

# Section 3 - Level 3 Group 1

## Component Rebuild Tools Group

Level 3 consists of components rebuild and alternative repair tools. The level will be divided in the engine group sections and major engine components (i.e. Cylinder Block, Cylinder Head, etc.). Level 1 and 2 tools must also be added to Level 3 tools to offer total service level capability.

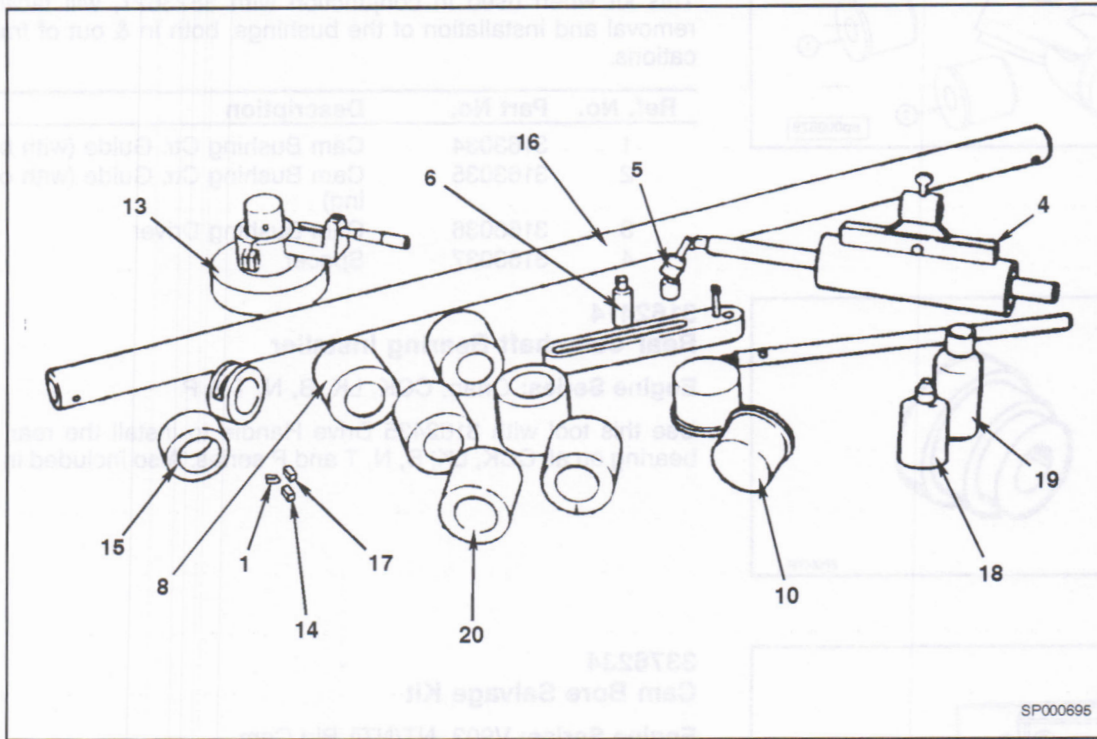
This section contains major component rebuild tools for the Cylinder Block Group family. See the below listing for a general description of contents for this grouping of tools.

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## Cam Bore Salvage Tools

3162233

Cam Bore Salvage Kit

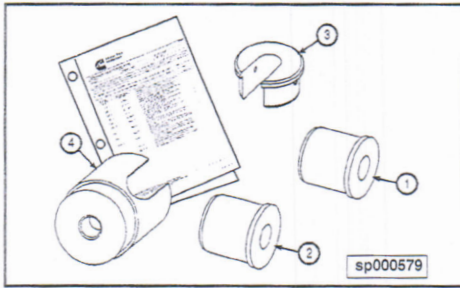


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**Engine Series:** K19, K38 and K50, QSK19

**3162233 Kit** includes all the necessary tools to cut cam bores in the cylinder block for installing salvage repair bushings. Bushings must be ordered separately. See Alternative Repair Section. If you have ref nos. 4, 5, 6, 13 and 16 in existing ST 1177 Main Bearing Bore Kit, you may purchase 3162232 Cam Bore Salvage Kit to make equivalent to 3162233. For QSK19 only, use 3163014 along with ST 1177.

Ref. No.	Part No.	Description
1	ST 1177-1	Tool Bit ( $5/8$ )
	ST 1177-53	Steel Box
4	ST 1177-17	Feed Unit
5	ST 1177-27	Universal Drive Ass'y
6	ST 1177-31	Drive Adapter
8	3376351	Centering Ring (K19)
	ST 1177-49	Cutter Key
13	ST 1177-5111	Micrometer Base Ass'y
	3376354	Tool Bit ( $1/2$ )
	3376355	Micrometer Setting Ring
16	ST 1177-16	Boring Bar
17	3376239	Tool Bit ( $9/16$ )
18	3823718	Retaining Compound
19	3824715	Primer-T
20	3825133	Centering Ring (QSK19)
10	3825134	Bearing/Bushing Driver (QSK19)

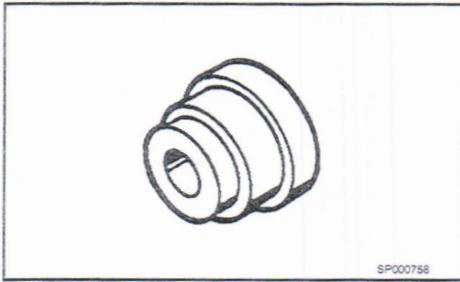


**3163015  
Cam Bushing R&I Kit**

**Engine Series:** QSKV45/60

This kit when used in conjunction with 3823621, will facilitate easy removal and installation of the bushings, both in & out of frame applications.

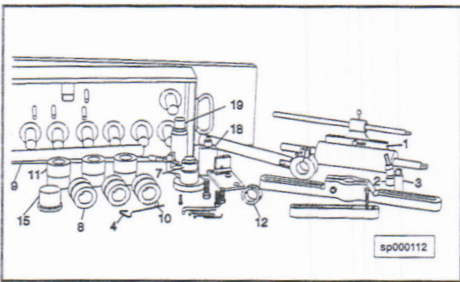
Ref. No.	Part No.	Description
1	3163034	Cam Bushing Ctr. Guide (with bushing)
2	3163035	Cam Bushing Ctr. Guide (with out bushing)
3	3163036	Cam Bushing Driver
4	3163037	Spacer



**3162414  
Rear Camshaft Bearing Installer**

**Engine Series:** Onan, CCK, LK, B, N, T & P

Use this tool with 3162435 Drive Handle to install the rear camshaft bearing on all CCK, LK, B, N, T and P series. Also included in 3162417.



**3376234  
Cam Bore Salvage Kit**

**Engine Series:** V903, NT/NTA Big Cam

**3376234 Kit** includes all the necessary tools to cut the cam bores in the cylinder block for installing salvage repair bushings. Bushings must be ordered separately. See Alternative Repair Section. If you have ref nos. 1, 2 and 3 in an existing ST 1177 Main Bearing Bore Kit, you may purchase 3376233 Cam Bore Salvage Kit to make equivalent to 3376234.

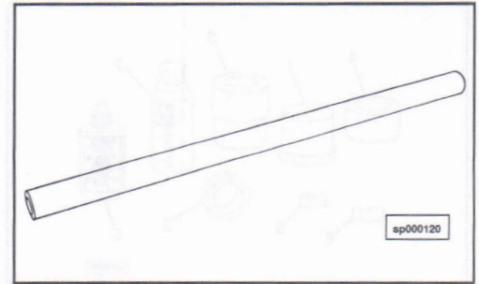
Ref. No.	Part No.	Description
1	ST 1177-17	Feed Unit
2	ST 1177-27	Universal Drive
3	ST 1177-31	Drive Adapter
4	ST 1177-49	Cutter Key
7	3376236	Micrometer Set Ring
8	3376240	Centering Ring (2.625 dia.)
9	3376238	Boring Bar
10	3376239	Cutter ( <sup>9</sup> / <sub>16</sub> )
11	3376241	Centering Ring (2.687)
12	3376237	Cutter Holder
15	3376411	Bearing/Bushing Driver
18	3823718	Retaining Compound
19	3824715	Primer-T

**3376324**

**Cam Bore Alignment Bar**

**Engine Series:** NT, V378, V555, V504

These alignment bars are used to check the cam bore alignment of the cylinder block. The bars are slightly larger than the camshaft and provide a good method of checking for proper camshaft to bushing clearance. **3376324** and **3376325** are also used as a pilot to install the camshaft into the "Small V" series block.



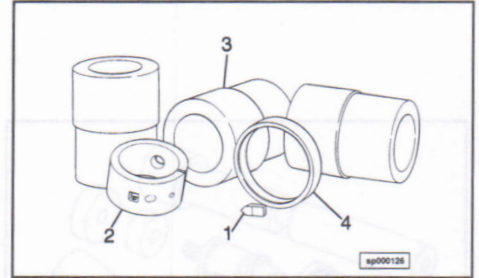
Part No.	Description
3376324	Cam Bore Alignment Bar (V378, V504, V555)
3376325	Cam Bore Alignment Bar (V378, V504, V555)
3376416	Cam Bore Alignment Bar (NT) Big Cam

**3376356**

**Cam Bore Salvage Kit**

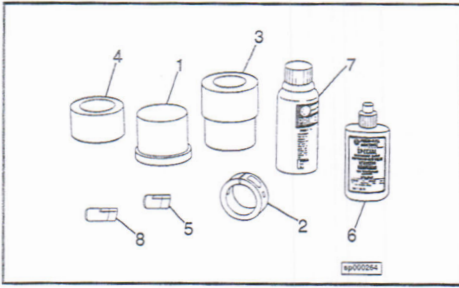
**Engine Series:** See Below

These kits contain special centering rings and bushing drivers unique to each engine series. Several details of 3376234 Kit are necessary to cut the cam bores. See Alternative Repair Section for repair bushing part numbers.



Ref. No.	Part No.	Description
	<b>3376356</b>	<b>Cam Bore Salvage Kit (V378, V504, V555 (Small Cam))</b>
1	3377290	Tool Bit (.310 Long)
1	ST 1177-1	Tool Bit (5/8 Long)
2	3376359	Cutter Holder
	<b>3376377</b>	<b>Cam Bore Salvage Kit (V378, V504, V555 (Big Cam))</b>
4	3376361	Driver Ring
3	3376372	Centering Ring (2.687)
	<b>3376585</b>	<b>Cam Bore Salvage Kit (N855(2.129) Small Cam)</b>
3	3376589	Centering Ring
2	3376359	Cutter Holder
1	3376357	Tool Bit (1 3/32 Long)
	3376588	Bearing/Bushing Driver
	<b>3376586</b>	<b>Cam Bore Salvage Kit (V1710 (2.254 Cam Bore))</b>
3	3376591	Centering Ring (2.254)
1	3376357	Tool Bit (1 3/32 Long)
	3376590	Bearing/Bushing Driver
	<b>3377302</b>	<b>Cam Bore Salvage Kit (V903 (2.872 Bore))</b>
3	3377303	Centering Ring
	<b>3823318</b>	<b>Cam Bore Salvage Kit (V903 600 hp (3.188 Bore))</b>



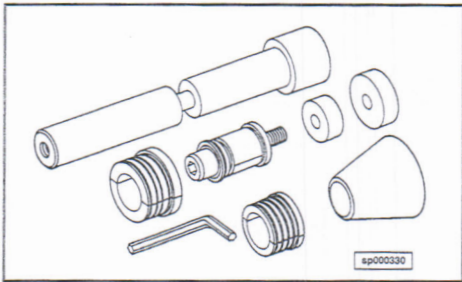


**3822385  
Cam Bore Salvage Kit**

**Engine Series:** L10

This kit includes all the necessary tools, when used with components of ST 1177, to cut the cam bores in the L10 cylinder block for installing a salvage repair bushing. Bushings must be ordered separately. See Alternative Repair Section.

Ref. No.	Part No.	Description
1	3377239	Bushing Driver Mandrel
2	3377238	Cutter Holder
3	3377237	Centering Ring
4	3376355	Micrometer Set Ring
5	3376239	Cutter ( <sup>9</sup> / <sub>16</sub> Long)
6	3823718	Retaining Compound
7	3824715	Primer-T
8	3376354	Cutter ( <sup>1</sup> / <sub>2</sub> Long)

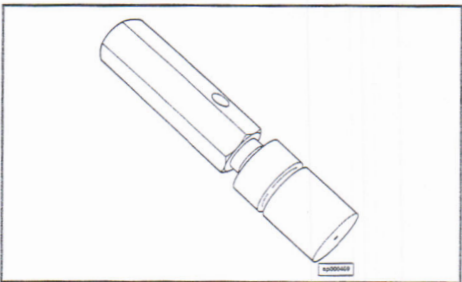


**3823509  
Cam Bushing Install/Removal Kit**

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

This bushing driver kit is used to install and remove the cam bushings. The driver head is an expanding head type to grip the bushing slightly while installing or removing the bushing.

**3823586 O'Ring** is available for the larger driver head and **3823568 O'Ring** is available for the smaller driver head.



**Connecting Rod Tools**

**ST 205  
Connecting Rod Plug Gauge**

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

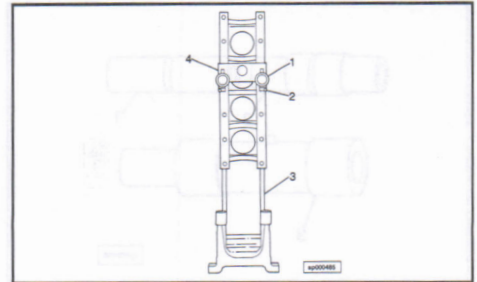
These are precision ground go no-go plug gauges used to check the piston pin bore of connecting rods. These plug gauges detect size only and will not detect out of round condition.

Part No.	Description
ST 205	Connecting Rod Plug (H, NH, NT, V28)
ST 504	Connecting Rod Plug (C & J, V555)
ST 715	Connecting Rod Plug (V903)
ST 797	Connecting Rod Plug (V378, V504)
ST 1296	Connecting Rod Plug (K19, K38, K50)
3376688	Connecting Rod Plug (L10)

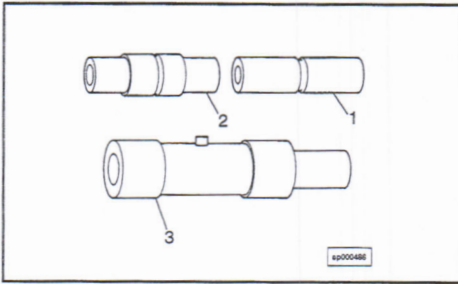
**ST 561**  
**Connecting Rod Checking Fixture**

**Engine Series: All**

This special fixture is used to check the connecting rod length, bend and twist. The connecting rod must have the cap assembled for this test. Dial indicators show if the length and bore alignment are acceptable. A feeler gauge is used to check twist. Use appropriate locating mandrels reference ST 562.



Ref. No.	Part No.	Description
1	ST 561-6	Dial Indicator
2	3375093	Contact Point
3	ST 561-5101	Base Assembly
4	ST 561-5102	Indicator Bracket Ass'y



**ST 562**  
**Connecting Rod Mandrel Use with ST 561**

Engine Series: See Below

Locating mandrels are used to locate the connecting rod in ST 561 Connecting Rod Checking Fixture. The small mandrels fit in the piston pin bore and the large expanding mandrel fits in the crankpin bore.

Ref. No.	Part No.	Description
	<b>ST 562</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (C &amp; J))</b>
	<b>ST 563</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (N855 &amp; N743))</b>
3	ST 563-5001	Connecting Rod Mandrel (Crankpin End)
2	ST 563-2	Connecting Rod Mandrel (Piston Pin End - less Bushing)
1	ST 563-3	Connecting Rod Mandrel (Piston Pin End - with Bushing)
		<b>(V28 Eng.)</b>
3	ST 758	Connecting Rod Mandrel (Crankpin End)
2	ST 563-2	Connecting Rod Mandrel (Pin End - less Bushing)
1	ST 563-3	Connecting Rod Mandrel (Piston Pin End - with Bushing)
	<b>ST 800</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (V903 &amp; V8 265))</b>
	<b>ST 801</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (V378/V504))</b>
		<b>(V555)</b>
3	ST 1197	Connecting Rod Mandrel (Crankpin End)
2	ST 562-9	Connecting Rod Mandrel (Piston Pin End - less Bushing)
	<b>ST 1305</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (K19))</b>
2	ST 1305-2	Connecting Rod Mandrel (Piston Pin End - less Bushing)
1	ST 1305-3	Connecting Rod Mandrel (Piston Pin End - with Bushing)
		<b>(K38 &amp; K50)</b>
3	ST 1331	Connecting Rod Mandrel (Crankpin End)
2	ST 1305-2	Connecting Rod Mandrel (Piston Pin End - less Bushing)
1	ST 1305-3	Connecting Rod Mandrel (Piston Pin End - with Bushing)
	<b>3376690</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (L10, M11))</b>
3	3376691	Connecting Rod Mandrel (Crankpin End)
2	3376692	Connecting Rod Mandrel (Piston Pin End - less Bushing)
1	3376693	Connecting Rod Mandrel (Piston Pin End - with Bushing)
	<b>3823285</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (B Series))</b>
3	3823302	Connecting Rod Mandrel (Crankpin End)
2	3823282	Connecting Rod Mandrel (Piston Pin End - less Bushing)
1	3823281	Connecting Rod Mandrel (Piston Pin End - with Bushing)

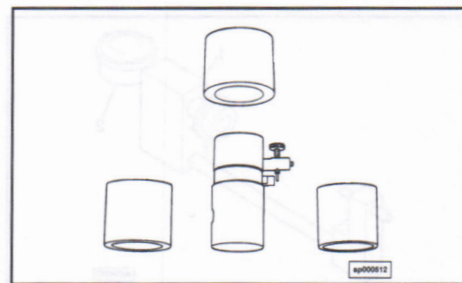
Ref. No.	Part No.	Description
	<b>3823286</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (C Series))</b>
3	3823303	Connecting Rod Mandrel (Crankpin End)
2	3823283	Connecting Rod Mandrel (Piston Pin End - with Bushing)
1	3823284	Connecting Rod Mandrel (Piston Pin End - less Bushing)
	<b>3823287</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (N855 2 capscrew))</b>
3	3823301	Connecting Rod Mandrel (Crankpin End)
	<b>3823785</b>	<b>Connecting Rod Mandrel Kit (Complete Tool (91N14))</b>
3	3823786	Connecting Rod Mandrel (Crankpin End)
2	3823787	Connecting Rod Mandrel (Piston Pin End - less Bushing)
1	3823788	Connecting Rod Mandrel (Piston Pin End - with Bushing)



**ST 861**  
**Connecting Rod Chamfer Tool**

**Engine Series:** C & J, K19, NH, NT, V28, V378, V555, V903, V504

This tool is used to cut a uniform starting chamfer in the piston bushing bore of the connecting rod before installing a service bushing.

