Special Service Tools By Engine Model

MODEL	DESCRIPTION	WISCONSIN PART NO.
ACN, BKN, S7D, S8D, TRA10D, TRA12D, AEH, AEN, AENL, S10D, S12D, S14D, TE, TF, THD, TJD, VE4D, VF4D, VH4D	Puller for valve seat inserts	DF66A
ACN, BKN, AEH, AENL, AFH, AGH, AHH	Driver for removing rope starter sheave	DF73
AFH, AGH, AGND, VP4D, VG4D	Puller for valve seat inserts	DF68A
TE, TF, VE4, VF4, VP4D	Valve stem guide tool kit (Obsolete)	DF70
V460D, V461D, V465D	Shoulder punch for removing valve stem guides from cylinder head	DF75
V460D, V461D, V465D	Hollow punch for pressing valve stem guides into cylinder head	DF76
V460D, V461D, V465D	Retainer bar to hold down both banks of cylinder barrels	DF77
V460D, V461D	Piston sleeve for installing cylinder barrel over piston	DF80
All models **except** V460D, V461D, V465D	Driver for pressing valve seat inserts into cylinder blocks	DF69
All models **except** V460D, V461D, V465D	Driver for removing valve guide inserts from cylinder blocks	DF72
For all flywheel magneto engines	Static timing light	DF81S1
All 4 cylinder engines	Puller for idler gear stud	DF67
All models	Analyzer for static testing flywheel alternator and solid state ignition components	DF83
All models	Exhaust valve rotators	AG31
Military engines	Removal of valve stem guides and re-installation	AD42, AD43
	(Repl. by AD47)	AD41

Special Service Tools By Engine Model (Cont.)

MODEL	DESCRIPTION	OWATONNA PART NO.
W2-1230, W2-1235, W2-1250	Complete tool service kit	TW1001
W2-1230, W2-1235. W2-1250	Crankshaft main bearing tool	TW1001-1
W2-1230, W2-1235. W2-1250	Crankshaft seal installer	TW1001-2
W2-1230, W2-1235, W2-1250	Forcing screws	303576
W2-1230, W2-1235, W2-1250	Seal driver	208200
All models	Piston pin remover/installer kit	7082B

