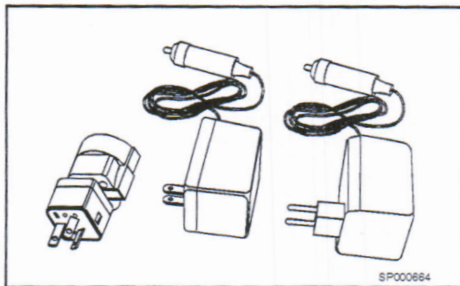
50 watt version of 3163337

Ref. No.	Part No.	Description
1	3163339	Black Light Lamp (50 Watt)
2	3163347	Electrical Adapter Cable
3	3163348	Safety Glasses (Enhances Fluoroscences)
4	3163470	Battery Pack (consists of) 3163344 - Battery (12 Volt) 3163345 - Battery Charger Plastic Carrying Case

Replacement Bulbs/Lens

3163342	Filter Lens (50W/12V)
3163343	Bulb (50W/12V)





3163346
Battery Charger

Engine Series: All

International Charger Set for use with Black Light Lamps, 3163290 and 3163339. Consists of European battery charger (230 volt/50Hz), Japanese battery charger (100Volt/50-60Hz) British adapter plug, Australian adapter plug.

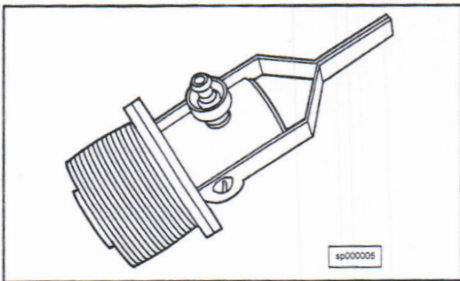


3376891
Fluorescent Tracer

Engine Series: All

This special dye, when mixed in the cooling system or lubricating system, will help determine the source of leaks. Black Lights 3824524, 3824525, 3824754, 3377253, 3377308 or 3377394 must be used to illuminate the dye.

Part No.	Description
3376891	Fluorescent Tracer for Oil (includes (6) 4 ounce plastic bottles)
3162724	Fluorescent Tracer for Oil (5 gal.)
3377438	Fluorescent Tracer for Coolant (includes (6) 4 ounce plastic bottles)
3162725	Fluorescent Tracer for Coolant (5 gal.)



Blow By Tools

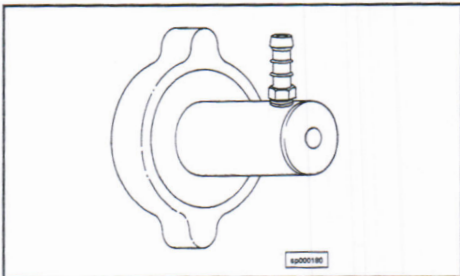
3375150
Blow By Tool

Engine Series: L10, N855, V903, K19, V28

This is a bottle stopper type blow-by tool that is convenient to use in the oil fill hole in the valve cover.

NOTE: 2 are required for V28 engines.

NOTE: ST 1111-3 Manometer or equivalent must be attached to the barbed fitting for test results.



3376949
Blow-by Tool

Engine Series: V378/V504/V555, V903

This special blowby tool is used for marine engines and V903 military with internal venting. This is a twist on filler cap style with .302 orifice.

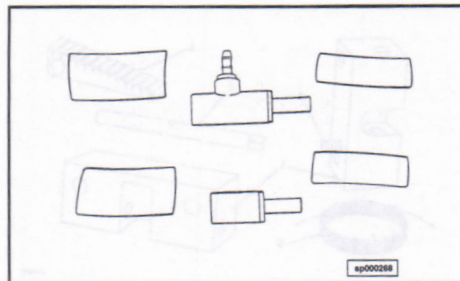
3822566
Blow-By Tool (Use with ST 1111-3)

Engine Series: See Below

These tools are used to check engine crankcase blow-by. **ST 1111-3 Manometer** or equivalent must be attached to the special barbed fitting.

NOTE: To check blow-by on V28, install 2 of **3822566** and plug one manometer outlet fitting. Attach the manometer to the other fitting.

Part No.	Description
3822566	Blow-By Tool (NH, N14, C, V903, L10, M11, V378, V504, V555, V28 (.302 Orifice))
3822567	Blow-By Tool (K19 Standard (.354 Orifice))
3822568	Blow-By Tool (K19 Uprate (.406 Orifice))
3822476	Blow-By Tool (B Series (.221 Orifice))
3822570	Blow-By Tool (K38 and K50 Standard (.354 Orifice))
3822571	Blow-By Tool (K38 and K50 Uprate (.406 Orifice))



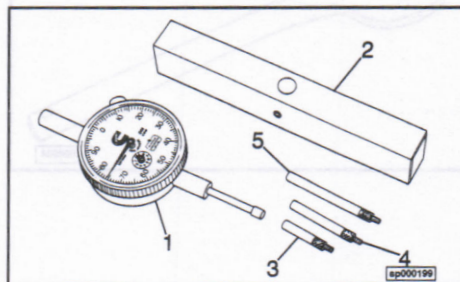
Depth and Measuring Gauge

ST 537
Dial Depth Gauge

Engine Series: All

This depth gauge is used to check end clearance on all turbochargers.

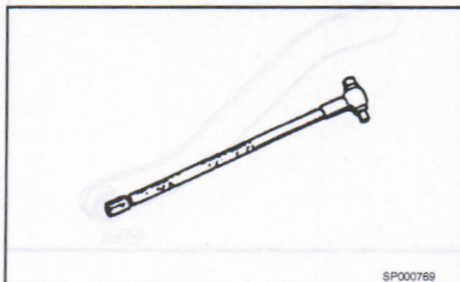
Ref. No.	Part No.	Description
1	3375006	Dial Indicator
2	ST 537-2	Base
3	ST 537-3	Point (1 in.)
4	ST 537-4	Point (1 1/2 in.)
5	ST 537-5	Point (2 in.)



3162420
Telescoping Gauge

Engine Series: Onan

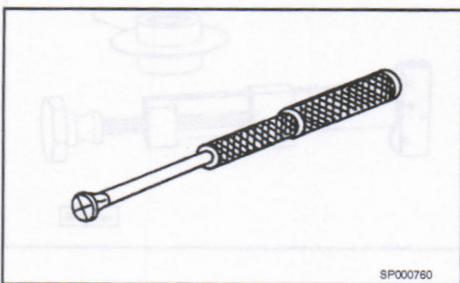
This gauge checks slots, grooves, recesses or cylinders ⁵/₁₆ to 1/2 inch inside diameter. Read measurement with micrometer.

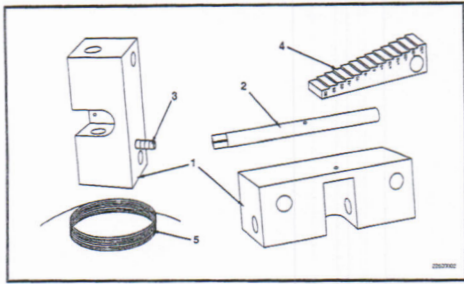


3162421
Small Hole Gauge Set

Engine Series: Onan

This small hole gauge set is used for precision measuring of small holes.



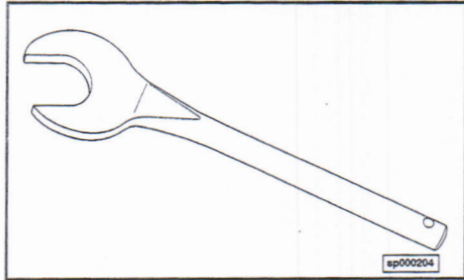


**3163173
Exhaust Manifold Alignment Kit**

Engine Series: KV

This kit will facilitate in deciding the thickness of the exhaust manifold gasket needed for the slip joints to remain in alignment.

Ref. No.	Part No.	Description
1	3163333	Gauge Block
2	3163334	Tensioning Rod
3	3163336	Set Screw
4	3163174	Gauge Fixture
5	3163335	Wire (25 Gauge)



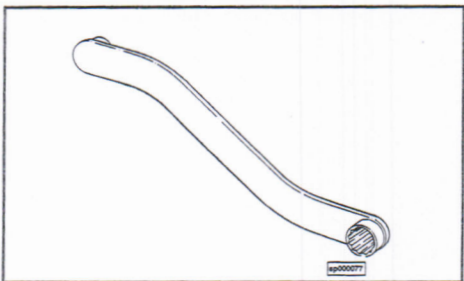
Fan Hub Wrenches

**ST 832
Fan Hub Wrenches**

Engine Series: See Below

These are special thin head design fan hub wrenches to tighten and/or loosen the large fan hub locknut on most engines.

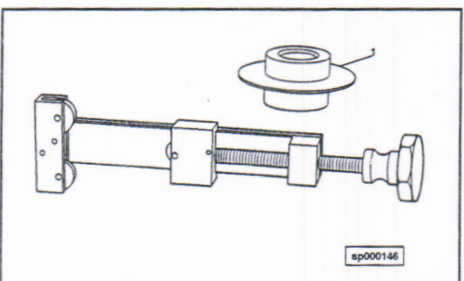
Part No.	Description
ST 832	Fan Hub Wrench (C&J 2 ³ / ₁₆ in.)
ST 845	Fan Hub Wrench (N855, V6/V8, Series 2 in.)
ST 846	Fan Hub Wrench (V28 2 ³ / ₈ in.)
ST 891	Fan Hub Wrench (C&J 1 ¹ / ₂ in.)
ST 892	Fan Hub Wrench (C&J 1 ¹¹ / ₁₆ in.)
ST 893	Fan Hub Wrench (N855, V6/V8 Series 2 ¹ / ₁₆ in.)
3823346	Fan Hub Wrench (6B Series Chrysler 36 mm)



**3375785
Fan Hub Wrench**

Engine Series: NT

This special (³/₄ socket size) fan hub wrench is designed to work in narrow places to install or remove the capscrews between the fan hub and fan hub bracket with or without the freon compressor mounted.



Filter Wrenches and Cutters

**3376579
Filter Cutter**

Engine Series: All Except C & J

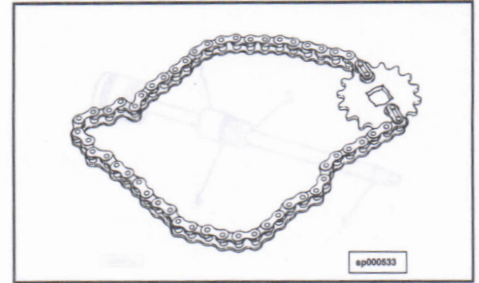
When inspection of the spin on filter is required, this is a special size cutter used to cut open the filter to permit inspection of the filter element.

Ref. No.	Part No.	Description
1	3376600	Cutter Wheel (Replacement)

3398026
Filter Wrench

Engine Series: See Below

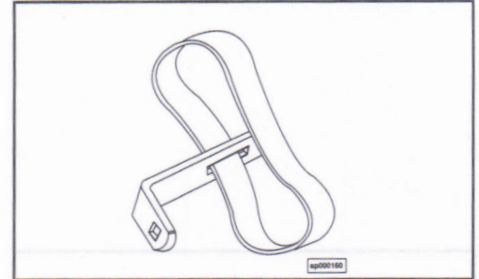
This filter wrench is used for removing oil and fuel filters.