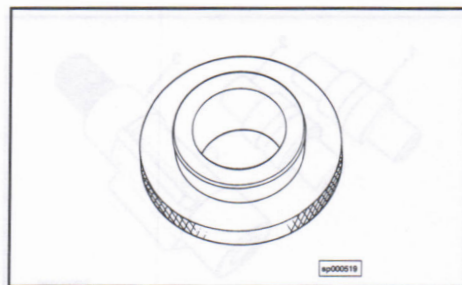


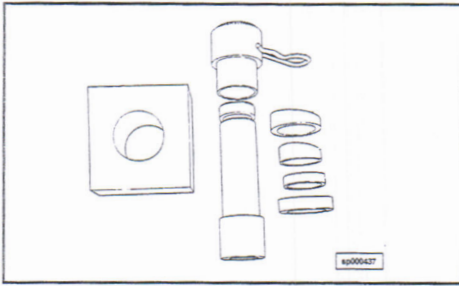
**ST 894**  
**Connecting Rod Ring Gauge**

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

These ring gauges are precision ground and used to 'set' dial bore gauges, check inside micrometers, etc. when checking the crankpin bore of the connecting rod.

Part No.	Description
ST 894	Connecting Rod Ring Gauge (2.692 V378, V504)
ST 896	Connecting Rod Ring Gauge (3.273 H, NH 2 in. cam)
ST 897	Connecting Rod Ring Gauge (3.3165 V903, NT 2 1/2 cam)
ST 899	Connecting Rod Ring Gauge (4.0025 V28)
ST 1221	Connecting Rod Ring Gauge (2.942 V555)
ST 1290	Connecting Rod Ring Gauge (4.252 K19)
ST 1327	Connecting Rod Ring Gauge (4.502 K38, K50)
3376575	Connecting Rod Ring Gauge (83.897 L10)





**ST 1186**  
**Connecting Rod Bushing Driver**

**Engine Series:** See Below

These bushing drivers are used to install and remove piston pin bushings in the connecting rods.

**ST 1186 Bushing Driver** is used to remove/install bushings for C and J series, V378, V504 and V555. For C & J only, use Details 1, 2, 5, 8, 9 and 14. For V378 and V504 only, use Details 1, 2, 3, 4, 5 and 14. For V555 only, use Details 1, 10, 11, 12, 13, and 14.

**ST 1242 Bushing Driver** is used for NH, N927 and V28.

**ST 1243 Bushing Driver** is used for V6 200, V8 265 and V903.

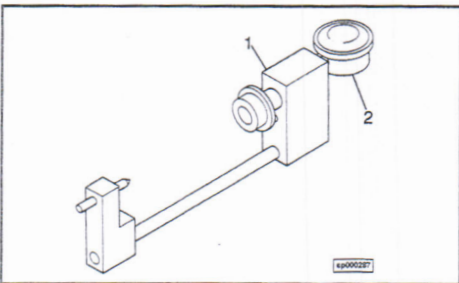
**ST 1285 Bushing Driver** is used for K19, K38 and K50.

**3376689 Bushing Driver** is used for L10, M11.

**3823690 Bushing Driver** is used for C Series engines.

**3823902 Bushing Driver** is used for B Series engines.

**3824227 Bushing Driver** is used for 91N14.

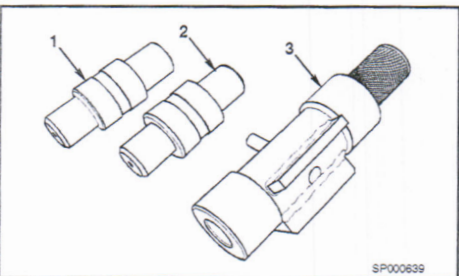


**3822764**  
**Connecting Rod Bolt Checking Fixture**

**Engine Series:** All K Series

This special fixture is designed to measure the connecting rod bolt length during assembly and tightening of connecting rod bolts to insure proper tensioning.

Ref. No.	Part No.	Description
1	3822981	Fixture
2	3375006	Dial Indicator



**3825185**  
**Rod Bend/Twist Mandrel Kit**

**Engine Series:** QST30

This kit is used for checking length, twist & bore alignment of connecting rods to help decide if they can be rebuilt. To be used in conjunction with ST-561.

Ref. No.	Part No.	Description
1	3825186	Mandrel, piston pin end with bushing
2	3825187	Mandrel, piston pin end without bushing
3	3825188	Mandrel, crank pin end

## Counterbore Tools

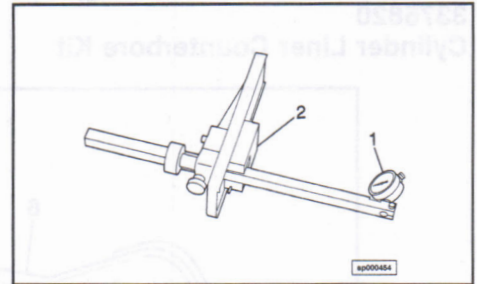
### ST 1252 Concentricity Gauge

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

This gauge is used to check the alignment concentricity between the cylinder liner upper counterbore and the lower packing ring bore.

Ref. No.	Part No.	Description
1	ST 1252-1	Dial Indicator
2	ST 1252-2	Counterbore Contact Plate (Std)
2	3823572	Counterbore Contact Plate (K19, K38, K50)

**Note:** 3823572 must be ordered separately. It is not part of ST 1252 Kit.

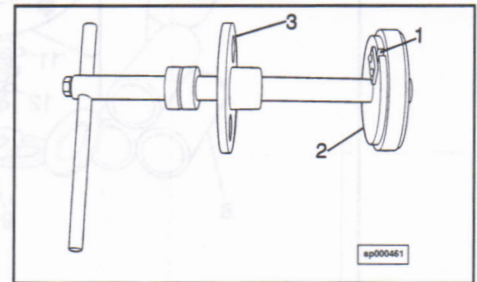


### ST 1318 Chamfer Tool

**Engine Series:** C & J, NH, NT, V28, V378, V555, V903, V504

This tool is used to cut crevice seal entry chamfer when repairing the lower bore with a repair sleeve. This tool must be used with repair sleeves 3375304, 3375305, 3375306 and 3375307.

Ref. No.	Part No.	Description
1	ST 1318-23	Cutter (All except V903)
1	ST 1318-24	Cutter (V903)
2	ST 1318-14	Cutter Plate (NT 5 1/2)
2	ST 1318-15	Cutter Plate (V6, V8, 5 1/2)
2	ST 1318-16	Cutter Plate (V903)
2	ST 1318-17	Cutter Plate (NH 5 1/8)
3	3377343	Guide Plate (NT .020 O.S.)
3	3822914	Guide Plate (NT .040 O.S.)

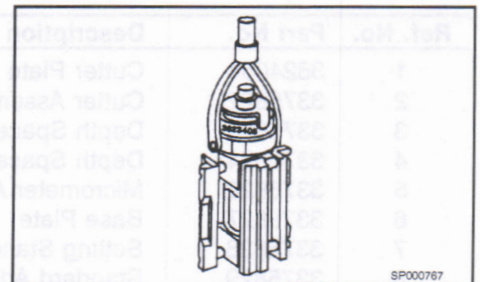


### 3162434 Cylinder Hone

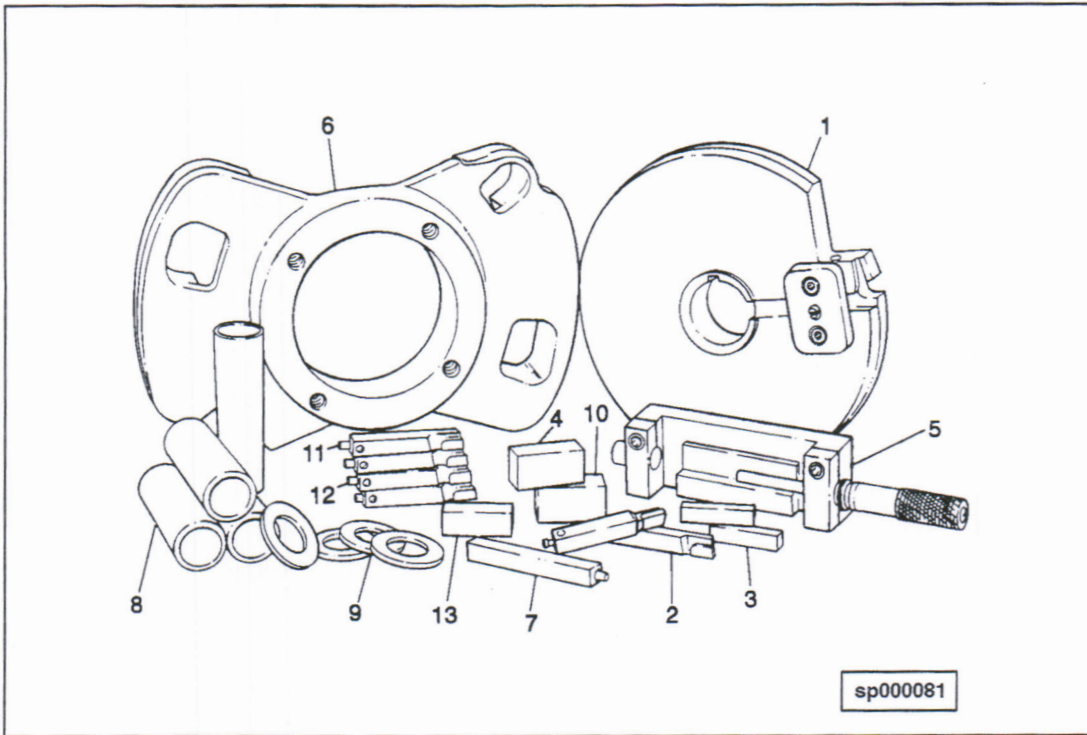
**Engine Series:** Onan

This hone maintains alignment of original bore. It reconditions cylinder bore with less stock removal. produce any finish required. 2 1/2 to 4 1/8 inch range.

**NOTE:** Replacement Stones  
3162432 - rough stone  
3162433 - finish stone



3375820  
Cylinder Liner Counterbore Kit



**Engine Series:** K19, K38, K50

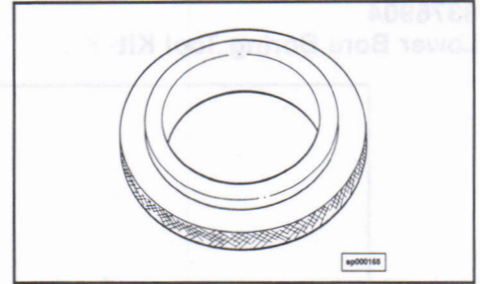
This kit is used to adapt older model counterbore tools such as ST 1168 so that the tool will cut counterbores on K series cylinder blocks for oversize liners or repair sleeves. For more current tooling, refer to 3377356 Counterbore Tool and various kits contained within.

Ref. No.	Part No.	Description
1	3824054	Cutter Plate
2	3375822	Cutter Assembly
3	3375823	Depth Spacer Block (.010 and .020 O.S.)
4	3375824	Depth Spacer Block (.010 and .020 O.S.)
5	3375826	Micrometer Ass'y
6	3375827	Base Plate
7	3375828	Setting Standard
8	3375829	Standard Adapter
9	3375830	Flat Washer
10	3375831	Depth Spacer Block (.030 and .040 O.S.)
11	3375443	Cutter Assembly
12	3376187	Cutter Assembly
13	3376189	Depth Spacer Block (Thick Flange Liner)

**3376830  
Counterbore Ring Gauge**

Engine Series: See Below

Each ring gauge is sized especially for a certain application. The ring gauges are used to "set" dial bore gauges for inspection purposes.



Part No.	Description
3376830	Counterbore Ring Gauge (N855, V28 (6.5635))
3376831	Counterbore Ring Gauge (K19 (7.410))
3376832	Counterbore Ring Gauge (K19, K38, K50 (7.4935))
3822471	Counterbore Ring Gauge (N855, V28 (6.750))
3822912	Counterbore Ring Gauge (N855 Secondary Bore (6.294))
3822913	Counterbore Ring Gauge (N855 Secondary Bore (6.334))

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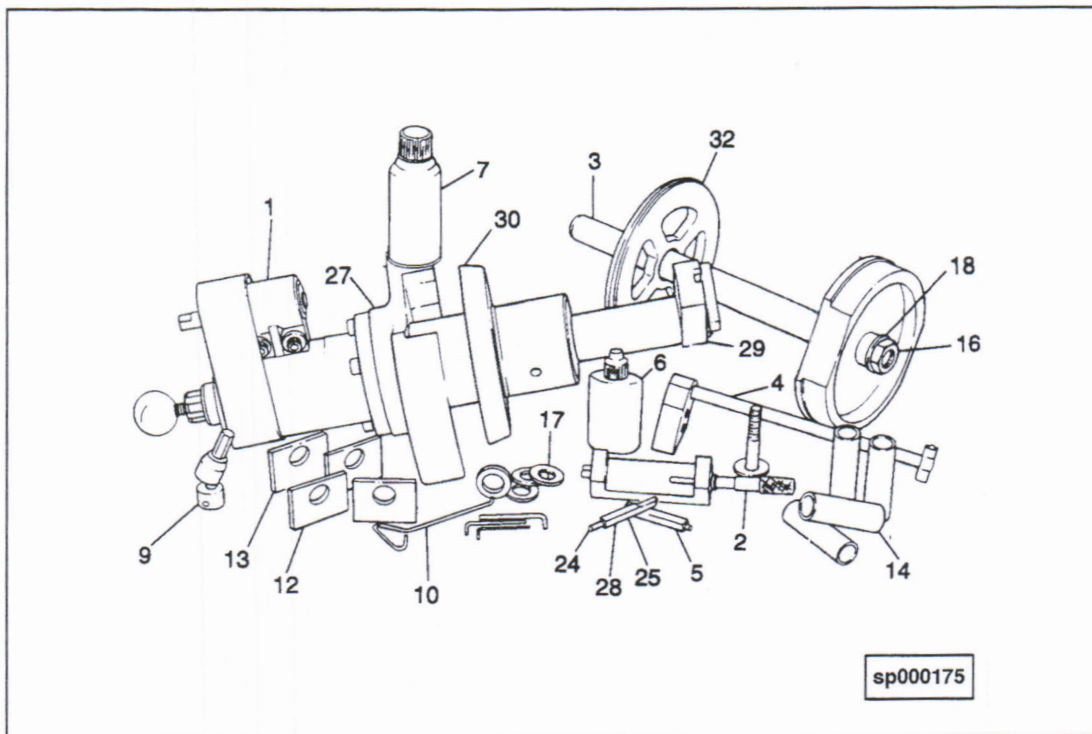
NOTE: 3376804 kit can be broken down into several small kits so that only the tools needed for a specific engine model can be selected and ordered as desired. Order 3376808 Boaring Unit, selected base plate assembly and selected application kit or order complete 3376804 as desired.

This kit contains all the necessary tools and components to salvage the cylinder block lower liner bore sealing area for installing a repair sleeve. See Alternative Repair Section for repair sleeves.

Engine Series: All Except L10, B & C Series

Part No.	Description	Part No.	Description
3376808	Basic Boaring Unit Kit (All)	3376815	Boaring Unit
3376815	Boaring Unit	3376822	Micromer Block
3376822	Micromer Block	3376827	Driver Shaft
3376827	Driver Shaft	3376835	Depth Set Unit
3376835	Depth Set Unit	3376838	Outer Set Gauge
3376838	Outer Set Gauge	3376845	Retaining Compound
3376845	Retaining Compound	3376852	Primer-T
3376852	Primer-T	3376858	Service Package
3376858	Service Package	3376865	Service Package (All)
3376865	Service Package (All)	3376872	Universal Drive
3376872	Universal Drive	3376879	Outer Key
3376879	Outer Key	3376886	Outer Washer (V)
3376886	Outer Washer (V)	3376893	Outer Washer (V)
3376893	Outer Washer (V)	3376900	Sand Adapter
3376900	Sand Adapter	3376907	Jam Nut (V-14)
3376907	Jam Nut (V-14)	3376914	Washer (V)
3376914	Washer (V)	3376921	Washer (V)
3376921	Washer (V)	3376928	Base Plate Assy (All Except K)
3376928	Base Plate Assy (All Except K)	3376935	Outer
3376935	Outer	3376942	Outer

3376904  
Lower Bore Boring Tool Kit



**Engine Series:** All Except L10, B & C Series

This kit contains all the necessary tools and components to salvage the cylinder block lower liner bore sealing area for installing a repair sleeve. See Alternative Repair Section for repair sleeves.

**NOTE:** 3376904 Kit can be broken down into several small kits so that only the tools needed for a specific engine model can be selected and ordered as desired. Order 3376905 Boring Unit, selected base plate assembly and selected application kit or order complete 3376904 as desired.