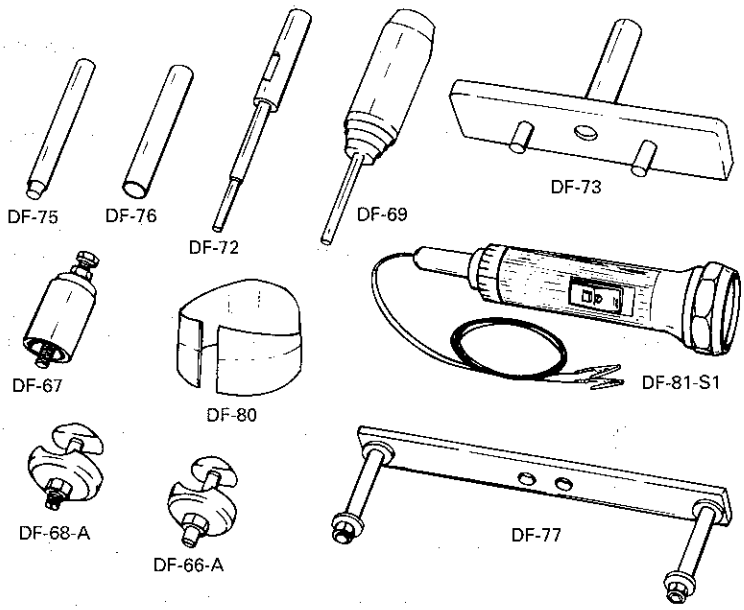
Special Service Tools By Part Number

WISCONSIN PART NO.	DESCRIPTION	MODEL
DF66A	Puller for valve seat inserts	ACN, BKN, S7D, S8D, TRA10D, TRA12D, AEH, AEN, AENL, S10D, S12D, S14D, TE, TF, THD, TJD, VE4D, VF4D, VH4D
DF67	Puller for idler gear stud	All 4 cylinder engines
DF68A	Puller for valve seat inserts	AFH, AGH, AGND, VP4D, VG4D
DF69	Driver for pressing valve seat inserts into cylinder blocks	All models **except** V460D, V461D, V465D
DF70	Valve stem guide tool kit	TE, TF, VE4, VF4, VP4D
DF72	Driver for removing valve guide inserts from cylinder blocks	All models **except** V460D, V461D, V465D
DF73	Driver for removing rope starter sheave	ACN, BKN, AEH, AENL, AFH, AGH, AHH
DF75	Shoulder punch for removing valve stem guides from cylinder head	V460D, V461D, V465D
DF76	Hollow punch for pressing valve stem guides into cylinder head	V460D, V461D, V465D
DF77	Retainer bar to hold down both banks of cylinder barrels	V460D, V461D, V465D
DF80	Piston sleeve for installing cylinder barrel over piston	V460D, V461D
DF81S1	Static timing light	For all flywheel magneto engines
DF83	Analyzer for static testing flywheel alternator and solid state ignition components	All models
AG31	Exhaust valve rotators	All models
AD41, AD42, AD43	Removal of valve stem guides and re-installation	Military engines

Special Service Tools By Part Number (Cont.)

OWATONNA PART NO.	DESCRIPTION	MODEL
TW1001	Complete tool service kit	W2-1230, W2-1235, W2-1250
TW1001-1	Crankshaft main bearing tool	W2-1230, W2-1235, W2-1250
TW1001-2	Crankshaft seal installer	W2-1230, W2-1235, W2-1250
303576	Forcing screws	W2-1230, W2-1235, W2-1250
208200	Seal driver	W2-1230, W2-1235, W2-1250
7082B	Piston pin remover/installer kit	All models

Special Tools For Servicing Wisconsin Air Cooled Engines



PART NO.	DESCRIPTION
DF66A	PULLER for valve seat inserts For engine models ACN, BKN, S7D, S8D, TRA10D, TRA12D, AEH, AEN, AENL, S10D, S12D, S14D, TE, TF, THD, TJD, VE4D, VF4D, VH4D
DF67	PULLER for idler gear stud. For all 4 cylinder engines
DF68A	PULLER for valve seat inserts. For engine models AFH, AGH, AGND, VP4D and VG4D
DF69	DRIVER for pressing valve seat inserts into cylinder blocks. Constructed with pilot size for all models of engines **except** V460D, V461D and V465D
DF72	DRIVER for removing valve guide inserts from cylinder blocks. For all engine models **except** V460D, V461D and V465D
DF73	DRIVER for removing rope starter sheave. For engine models ACN, BKN, AEH, AENL, AFH, AGH, AHH

PART NO.	DESCRIPTION
DF75	SHOULDER PUNCH for removing valve stem guides from cylinder head. For engine models V460D, V461D and V465D
DF76	HOLLOW PUNCH for pressing valve stem guides into cylinder head. For engine models V460D, V461D and V465D
DF77	RETAINER BAR to hold down both banks of cylinder barrels. For engine models V460D, V461D and V465D (2 required)
DF80	PISTON SLEEVE for installing cylinder barrel over piston. For engine models V460D and V461D
DF81S1	STATIC TIMING LIGHT for all flywheel magneto engines.

Prices on request.

DF83 Service Tool (Flywheel Alternator, Solid State Ignition)

USE WITH ALL MODELS

A new service tool, the DF-83 Analyzer is now available to assist you in static testing flywheel alternator and solid state ignition components.

This tool will accurately test all rectifiers, regulators, and ignition modules that have been used on Wisconsin and Wisconsin-Robin engines.

Although continuity testers (such as an ohmeter or the DF81 flashlight) can accurately test rectifiers, no practical method other than substitution has been available until now to completely test regulators and ignition modules.

Stator tests are also listed. Unfortunately, using the DF83 Analyzer to test stators is not a 100% method of testing. Some stators that pass the DF83 tests may still be defective. However, if the stator fails the tests, it is definitely defective.

The only methods of testing stators that near 100% accuracy are running tests using an AC voltmeter or oscilloscope. The AC voltmeter method is explained in the MY110 sheets that are included in Instruction Books and Parts Lists for engines using flywheel alternators.

This Analyzer can also be utilized as a continuity tester by only using the red and black leads.

The transistorized circuitry of the voltage regulators used on the Wisconsin engine's flywheel alternators has been changed.

Due to this change, it has become necessary to revise the DF83 analyzer testing procedure. Use of the original instruction sheet (part number MY117) will result in some good components testing as failed components.

Included with this bulletin is a copy of the revised testing procedure (part number TTP20073). Additional copies are available by ordering TTP20073 through regular parts channels.

DF83 Analyzer

OPERATION

The DF83 Analyzer was developed for testing the solid state ignition and flywheel alternator components as furnished on *Wisconsin* engines. It is very efficiently and economically powered by four transistor radio type 9 volt batteries.