3398145
Filter Wrench

Engine Series: All

This is a smaller flexible strap type filter wrench used to remove smaller fuel filters and DCA cannisters up to 6 inches diameter. A $\frac{3}{8}$ in. square drive ratchet or breaker bar can be used to provide leverage required.

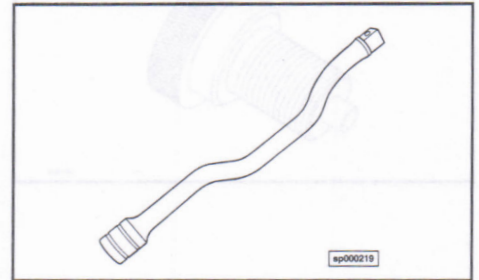


Fuel System and Valve Adjusting Tools

ST 1145
Injector Torquing Adapter

Engine Series: All Except B and C Series

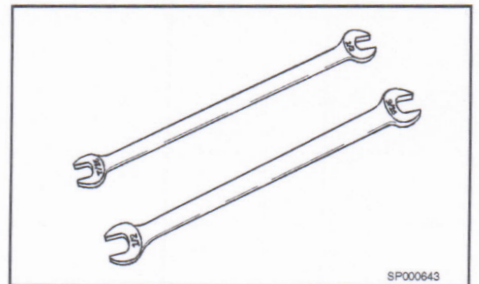
This special bent $\frac{3}{8}$ socket extension is bent to provide clearance to torque the injector hold-down capscrews without removing the upper rocker lever housing.



3162367
Tappet Adj Wrench Set

Engine Series: Onan

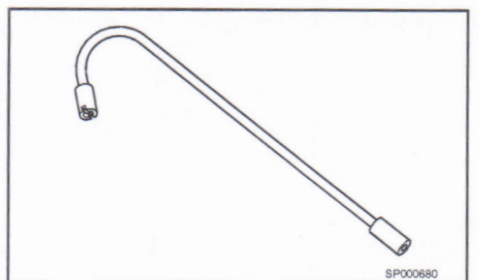
Set of 2 long thin wrenches for adjusting tappets. Sizes are $7\frac{1}{16}$ " x $1\frac{1}{2}$ " and $1\frac{1}{2}$ " x $9\frac{1}{16}$ ".

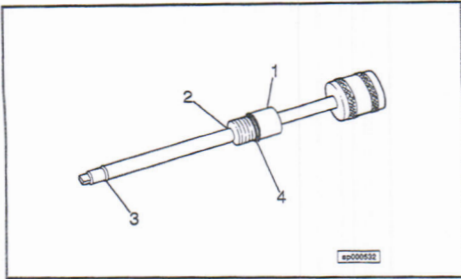


3162368
Carburetor Adj. Wrench

Engine Series: Onan

This tool simplifies carburetor main jet adjustments. It's use reduces the risk of burns from hot manifold or exhaust pipes. Use with any cross pin adjustment jet.



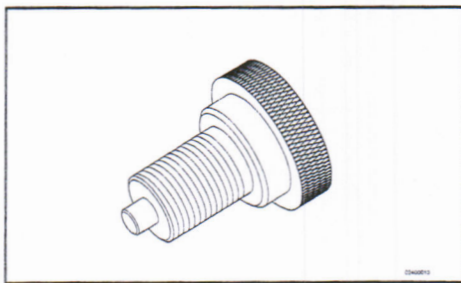


3162887
Fuel Pump Idle Adjust Tool

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
	3162887	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
	3162888	Idle Adjust Tool (Illustrated above) (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



3163194
Injector Fuel Shut-Off

Engine Series: QSKV 45/60

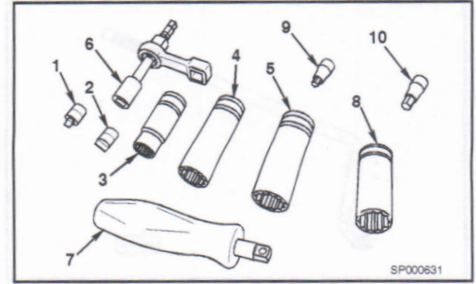
This tool is used in the diagnosis of a malfunctioning injector by shutting off the fuel supply to the injectors one by one. After a good injector is disabled by this process, there will be a distinctive drop in engine idle speed. Disabling a bad injector will cause no change in engine idle speed.

**3163196
 Torque Wrench Adapter Kit**

Engine Series: All Except B and C Series

This offset adapter consists of a handle, 1/2 in. drive socket wrench adapter, 1/2 in. square opening to accommodate a torque wrench and 2 screwdriver blades. Use this tool to torque valve and crosshead adjusting locknuts.

NOTE: 3163196 & 3163167 to be used with the following tools:
 3163171 Feeler Gauge (.014 thick)
 3163172 Feeler Gauge (.027 thick)
 3163530 Brake Setting Feeler Gauge (7-mm thick)

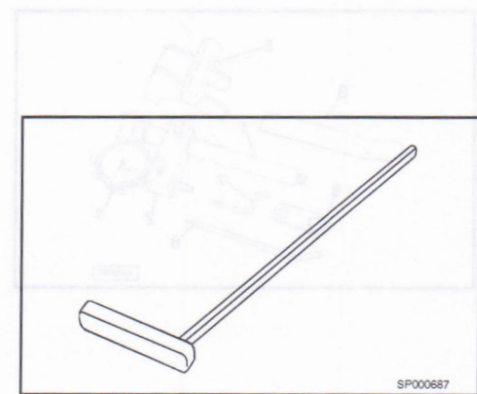


Ref. No.	Part No.	Description
1	3400038	Screwdriver Blade (.032 tip)
2	3400039	Screwdriver Blade (.062 tip)
3	3400040	Deep Well Socket (9/16)
4	3400041	Deep Well Socket (3/4)
5	3163166	Deep Well Socket (7/8)
6	3163169	Driver Adapter
7	3400037	Driver
3163167 Torque Wrench Adapter Kit Signature Series		
8	3163168	Deepwell Socket (24MM)
9	3163528	Hex Socket Driver (6MM)
10	3163529	Hex Socket Driver (8MM)
4	3400041	Deep Well Socket (3/4)

**3163530
 Brake Setting Feeler Gauge**

Engine Series: Signature/ISX

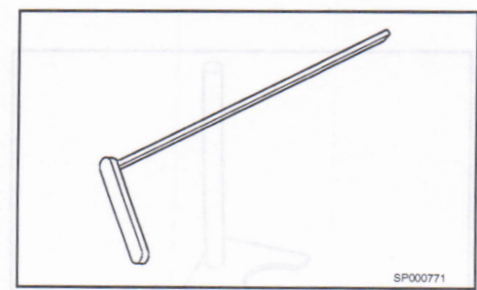
Sets brakes with 7-MM clearance.

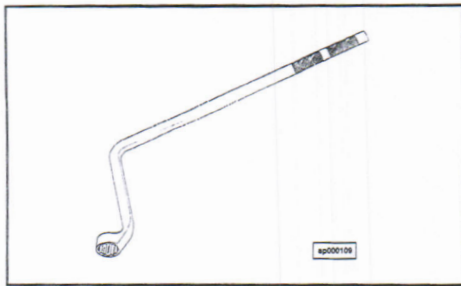


**3163681
 Feeler Gauge**

Engine Series: ISL

A .090 thick feeler gauge used to Properly set the compression brake lash.



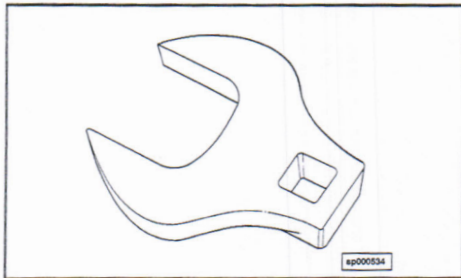


3376191
Offset Wrench

Engine Series: All Except L10, B and C Series

These offset wrenches are used when adjusting valves and injectors so that obstructions can be overcome when tightening the locknuts.

Part No.	Description
3376191	Offset Wrench ($3/4$)
3376192	Offset Wrench ($15/16$)
3376193	Offset Wrench ($7/8$)



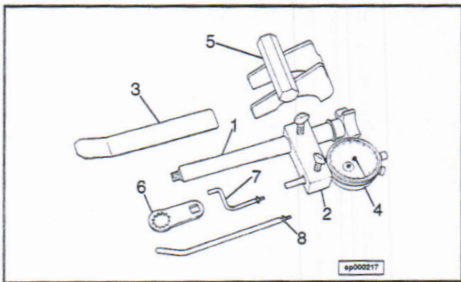
3399463
Crowsfoot Wrench

Engine Series: L10, B & C

3399463 Crowsfoot Wrench is a metric crowsfoot wrench used to torque the injector hold down clamp and the turbocharger oil supply fitting.

3399458 Crowsfoot Wrench ($7/8$) is used to break loose and torque the injector adjusting lock nut for 91 L10 engines with Cummins Compression Brake.

3162225 Crowsfoot Wrench ($3/4$) 12 point, $3/8$ drive crowsfoot, is used on the B&C engines to remove and install the high pressure lines on VP44 fuel pump.

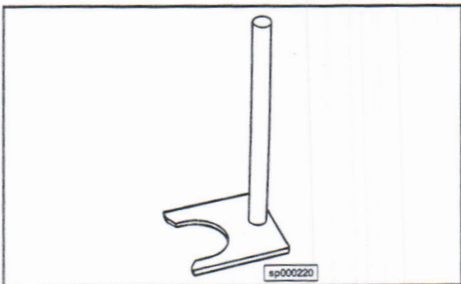


3822575
Injector and Valve Adjustment Kit

Engine Series: K19, K38, K50

This kit is used to adjust valves and injectors with or without Jacobs Brakes installed.

Ref. No.	Part No.	Description
1	3823970	Long Mounting Bolt
2	3375007	Indicator Support Block
3	3375012	Feeler Gauge
4	3375006	Dial Indicator
5	3822574	Rocker Lever Actuator
6	3375008	Torque Adapter
7	3823332	Dial Indicator Extension - Short
8	3375005	Dial Indicator Extension - Long



3822695
Tappet Set Feeler Gauge

Engine Series: NTTA 450 Series

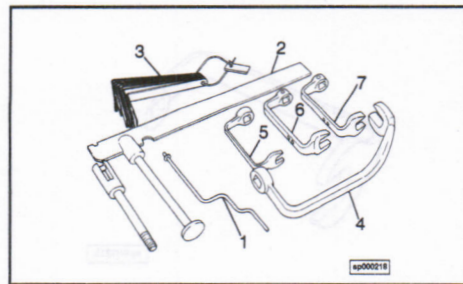
This special thickness gauge is used to set the type "C" STC tappets.