Ref. No.	Part No.	Description
	<b>3376905</b>	<b>Basic Boring Unit Kit (All)</b>
1	3376915	Boring Unit
2	3376552	Micrometer Block
3	ST 1287-34	Driver Shaft
4	3376551	Depth Set Unit
5	ST 1287-35	Cutter Set Gauge
6	3823718	Retaining Compound
7	3824715	Primer-T
8	3376916	Service Package
	<b>3376916</b>	<b>Service Package (All)</b>
9	ST 1177-27	Universal Drive
10	ST 1168-51	Cutter Key
12	ST 1287-16	Offset Washer (7/8)
13	ST 1287-17	Offset Washer (5/8)
14	ST 1287-5	Stud Adapter
16	ST 1168-38	Jam Nut (7/8-14)
17	3375830	Washer (3/4)
18	ST 1168-41	Washer (7/8)
	<b>3376906</b>	<b>Base Plate Ass'y (All Except K)</b>
24	ST 1287-10	Cutter
25	ST 1287-11	Cutter

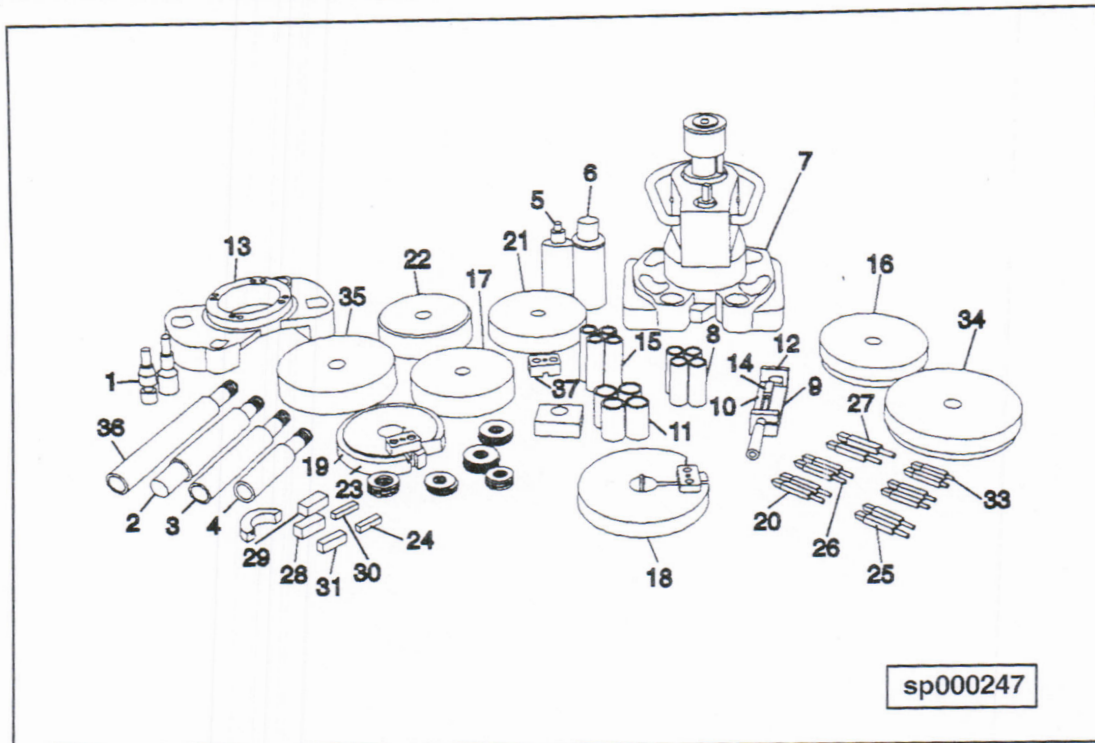
Ref. No.	Part No.	Description
	<b>3376907</b>	<b>Base Plate Ass'y (All K Series)</b>
27	3375827	Base Plate
28	3376557	Cutter
29	3376558	Cutter Holder
	<b>3376908</b>	<b>Application Kit (NH, V12 5 1/8 Bore)</b>
30	ST 1287-14	Alignment Ring
32	ST 1287-30	Guide Plate
	<b>3376909</b>	<b>Application Kit (N855, V28 5 1/2 Bore)</b>
31	ST 1287-25	Driver Plate
32	ST 1287-30	Guide Plate
32	3822915	Guide Plate (.020 & .040 O.S.)
30	3822916	Alignment Ring (.020 & .040 O.S.)
	<b>3376910</b>	<b>Application Kit (V903)</b>
	<b>3376911</b>	<b>Application Kit (V6-200/V8-265)</b>
	<b>3376912</b>	<b>Application Kit (C&amp;J)</b>
	<b>3376913</b>	<b>Application Kit (V378, V504, V555)</b>
	<b>3376914</b>	<b>Application Kit (All K Series)</b>
31	3376553	Driver Plate
32	3376554	Guide Plate

Engine Gearset NH 5 1/8 HT 2 for V28, V903, K

This tool is used to bore the upper counterbore in the cylinder block for upper press fit taper sleeves or over-size flanges. Separate kits may be ordered as desired. For lower press fit tooling, refer to 382335 for HT NH series and 382419 for K series.

Part No.	Part No.	Description
382335	382335	Counterbore Drive Unit and Misc. Small Parts (All Engines Listed)
1	ST 117-27	Universal Drive
2	ST 118-37	Bushing Driver Handle
3	ST 118-48	Long Bushing Driver Shaft
4	ST 118-47	Short Bushing Driver Shaft
5	382378	Finishing Compound
6	382475	Primer T
	382739	Base Plate and Micrometer Block Assembly (N855, V28, V903, 1/2, 5/8 and 8/8 Bore)
7	ST 118-28	Base Plate
8	ST 118-29	Stud Adapter (1 in. x 2 in.)
9	382682	Micrometer Block Assembly
10	ST 1287-35	Setting Standart
11	ST 118-40	Stud Adapter (1/2 x 2 in.)
	382738	Base Plate and Micrometer Block Assembly (All K Series)
12	382738	Micrometer Block Assembly
13	382687	Base Plate
14	382688	Setting Standart
15	382689	Stud Adapter
	382733	Cutter/Plate Driver Ass'y (N855, V12 1/2 and 5/8 Bore)
16	ST 118-38	Spinning Driver
17	ST 118-44	Guide Plate
18	ST 118-51	Cutter Plate Key
19	ST 118-57	Cutter Plate Assembly

3377356  
Cylinder Liner Counterbore Tool (Upper Press Fit Liners)



Engine Series: NH 5 1/8, NT 5 1/2, V28, V903, K

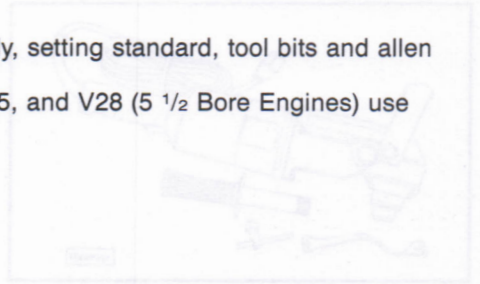
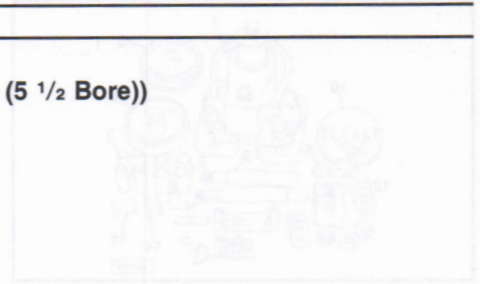
This tool is used to bore the upper counterbore in the cylinder block for upper press fit repair sleeves or oversize flange liners. Separate kits may be ordered as desired. For lower press fit tooling, refer to 3823325 for NT, N14 series and 3824119 for K series.

Ref. No.	Part No.	Description
	<b>3823352</b>	<b>Counterbore Drive Unit and Misc. Small Parts (All Engines Listed)</b>
1	ST 1177-27	Universal Drive
2	ST 1168-37	Bushing Driver Handle
3	ST 1168-46	Long Bushing Driver Shaft
4	ST 1168-47	Short Bushing Driver Shaft
5	3823718	Retaining Compound
6	3824715	Primer T
	<b>3377351</b>	<b>Base Plate and Micrometer Block Assembly (N855, V28, V903, (4 7/8, 5 1/8 and 5 1/2 Bore))</b>
7	ST 1168-28	Base Plate
8	ST 1168-29	Stud Adapter (1 in. x 2 1/4)
9	3376552	Micrometer Block Assembly
10	ST 1287-35	Setting Standard
11	ST 1168-40	Stud Adapter (3/4 x 2 3/4)
	<b>3377352</b>	<b>Base Plate and Micrometer Block Assembly (All K Series)</b>
12	3375826	Micrometer Block Assembly
13	3375827	Base Plate
14	3375828	Setting Standard
15	3375829	Stud Adapter
	<b>3377353</b>	<b>Cutter/Plate/Driver Ass'y (N855, V12 (4 7/8 and 5 1/8 Bore))</b>
16	ST 1168-36	Bushing Driver
17	ST 1168-44	Guide Plate
18	ST 1168-51	Cutter Plate Key
19	ST 1168-97	Cutter Plate Assembly

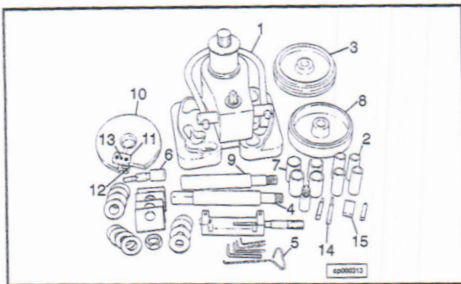
Ref. No.	Part No.	Description
20	3823674	Cutter Assembly
	<b>3377354</b>	<b>Cutter/Plate/Driver Ass'y (N855, V28, V903 (5 1/2 Bore))</b>
16	ST 1168-36	Bushing Driver
21	ST 1168-43	Guide Plate (N855, V28)
22	ST 1168-45	Guide Plate (V903)
18	ST 1168-51	Cutter Plate Key
23	3376782	Cutter Plate Assembly
24	3376784	Depth Spacer Block
20	3823674	Cutter Assembly
	<b>3377355</b>	<b>Cutter/Plate/Driver Ass'y (All K Series)</b>
18	ST 1168-51	Cutter Plate Key
25	3376187	Cutter Ass'y (.068/.073R)
26	3375443	Cutter Ass'y (.057/.067R)
27	3375822	Cutter Ass'y (.008/.012R)
28	3375823	Depth Spacer Block
29	3375824	Depth Spacer Block
30	3375831	Depth Spacer Block
31	3376189	Depth Spacer Block
32	3824054	Cutter Plate Ass'y
	<b>3376622</b>	<b>Driver/Plate Ass'y (All KV Series)</b>
33	3376219	Cutter Ass'y (1/4 Offset)
34	3376223	Bushing Driver
35	3376224	Guide Plate
36	3376226	Sleeve Driver Shaft
37	3376365	Cutter Holder Plate
32	3824054	Cutter Plate Assembly
18	ST 1168-51	Cutter Key

**3823552 Plastic Case** is available to store the micrometer block assembly, setting standard, tool bits and allen wrenches.

Note: To convert ST 1168 to current cutter plate and cutter for V903, N855, and V28 (5 1/2 Bore Engines) use 3823674, 3376782 and 3376784.



Ref. No.	Part No.	Description
1	3824052	Cutter Plate Ass'y (.030 o.s.)
1	3824053	Cutter Plate Ass'y (.040 o.s.)
1	3824054	Cutter Plate Ass'y (.082 o.s.)
The above assemblies include:		
2	3824057	Depth Spacer Block
3	ST 1168-50	Swivel Pin Set Screw
4	ST 1168-55	Spring Ball Plunger Set Screw
5	3824055	Cutter Holder Plate
6	3375443	Cutter Assembly
6	3824058	Cutter Assembly

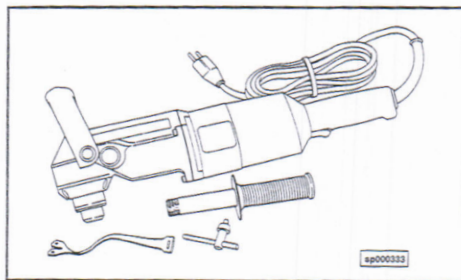


**3823325**  
**Counterbore Tool (Lower Press Fit Liners)**

**Engine Series:** N855 Series

This is a special kit designed to cut the counterbores for "lower press fit liners". This kit contains all the necessary tools required to cut the lower press fit liner counterbore of the upper deck of the cylinder block for installing counterbore repair sleeves.

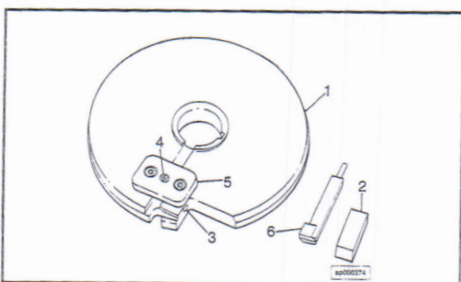
Ref. No.	Part No.	Description
1	3823352	<b>Basic Machine (Drive Unit)</b>
2	ST 1168-29	Stud Adapter
3	ST 1168-36	Driver Plate
4	ST 1168-37	Driver Handle
5	ST 1168-51	Cutter Key
6	ST 1177-27	Universal Drive
7	ST 1168-40	Stud Adapter
	<b>3823353</b>	<b>Cutter Plate Kit</b>
8	ST 1168-43	Guide Plate
9	ST 1168-47	Driver Shaft
10	3822955	Cutter Plate Ass'y
11	ST 1168-17	Cutter Plate Holder
12	ST 1168-20	Swivel Pad Set Screw
13	ST 1168-56	Ball Spring Plunger Screw
14	3823674	Cutter Assembly
15	3823291	Depth Set Block
	3823606	Depth Set Stop Gauge



**3823532**  
**Right Angle Drill (Heavy Duty)**

**Engine Series:** All

This heavy duty right angle drill can be used in close quarters where a standard heavy duty drill cannot be used. This right angle drill may be used when boring counterbores, line boring camshaft bores, KV idler bores, line boring crankshaft bores and general drilling. This heavy duty drill is dual range 300/1200 RPM and includes a 1/2 inch chuck, chuck key, ball handle and storage box.



**3824052**  
**Counterbore Cutter Plate O.S. Liners**

**Engine Series:** K19 Series

These cutter plates are used in conjunction with components of **3377356** for machining cylinder block liner counterbore for oversize liners. Select the appropriate cutter plate needed.

Ref. No.	Part No.	Description
1	3824052	Cutter Plate Ass'y (.020 o.s.)
1	3824053	Cutter Plate Ass'y (.040 o.s.)
1	3824054	Cutter Plate Ass'y (.065 o.s.)

The above assemblies include:

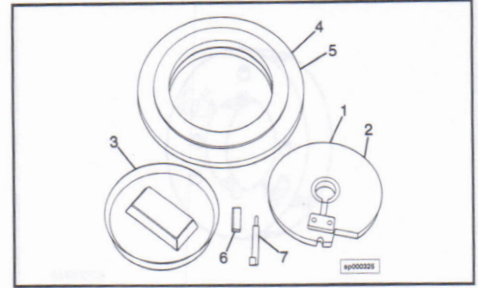
2	3824057	Depth Spacer Block
3	ST 1168-20	Swivel Pad Set Screw
4	ST 1168-56	Spring Ball Plunger Set Screw
5	3824055	Cutter Holder Plate
6	3375443	Cutter Assembly
6	3824056	Cutter Assembly

**3824119**  
**Counterbore Salvage Kit**

Engine Series: K19

This kit contains the most needed tools for repairing counterbores in the K19 series engines. These are used in conjunction with components of 3377356 Cylinder Liner Counterbore Tool.

Ref. No.	Part No.	Description
1	3824052	Cutter Plate Ass'y (.020 O.S.)
2	3824054	Cutter Plate Ass'y (.065 O.S.)
3	3823924	Lower Bore Chip Containment Plug
4	3823973	Liner Counterbore Ring Gauge (Std. & .020 O.S. Step Gauge (7.091 & 7.111))
5	3823975	Liner Counterbore Ring Gauge (.065 & .085 O.S. Step Gauge)
6	3824057	Depth Spacer Block
7	3375443	Cutter Assembly



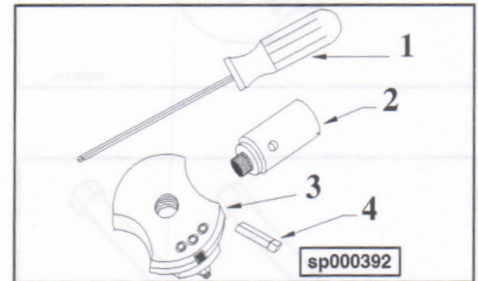
**3824789**  
**Counterbore Salvage Kit**

Engine Series: L10/M11

These tools are used to salvage the L10/M11 mid stop liner ledge. In some instances, the ledge cannot easily be "cleaned up" with the hand operated 3823558 Counterbore Ledge Cutter Kit. This kit is used with the power tool mentioned below to bore (cut) the ledge up to .125 inch deeper if necessary to clean up the counterbore ledge. This kit provides an extension shaft and cutter plate and tool bit to be used with **3823352 Counterbore Cutter Tool**.

**NOTE:** Many customers have this tool in their 3823325 Counterbore Tool Kit for repairing lower press fit liner counterbores with repair sleeves. Also **3823495 Depth Gauge Block** must be used to measure the depth of cut precisely.