Caution: Turn analyzer switch to *off* position when not in use, to prevent any unnecessary drain on the batteries. *Do Not* allow Indicator Light to burn unnecessarily for any length of time – the 10 volt bulb as used in the 36 volt test system will heat up and burn out.

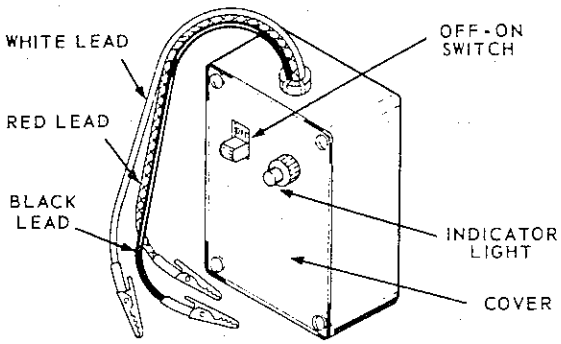
Heavy duty type batteries should last about one year with normal use, but it is suggested that periodically a voltmeter be used to check the battery output – Test batteries as follows:

Analyzer Black Lead to Red Lead *27 volts* – when voltage drops to 24 volts, replace batteries.

Analyzer Black Lead to White Lead *36 volts* – when voltage drops to 32 volts, replace batteries.

To replace batteries; Remove cover and use a pen knife to peel off foam rubber insulating tape, so that batteries can be individually disconnected and removed. Tape batteries together in reassembly.

To remove indicator lamp; unscrew knurled nut and pull bulb outward – use exact replacement.



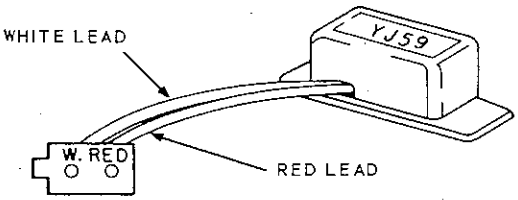
DF83 ANALYZER

TESTING PROCEDURES

YJ59 REGULATOR

Module is defective if lamp indication is not as specified

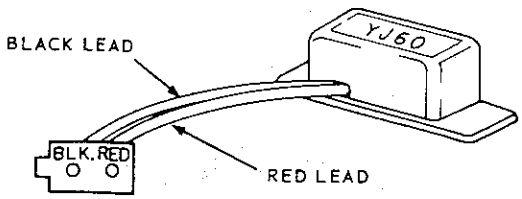
TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Module Base Plate	Module Red Lead	–	Off
2	Module Red Lead	Module Base Plate	–	Off
3	Module Red Lead	Module Base Plate	Module White Lead Then Remove	On And Remain On



YJ60 REGULATOR

Module is defective if lamp indication is not as specified

TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Module Base Plate	Module Red Lead	–	Off
2	Module Red Lead	Module Base Plate	–	Off
3	Module Black Lead	Module Base Plate	–	Dim
4	Module Base Plate	Module Black Lead	–	On

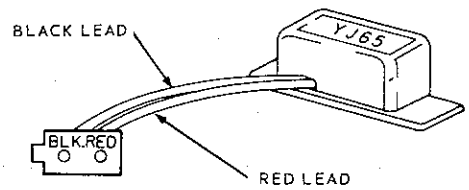


DF83 Analyzer

YJ65 REGULATOR

Module is defective if lamp indication is not as specified

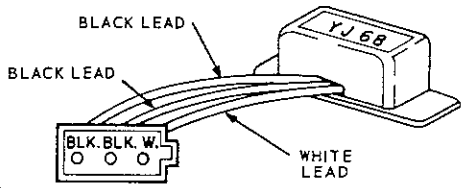
TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Module Base Plate	Module Red Lead	–	Off
2	Module Red Lead	Module Base Plate	–	Off
3	Module Black Lead	Module Base Plate	–	Off
4	Module Base Plate	Module Black Lead	–	On



YJ68 RECTIFIER

Module is defective if lamp indication is not as specified

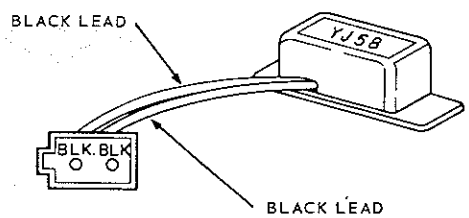
TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Module White Lead	Either Module Black Lead	–	Off
2	Module White Lead	Other Module Black Lead	–	Off
3	Either Module Black Lead	Module White Lead	–	On
4	Other Module Black Lead	Module White Lead	–	On
5	Module Base Plate	Module White Lead	–	Off