3823275
Injector Adjustment Kit With Jacobs Brakes

Engine Series: NT/N14

This kit is used to adjust injectors and valves on N855 series engines with Jacobs Brakes installed. Ref. Models 25, 30, 401, -A, B, C Series

Ref. No.	Part No.	Description
1	3823273	Dial Indicator Extension
2	3823274	Rocker Lever Actuator
3	3823557	Feeler Gauge Set
4	3823555	Injector Adjustment Wrench (3/4)
5	ST 1137	Injector Adjustment Wrench (7/16)
6	3823553	Injector Adjustment Wrench (9/16)
7	3823554	Injector Adjustment Wrench (5/8)

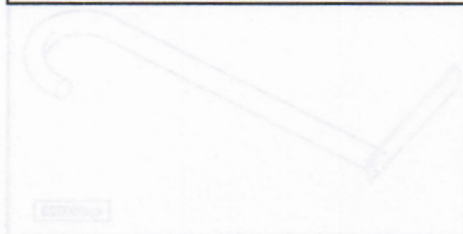
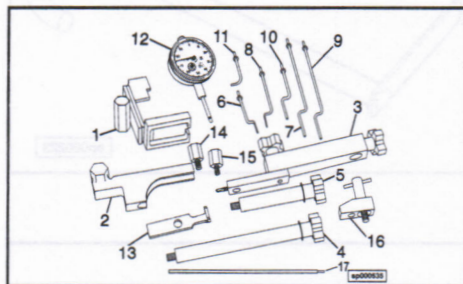


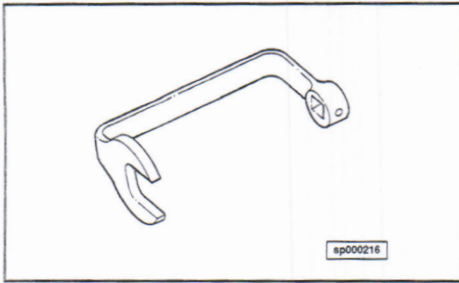
3823610
Injector Adjustment Kit

Engine Series: All Except K

This kit includes all the tools to adjust injectors with the dial indicator method. The kit also includes tools for adjusting STC and Celect injectors. A special 12 inch long dial indicator extension is also included to find TDC on '94 L10 Gas Engines with Woodward Electronic Fuel Control System Spark Ignition Timing.

Ref. No.	Part No.	Description
1	3823609	Rocker Lever Actuator (all N855, V1710)
2	3823771	Rocker Lever Actuator (L10, V903)
3	3823969	Indicator Support Stand
4	3823970	Long Mounting Shaft
5	3823971	Short Mounting Shaft
6	3377082	Dial Indicator Extension (std PTD)
7	3822712	Dial Indicator Extension (L10, STC, Celect with Jacobs Brakes)
8	3823839	Dial Indicator Extension (all N855, L10 STC, Celect)
9	3823840	Dial Indicator Extension (all N855, L10 STC, Celect with Jacobs Brakes)
10	3823594	Dial Indicator Extension (STC Tappet Travel)
11	3823595	Dial Indicator Extension (STC Rocker Lash)
12	3375006	Dial Indicator
13	3823348	Top Stop Tappet Lift Tool
14	3823229	Rocker Housing Adapter (88NT) 5/16-18
15	3823826	Rocker Housing Adapter (all N855) 1/4-20
16	3377081	Dial Indicator Mounting Adapter (L10)
17	3824719	Dial Indicator Extension (TDC, 12 in. long)

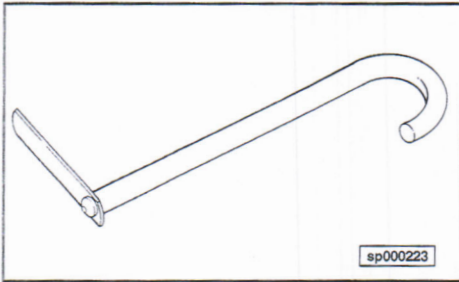




3823756
Injector Adjustment Wrench

Engine Series: L10 w/Cummins Compression Brake

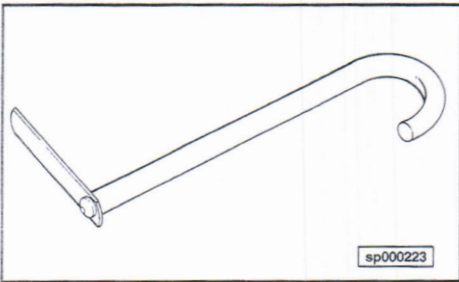
This wrench ($\frac{3}{4}$) is used to adjust and hold the injector rocker lever adjusting screw for 91 L10 engines with Cummins Compression Brake.



3823783
Feeler Gauge

Engine Series: All with Cummins Engine Brake

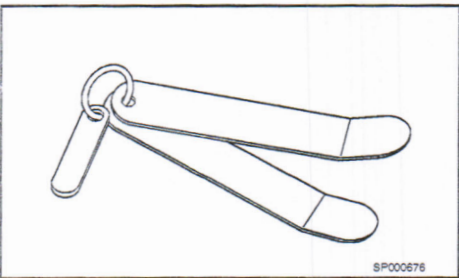
This special size feeler gauge is used to set the slave piston to the crosshead clearance of engines using the Cummins Engine Brake. Gauge is .018 inch.



3823802
Feeler Gauge

Engine Series: All with Cummins Engine Brake

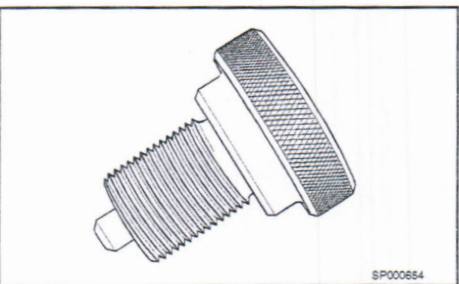
This special size feeler gauge is used to set the slave piston to the crosshead clearance of engines using the Cummins Engine Brake. Gauge is .023 inch.



3824901
Valve Setting Gauge Kit

Engine Series: QSK19

These special feeler gauges are for setting the rocker lever/valve lash on the QSK19 series engines. The kit includes .014 and .032 thickness feeler gauges. The special width insures precise valve lash adjustment. The rocker lever adjusting screw has a swivel foot and the wide feeler gauge is necessary to insure that the swivel pad is "flat".



3825165
Injector Fuel

Engine Series: QSK 19

This tool is used to diagnose a malfunctioning injector by shutting off the fuel supply to the injectors one by one.

NOTE: This test is to be done at IDLE only.

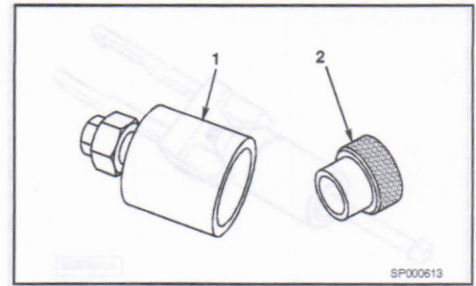
Injector Pullers and Installers

3162745 Injector Puller Assy.

Engine Series: ISB/ISC

Provides save and effective method to pull "ISB/ISC" injectors. Especially useful in pulling the #5 & #6 injectors in pickup trucks.

Ref. No.	Part No.	Description
1	3825156	Injector Puller
2	3825157	Fuel Connector Remover

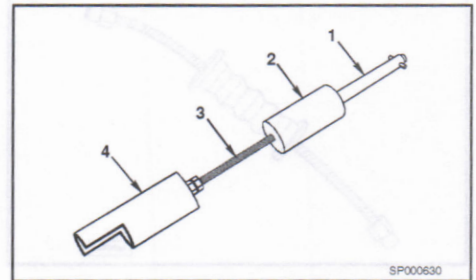


3163483 Injector Puller/Driver

Engine Series: Signature/ISX

This driver bottoms the injectors into the injector bore prior to installing the holddown clamp and tightening. This prevents cutting the o'rings.

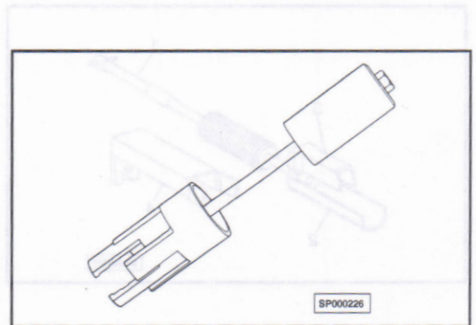
Ref. No.	Part No.	Description
1	3163482	Injector Puller
2	3163480	Slide Hammer
3	3163481	Slide Hammer Shaft
4	3162469	Injector Driver



3822304 Injector Puller

Engine Series: NT, NH, K

This puller is used on NH and K engines equipped with HVT (Hydraulic Variable Timing) injectors. This applies to NH Big Cam V and 88NT with HVT injectors. It will not work with STC injectors.



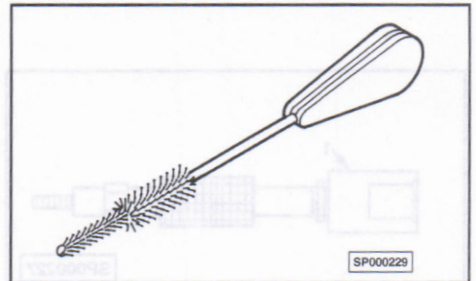
3822509 Injector Bore Brush

Engine Series: B and C Series

These special step brushes are used to clean the injector bore in the cylinder head.

Part No.	Description
3822509	Injector Bore Brush (.375 Smallest Dia.)

NOTE: Not recommended or offered for other engines.

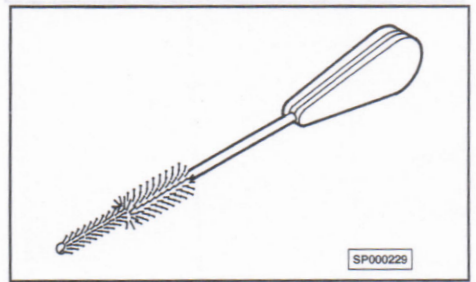


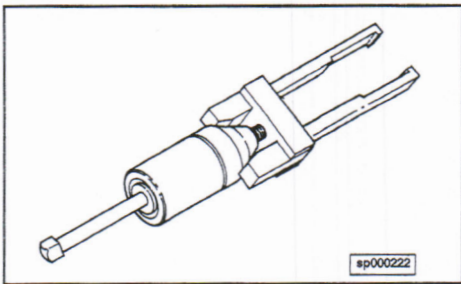
3822510 Injector Bore Brush

Engine Series: B and C Series

These special step brushes are used to clean the injector bore in the cylinder head.

Part No.	Description
3822510	Injector Bore Brush (.300 Smallest Dia.)

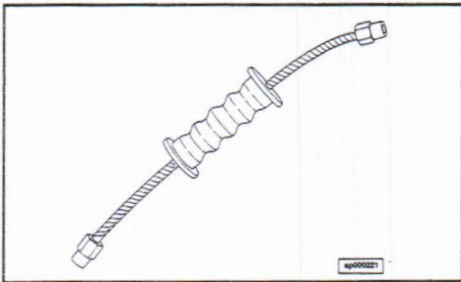




3823024
Injector Puller

Engine Series: See Below

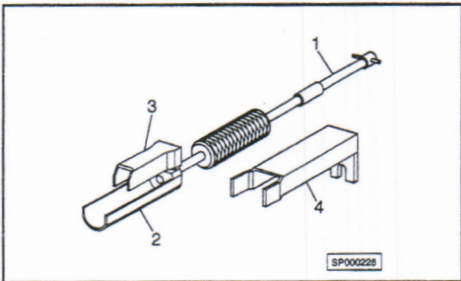
This injector puller is used to remove PTD, PTD Top Stop, K, L10 Top Stop and L10 STC and earlier PTB cylindrical type injectors from the cylinder head.



3823276
Injector Puller

Engine Series: All B and C Series

This injector puller is designed to remove injectors from all B and C series engines. Different size tube nuts are attached to each end to screw onto the injector as required. The slide hammer is then used to pull the injector.