Ref. No.	Part No.	Description
1	3824790	Shaft Extension Adapter
2	3824791	Hex Key Driver
3	3823569	Cutter Plate
4	3823570	Cutter Bit

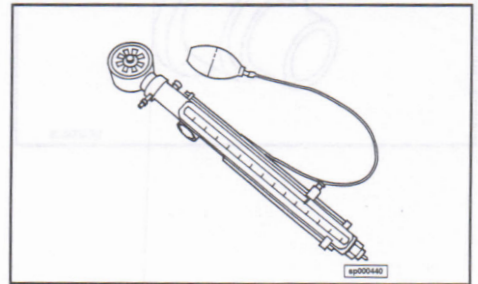


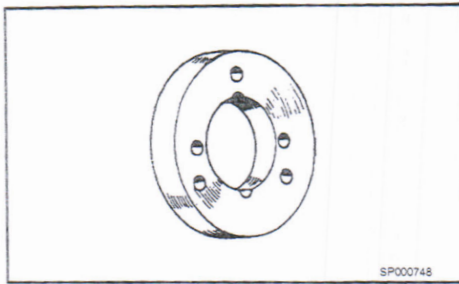
**Crankshaft Tools**

**ST 1196**  
**Crankshaft Hardness Tester**

Engine Series: All Except K38

The Scleroscope Hardness Tester is a portable tester suitable for testing crankshaft journal hardness without causing perceptible surface indentations.

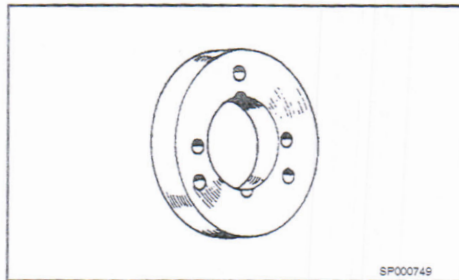




**3162393**  
**Gear Puller Ring**

**Engine Series:** Onan 2 Cyl. Gas

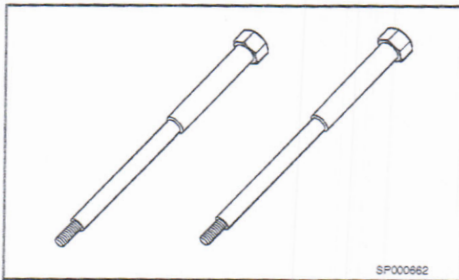
This ring mounts to crankshaft gear. Extended edge permits use with any gear puller. Includes (3) 10-32 x 2 " socket head capscrews. For all 2 cylinder gasoline engines.



**3162394**  
**Gear Puller Ring**

**Engine Series:** Onan J

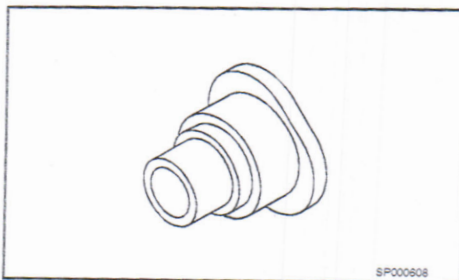
This ring mounts to crankshaft gear. Extended edge permits use with any gear puller. Includes (2) 1/4-20 x 1 " socket head capscrews. For all J series engines.



**3162404**  
**Special Shoulder Bolt**

**Engine Series:** Onan

Use these special shoulder bolts to pull the crankshaft gear. Use 3397890 Puller with these special bolts. Also included in 3162417.



**3162411**  
**Bearing Installer**

**Engine Series:** Onan, CCK, LK, B, N, T & P

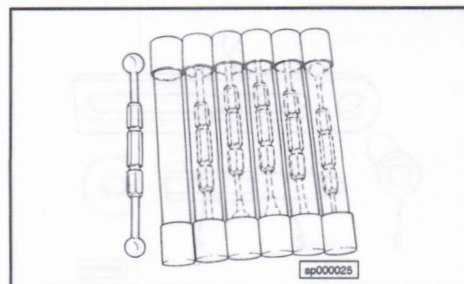
Use this tool with 3162435 Drive Handle to install the crankshaft and front camshaft bearings on all CCK,LK,B,N,T and P series. Also included in 3162417.

**3375240**  
**Fillet Ball Gauges**

**Engine Series:** All Except V378, V504, B and C Series

These ball gauges are used during the inspection process of crankshaft fillets especially while regrinding a crankshaft. These are used to check the radius of connecting rod journals and main bearing journal radius of the crankshaft.

Part No.	Description
3375241	Ball (.250/.270 radius) (K19, K38, K50)
3375242	Ball (.230/.250 radius) (K19, K38, K50)
3375243	Ball (.180/.200 radius) (NH, NT, V28)
3375244	Ball (.160/.170 radius) (NH, NT, V903, V555, V28, C&J)
3375245	Ball (.140/.150 radius) (V903, V555, C&J)
3375246	Ball (.120/.130 radius) (V903, V555, C&J)
3376602	Ball (5.75/6.25 mm) (L10)
3376603	Ball (4.75/5.25 mm) (L10)
3376745	Ball (.212/.235 radius) (NT, N14)
3376746	Ball (.262/.285 radius) (NT, N14)

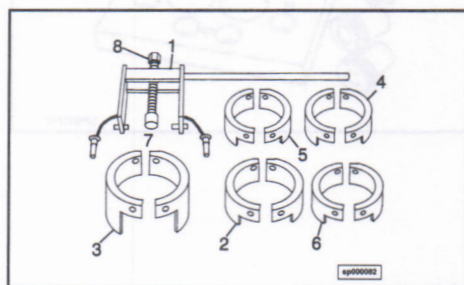


**3375840**  
**Crankshaft Gear Puller Set**

**Engine Series:** See Below

This special puller is used to pull the crankshaft gear without heating the gear and without damage to the gear. Note: The 3375834 gear puller assembly and appropriate puller jaw can be ordered separately as desired.

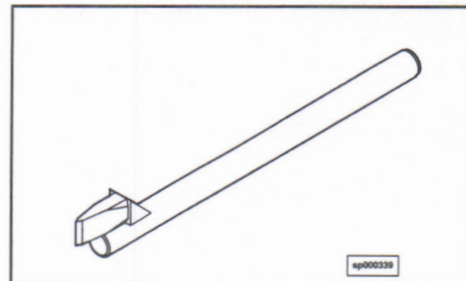
Ref. No.	Part No.	Description
1	3375834	Gear Puller Assembly
8	3376833	Puller Bolt
7	3375841	Dowel Pin Assembly
2	3375835	Puller Jaw (K)
3	3375836	Puller Jaw (V28)
4	3375837	Puller Jaw (V903)
5	3375838	Puller Jaw (V504, V555)
6	3375839	Puller Jaw (N855, L10)
6	3824284	Puller Jaw (94 N14)



**3823585**  
**Crankshaft Gear Splitter**

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

This special chisel is designed to "split" the crankshaft gear for removal purposes.

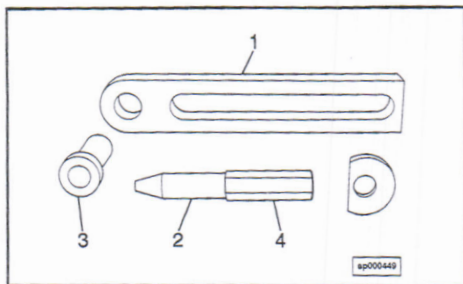


## Cylinder Block Repair and Salvage Kits

### ST 1232 Drill/Ream Fixture

Engine Series: All

This fixture is used to drill and ream holes in the cylinder block or any other dowel hole as required. Bushings are not included in this kit. Order bushings sizes as required.

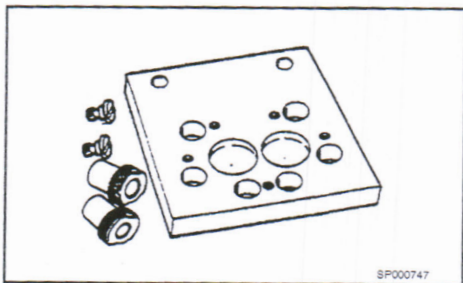


Ref. No.	Part No.	Description
1	ST 1232-1	Plate
2	3375052	Locator Pin (1 in. O.D.)
3	3377339	Bushing (3/4 I.D.) - Military Application
4	3377340	Locating Pin (3/4 O.D.) - Military Application

### 3162392 Fixture Kit

Engine Series: Onan N

Used for installation of step studs on N series engines.

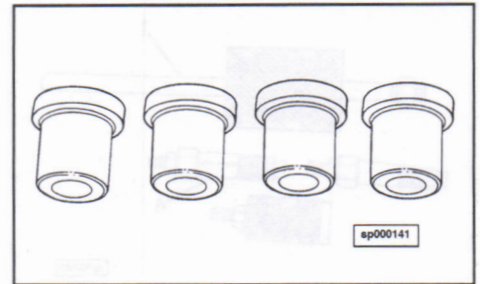


**3376495**  
**Drill/Ream Bushing Set**

Engine Series: All

These bushings are sold in sets as indicated in bold type. Use these bushings in ST 1232 Drill/Ream Fixture. **Reamers are not provided.**

Part No.	Description
<b>3376495</b>	<b>Drill Ream Bushing Set - N14</b> Bushing Size 0.4844 Bushing Size 0.5000 Bushing Size 0.5156 Bushing Size 0.5312 Bushing Size 0.5469
<b>ST 1234</b>	<b>Drill Ream Bushing Set - NH/NT/K/Small V/V28/V903</b> Bushing Size 0.5625 Bushing Size 0.5781 Bushing Size 0.5937 Bushing Size 0.6094
<b>ST 1235</b>	<b>Drill Ream Bushing Set</b> Bushing Size 0.6250 Bushing Size 0.6406 Bushing Size 0.6562 Bushing Size 0.6719
<b>ST 1236</b>	<b>Drill Ream Bushing Set</b> Bushing Size 0.6875 Bushing Size 0.7031 Bushing Size 0.7187 Bushing Size 0.7344
<b>ST 1237</b>	<b>Drill Ream Bushing Set</b> Bushing Size 0.7500 Bushing Size 0.7656 Bushing Size 0.7812
<b>ST 1238</b>	<b>Drill Ream Bushing Set</b> Bushing Size 0.8906 Bushing Size 0.9375



**3823679**  
**Water Hole Repair Kit**

Engine Series: All NH Series

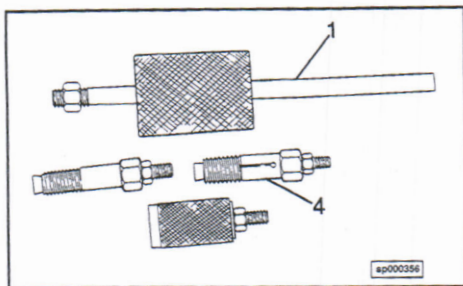
This kit contains all the necessary parts to repair cracked or damaged water coolant passages in the cylinder block top deck. The inserts are threaded on the outside and secured with a sealing and retaining compound.

Ref. No.	Part No.	Description
1	3823680	Repair Insert ((Qty. 15) for 3/4 thick head deck)
2	3823681	Repair Insert ((Qty. 15) for 1 in. thick head deck)
3	3823682	Sealing/Retaining Compound (50 mg.)
4	3823683	Tap
5	3823684	Tap Depth Stop
6	3823685	Reamer
7	3823686	Insert Installation Tool

Optional to be ordered separately:

3823689	Sealing/Retaining Compound (250 mg.)
3823831	Rubber Stopper (Qty. 12)



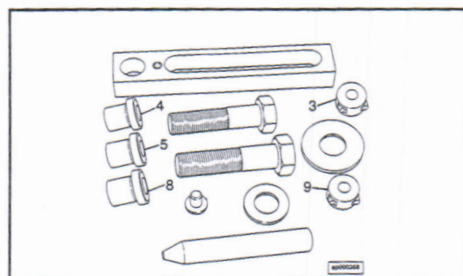


**3823821**  
**Cam Box Dowel Extractor Set**

**Engine Series:** NH/NT

This kit is designed specifically for 91N14 series engines. Special extractor heads are provided to pull the ring dowels and the 1/4 in. dowel plus a slide hammer assembly.

Ref. No.	Part No.	Description
1	3823822	Slide Hammer Assembly
4	3823825	Extractor (removes ring dowel from the rocker box)



**3823926**  
**Coolant Hole Insert Fixture Kit**

**Engine Series:** N855, K19, K38, K50

This kit contains the tools to make it easier to repair cylinder block coolant passage holes with external threaded inserts. The kit includes the basic fixture, locating pin and bushings to guide reamers and taps that are used in **3823679 Kit** and **3824047 Kit**. The kits can be purchased separately as described below.

Ref. No.	Part No.	Description
3	3823929	Tap Stop (.368)
4	3823930	Ream Bushing (.4531)
5	3823931	Tap Bushing (.5070)
8	3823934	Tap Bushing (.6300)
9	3823935	Tap Stop (.489)

Refer to the below listed part numbers for kits applicable to a specific engine series.

Refer to **Kits 3823679** and **3824047** for repair inserts, reamers, taps and insert installation tools.

	<b>3823936</b>	<b>Coolant Hole Insert Fixture Kit (All NH, N14 Series)</b>
3	3823929	Tap Stop (.368)
4	3823930	Ream Bushing (.4531)
5	3823931	Tap Bushing (.5070)
	<b>3823937</b>	<b>Coolant Hole Insert Fixture Kit (K19, K38, K50)</b>
8	3823934	Tap Bushing (.6300)
9	3823935	Tap Stop (.489) Capscrew (3/4-16 x 3)



**3824047**  
**Coolant Passage Repair Kit**

**Engine Series:** K19, K38, K50

This cylinder block coolant passage repair kit utilizes an external threaded repair insert (5/8-18) to salvage the upper deck water passages in the cylinder block. This kit repairs less serious damaged blocks than **3824066 Kit**.

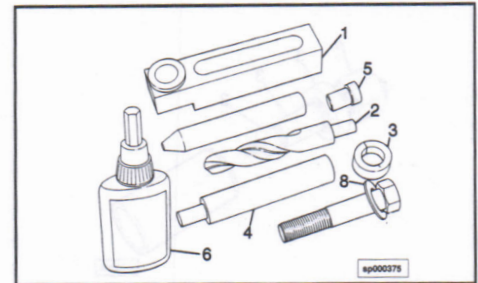
Ref. No.	Part No.	Description
1	3823682	Sealing/Retaining Compound
2	3823686	Insert Installation Tool
3	3824048	Repair Insert (Qty 12)
4	3824049	Plug Tap (5/8-18)
5	3824050	Tap Depth Stop

**3824066**  
**Water Hole Surface Repair Kit**

**Engine Series:** All K Series

This kit contains all the necessary components to repair the cylinder block water hole that has eroded out or otherwise become unfit for reuse. A brass bushing with a flanged head is installed for permanent repair.

Ref. No.	Part No.	Description
1	3824067	Locating Fixture (includes locating pin)
2	3824068	Counterboring Tool (special step size)
3	3824069	Depth Stop Collar
4	3824070	Bushing Driver
5	3824071	Special Repair Bushing
6	3823682	Sealing/Retaining Compound
8	3824114	Flat Washer



**3824297**  
**Coolant Leak Test Plugs**

**Engine Series:** See Below

These plugs are used to seal the coolant passages in the cylinder block top deck when pressurizing the block to check for leaks around the cylinder liners.

Part No.	Description
3824295	7/16 O.D. N855, V903, V28, V504, V555
3824294	3/8 O.D. N855 Block



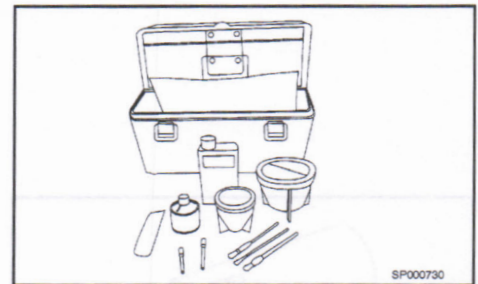
**3824585**  
**Ceramic R-Metal Salvage Kit**

**Engine Series:** K38, K50

This salvage kit contains Belzona Ceramic R-Metal for repairing pitted KV series cylinder blocks, caused by cavitation/erosion. The kit contains two part mixable paste that is applied, to the area to be repaired, with a plastic contour tool in thin coats, on a pre-roughened metal surface. Complete instructions are provided with kit.

**NOTE:** This material is not machinable, but is grindable to remove excess material after curing.

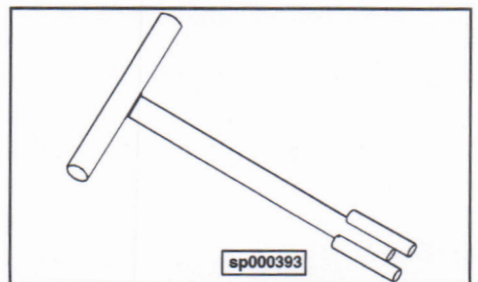
Part No.	Description
3824586	Ceramic R-Metal (Includes 2 containers, 1 tub base and 1 tub solidifier, Total wt. 2 Kg)
3824587	Cleaner/Degreaser (Pint)
3824588	Release Agent (Pint)
3824589	Grinder Burr (1/2 radius)
3824590	Grinder Burr (3/8 radius)

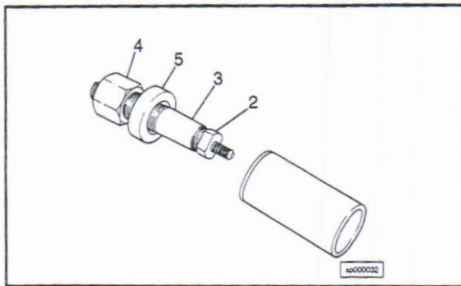


**3824832**  
**Oil Capacitor Installer**

**Engine Series:** M11

This tool is used to install the oil capacitor in the cylinder block cam pockets for the M11 series engines. New engines have this oil capacitor installed in the cam pockets cavities to retard drain back of oil. This tool is to be used to replace the capacitors that have failed or for some reason been removed.