YJ58 and YJ64 RECTIFIER

Module is defective if lamp indication is not as specified

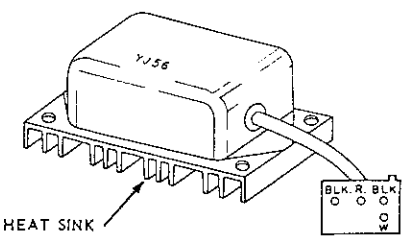
TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Either Module Black Lead	Module Base Plate	–	Off
2	Other Module Black Lead	Module Base Plate	–	Off
3	Module Base Plate	Either Module Black Lead	–	On
4	Module Base Plate	Other Module Black Lead	–	On



YJ56 RECTIFIER/REGULATOR

Module is defective if lamp indication is not as specified

TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Either Module Black Lead	Module Heat Sink	–	Off
2	Other Module Black Lead	Module Heat Sink	–	Off
3	Module Heat Sink	Either Module Black Lead	–	On
4	Module Heat Sink	Other Module Black Lead	–	On
5	Module Heat Sink	Module Red Lead	–	Off
6	Module Red Lead	Module Heat Sink	–	Off
7	Module White Lead	Module Heat Sink	–	Off
8	Module Heat Sink	Module White Lead	–	On

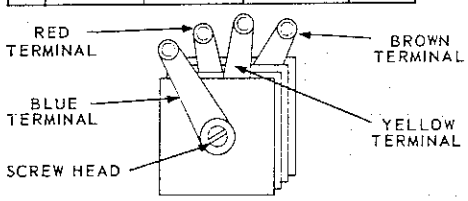


DF83 Analyzer

ROBIN EY-21W
EY 2107130120 RECTIFIER

Module is defective if lamp indication is not as specified

TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Brown Terminal	Blue Terminal	–	Off
2	Blue Terminal	Brown Terminal	–	On
3	Yellow Terminal	Blue Terminal	–	Off
4	Blue Terminal	Yellow Terminal	–	On
5	Red Terminal	Brown Terminal	–	Off
6	Brown Terminal	Red Terminal	–	On
7	Red Terminal	Yellow Terminal	–	Off
8	Yellow Terminal	Red Terminal	–	On



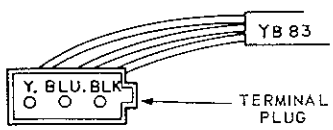
STATORS

The continuity tests for stators is not a 100% method of checking. However, if the stator fails the continuity tests, it is definitely defective. If it passes the tests but all other components have also checked out O.K., the stator may be the defective part of the system and should be replaced. Test can be made with Stator on engine.

Stator is defective if lamp indication is not as specified

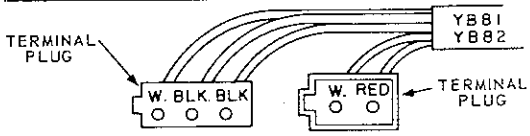
YB83 STATOR

TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Stator Blue Lead	Stator Block Lead	–	On
2	Stator Yellow Lead	Stator Block Lead	–	On (Dim)
3	Stator Blue Lead	Ground	–	Off
4	Stator Yellow Lead	Ground	–	Off



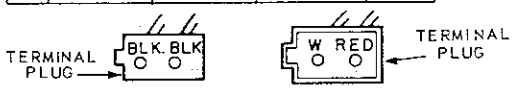
YB81 10 amp STATOR YB82 25 amp STATOR

TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Stator Black Lead	Ground	–	On
2	Stator Other Black Lead	Ground	–	On
3	Ground	Stator Red Lead	–	On
4	Ground	Stator Black Lead	–	On
5	Ground	Stator Other Black Lead	–	On



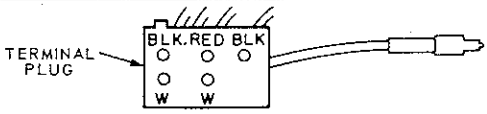
YB75 10 amp STATOR YB76 30 amp STATOR

TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	–	Laminated Flange	Stator Black Lead	Off
2	–	Laminated Flange	Stator Other Black Lead	Off
3	Stator Black Lead	Stator White Lead	–	On
4	Stator Other Black Lead	Stator White Lead	–	On
5	Stator Red Lead	Stator White Lead	–	On