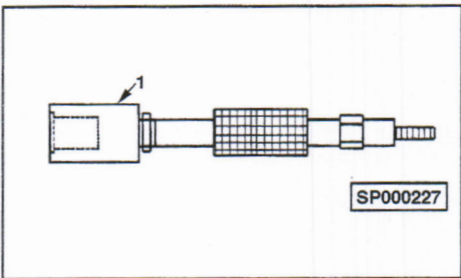


3823579
Injector Puller/Installer

Engine Series: N14 and L10 with Celect Injectors

This is a combination tool that is used to remove and install the Celect injectors. The puller end (small drill rod) is engaged with a small hole in the injector body. The slide hammer action removes the injector from the cylinder head. The opposite end of the tool is the installer end. Again the slide hammer is utilized to install the injector.

Ref. No.	Part No.	Description
1	3823580	Injector Puller
2	3823582	Injector Driver
3	3823583	Injector Guide (L10)
4	3823584	Injector Guide (N14)



3824653
Injector Puller/Installer

Engine Series: NT, N14

This tool is required to remove and install STC injectors (with a tappet top stop). This applies to NTC444, 91NT, 88NT and other engine models that can use the threaded rod puller. The installer portion applies force to the perimeter to install the injector without damage to the top cap.

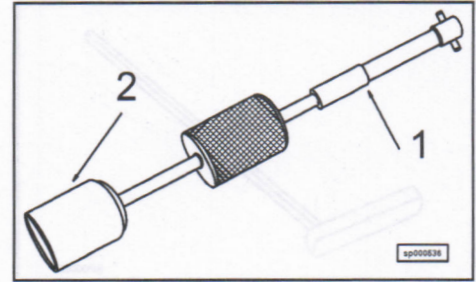
Ref. No.	Part No.	Description
1	3824654	Installer (Replacement)

**3824830
Injector Puller/Installer**

Engine Series: QSK19

This injector puller is used to remove or install QSK injectors for the K19 Quantum engines. The puller end (small drill rod) is engaged with a small hole in the injector body. The slide hammer action removes the injector from the cylinder head. The opposite end of the tool is the installer end. Again the slide hammer is utilized to install the injector.

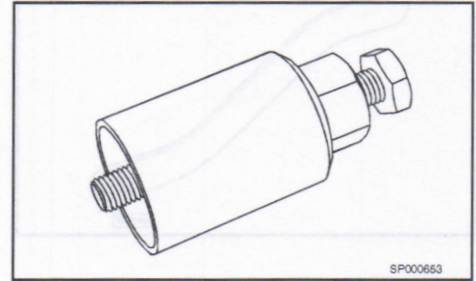
Ref. No.	Part No.	Description
1	3823580	Injector Puller
2	3824831	Injector Installer



**3825190
Injector Puller**

Engine Series: QST 30

This tool provides a safe & effective method to pull injectors after the fuel connector tube is removed.

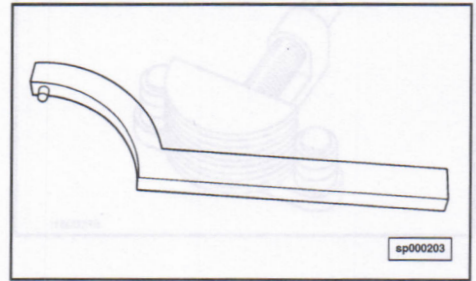


Miscellaneous

**ST 983
Spanner Wrench**

Engine Series: V28

This special spanner wrench is used to adjust the sheave for tightening the belt tension of the water pump belts.

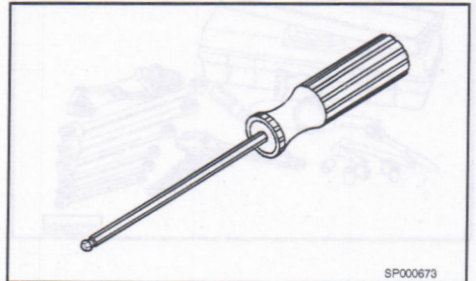


**3162384
3/16 Ball Driver**

Engine Series: Onan

Use on allen head (socket head) type screw in hard to get to places. Works at any angle.

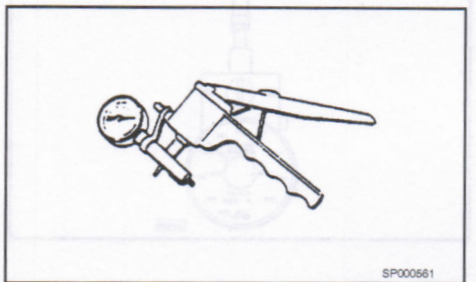
Part No.	Description
3162384	Ball Driver (3/16)
3162387	Ball Driver (5/32)

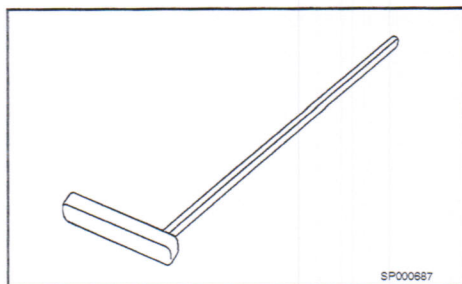


**3162422
Vacuum Pump**

Engine Series: Onan, Emerald Marquis Generator

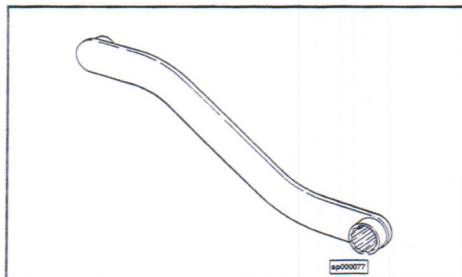
This hand vacuum pump is used to check, measure and adjust various vacuum operated components, in frame. Includes 2 ft. plastic hose, 6 adapters, 2 lid covers & suction cup.





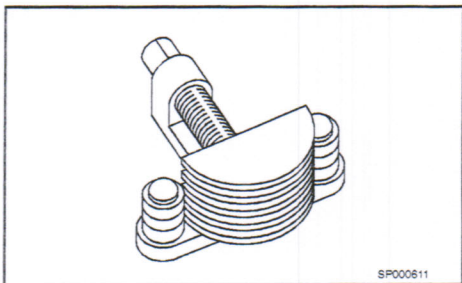
3163530
Brake Setting Feeler Gauge

Engine Series: Signature/ISX
Sets brakes with 7-MM clearance.



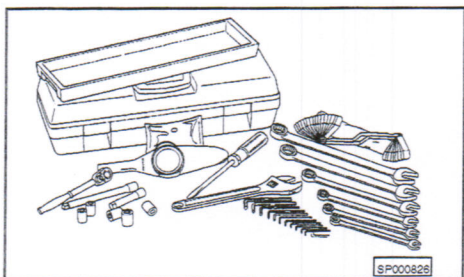
3375785
Fan Hub Wrench

Engine Series: NT
This special ($\frac{3}{4}$ socket size) fan hub wrench is designed to work in narrow places to install or remove the capscrews between the fan hub and fan hub bracket with or without the freon compressor mounted.



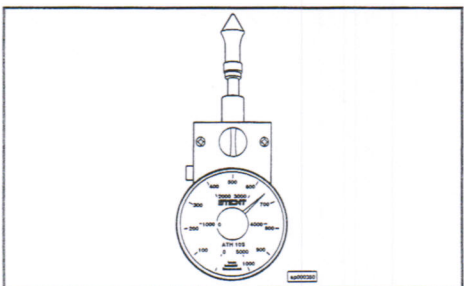
3397836
Small Dia. Tubing Bender

Engine Series: All
This small tubing bender is used to bend $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$ and $\frac{3}{8}$ inch copper tubing without kinking the tubing. Smooth curvatures are made and easily controlled with this tool.



3399881
Maintenance Tool Kit

Engine Series: All Except B, C and L10
This kit includes the minimum tools required to perform minor engine maintenance.



3823782
Hand Tachometer

Engine Series: K19, K38, K50, NH, NT, V28
This tachometer is used to measure engine speed on Cummins generator sets. This tachometer features a push button that "locks in" the reading. The unit is packaged in a heavy duty lined plastic case.

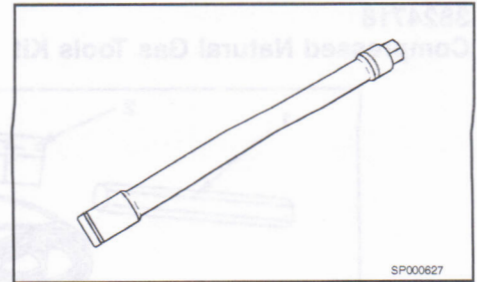
Natural Gas Tools

3162231

Spark Plug Wrench

Engine Series: QSK19G

Spark plug socket for QSK19G engine to accommodate champion RB77WPC spark plug.

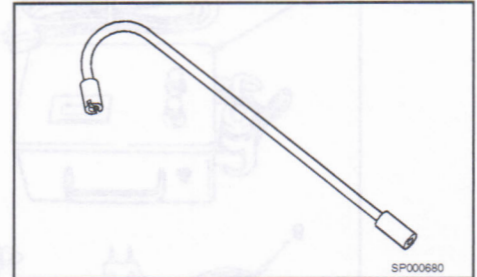


3162368

Carburetor Adj. Wrench

Engine Series: Onan

This tool simplifies carburetor main jet adjustments. It's use reduces the risk of burns from hot manifold or exhaust pipes. Use with any cross pin adjustment jet.

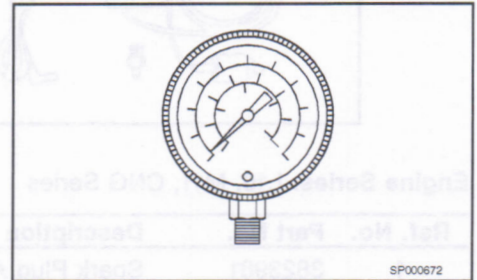


3162374

Gas Pressure Gage

Engine Series: Onan, LP & NG

This gage gives direct reading of 0-20 oz. Pressure, 0-35 in. H2O for all LP and natural gas units. Instructions are included.