## Idler Bore Salvage Tools

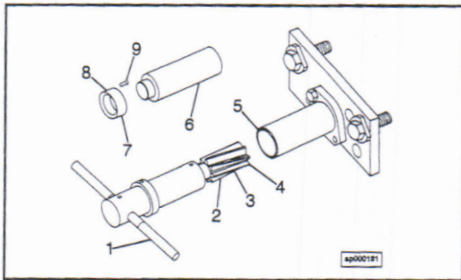
### 3375290

#### Idler Shaft Puller

Engine Series: K19, K38, K50

This puller is designed to pull the idler shafts from the front of the cylinder block. The thrust bearing reduces the friction load while rotating the large nut.

Ref. No.	Part No.	Description
2	3375303	Point Adapter
3	ST 386-2	Puller Arbor
4	ST 386-3	Hex Nut
5	ST 386-11	Thrust Bearing



### 3376951

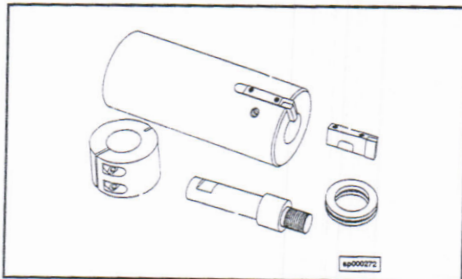
#### Idler Shaft Bore Salvage Kit - (K38 & K50)

Engine Series: K38 & K50

This kit is designed to salvage the idler shaft bores in the cylinder block.

Ref. No.	Part No.	Description
1	3376954	Handle Assembly
2	3376955	Reamer (1.250 in.)
3	3376956	Reamer (.9995 in.)
4*	3377306	Reamer (1.496 in.)
5	3376957	Fixture Assembly (K38, K50)
6	3376958	Bushing Driver
7	3376959	Salvage Bushing
8*	3377305	Salvage Bushing
9	3376426	Repair Rivet (50)

\*Note: Items 4 Reamer and 8 Salvage Bushings are optional.  
3377305 Bushing has a flange and is used to salvage the area around the idler bore.



### 3822527

#### Gear Housing Spotface Kit

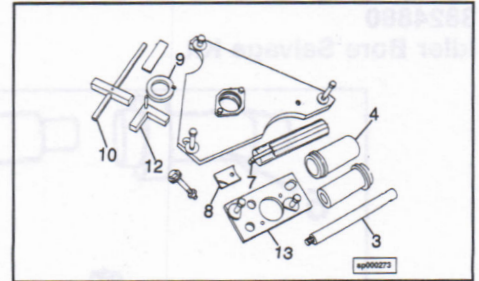
Engine Series: K38, K50

This kit is used to update the water pump idler spotface on the gear housing.

**3822548**  
**Idler Bore Salvage Kit**

**Engine Series:** K38, K50

The water pump idler pin and bore in the cylinder block have been redesigned for strength. This kit enables an update to the new design bore dimensions.

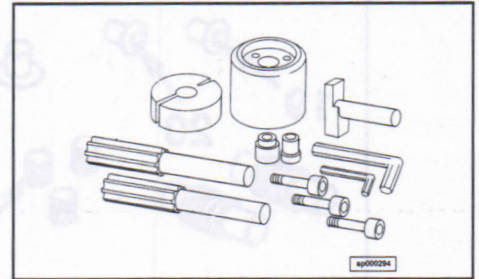


Ref. No.	Part No.	Description
3	3822551	Locator Shaft
4	3822552	Tool Holder Guide Bushing
7	3822555	Rough Cutter
8	3822556	Finish Cutter
9	3822557	Depth Stop Collar
10	3822558	Depth Stop Set Gauge
12	3822560	Centering Gauge
13	3822561	Plate

**3823063**  
**Idler Bore Salvage Kit**

**Engine Series:** L10

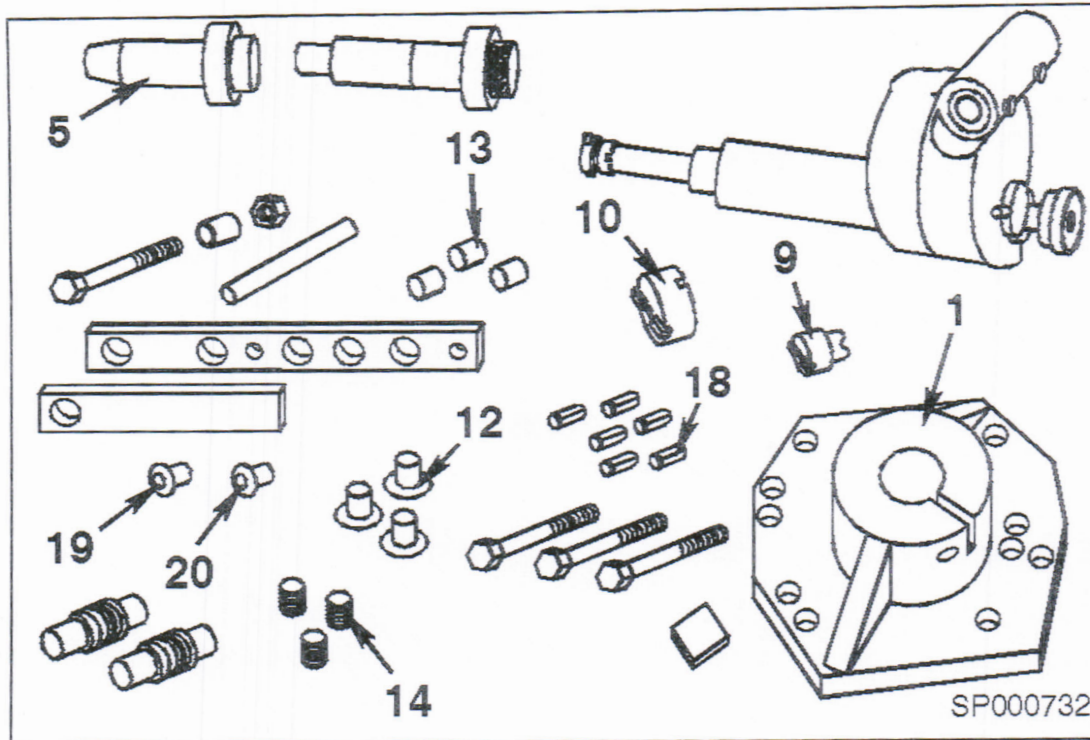
This tool is used to repair the idler shaft dowels on the front of the cylinder block.



Engine Series: K10  
 This tool is used to rebuild/replace the idler bore and face of the cylinder block. This tool provides the precise location and tools to bore out the worn or damaged idler bore and a new repair bushing sleeve is included so that the idler bore is back to original specifications in terms of size and location.  
 This tool and the rough repair bushing will salvage damaged bore or damaged bore and face. It is recommended to perform this operation out-of-frame.  
 This tool also has provisions to salvage the threads in the idler bore for the retaining cap screw.  
**NOTE:** ST 257 Valve Seat Insert Tool is used in conjunction with this kit. This tool provides the driving mechanism to bore out the damaged bore. If you have ST 257, you can order 3825135 Idler Bore Salvage Kit. If you do not have ST 257, order 3825880 Idler Bore Salvage Kit. A standard 1/2" hand drill provides the power for this tool.  
 Part No. 22 3824880 Idler Bore Salvage Tool consists of:  
 3825103 Idler Bore Drive Unit  
 3825135 Idler Bore Salvage Kit consists of:

Part No.	Part No.	Description
3824881	1	Idler Salvage Bore Plate Assy
3824887	2	Idler Salvage Insert Driver
3824890	3	Idler Salvage Start Cutter
3824891	4	Idler Salvage Finish Cutter
3824893	5	Idler Bore & Face Salvage Bushing (Qty 3)
3824894	6	Idler Bore Insert (Bushings) (Qty 3)
3824895	7	Thread Insert (1/8" x 1/4") (Qty 3)
3824896	8	Expansion Pin (1/2" x 1/4") (Qty 3)
3824897	9	Slip Fit Drill Bushing
3824898	10	Slip Fit Tapping Bushing

3824880  
Idler Bore Salvage Kit



**Engine Series:** K19

This tool is used to rebuild/salvage the idler bore and face of the cylinder block. This tool provides the precise location and tools to bore out the worn or damaged idler bore and a new repair bushing/sleeve is installed so that the idler bore is back to original specifications in terms of size and location.

This tool and the proper repair bushing will salvage damaged bore or damaged bore and face. It is recommended to perform this operation out-of-frame.

This tool also has provisions to salvage the threads in the idler bore for the retaining capscrew.

**NOTE:** ST 257 Valve Seat Insert Tool is used in conjunction with this kit. This tool provides the driving mechanism to bore out the damaged bore. If you have ST 257, you can order 3825136 Idler Bore Salvage Kit. If you do not have ST 257, order 3824880 Idler Bore Salvage Kit. A standard 1/2 in. hand drill provides the power for this tool.

Ref No. 22 **3824880 Idler Bore Salvage Tool** consists of:

3825103 Idler Bore Drive Unit

3825136 Idler Bore Salvage Kit consists of:

Ref. No.	Part No.	Description
1	3824881	Idler Salvage Base Plate Ass'y
5	3824887	Idler Salvage Insert Driver
9	3824890	Idler Salvage Start Cutter
10	3824891	Idler Salvage Finish Cutter
12	3824893	Idler Bore & Face Salvage Bushing (qty. 3)
13	3824958	Idler Bore Insert (Bushing) (qty. 3)
14	3824883	Thread Insert (5/8-18 x 13/16-14) (qty. 3)
18	3824882	Expansion Pin (1/4 x 3/8) (qty. 6)
19	3377339	Slip Fit Drill Bushing
20	3824959	Slip Fit Tapping Bushing

## Lifting Devices

### ST 125 Engine Lifting Fixture

**Engine Series:** NH and NT

This lifting fixture is designed to lift all H/NH/NT engines except 5 1/8 bore with top mounted turbocharger. The flat lifting hooks provided engage lugs between the cylinder heads on the 4 7/8 and 5 1/8 bore engines. The chain and hook assemblies are provided for lifting eyes on the 5 1/2 bore engines.

Ref. No.	Part No.	Description
1	ST 125-1	Lifting Hook
2	ST 125-3	Lifting Beam
3	ST 125-4	Hook and Chain Ass'y

### ST 862 Head Lifting Plate

**Engine Series:** V378, V555, V903, V504

This lifting plate is attached to the cylinder head to lift the head from the cylinder block. It can also be used for assembly of the cylinder head.

### 3162424 Rotor Positioning Sling

**Engine Series:** Onan

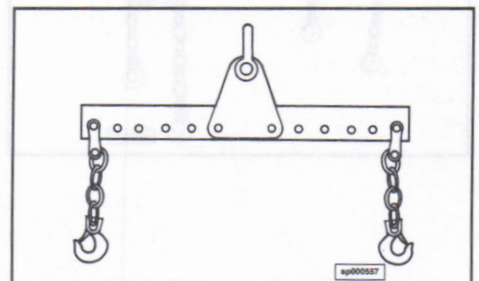
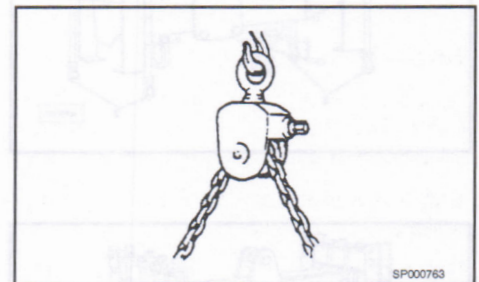
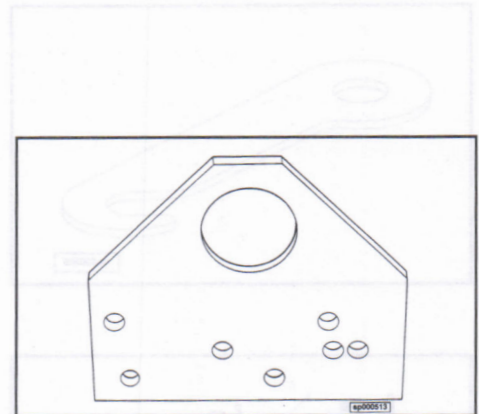
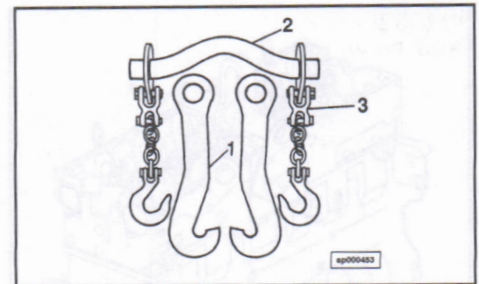
A 2000 lb. Capacity load rotor positioning sling (**NOT A HOIST**) to provide an easier way to handle & position engines, transmissions & other bulky components.

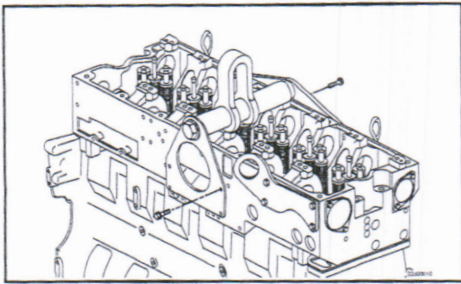
### 3162871 Engine Lifting Fixture

**Engine Series:** K19, NH, NT, V378, V555, V903, V504, L10, B and C

This is a light weight lifting fixture to be used with a hoist to lift many different engine models.

**NOTE:** To lift K19 series engines, use 2 **3163091 engine lifting hooks** designed for the K19 engines.

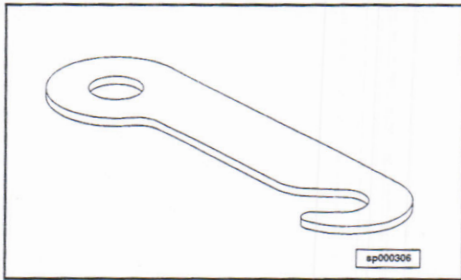




**3162996  
Cylinder Head Lifting Fixture**

**Engine Series:** Signature/ISX

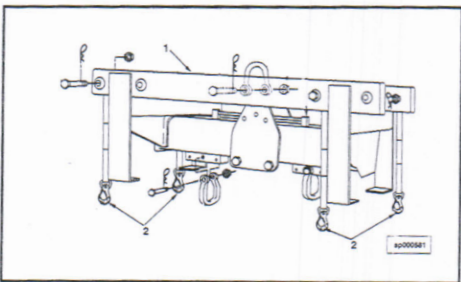
Lifts the assembled cylinder head for in and out of chassis operations. Provides placement of the cylinder head over the fire rings. To be used in conjunction with a lifting hoist or boom but cannot be conveniently used where space limitation exists. Maximum lifting capacity is 750 lbs. The fixture is required to be secured to the cylinder head with 7 cap screws, part # 3902460 (M10 x 1.5 x 25-mm lg., grade-10.9 cap screws are acceptable



**3163091  
Engine Lifting Hook**

**Engine Series:** K19, QSK19

This special hook is designed to hook onto the lifting lugs of the cylinder heads. Use **3162871 Engine Lifting Fixture** to attach to these lifting hooks to lift the engine as required. Two hooks are required to lift an engine.

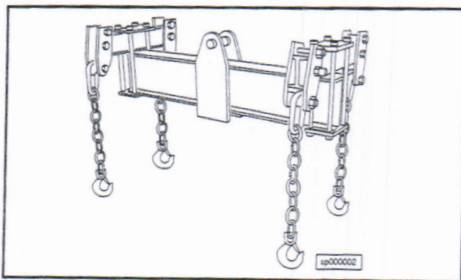


**3163264  
Engine Lifting Fixture Kit**

**Engine Series:** QSK 19, 45/60, K19 and KV

This lifting fixture with a rated capacity of 25,000 lbs. is needed to lift the heavier engines and 2 stage items (turbocharger, after-coolers, filters, etc.).

Ref. No.	Part No.	Description
1	3163265	Engine Lifting Fixture
2	3163267	Lifting Sling



**3375109  
Engine Lifting Fixture**

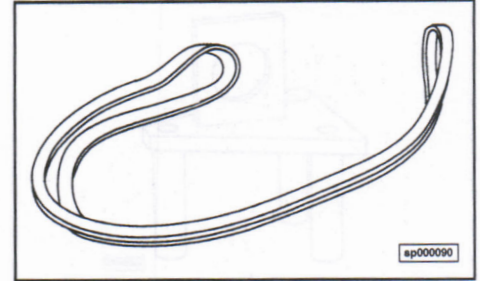
**Engine Series:** K38, K50

This heavy duty lifting fixture is required for lifting the K38 and K50 series engines.

**3375957**  
**Nylon Lifting Sling**

**Engine Series:** All

These endless slings are the most popular, practical and strongest slings designed for all-purpose lifting any vertical, choker or basket hitch. Each sling has a leather protector so that the sling cannot be 'cut' accidentally that would weaken the sling. The leather also protects the piece being lifted. These are excellent for lifting crankshafts and/or camshafts without marring the finished machine finish.



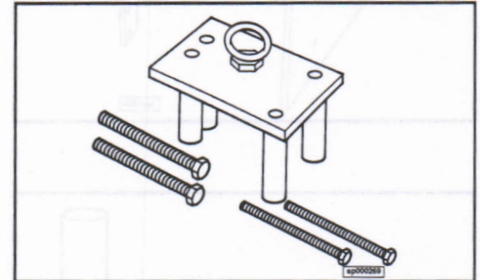
Part No.	Description
3375957	Nylon Lifting Sling (1 in. x 6 ft. rated at 2000 lb. with choker hitch and 4000 lb. with basket hitch)
3375958	Nylon Lifting Sling (2 in. x 6 ft. rated at 4000 lb. with choker hitch and 8000 lb. with basket hitch)

Note: Both slings have a 36 inch leather sleeve included.