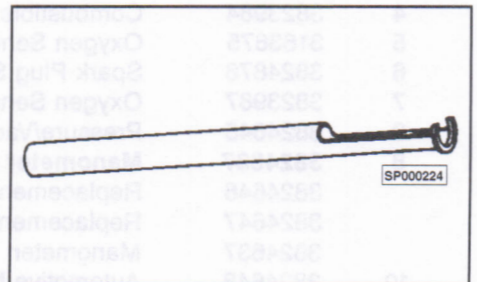


3824449

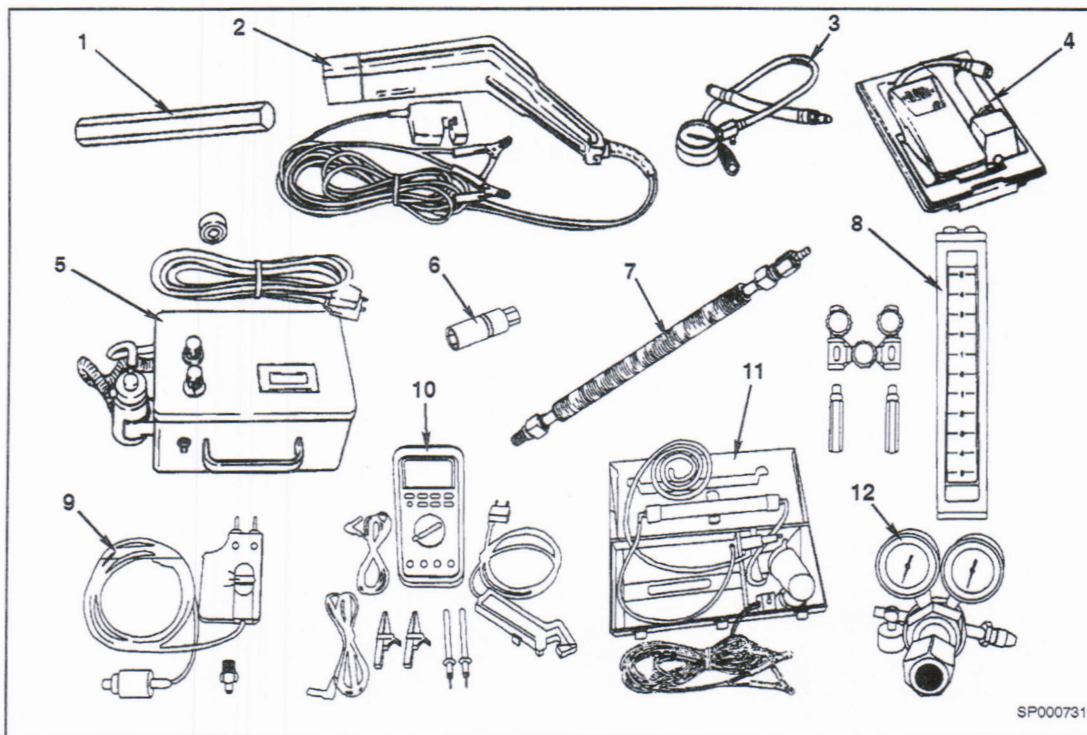
Spark Plug Boot Remover

Engine Series: L10, M11 CNG Series Engines

This remover tool is designed to slip under the spark plug boot and pull the spark plug boot off the spark plug of compressed natural gas engines. The tool is 8 inches long. This tool can also be used to push the boot onto the plug.



3824718
Compressed Natural Gas Tools Kit



SP000731

Engine Series: L10, M11, CNG Series

Ref. No.	Part No.	Description
1	3823981	Spark Plug Adapter Wrench
2	3823982	Tachometer/Timing Light
3	3823983	Compression Gauge/Adapter Set
4	3823984	Combustible Gas Detector
5	3163675	Oxygen Sensor Analyzer
6	3824876	Spark Plug Socket
7	3823987	Oxygen Sensor Heat Sink
9	3824645	Pressure/Vacuum Module
8	3824637	Manometer Kit
	3824646	Replacement Valve for 3824637 Manometer
	3824647	Replacement Manometer for
	3824637	Manometer
10	3824648	Automotive Meter
	3824649*	Calibration Gas (Span Gas)
11	3824699	Vacuum Pump/Dryer Kit
	3824700	Clay Dryer Material
	3824701	Crystal Dryer Material
12	3824714	Calibration Gas Regulator (Span Gas)
	3163676	Sensor

*Span Gas is not included in this kit. Must be ordered separately

3824702 Kit includes: 3824699 Vacuum Pump/Dryer Kit, 3163675 Oxygen Analyzer and 3823987 Heat Sink.

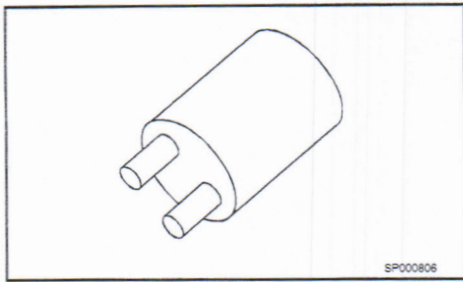
Note: If desired separately, part number **3823988 Oxygen Sensor Analyzer Kit** contains 3163675 and 3823987 from above.

Ref. No.	Part No.	Description
Order the following as needed		
	3163675	Oxygen Sensor
	3824636	Micro Fuel Cell Type B1
	3825137	Compressed Natural Gas Tool Kit
	3376859	Female Quick Connect (Not Shown)
3	3823983	Compression Gauge/Adapter Set
4	3823984	Combustion Gas Detector
6	3824876	Spark Plug Wrench
9	3824645	Pressure/Vacuum Module
10	3824648	Automotive Meter



Ref. No.	Part No.	Description
1	ST 434-12	Vacuum Gauge (0-30 in. Hg.)
2	ST 434-1	Adapter (No. 8 Hose)
3	ST 434-2	Adapter (No. 10 Hose)
4	3375845	Adapter (No. 12 Hose)
5	3375832	Adapter (No. 18 JIC)
6	3375718	Adapter (No. 12 JIC)
7	3375808	Adapter with Blow (No. 18 JIC)
8	3375807	Adapter (No. 18 JIC to No. 12 SAE)

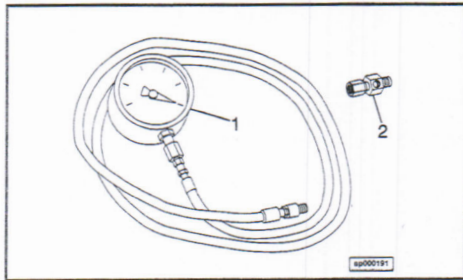
Ref. No.	Part No.	Description
1	ST 1273-1	Pressure Gauge (0-15 in. Hg.)



3824788
Carburetor Adjuster

Engine Series: L10G

This is a special 1/4 in. drive spanner wrench with 2 pins to adjust the tamper-proof mixture and power settings for the '95 L10G engines.



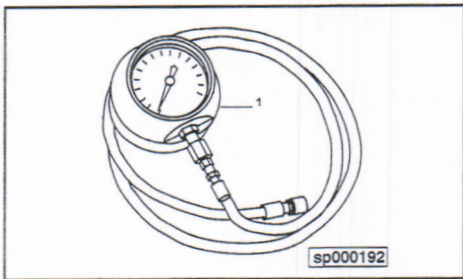
Pressure Gauges and Instruments

ST 434
Vacuum Gauge

Engine Series: All

This tool is used to check fuel filter restriction. **ST 434 contains the gauge, hose and a No. 10 hose adapter.** See below for other size adapters.

Ref. No.	Part No.	Description
1	ST 434-12	Vacuum Gauge (0-30 in. hg.)
2	ST 434-1	Adapter (No. 8 Hose)
2	ST 434-2	Adapter (No. 10 Hose)
2	3375845	Adapter (No. 12 Hose)
2	3376922	Adapter (No. 16 JIC)
2	3376719	Adapter (No. 12 JIC)
2	3375806	Adapter with Elbow (No. 16 JIC)
2	3375807	Adapter (No. 16 JIC to No. 12 SAE)



ST 1273
Pressure Gauge

Engine Series: All Except V378 and V504

This pressure gauge is used to measure intake manifold pressure turbo boost.

Ref. No.	Part No.	Description
1	ST 1273-1	Pressure Gauge (0-75 in. Hg.)

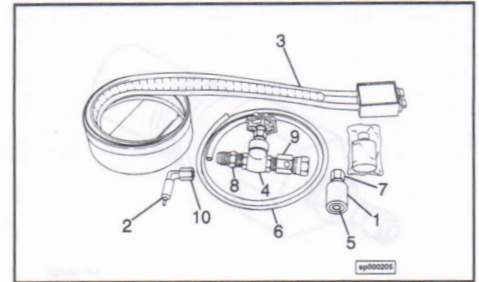
**ST 1111
Seal Leakage Tester**

Engine Series: All Except B & C Series

This leakage tester is used to check the tachometer and main shaft seals in the fuel pump. The tool may be used either when pump is mounted to the engine or on the fuel pump test stand.

NOTE: This kit is used with **ST 434 Vacuum Gauge**.

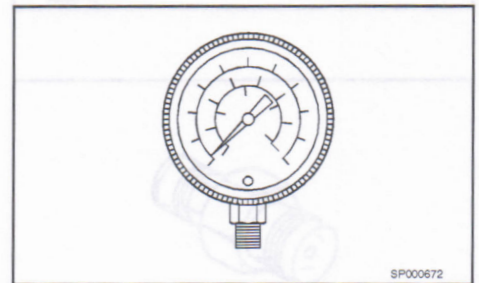
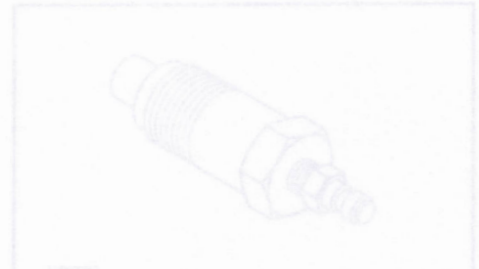
Ref. No.	Part No.	Description
1	ST 1111-1	Tachometer Drive Adapter
2	ST 1111-2	Main Shaft Adapter
3	ST 1111-3	Manometer (18-0-18)
4	ST 1111-4	Gate Valve
5	ST 1111-5	O'Ring Seal
6	ST 1111-6	Connecting Hose
7	ST 1111-7	Male Connector
8	ST 1111-8	Fitting
9	ST 1111-9	Adapter
10	ST 1111-10	Male Elbow



**3162374
Gas Pressure Gage**

Engine Series: Onan, LP & NG

This gage gives direct reading of 0-20 oz. Pressure, 0-35 in. H₂O for all LP and natural gas units. Instructions are included.



**3162398
Diesel Compression Test Kit**

Engine Series: Onan

This kit includes the compression tester & 3 adapters for testing J, L/A & DK series.

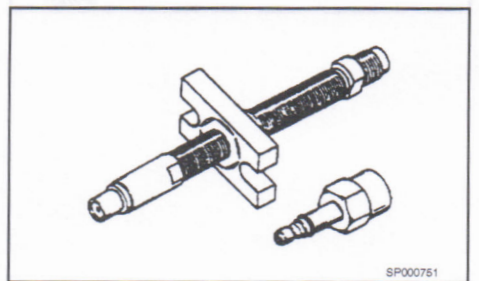
3162399 - Compression tester and Case (Does not include adapters)

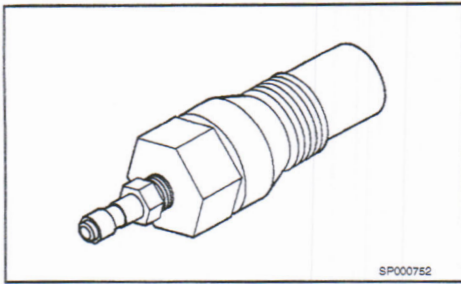


**3162400
Compression Test Adapter**

Engine Series: Onan

This special adapter fits in place of the fuel injection nozzle to measure compression.

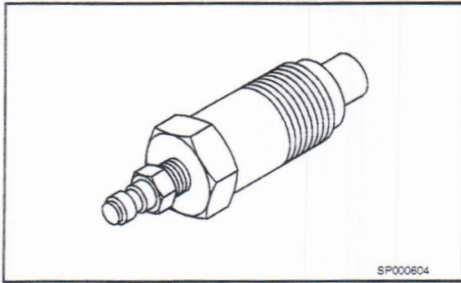




3162401
Compression Test Adapter

Engine Series: Onan

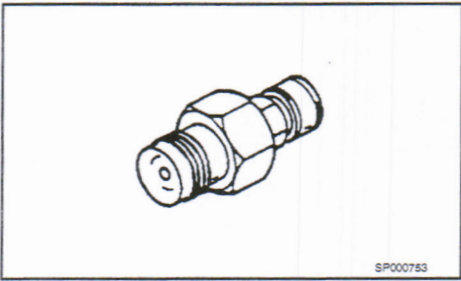
This special adapter fits in place of the fuel injection nozzle to measure compression.



3162402
Compression Test Adapter

Engine Series: Onan, DK

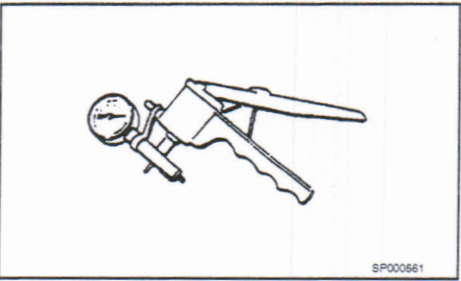
Compression adapter for DK series.



3162403
Compression Test Adapter

Engine Series: Onan

This compression adapter is for use with a Motorite brand compression tester.



3162422
Vacuum Pump

Engine Series: Onan, Emerald Marquis Generator

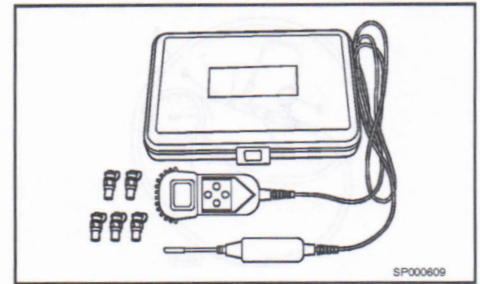
This hand vacuum pump is used to check, measure and adjust various vacuum operated components, in frame. Includes 2 ft. plastic hose, 6 adapters, 2 lid covers & suction cup.

3163077
Marine Sea Trial Test Kit

Engine Series: All Marine Except B & C

This is a less expensive alternative to the 3375935 Marine Test Kit. It has higher accuracy and provides digital pressure and temperature measurements through a single fitting.

Part No.	Description
3163078	Digital Unit with Probe
3163079	Neoprene Fitting with Viton Cap
3163080	Nordel Fitting
3163081	Storage Case
Optional Items are:	
3163082	Retrofit Kit (includes 1/4 NPT tap, pilot drill & 3 Nordel fittings)
3163083	Replacement Nordel Plug, 5
3163084	Replacement Neopreme Plug, 5
3163085	90 Degree Adapter

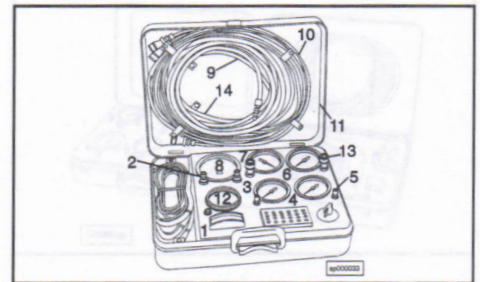


3375273
Pressure Kit

Engine Series: All

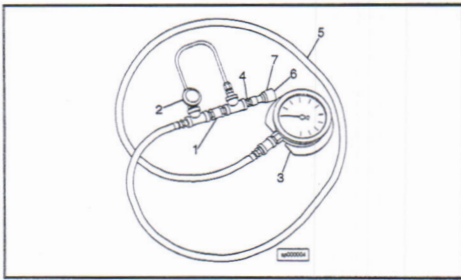
This portable test kit is contained in a heavy duty suitcase so that engine performance can be tested in 'the field'. The kit contains 7 instruments to determine engine performance. Test that can be performed are: Intake Manifold Vacuum and Exhaust Back Pressure, Fuel Pump Pressure, Fuel Pump Vacuum, Turbocharger Boost, Lube Oil Pressure, Idle diagnosis, Lube Oil Temperature and Engine Speed.

3377452 Hose Kit is available to allow modifications of the hoses used in the kit. The original Kits contained Nylon Fuel oil/sea water tube lines. This Kit contains Hoses constructed with Hightensile steel wire braid reinforcement.



Ref. No.	Part No.	Description
1	3375285	Temperature Gauge
2	3375283	Female Quick Disconnect
3	3375275	Pressure Gauge (0-100 psi)
4	3375278	Pressure Gauge (0-75 in. hg.)
5	ST 435-8	Male Quick Connect
6	3375277	Pressure Gauge (0-300)
7	3375274	Vacuum Gauge (0-30 in. hg.)
8	3375276	Magnehelic Gauge (0-60)
9	3375279	Thermocouple
10	3375280	Flex Tubing
	3375284	Quik Disconnect (male)
11	3375281	Suitcase
13	ST 435-7	Female Quick Connect
12	3376229	Tachometer
14	3377447	Hose Assembly
	3377452	Hose Kit (Modification Available)



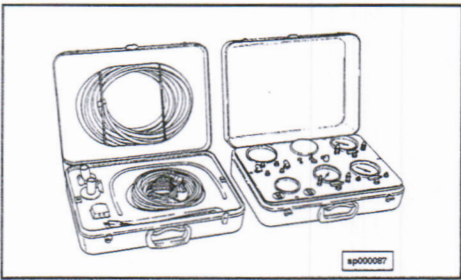


3375932
Snap Rail Pressure Gauge

Engine Series: All Except B and C Series

This tool is used to check 'Snap Rail' pressure readings of the fuel pump. The special check valve allows pressure to build on the gauge to the highest reading during repeated 'snapping open' of the throttle. A bypass valve arrangement allows bleed off of pressure after test is completed or if repeated test is needed.

Ref. No.	Part No.	Description
1	3375982	Check Valve
2	3375983	Shut-off Valve
3	ST 435-6	Pressure Gauge (0-300 psi)
4	149837	Close Nipple
5	ST 435-1	Hose
6	3377244	Male Quick Connect
7	3376859	Female Quick Connect



3375935
Marine Test Kit

Engine Series: All Marine Except B & C

This is a suitcase type test kit to test the performance of Marine Engines. The kit is designed to test single or twin engines running at the same time. 2 suitcases are provided. 1 suitcase provides the instrumentation and the other provides the accessories (hoses, tachometer, sending units, etc.).

Part No.	Description
3823886	Instrumentation Suitcase
3375276	Magnehelic Gauge
3375277	Pressure Gauge (0-300 PSI)
3375278	Pressure Gauge (0-75 in. hg.)
3375632	Digital Tachometer
3375921	3 Way Ball Valve
3375936	Pressure/Vacuum Gauge
3375951	Dual Pyrometer
3823887	Accessories Suitcase
3375633	Tachometer Sending Unit
3376299	Tachometer Drive Tang
3375986	Thermocouple
3375991	Male Connector (For 3375952)
3377447	Hose Assembly
3377446	Hose Update Kit

Note: 3377446 is an update kit for updating kits that have the nylon fuel oil/sea water tube lines.



3822985
Combustion Leak Test Kit

Engine Series: Big Cam IV NT

This kit is used to test for combustion gasses in the coolant system. May be used in conjunction with **3822994 Coolant Analyzer**.

NOTE: 3822987 Large Leak Test Adapter is available as required.

Ref. No.	Part No.	Description
1	3822986	Leak Test Fluid (16 oz.)

3822994
Engine Coolant Analyzer

Engine Series: Big Cam IV NT

The analyzer is a self contained diagnostic tool to troubleshoot optimized aftercooling low flow cooling systems on Big Cam IV NT engines. This is used to determine causes for pressure loss, restriction, improper temperature control and entrained air.

Part No.	Description
3822995	Pressure Gauge (0-60 PSI)
3822996	Temperature Gauge (30-220° F)
3375921	Ball Valve
3822997	Sight Glass
3376920	Female Quik Connect

3823099 Coolant Hose Extension Kit is available but not included in above kit. This kit includes three 8 foot lengths of hose with quik connecting fittings on each end. Part number for quik connect fittings are:

3376860	Male Quik Connect
3376920	Female Quik Connect

3823204
C-Brake Oil Pressure Test Kit

Engine Series: NT W/C-Brake

This test kit provides a special adapter to fit in place of the rocker housing solenoid to measure oil supply pressure as desired. The gauge, hose, and adapter are included in the kit.

Ref. No.	Part No.	Description
1	3823205	Pressure Gauge (0-60 PSI)
2	3823206	Special Adapter

3823700
Rail Pressure Response Kit

Engine Series: All Engines

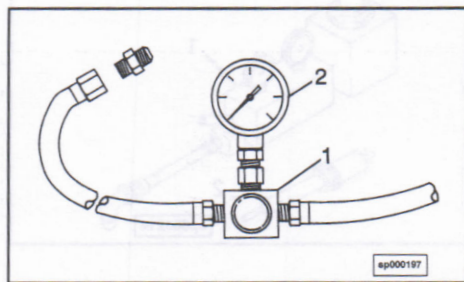
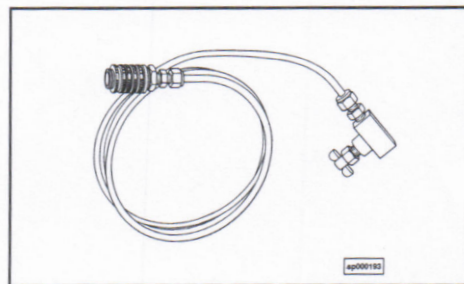
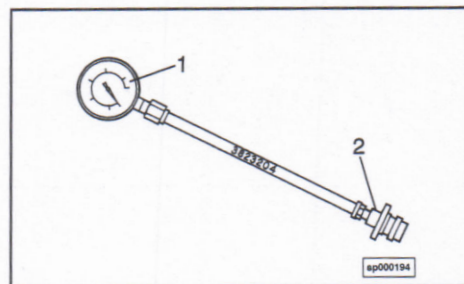
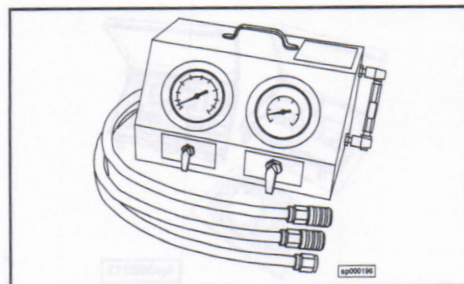
This kit is used to check over the road fuel rail pressure response. **ST 435-6 Pressure Gauge** must be used with this kit. The tubing is 15 ft. long so that the pressure gauge can be placed in the truck cab while driving over the road.

3823799
Waste Gate Pressure Test Kit

Engine Series: B & C Series

This kit contains hose, pressure regulator, and pressure gauge to calibrate the Holset Turbocharger waste gate opening position by operating the boost pressure actuator with an available air supply. The pressure regulator and pressure gauge allows controlled adjustments without running the engine.

Ref. No.	Part No.	Description
1	ST 990-40	Pressure Regulator
2	3823205	Pressure Gauge (0-60 psi)





**3824212
Cylinder Diagnostics Kit**

Engine Series: K38, K50

This diagnostic kit is used to troubleshoot and locate defective cylinders. The kit contains 2 cases that contains 3824213 Diagnostic Valve Cover Kit and 3824214 Diagnostic Instrumentation Kit. The special valve covers allow the injector plungers to bottom out and cut off the fuel supply. The instrumentation kit contains a fuel control valve for each bank and other parts to control and monitor the fuel system pressures to locate the defective cylinders. K38 & K50 engines.