**3822479**  
**Cylinder Head Lifting Bracket**

**Engine Series:** L10

This special bracket is designed to lift the cylinder head from the cylinder block. The offset lifting eye provides for lifting the head with the exhaust manifold and turbo mounted (Keeps balanced and level).

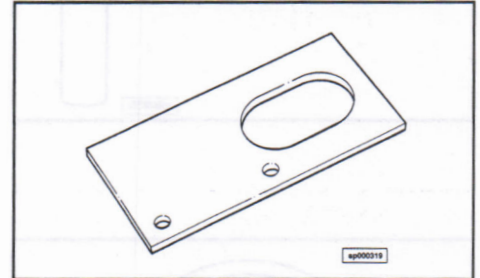


Part No.	Description
3822982	Anchor Shackle

**3823466**  
**Intercooler/Aftercooler Lifting Bracket**

**Engine Series:** K38

This special lifting bracket is designed to attach to the intercooler bolt flange. 2 brackets are required to lift the intercooler, 4 brackets are required to lift the intercooler/aftercooler assembly with chains and **3822512 Lifting Bar**.

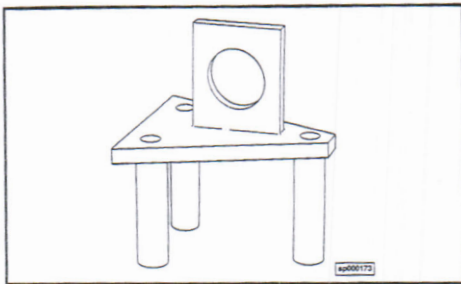


**3823467**  
**Turbocharger Lifting Bracket**

**Engine Series:** K38

This special lifting eye is designed to lift and remove the high pressure stage turbocharger. (BBC 15 Turbo)

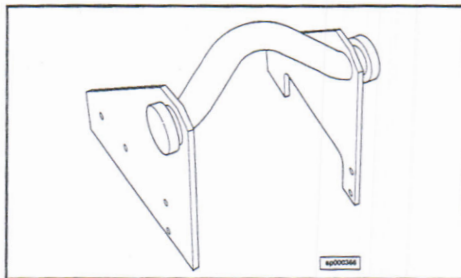




**3376888**  
**Cylinder Block Lifting Fixture**

**Engine Series:** L10

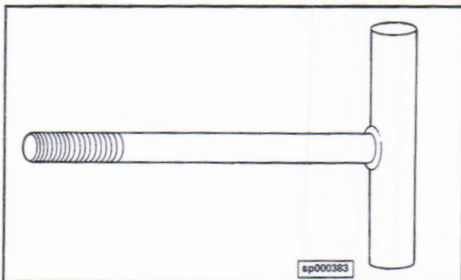
This special fixture is attached to the cylinder block with cylinder head capscrews to lift the cylinder block with ease any time the block needs to be moved, such as washing/rebuilding.



**3823920**  
**Engine Lifting Bracket**

**Engine Series:** N14

This special heavy duty lifting bracket and bar is designed especially for lifting N14 with cast iron rocker lever housings. This must be used when engine is in a chassis or if the rear lifting eye is removed.

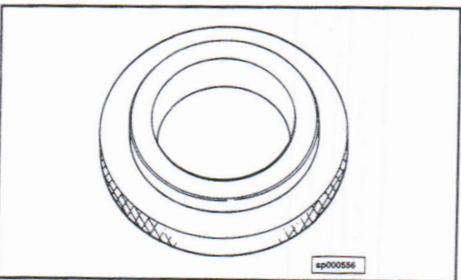


**3824463**  
**T-Handle Lifting Stud Kit**

**Engine Series:** All Except L10, B and C Series

This T Handle Kit is designed to provide safe lifting handles on heavy and cumbersome parts. The kit contains 2 each size.

Part No.	Description
3824464	T Handle Lift Stud (5/16-18)
3824465	T Handle Lift Stud (3/8-16)
3824466	T Handle Lift Stud (7/16-14)
3824467	T Handle Lift Stud (1/2-13)
3824468	T Handle Lift Stud (9/16-12)



**Main Bearing Bore Salvage Tools**

**ST 900**  
**Main Bearing Ring Gauge**

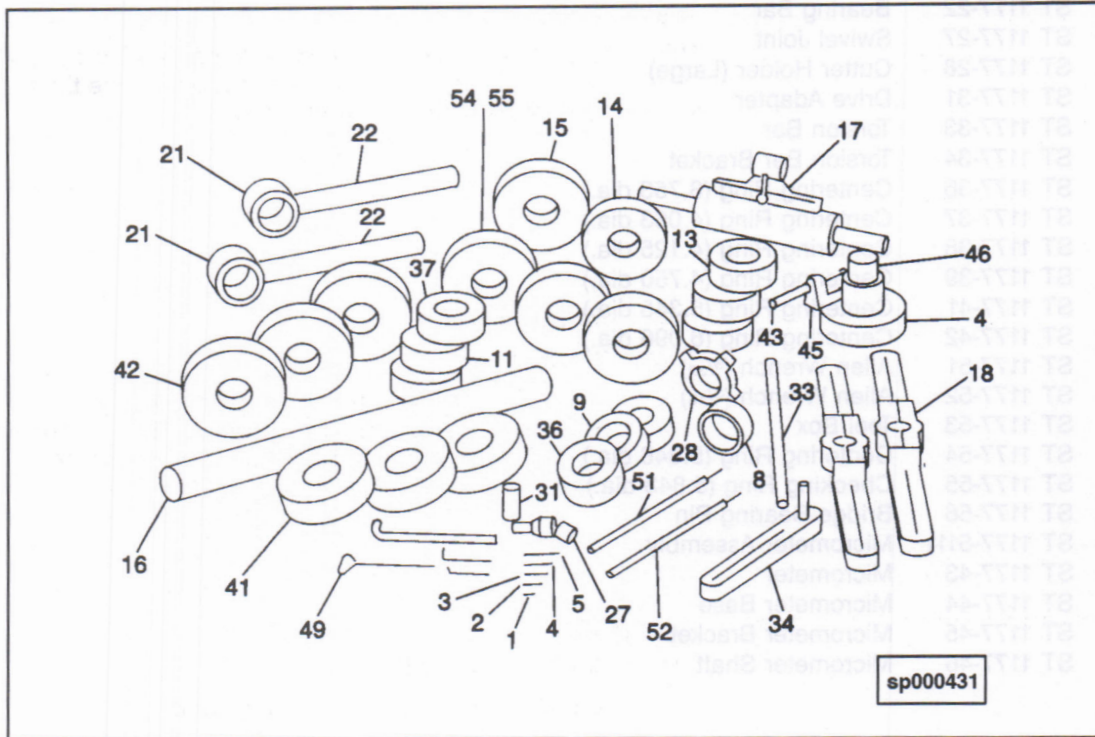
**Engine Series:** All Except B Series

These precision ground ring gauges are sized for specific engine models to check the main bearing bores. These ring gauges are required to set dial bore gauges and or check inside micrometers.

**NOTE:** ST 900 is also used to check C & J cylinder liners.

Part No.	Description
ST 900	Main Bearing Ring Gauge (4.125 (C&J))
ST 903	Main Bearing Ring Gauge (4.750 (H, NH, NT))
ST 1253	Main Bearing Ring Gauge (6.096 (V28 Phase 3))
ST 1292	Main Bearing Ring Gauge (5.846 (K19))
ST 1328	Main Bearing Ring Gauge (6.846 (K38, K50))
3376576	Main Bearing Ring Gauge (121.990 mm (L10, M11))
3376717	Main Bearing Ring Gauge (4.063 (V903))
3824578	Main Bearing Ring Gauge (105 mm (C Series))

ST 1177  
Main Bearing Bore Tool



**Engine Series:** C & J, K19, NH, NT, V28, V378, V555, V903, V504

This kit contains all the necessary tools to check the alignment and/or rebores the main bearing bores when service caps are used for most Cummins engines. The boring bar is suspended in centering rings temporarily installed in undamaged journal bores. Precision checking rings are then slipped along the bar through the other bores to check alignment. Misalignment or size deviation will be apparent. Necessary boring is done without dismantling the tool. Split ring cutter holders, with preset tool bits, are assembled to the bar and a rotation and feed mechanism is attached to the end of the bar.

**NOTE:** ST 1177-12 and -38, used on C, J engines are not supplied when ordering the complete kit, but can be ordered as desired.

**NOTE:** 3375053 Thrust Bearing Surface Cutter is also used with this tool.

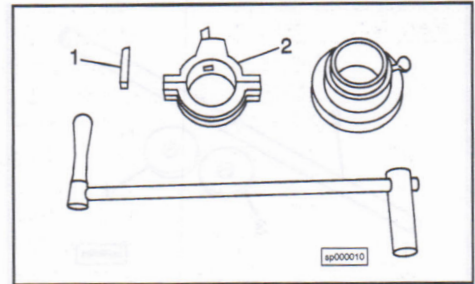
Ref. No.	Part No.	Description
1	ST 1177-1	Cutting Tool (5/8 long)
2	ST 1177-2	Cutting Tool (7/8 long)
3	ST 1177-3	Cutting Tool (1 1/4 long)
4	ST 1177-4	Cutting Tool (1 1/2 long)
5	ST 1177-5	Cutting Tool (2 long)
6	ST 1177-6	Capscrew (10-24x5/8)
7	ST 1177-7	Swivel Pad Screw (1/4-20x1/2)
8	ST 1177-8	Cutter Holder (Small)
9	ST 1177-9	Checking Ring (3.751 dia.)
11	ST 1177-11	Checking Ring (4.061 dia.)
12	ST 1177-12	Checking Ring (4.1227 dia.)
13	ST 1177-13	Checking Ring (4.7472 dia.)
14	ST 1177-14	Checking Ring (5.3422 dia.)
15	ST 1177-15	Checking Ring (6.0932 dia.)
16	ST 1177-16	Bar (2 in. x 56 in.)
17	ST 1177-17	Bore Feed Ass'y
18	ST 1177-18	Bore Bar Bridge

Ref. No.	Part No.	Description
21	ST 1177-21	Bridge Bearing
22	ST 1177-22	Bearing Bar
27	ST 1177-27	Swivel Joint
28	ST 1177-28	Cutter Holder (Large)
31	ST 1177-31	Drive Adapter
33	ST 1177-33	Torsion Bar
34	ST 1177-34	Torsion Bar Bracket
36	ST 1177-36	Centering Ring (3.753 dia.)
37	ST 1177-37	Centering Ring (4.063 dia.)
38	ST 1177-38	Centering Ring (4.125 dia.)
39	ST 1177-39	Centering Ring (4.750 dia.)
41	ST 1177-41	Centering Ring (5.345 dia.)
42	ST 1177-42	Centering Ring (6.096 dia.)
51	ST 1177-51	Allen Wrench ( <sup>5</sup> / <sub>32</sub> )
52	ST 1177-52	Allen Wrench ( <sup>3</sup> / <sub>16</sub> )
	ST 1177-53	Tool Box
54	ST 1177-54	Centering Ring (5.846 dia.)
55	ST 1177-55	Checking Ring (5.843 dia.)
	ST 1177-56	Bridge Bearing Pin
	ST 1177-5111	Micrometer Assembly
43	ST 1177-43	Micrometer
44	ST 1177-44	Micrometer Base
45	ST 1177-45	Micrometer Bracket
46	ST 1177-46	Micrometer Shaft

**3375053**  
**Main Bearing Thrust Surface Cutter**

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

This tool is used with components of ST 1177 Kit to restore the thrust face of the cylinder block and cap. This tool contains a tool holder, a depth set collar and a hand crank. The recently added cutter for K series engines is longer and will allow the cut to be made in one pass.

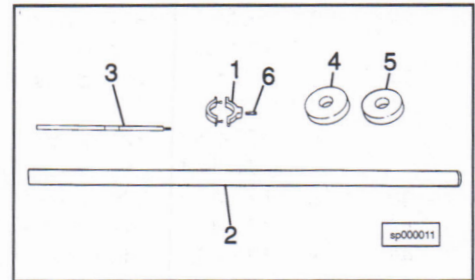


Ref. No.	Part No.	Description
1	3376646	Cutter (left) 2 1/4" (K19, K38, K50)
1	3376647	Cutter (right) 2 1/4" (K19, K38, K50)
1	3376202	Cutter (right) 1 3/4" (NT)
1	3376201	Cutter (left) 1 3/4" (NT)
2	3375149	Cutter Holder

**3375059**  
**Main Bearing Bore Kit**

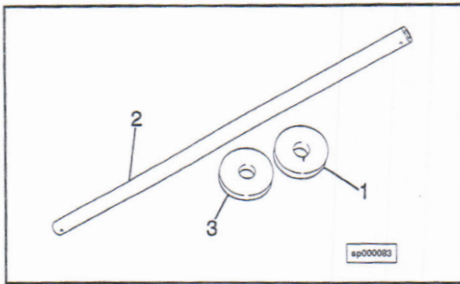
**Engine Series:** K38, K50

This kit is required to check the alignment of the main bearing bores and can also be used to rebores the cylinder block main bearing bore as needed when service caps are used. The Kit contains the special parts needed to check or bore K38 and K50 cylinder blocks. Components of ST 1177 must also be used. These components are ST 1177-17, -18, -19, -21, -22, -23, -24, -25, -26, -27, -31, -34, -35, -51, -52, -56, and -5111.



Ref. No.	Part No.	Description
1	3375060	Cutter Holder
2	3375061	Boring/Alignment Bar
3	3375062	Torsion Bar
4	3375063	Centering Ring
5	3375064	Checking Ring
6	ST 1177-3	Cutting Tool

Note: ST 1177-18 Checking Bar is required for use with these Checking and Centering Rings. Order as needed.



**3375847**  
**Main Bearing Alignment Kit**

**Engine Series:** All Except B

These kits contain the necessary tools to check main bearing bore alignment of the cylinder block. Each kit will contain the bar, 2 centering rings and a checking ring.

Ref. No.	Part No.	Description
	<b>3375847</b>	<b>Main Bearing Alignment Kit (NH, NT)</b>
1	ST 1177-39	Centering Ring
2	ST 1177-16	Checking Bar
3	ST 1177-13	Checking Ring
	<b>3375848</b>	<b>Main Bearing Alignment Kit (V12 phase I and II)</b>
1	ST 1177-41	Centering Ring
2	ST 1177-16	Checking Bar
3	ST 1177-14	Checking Ring
	<b>3375849</b>	<b>Main Bearing Alignment Kit (V28 phase III)</b>
1	ST 1177-42	Centering Ring
2	ST 1177-16	Checking Bar
3	ST 1177-15	Checking Ring
	<b>3375850</b>	<b>Main Bearing Alignment Kit (K19)</b>
1	ST 1177-54	Centering Ring
2	ST 1177-16	Checking Bar
3	ST 1177-55	Checking Ring
	<b>3375851</b>	<b>Main Bearing Alignment Kit (K38, K50)</b>
1	3375063	Centering Ring
2	3375061	Checking Bar
3	3375064	Checking Ring
	<b>3375852</b>	<b>Main Bearing Alignment Kit (V903)</b>
1	ST 1177-37	Centering Ring
2	ST 1177-16	Checking Bar
3	ST 1177-11	Checking Ring
	<b>3375853</b>	<b>Main Bearing Alignment Kit (V504, V555)</b>
1	ST 1177-36	Centering Ring
2	ST 1177-16	Checking Bar
3	ST 1177-9	Checking Ring
	<b>3375854</b>	<b>Main Bearing Alignment Kit (C&amp;J)</b>
1	ST 1177-38	Centering Ring
2	ST 1177-16	Checking Bar
3	ST 1177-12	Checking Ring
	<b>3822497</b>	<b>Main Bearing Alignment Kit (L10, M11)</b>
1	3376781	Centering Ring
2	ST 1177-16	Checking Bar
3	3376811	Checking Ring
	<b>3824579</b>	<b>Main Bearing Alignment Kit (C Series)</b>
1	3824581	Centering Ring
3	3824580	Checking Ring

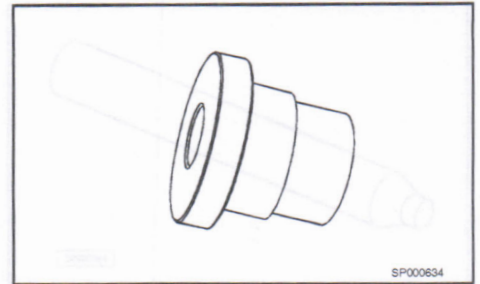
Note: **ST 1177-16 Checking Bar** is required for use with these Checking and Centering Rings. Order as needed.

## Mandrels and Drivers

### 3162372 Cam Bushing Rear Driver

Engine Series: Onan J

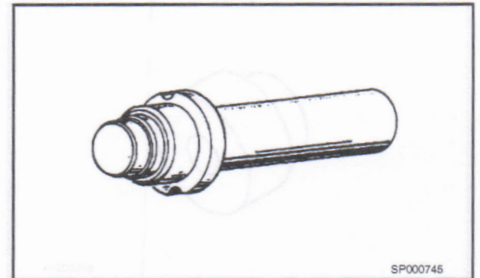
This driver simplifies installation of rear cam bushings on all J series engines.



### 3162380 Main/Cam Bearing Driver

Engine Series: Onan

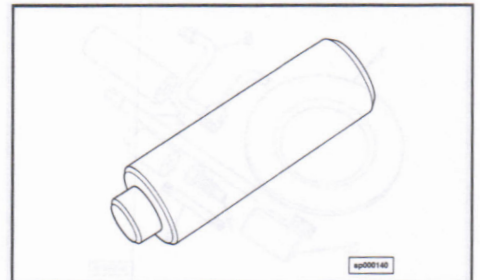
Used to install precision crankshaft & camshaft bearings. Also included in 3162417



### 3376487 Ring Dowel Driver

Engine Series: L10

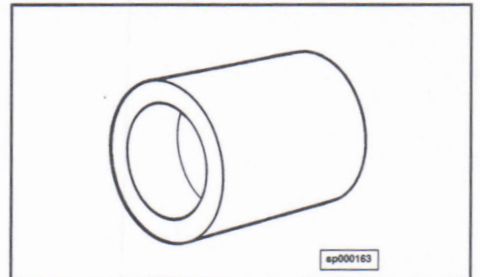
This special mandrel is used to install the ring dowels in the cylinder block to the proper depth.



### 3376820 Gear Mandrel

Engine Series: L10

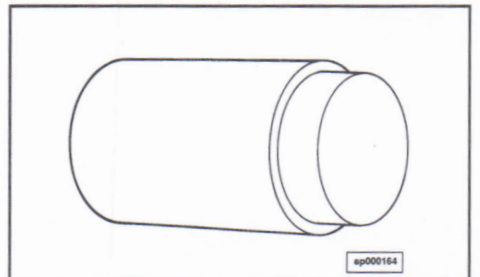
This mandrel is especially designed to press and position properly the gear onto the shaft when rebuilding the hydraulic drive assembly.

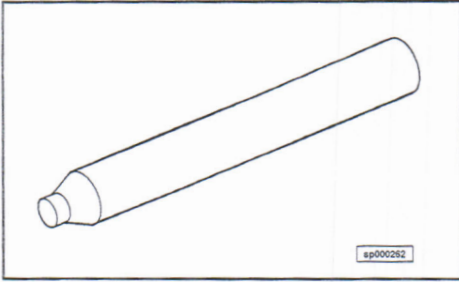


### 3376821 Bearing Mandrel

Engine Series: L10

This mandrel is used to press the bearing into the hydraulic pump drive housing when rebuilding the hydraulic drive assembly.

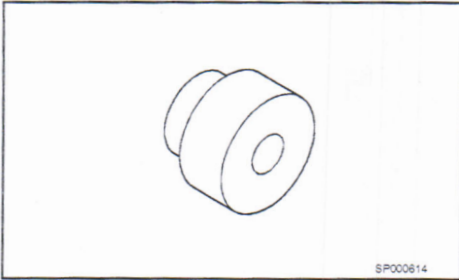




**3822372**  
**Cup Plug Driver**

**Engine Series:** L10, K19, B and C

This cup plug driver is designed to install "3/8" cup plugs in cylinder blocks and heads.



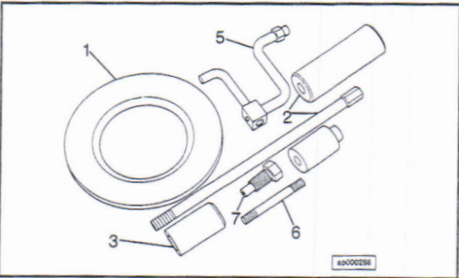
**3824895**  
**Cup Plug Driver**

**Engine Series:** QST30

This expansion plug driver is used to install expansion plugs in the QST30 cylinder block and/or cylinder head.

**NOTE:** 3376795 Handle is also required with these drivers.

Part No.	Description
3824895	Cup Plug Driver (30 mm nominal)
3824896	Cup Plug Driver (40 mm nominal)



**Power Take-off Tools**

**3822771**  
**Power Take Off Kit - Knowles**

**Engine Series:** L10

This kit is used to install the rear engine power take off for engines equipped with the Knowles rear engine power take off. These tools are used with flywheel housing part number 3818752.

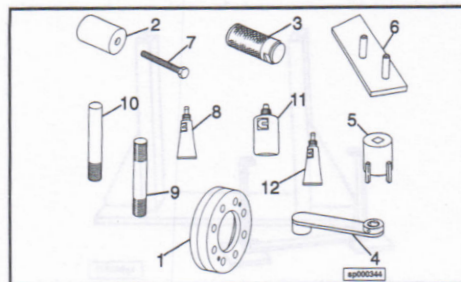
Ref. No.	Part No.	Description
1	3822772	Centering Ring
2	3822773	Slide Hammer Assembly
3	3822774	Alignment Plug
5	3822776	Hex Key Holder Wrench (14 mm)
6	3822784	Gear Locator Stud
7	3822785	Gear Retainer Capscrew

**3823707**  
**Rear Engine Power Take Off Kit - ADC**

Engine Series: L10

The tools in this kit are used to install the rear engine power take off for the Advance Drive Train version. These tools are used with flywheel housing part numbers 3862665 or 3862448.

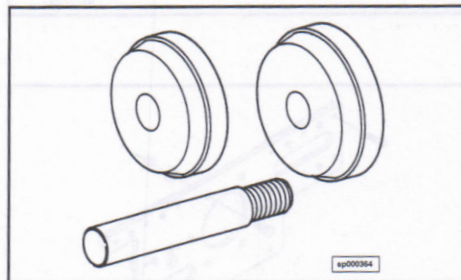
Ref. No.	Part No.	Description
1	3823708	Locating Ring
2	3823709	Idler Shaft Puller
3	3823710	Cup Plug Driver
4	3823711	Offset Wrench
5	3823712	Spanner Wrench
6	3823890	Gear Locking Tool, ADC 986
6	3823891	Gear Locking Tool, ADC 1000
7	3823714	Hex Head Capscrew
8	3823494	Silicone Sealant
9	3822784	Gear Locator Stud
10	3376697	Flywheel Hsg. Guide Stud
11	3375068	Cup Plug Sealant
12	3375066	Pipe Sealant



**3823893**  
**Power Take Off - Bearing Race Driver Kit**

Engine Series: C Series

This bearing race driver kit contains 2 size driver heads and a handle to install bearing races in the rear engine power take off.

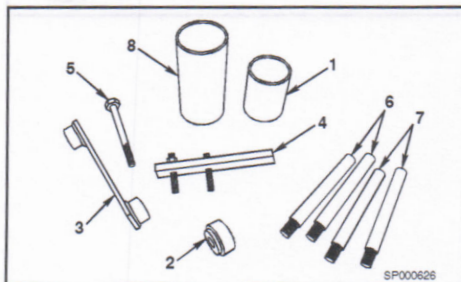


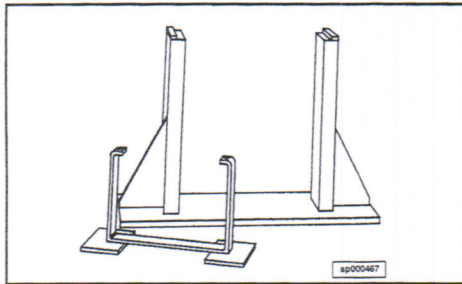
**3824926**  
**Rear Engine Power Take Off Kit**

Engine Series: M11/L10

Current M11 engines have been fitted with an improved version of Cummins built Repto. This kit is used to install & remove this new REPTO.

Ref. No.	Part No.	Description
1	3823709	Idler Shaft Puller
2	3824927	Cup Plug Driver
3	3824928	Offset Wrench
4	3823891	Gear Locking Tool
5	3823714	Hex Head Cascrew
6	3824929	Gear Locator Pin
7	3824930	Flywheel Housing Locator Pin
8	3824931	Installer, Oil Seal/Bearing (output shaft)





## Rebuild Stands

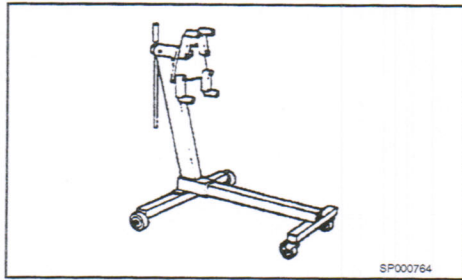
### ST 163 Engine Support

**Engine Series:** NH, NT, V378, V555, V504, L10, M11

These engine support stands are used to support the engine while in storage or rebuild area.

**NOTE:** Two are required. Engine must not rest on the oil pan.

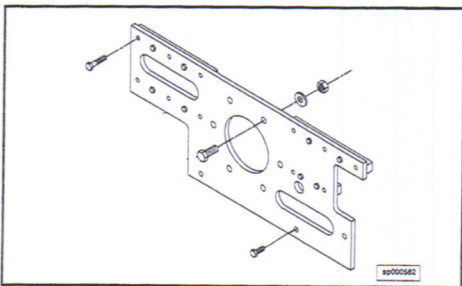
Part No.	Description
ST 163	Engine Support (H, NH, NT, V378)
3376057	Engine Support (L10, M11)



### 3162425 Engine Stand

**Engine Series:** Onan

This is a 1000 lb. Capacity engine stand with 4 adjustable attachment arms to make engine mounting fast & easy. Engine can be rotated a full 360 degrees.



### 3162464 Rebuild Stand Adapter Kit

**Engine Series:** Signature/ISX

Used to mount Signature 600 engine on the oil cooler side of rebuild stands, 3375193 and 3375194.

**3163368  
Engine Stand Adapter Plate**

**Engine Series:** See Below

The following adapter plates are used to mount an engine to 3375193 and/or 3375194 engine rebuild stand.

Part No.	Description
3163368	Engine Stand Adapter Plate (All K19 Series)
3163621	Engine Stand Adapter Plate (N14, NT, NH)
3163625	Engine Stand Adapter Plate (B3.3)
ST 1329	Engine Stand Adapter Plate (V6-200/V8-265, V906)
ST 1330	Engine Stand Adapter Plate (V378, V504, V555)
3376432	Engine Stand Adapter Plate (L10 Series (Includes 3376434 Mtg. Bolts) Exhaust Side)
3163299	Engine Stand Adapter Plate (L10/M11 ECM Side)
3376975	Engine Stand Adapter Plate (B Series)
3822607	Engine Stand Adapter Plate (6C(T) 8.3)
3822380	Engine Stand Adapter Plate (Komatsu 560-155-416)
3822381	Engine Stand Adapter Plate (Cat 3406)
3822382	Engine Stand Adapter Plate (Detroit 12V71T)

**Note: To modify old 3375013 plate cover, order 3163297, Adapter Plate Upgrade Kit.**

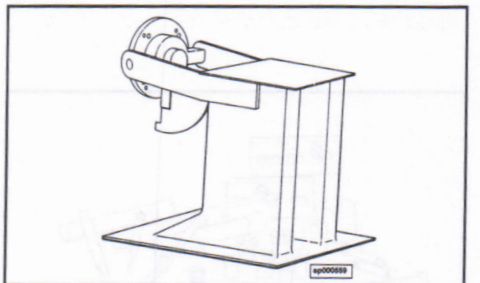
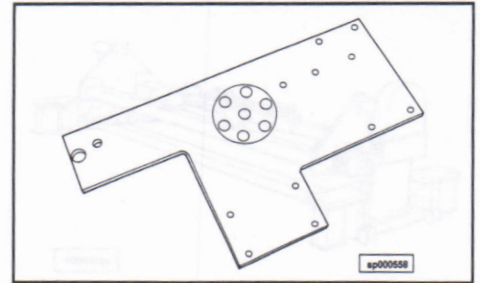
The following adapter plates are used to mount an engine to the "old" ST 548 Engine Rebuild Stand.

ST 572	Engine Stand Adapter Plate (V6200, V8265, V903)
ST 805	Engine Stand Adapter Plate (All NH Series)
ST 841	Engine Stand Adapter Plate (V378, V504, V555)
3376432	Engine Stand Adapter Plate (L10)
3376975	Engine Stand Adapter Plate (B Series)
3822607	Engine Stand Adapter Plate (6C(T) 8.3)

**3375193  
Engine Rebuild Stand**

**Engine Series:** All Except K38, K50, V28

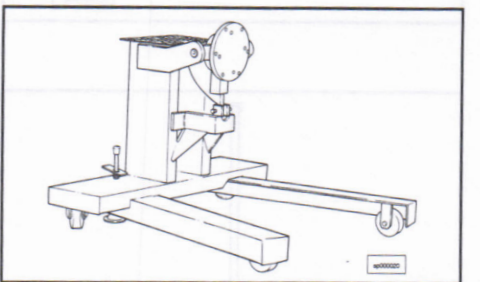
This engine rebuild stand is a tilt type stand which lays the engine on it's side, for repair or rebuilding of the engine. A hand crank provides the leverage to lift the engine. This rebuild stand must be bolted down to the floor for safety reasons.

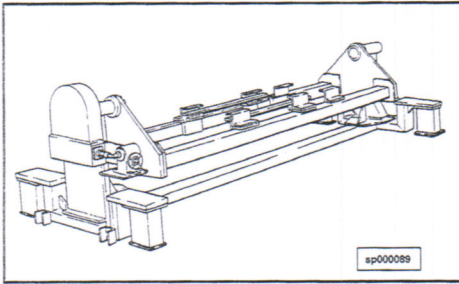


**3375194  
Engine Rebuild Stand**

**Engine Series:** All Except K38, K50, V28

This engine rebuild stand is a portable engine rebuild stand that allows moving the engine or cylinder block. This rebuild stand exactly the same as 3375193 except for the mobility feature.

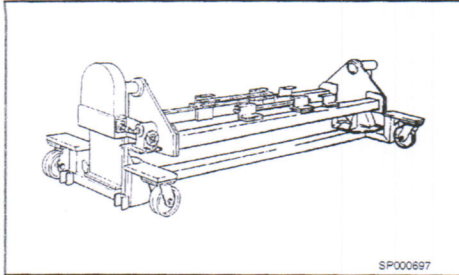




**3375955  
Engine Rollover Stand**

**Engine Series:** K38, K50, V28

This heavy duty rolover stand is a pedestal type stand designed to hold the weight of a complete K38, K50 or V28 engine during assembly or disassembly of the engine. Rotation of the stand is limited to 6000 lbs. A 5:1 gear box is attached to allow the stand to be rotated with a 5/8 or 3/4 inch drill motor.

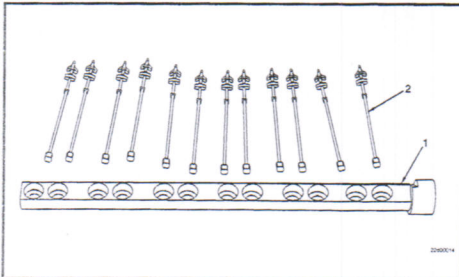


**3375990  
Engine Rollover Stand**

**Engine Series:** K38, K50, V28

This heavy duty engine rolover stand is the same as 3375955 except that a wheel kit and tongue to pull the stand are part of the stand. The wheels and tongue allow the stand to be pushed or towed with or without an engine mounted.

**NOTE: 3375999 Tongue and Caster Kit** is available to update 3375955 as desired to upfit the stand to a roller type stand.



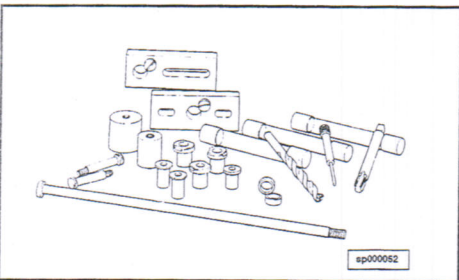
**Tappet Tools**

**3163468  
Tappet R&I Tool**

**Engine Series:** ISL

To aid in the removal and installation of roller tappets in the ISL engine. Tool consist of tappet holder and 12 tappet retrievers. The tappet retrievers may also be used to facilitate a cam change.

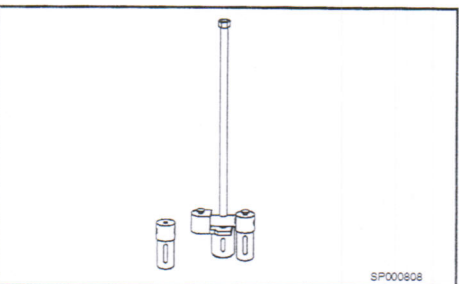
Ref. No.	Part No.	Description
1	3163605	Tappet Holder
2	3163540	Tappet R&I Tool



**3375622  
Tappet Guide Screw Salvage Kit**

**Engine Series:** V28

This salvage fixture is used to salvage mislocated or damaged tappet guide screw threads. The kit includes all the tooling required to drill out the damaged threads and prepare for a special thread insert to be installed. Order the thread insert and staking tool separately. Order 3375430 Thread Insert and 3375431 Staking Tool as required.



**3375623  
Tappet Guide Screw Checking Tool**

**Engine Series:** V28

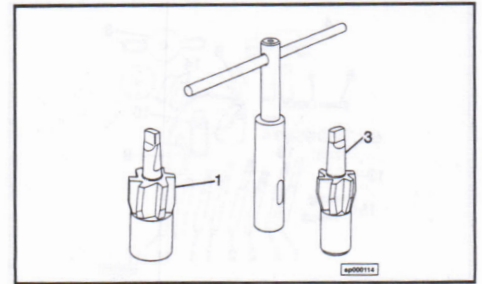
This special tool is used to check the alignment of the tappet guide screw threads in the cylinder block as desired. The special plugs are positioned in the tappet bores and the tappet guide screw must enter the plugs freely without binding.

**3376250**  
**Tappet Bore Chamfer Kit**

**Engine Series:** V28

This kit is used to machine a 15 degree lead in chamfer at the top edge of the valve and injector tappet bores in the V28 cylinder block to make it easier to install the tappets.

Ref. No.	Part No.	Description
1	3376243	Injector Chamfer Cutter
3	3376246	Valve Chamfer Cutter

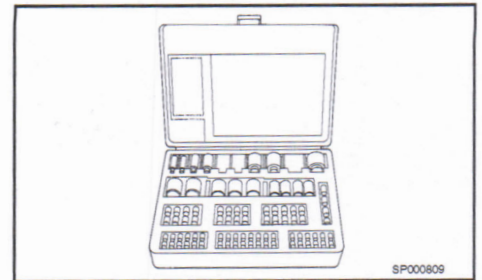


**Thread Inserts and Tooling**

**3375021**  
**Thread Insert Kit SAE**

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

This kit contains an assortment of open end thread inserts that can be used to salvage damaged threads in various components. Complete instructions are included in the lid. These are the locking pin type thread inserts. All recommended drill sizes and tap sizes are included.