Part No.	Description
3824212	Single Cylinder Diagnostic Kit contains the following:
3824213	Valve Cover Kit
3824216	Diagnostic Valve Cover (4)
3822690	Carrying Case
3824214	Instrumentation Kit contains the following:
3824217	Fuel Connection Block Ass'y (2)
—	O'Ring (10)
—	Capscrew
3824218	Fuel Block Ass'y
—	Fuel Block
—	O'Ring (10)
—	Adapter
—	Hose
—	Hose

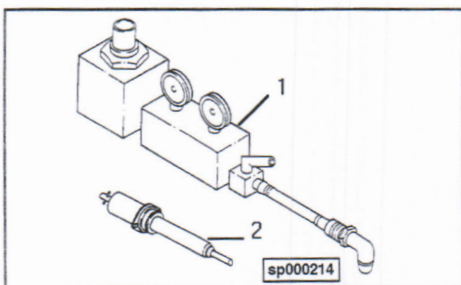
Other components included are:

3824219	Fuel Control Valve Ass'y (2)
—	No. 6 Hose
3824220	Pressure Gauge (2)
3376859	Quick Coupler
3824241	Pressure Gauge (100 psi)
—	No. 4 Hose
3824221	Blowby Valve Ass'y
3824242	Pressure Gauge (25 in. H ₂ O)
—	Blow by Valve
—	Blow by Plug
—	No. 4 Hose
3824521	Needle Valve (4)
—	O'Ring (10)
3824222	Carrying Case

**3824215
Differential Pressure Test Kit**

Engine Series: K38, K50

This kit is designed for a "non running test" of cylinder/piston ring condition. A special dummy injector and shop air pressure are used to determine air pressure loss thru the cylinder attached to the Differential Pressure Tester.



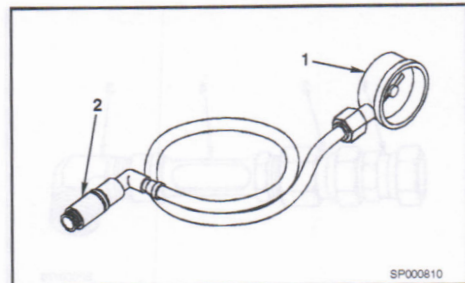
Ref. No.	Part No.	Description
1	3824223	Differential Cylinder Pressure
2	3824224	Adapter

3824433
Waste Gate Pressure Test Kit

Engine Series: L10 CNG

This kit contains a pressure gauge, hose and quick connect fitting to calibrate the Holset Turbocharger waste gate opening position by operating the boost pressure actuator with an available air supply.

Ref. No.	Part No.	Description
1	3824434	Pressure Gauge (0-30 psi.)
2	3376859	Female Quick Connect

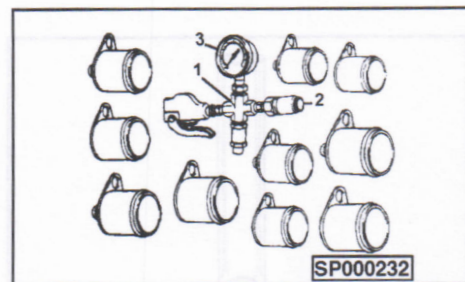


3824556
Charge Air Cooler Tester

Engine Series: L10, M11, B & C Series

This tester is used to pressure test charge air coolers. This tester will allow testing of coolers with 2.5 to 4.5 inch diameter inlets and outlets. The tool incorporates an inline control valve, pressure gauge, pressure relief valve, 2 test plugs each size, pressure limit placard and safety chains to make it as safe as possible.

Ref. No.	Part No.	Description
1	3824557	Test Gauge Assembly
2	3376859	Female Quick Connect
3	3823205	Pressure Gauge (0-60 psi.)
	3824558	Test Plug Kit (2 1/2 in. dia.)
	3824559	Test Plug Kit (3 in. dia.)
	3824560	Test Plug Kit (3 1/2 in. dia.)
	3824561	Test Plug Kit (4 in. dia.)
	3824562	Test Plug Kit (4 1/2 in. dia.)

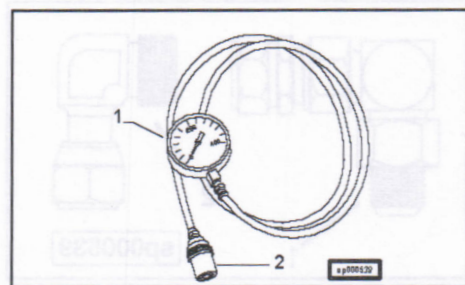


3824877
Snap Rail Pressure Gauge

Engine Series: QSK19

This pressure gauge is designed with the pressure gauge range to check the "Snap Rail Pressure" on the QSK19 Quantum engines. This pressure gauge has a higher range than the pressure gauge used for most engines.

Ref. No.	Part No.	Description
1	3824829	Pressure Gauge (0-400)
2	3376859	Quick Connect (F)



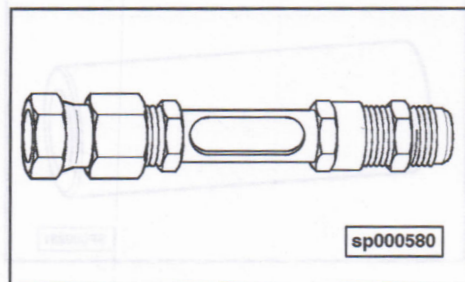
Sight Glasses

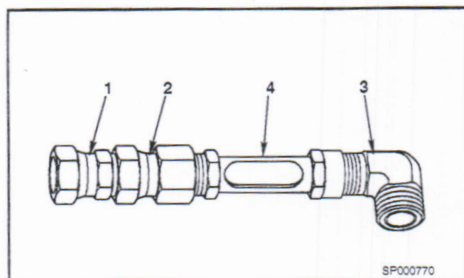
ST 998
Fuel Sight Glass

Engine Series: All

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

Part No.	Description
ST 998	Sight Glass (No. 10 hose SAE)
3375362	Sight Glass (No. 12 hose SAE)
3376718	Sight Glass (No. 12 hose JIC)
3375808	Sight Glass (No. 16 hose JIC)





3163270
Sight Glass Assembly

Engine Series: QSK45/60

Sight glass connected between the fuel pump and full flow fuel filter to measure any fuel restriction and air leaks in the system.

Ref. No.	Part No.	Description
1	3163496	Reducing Adapter
2	3163497	Female Adapter Union
3	3163498	Male Adapter Elbow
4	3164253	Sight Glass

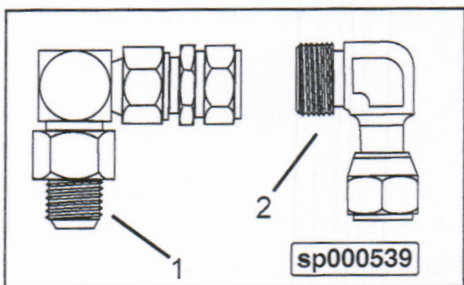


3377405
Cooling Sight Glass

Engine Series: All Except K38 and K50

These sight glasses are used to troubleshoot the engine cooling system. All are 5 inches long.

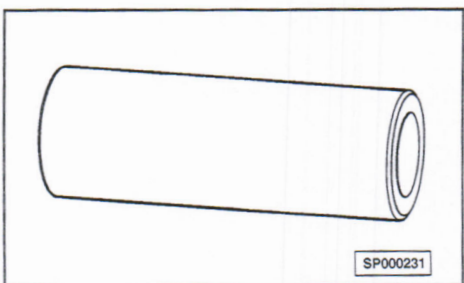
Part No.	Description
3377405	Cooling Sight Glass (1 in. O.D. NH Big Cam)
3377406	Cooling Sight Glass (1 1/4 in. O.D. NH Big Cam)
3823916	Cooling Sight Glass (1 3/4 in. O.D. B)
3377407	Cooling Sight Glass (2 in. O.D. V378, V504, V555)
3377408	Cooling Sight Glass (2 1/4 in. O.D. V378, V504, V555, NH, C)
3377409	Cooling Sight Glass (2 1/2 in. O.D. V903, L10)
3377410	Cooling Sight Glass (2 3/4 in. O.D. NH, L10, K19)
3377411	Cooling Sight Glass (3 in. O.D. V903)
3377412	Cooling Sight Glass (3 1/2 in. O.D. V28)



3824921
Sight Glass Adapter

Engine Series: QSK 19

These special elbow adapters are used to attach ST 998 Fuel Sight Glass between the vehicle full flow fuel filter and the fuel pump to measure fuel restriction for Quantum engines. Elbow (2) has # 12 flat faced male o'ring seal fitting on one end and # 10 SAE female hose swivel fitting on the other end. Elbow (1) has # 12 swivel flat face o'ring seal fitting on one end and # 10 SAE male fitting on the other end.



Tachometers

ST 1032
Tachometer Seal Driver

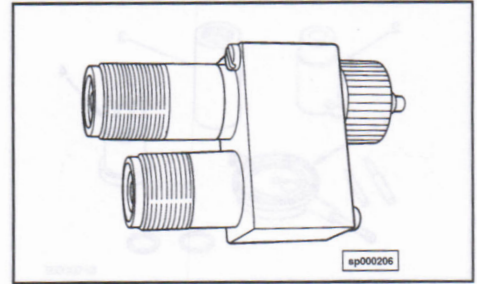
Engine Series: All Except B and C Series

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

ST 1224
Dual Tachometer Drive Adapter

Engine Series: C & J, NH, NT, V378, V555, V504, B and C, L10

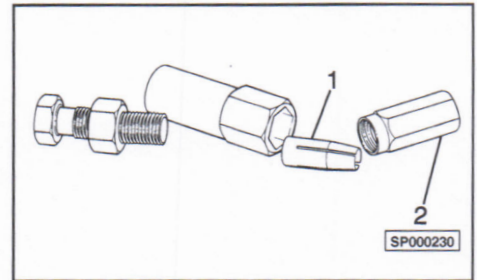
This adapter has a 2:1 drive ratio used for field testing and/or setting over speed switches used on fire pump engines.



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.

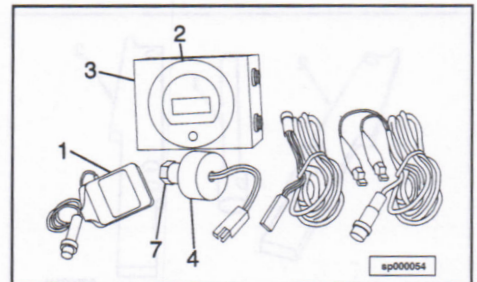


Ref. No.	Part No.	Description
1	ST 1326-1	Collar
2	ST 1326-2	Collar

3375631
Digital Tachometer Assembly

Engine Series: All Except B and C Series

This portable digital tachometer can be used to test engine speed on the fuel pump test stand, field test kits, dynamometers and/or other applications. The unit requires a 12 VDC power supply. The tachometer sending unit screws onto the fuel pump tach drive. A 110 VAC to 12 VDC converter is provided for more permanent applications.



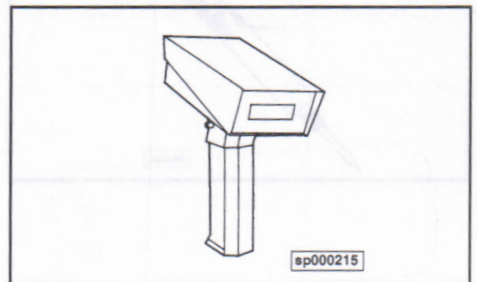
Ref. No.	Part No.	Description
1	3375635	Power Converter
2	3375632	Digital Tachometer Head
3	3375636	Aluminum Box
4	3375633	Sending Unit
7	3376299	Sending Unit Drive Tang

3377462
Digital Optical Tachometer

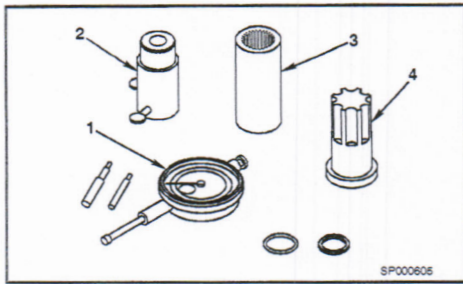
Engine Series: All

This digital tachometer is a non contact tachometer to measure any rotating member speed. The tachometer can be used to measure engine speed and or any shaft speed by placing a short piece of reflective tape on the rotating member. Just point the unit at the reflective tape and the RPM is displayed on the hand held unit.

Includes 4 AA batteries, reflective tape and padded case.



Part No.	Description
3377463	Optional Rechargeable Nicad Battery/Recharger
3377464	Reflective Tape (5 ft. x 1/2 in.)



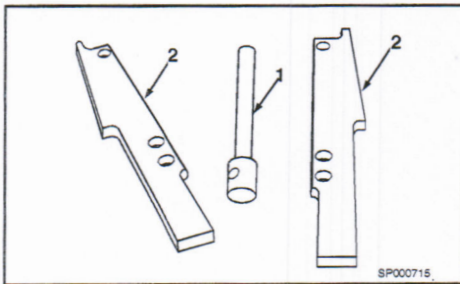
Timing Tools

3162853 Injection Timing Gauge Kit

Engine Series: B & C Series

This kit is designed to provide an alternate method to check timing or "re-time" the P7100 Bosch inline fuel injection pump, as related to troubleshooting white smoke complaints. This kit requires removing the number 1 fuel delivery valve. This kit should only be used after determining all other systems are operating properly, i.e. intake heater, fuel quality, and that the fuel pump timing pin is properly aligned in the fuel pump at TDC on number 1 cylinder. This kit can be used as "another check" of the fuel pump timing before replacing the fuel injection pump.

Ref. No.	Part No.	Description
1	3824564	Dial Indicator (1 inch Extension 2.5 inch Extension Point)
2	3824565	Pump Adapter
3	3824566	Delivery Valve Socket
	3824847	Sealing Ring (25 pcs)
4	3824591	Barring Tool
	3162854	O'Ring Seal
		Plastic Carrying Case

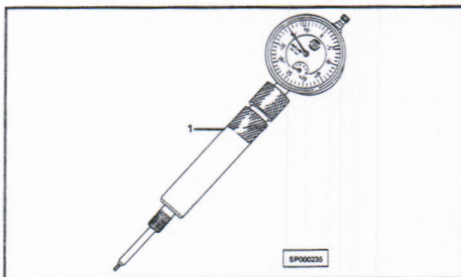


3163021 Timing Tool Kit

Engine Series: Signature/ISX

This is the kit necessary to time the Signature/ISX engine. It includes timing pin and wedges.

Ref. No.	Part No.	Description
1	3163020	Timing Pin
2	3163024	Timing Wedge
2	3163026	Timing Wedge
2	3163027	Timing Wedge



3377259 Fuel Pump Timing Tool

Engine Series: B Series

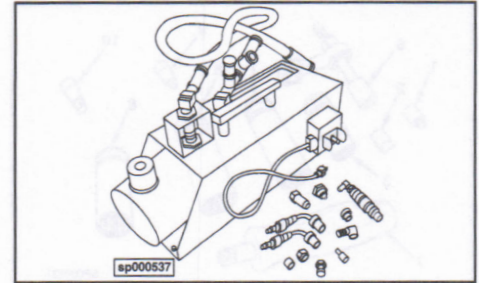
This timing indicator and adapter are required to set the Bosch fuel pump timing.

Part No.	Description
3824419	Timing Body/Stem

3824568
Timing Tool - Spill Port/High Pressure

Engine Series: B & C Series

This kit contains a portable pump (110 VAC, 60 hz) which pressurizes the fuel gallery of the "in line" high pressure injection pumps. Pump pressure (approx. 450 psi) is used as an aid in determining the fuel pump timing. This is an alternative way to determine the proper fuel pump timing, by attaching the pressure hose to the fuel pump and rotating the crankshaft slowly. This system determines the exact point when number 1 cylinder injection begins. Hoses, plumbing adapters and instructions are included.



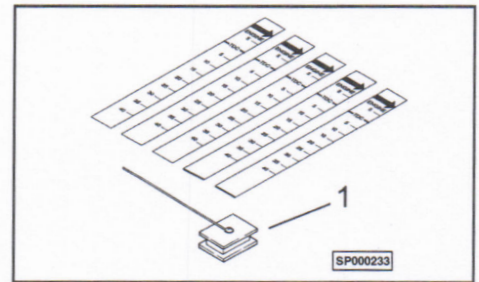
Part No.	Description
3162855	Plumbing Adapter Kit

3824569
Magnetic Pointer/Timing Tape

Engine Series: B & C Series

This kit contains **3824572 Magnetic Tape** with markings to identify TDC and degrees of advance from -5 to 40. These are marked to allow their use with 5 different diameter sizes of vibration dampers.

3824571 Magnetic Timing Pointer (1) which can be temporarily attached to the engine gear cover is also included in this kit.

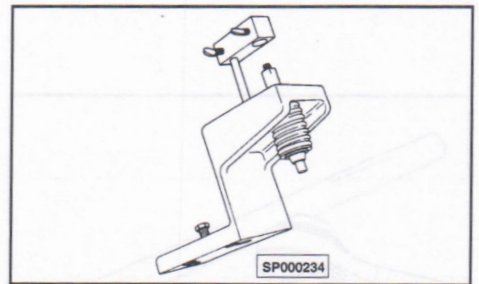


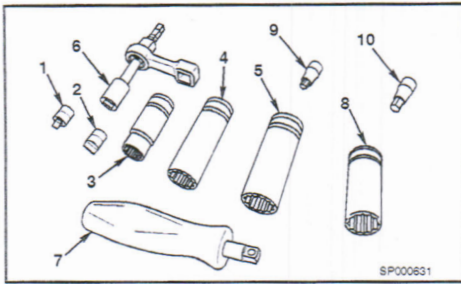
Use these in conjunction with the in-line fuel pump timing tools for indicators to determine position of the crankshaft.

3824570
Top Dead Center Locator

Engine Series: B & C Series

This tool was developed to eliminate error while timing the pump to the engine. It eliminates the possible risk of engine damage while locating TDC using the valves. Also it eliminates potential problems with camshaft gear backlash, cam lobe profile, and piston duration and loose or misaligned timing pins. The tool attaches to the flat boss area near the number 1 cylinder or number 6 cylinder and extends out over the intake and exhaust valve area.





Torque Wrenches

3163196 Torque Wrench Adapter Kit

Engine Series: All Except B and C Series

This offset adapter consists of a handle, 1/2 in. drive socket wrench adapter, 1/2 in. square opening to accommodate a torque wrench and 2 screwdriver blades. Use this tool to torque valve and crosshead adjusting locknuts.

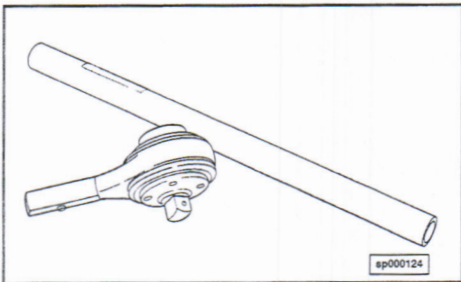
NOTE: 3163196 & 3163167 to be used with the following tools:

3163171 Feeler Gauge (.014 thick)

3163172 Feeler Gauge (.027 thick)

3163530 Brake Setting Feeler Gauge (7-mm thick)

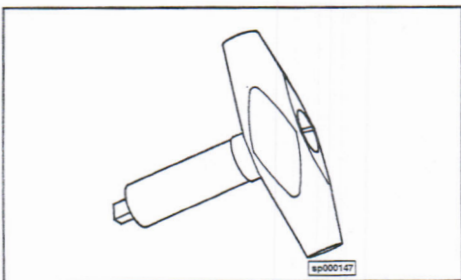
Ref. No.	Part No.	Description
1	3400038	Screwdriver Blade (.032 tip)
2	3400039	Screwdriver Blade (.062 tip)
3	3400040	Deep Well Socket (9/16)
4	3400041	Deep Well Socket (3/4)
5	3163166	Deep Well Socket (7/8)
6	3163169	Driver Adapter
7	3400037	Driver
	3163167	Torque Wrench Adapter Kit Signature Series
8	3163168	Deepwell Socket (24MM)
9	3163528	Hex Socket Driver (6MM)
10	3163529	Hex Socket Driver (8MM)
4	3400041	Deep Well Socket (3/4)



3376337 Geared Torque Multiplier

Engine Series: All

This 1/2 inch drive input, 3/4 inch drive output, torque multiplier is used for torquing operations where space limitations prevent using a long torque wrench for torquing requirements. This is a 1000 ft.lb. maximum capacity, with a 4:1 ratio, torque multiplier with an 18 inch handle.



3376592 Torque Wrench - Inch Pound

Engine Series:

This torque wrench is required to accurately and consistently set all PTD top stop injectors.

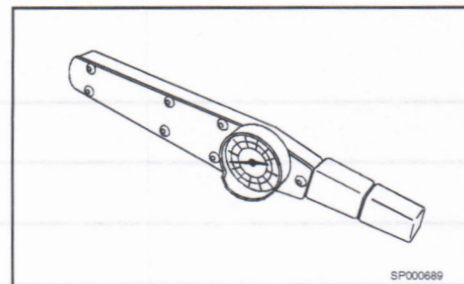
ST 669-13 Screwdriver Attachment must be used also.

3398032
Torque Wrench

Engine Series: QSK19

This is a $\frac{3}{8}$ drive, 600 in. lb. torque wrench used to set injector pre-load adjustments on engines with the high pressure fuel injection systems. "Quantum" engines.

ST 753-2 Screwdriver Attachment is available as required.

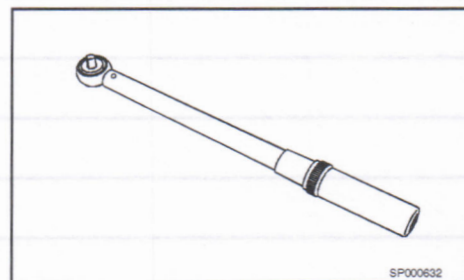


3398105
Torque Wrench - Click Type

Engine Series: All

These torque wrenches are used for general purpose when a specified torque is required. These are the micrometer type adjustment torque wrenches. One of the advantages of "clickers" is that it is not necessary to see the face of the torque wrench while torquing.

Part No.	Description
3398105	Torque Wrench - Click Type (15-100 ft.lb. (23.7-138.9 N•m) $\frac{3}{8}$ drive)
3398106	Torque Wrench - Click Type (30-250 ft.lb. (47.35-345.68 N•m) $\frac{1}{2}$ drive)



3823208
Torque Wrench - Inch Pound

Engine Series: N14, L10

This torque wrench is used to torque the Celect injector solenoid captive nuts when installing wiring harness for N14 and L10.

3823209 Socket Screwdriver is also required.