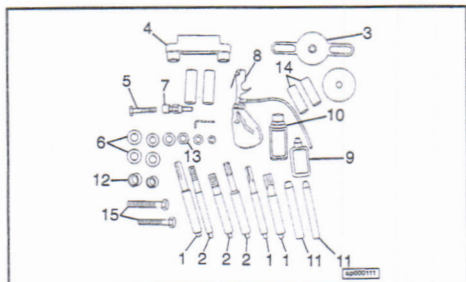


Part No.	Description
3375023	Thread Insert Installation Tool ( <sup>15</sup> / <sub>16</sub> )
3375026	Thread Insert Installation Tool ( <sup>3</sup> / <sub>8</sub> )
3375029	Thread Insert Installation Tool ( <sup>7</sup> / <sub>16</sub> )
3375032	Thread Insert Installation Tool ( <sup>1</sup> / <sub>2</sub> )
3375034	Thread Insert Installation Tool ( <sup>5</sup> / <sub>8</sub> )
3375036	Thread Insert Installation Tool ( <sup>3</sup> / <sub>4</sub> )
3375038	Thread Insert Installation Tool (1)

The following thread insert refill kits are available.

Each refill kit contains 1 case of 10 inserts.

3375022	Thread Inserts - SAE ( <sup>5</sup> / <sub>16</sub> -18 (Thin wall))
3375024	Thread Inserts - SAE ( <sup>3</sup> / <sub>8</sub> -16)
3375025	Thread Inserts - SAE ( <sup>3</sup> / <sub>8</sub> -24)
3375027	Thread Inserts - SAE ( <sup>7</sup> / <sub>16</sub> -14)
3375028	Thread Inserts - SAE ( <sup>7</sup> / <sub>16</sub> -20)
3375030	Thread Inserts - SAE ( <sup>1</sup> / <sub>2</sub> -13)
3375031	Thread Inserts - SAE ( <sup>1</sup> / <sub>2</sub> -20)
3375033	Thread Inserts - SAE ( <sup>5</sup> / <sub>8</sub> -18)
3375035	Thread Inserts - SAE ( <sup>3</sup> / <sub>4</sub> -16)
3375037	Thread Inserts - SAE (1-18)
3375141	Thread Inserts - SAE ( <sup>1</sup> / <sub>4</sub> -20)
3375143	Thread Inserts - SAE ( <sup>5</sup> / <sub>8</sub> -11)
3375430	Thread Inserts - SAE ( <sup>5</sup> / <sub>16</sub> -18 (Thick Wall))



**3376208  
Thread Salvage Kit**

**Engine Series:** K19, K38, K50, NH, NT, V28, V903, QST30

This thread salvage kit is used to salvage/repair damaged cylinder head capscrew threads in the cylinder block. The damaged threads are "reamed out" and tapped to accept a special threaded repair bushing to accept the original size cylinder head capscrew. **3376208 Kit** contains all the tools for NH, NT, V903 and K19, K38 and K50 series engines. See below for repair kits for each engine series if the complete kit is not required.

Ref. No.	Part No.	Description
	<b>3375197</b>	<b>Thread Salvage Kit (NH, V12 5 1/8 Bore)</b>
1	3375202	Reamer (59/64)
2	3375203	Tap (1-14)
3	ST 1272-1	Base Plate Ass'y
4	ST 1272-2	Drill Jig
5	ST 1272-3	Hex Head Bolt (5/8-18x3)
6	ST 1272-4	Heavy Washer
7	ST 1177-27	Universal Drive
8	ST 1272-11	Chip Removing Unit
9	3823718	Retaining Compound
10	3824715	Primer-T
	<b>3376005</b>	<b>Thread Salvage Kit (NT, V903, V28)</b>
1	3376006	Reamer (3/4)
2	3376007	Tap (13/16)
3	ST 1272-1	Base Plate Ass'y
4	ST 1272-2	Drill Jig
5	ST 1272-3	Hex Head Bolt (5/8-18x3)
6	ST 1272-4	Heavy Washer
7	ST 1177-27	Universal Drive
8	ST 1272-11	Chip Removing Unit
9	3823718	Retaining Compound
10	3824715	Primer-T
11	ST 1272-5	Locating Pin
12	ST 1272-9	Stop Collar
13	ST 1272-10	Installing Nut
14	ST 1272-14	Stud Adapter
15	3376009	Installing Bolt (Big Cam)
	Optional Item used with 33760005 for QST30:	
	3163562	Head Bolt Thread Repair Insert Kit
	<b>3376203</b>	<b>Thread Salvage Kit (K19, K38, K50)</b>
1	3376204	Reamer (13/16)
2	3376205	Tap (7/8-16)
3	ST 1272-1	Base Plate Ass'y
4	ST 1272-2	Drill Jig
5	ST 1272-3	Hex Head Bolt (5/8-18x3)
6	ST 1272-4	Heavy Washer
7	ST 1177-27	Universal Drive
8	ST 1272-11	Chip Removing Unit
9	3823718	Retaining Compound
10	3824715	Primer-T
15	3376228	Installing Bolt

Note: Some of the spare parts do not have part numbers assigned, but are included in each kit so that kit is ready to use when received.

Order thread inserts as desired, sold in lots of 12.  
3377133 Thread Insert (NH 5 1/8)

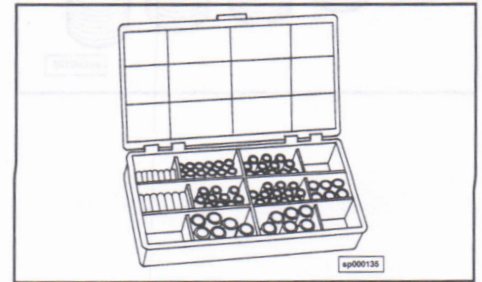
Ref. No.	Part No.	Description
	3377134	Thread Insert (NT, V903, V28)
	3377135	Thread Insert (Big Cam NT)
	3377136	Thread Insert (K19, K38, 7.492 bore)
	3377137	Thread Insert (K19, K38, K50)

**3376448**

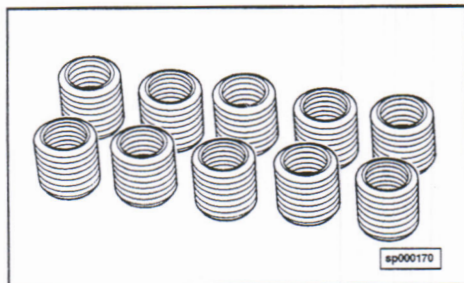
**Thread Insert Kit - Blind SAE**

**Engine Series:** All Except L10, B and C Series

This kit contains various size blind end thread inserts that can be used to salvage damaged capscrew threads that require a "bottom" in the insert. This is especially important when the capscrew thread enters a liquid (Fuel, Oil, or Coolant) passage that must be contained so that liquid under pressure will not escape around the capscrew threads. Complete installation instructions are included in the lid of the box. Refill of each part number contains 10 inserts.



Part No.		Int. Thd.	Length	Qty.
3376437	Thread Insert - Blind SAE	1/4-20	0.750	10
3376438	Thread Insert - Blind SAE	5/16-18	0.930	10
3376439	Thread Insert - Blind SAE	3/8-16	1.130	20
3376440	Thread Insert - Blind SAE	3/8-24	1.070	20
3376441	Thread Insert - Blind SAE	7/16-14	1.150	10
3376442	Thread Insert - Blind SAE	7/16-20	1.210	15
3376443	Thread Insert - Blind SAE	1/2-13	1.510	15
3376444	Thread Insert - Blind SAE	5/8-11	1.640	10
3376445	Thread Insert - Blind SAE	5/8-18	1.360	10
3376446	Thread Insert - Blind SAE	1/2-20	1.190	10
3376447	Thread Insert - Blind SAE	9/16-18	1.180	10
3823718	Thread Insert - Blind SAE	Retaining Compound		
3824715	Thread Insert - Blind SAE	Primer-T		



**3376881**  
**Thread Insert Kit (Metric)**

**Engine Series:** L10, M11, B and C Series

This kit contains an assortment of open end thread inserts that can be used to salvage damaged threads in various components. These are all metric threaded inserts.

Part No.		Internal Thread	External Thread	Length
3376701	Thread Inserts - Metric	M6x1.0-6H	M10x1.25-6G	12mm
3376702	Thread Inserts - Metric	M8x1.25-6H	M12x1.25-6G	12mm
3376703	Thread Inserts - Metric	M8x1.25-6H	M12x1.25-6G	17mm
3376704	Thread Inserts - Metric	M8x1.25-6H	M12x1.25-6G	20mm
3376705	Thread Inserts - Metric	M10x1.5-6H	M14x1.5-6G	8mm
3376706	Thread Inserts - Metric	M10x1.5-6H	M14x1.5-6G	12.5mm
3376707	Thread Inserts - Metric	M10x1.5-6H	M14x1.5-6G	14mm
3376708	Thread Inserts - Metric	M10x1.5-6H	M14-1.5-6G	15mm
3376709	Thread Inserts - Metric	M10x1.5-6H	M14x1.5-6G	18mm
3376710	Thread Inserts - Metric	M10x1.5-6H	M14x1.5-6G	20mm
3376711	Thread Inserts - Metric	M10x1.5-6H	M14x1.5-6G	24mm
3376712	Thread Inserts - Metric	M12x1.25-6H	M16x1.5-6G	8mm
3376713	Thread Inserts - Metric	M12x1.75-6H	M16x1.5-6G	8mm
3376714	Thread Inserts - Metric	M12x1.75-6H	M16x1.5-6G	21mm
3376715	Thread Inserts - Metric	M14x2.0-6H	M18x1.5-6G	30mm
3376716	Thread Inserts - Metric	M16x2.0-6H	M20x2.0-6G	30mm
3376281	Thread Inserts - Metric	M14x1.5-6H	M18x1.5-6G	63mm
3376282	Thread Inserts - Metric	M14x1.5-6H	M18x2.5-6G	43mm
The following is a wire coil insert that requires <b>3823384 Plug Tap</b> and <b>3823385 Installation Tool</b> for installation.				
3376285	Thread Inserts - Metric	M16x2.0-6H		30mm

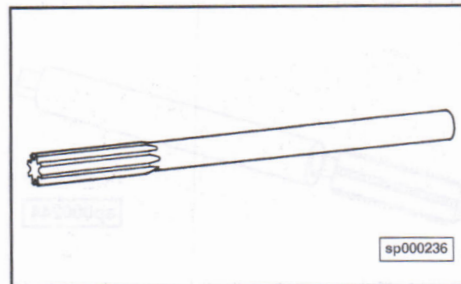
**3377200**  
**Thread Salvage Reamer Set**

Engine Series: L10

This reamer set contains miscellaneous size reamers for salvaging capscrew thread holes. Use these reamers in conjunction with 3376208 Thread Salvage Kit, 3377256 Tap Set, 3377208 and 3377209 Locating Pins. See 3376881 Thread Reamer Insert Kit.

Part No.	Description
3377202	Reamer (.4252)
3377203	Reamer (.4921)
3377204	Reamer (.5709)
3377205	Reamer (.6496)
3377206	Reamer (.7087)

Note: 3377206 & 3377207 have 1 in. dia. shanks. The others have 13/16 in. dia.



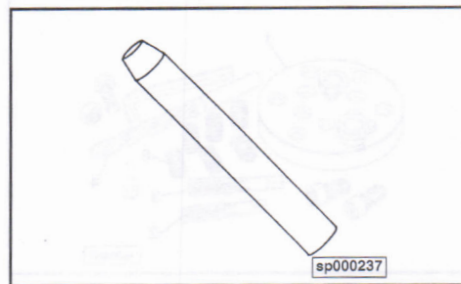
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**3377208**  
**Thread Salvage Locating Pin**

Engine Series: L10

These locating pins are to be used with ST 1272 and or 3376208 Salvage Fixture. The Locating Pins align the fixture over the holes to be repaired. Order pins as required.

Part No.	Description
3377208	Thread Salvage Locating Pin (for Smaller Holes) (13/16 O.D.)
3377209	Thread Salvage Locating Pin (for Larger Holes) (1 in. O.D.)



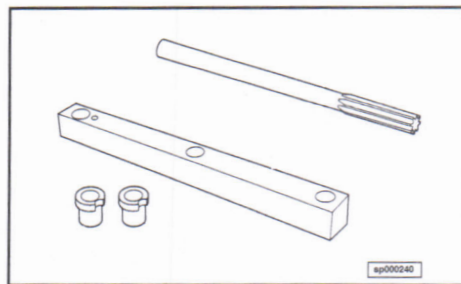
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**3377230**  
**Main Bearing Thread Salvage Kit**

Engine Series: L10

This is a special fixture designed to salvage the main bearing capscrew threads in the cylinder block.

**NOTE:** This fixture must be used with **ST 1272-5 Locating Pin**, **ST 1272-14 Stud Adapters** and **3376997 Special Tap** to salvage the capscrew threads.



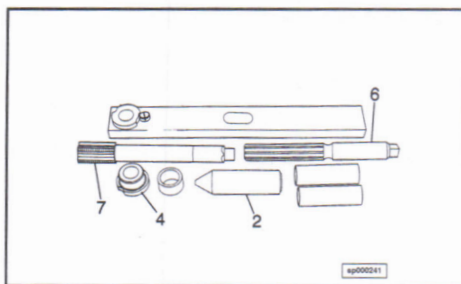
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**3377250**  
**Main Bearing Capscrew Thread Salvage Kit**

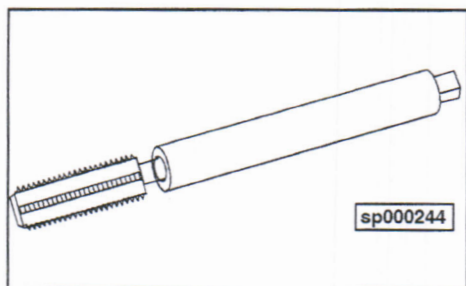
Engine Series: V903

This kit is designed to salvage the main bearing capscrew threads in the cylinder block. The kit contains all the necessary parts to complete the salvage except the thread insert. Use **3376404 Thread Insert** (3/4-16 I.D. x 7/8-16 O.D.)

Ref. No.	Part No.	Description
2	3377297	Locating Pin
4	3377299	Tap Bushing
6	3377251	Special Reamer
7	3377252	Special Tap
	3823718	Retaining Compound Stop Collar
	3824715	Primer-T
	3822399	Lockscrew



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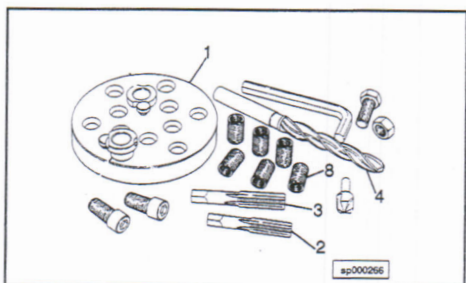
**3377256**  
**Thread Salvage Taps Kit - Metric**

**Engine Series:** L10

This kit contains miscellaneous sizes of "metric" taps for salvaging capscrew thread holes.

**NOTE:** Use these taps in conjunction with **3376208 Salvage Kit**, **3377200 Reamer Set**, **3377208** and **3377209 Locating Pins**. These taps are approximately 7 1/2 inches long.

Part No.	Description
3377258	Tap (M12 x 1.25)
3376995	Tap (M14 x 1.50)
3376996	Tap (M16 x 1.50)
3376997	Tap (M18 x 1.50)
3376998	Tap (M20 x 2.00)



**3822402**  
**Crankshaft Thread Repair Kit**

**Engine Series:** NT

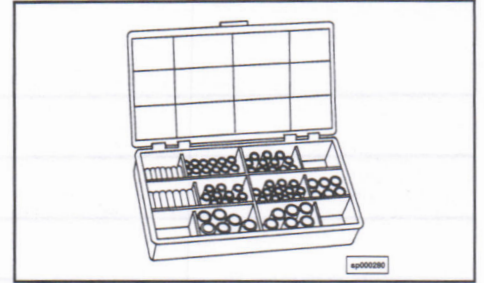
This kit is designed to permit the salvage of the threaded holes on the front and rear of the crankshaft. The procedure can be completed both in or out of chassis.

Ref. No.	Part No.	Description
1	3822403	Locator Plate
2	3822404	Bottom Tap (5/8-18)
3	3822405	Bottom Tap (3/4-16)
4	3822406	Core Drill (11/16)
8	3377139	Threaded Insert (Qty. 6)

**3822709**  
**Thread Insert Kit - Blind Metric**

**Engine Series:** L10, B and C Series

This kit contains various sizes of Metric internal thread, with SAE external thread, blind end thread inserts that can be used to salvage damaged capscrew threads that require a "bottom" in the insert. This is especially important when the capscrew thread enters a liquid (Fuel, Oil, or Coolant) passage that must be contained so that liquid under pressure will not escape around the capscrew threads. Complete installation instructions are included in the lid of the box. Refill of each part number contains 10 inserts.



Part No.		Int. Thd.	Length	Qty.
3822698	Thread Insert - Blind Metric	M6x100-6H	0.750	18
3822699	Thread Insert - Blind Metric	M8x1.25-6H	0.935	18
3822700	Thread Insert - Blind Metric	M10x1.5-6H	1.125	18
3822701	Thread Insert - Blind Metric	M12x1.25-6H	1.375	12
3822702	Thread Insert - Blind Metric	M12x1.50-6H	1.375	12
3822703	Thread Insert - Blind Metric	M12x1.75-6H	1.375	12
3822704	Thread Insert - Blind Metric	M14x2.00-6H	1.500	6
3822705	Thread Insert - Blind Metric	M16x1.5-6H	1.750	6
3822706	Thread Insert - Blind Metric	M16x2.00-6H	1.750	6
3823718	Thread Insert - Blind Metric	Retaining Compound		
3824715	Thread Insert - Blind Metric	Primer-T		