YB72 STATOR

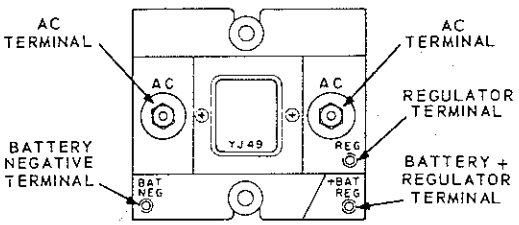
TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	–	Laminated Flange	Stator Black Lead	Off
2	–	Laminated Flange	Stator Other Black Lead	Off
3	Stator Black Lead	Stator White Lead	–	On
4	Stator Other Black Lead	Stator White Lead	–	On
5	Stator Red Lead	Stator White Lead	–	On



YJ49 RECTIFIER/REGULATOR

Module is defective if lamp indication is not as specified

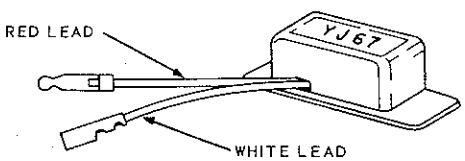
TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Either AC Terminal	Module BAT. NEG. Terminal	–	Dim
2	Other AC Terminal	Module BAT. NEG. Terminal	–	Dim
3	Module BAT. NEG. Terminal	Either AC Terminal	–	On
4	Module BAT. NEG. Terminal	Other AC Terminal	–	On
5	BAT. +/REG. Terminal	Either AC Terminal	–	Dim
6	BAT. +/REG. Terminal	Other AC Terminal	–	Dim
7	Either AC Terminal	BAT. +/REG. Terminal	–	On
8	Other AC Terminal	BAT. +/REG. Terminal	–	On
9	Module BAT. NEG. Terminal	REG. Terminal	–	Off



YJ67 ISOLATION DIODE

Module is defective if lamp indication is not as specified

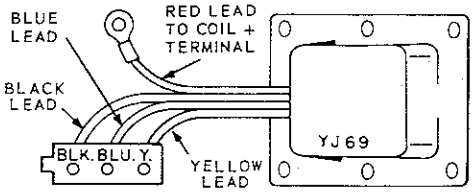
TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Module Red Lead	Module White Lead	–	Off
2	Module White Lead	Module Red Lead	–	On
3	Module White Lead	Module Base Plate	–	Off



YJ69 IGNITION MODULE

Module is defective if lamp indication is not as specified

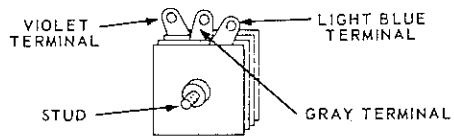
TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Module Yellow Lead	Module Case or Black Lead	–	Off
2	Module Yellow Lead	Module Case or Black Lead	Module Blue Lead Then Remove	On And Remain On
3	Module Case	Module Yellow Lead	–	On
4	Module Case	Module Blue Lead	–	On
5	Module Case	Module Red Lead	–	Off
6	Module Red Lead	Module Case or Black Lead	–	On
7	Module Yellow Lead	Module Red Lead	–	Off



ROBIN EY-44W
EY 2087130101 RECTIFIER

Module is defective if lamp indication is not as specified

TEST NO.	ANALYZER RED LEAD TO:	ANALYZER BLACK LEAD TO:	ANALYZER WHITE LEAD TO:	LAMP INDICATION
1	Light Blue Terminal	Stud	–	Off
2	Stud	Light Blue Terminal	–	On
3	Violet Terminal	Stud	–	Off
4	Stud	Violet Terminal	–	On
5	Gray Terminal	Light Blue Terminal	–	Off
6	Light Blue Terminal	Gray Terminal	–	On
7	Gray Terminal	Violet Terminal	–	Off
8	Violet Terminal	Gray Terminal	–	On



Valve Stem Guide Tool Kit (For Adding Replaceable Valve Stem Guides To Cylinder Blocks With Worn Guide Holes)

USE WITH MODELS TE, TF, VE4, VP4D

To eliminate the necessity of reaming out valve guide holes and using valves with oversize stems, Wisconsin Motor has added replaceable valve stem guides to the cylinder blocks of the two and four cylinder engines.

Engines in the field can be changed over to incorporate replaceable valve stem guides by use of Wisconsin Motor DF70 Tool Kit. Fig. 1 illustrates the component parts of the kit, and a reference number to the parts shows the sequence of their use.

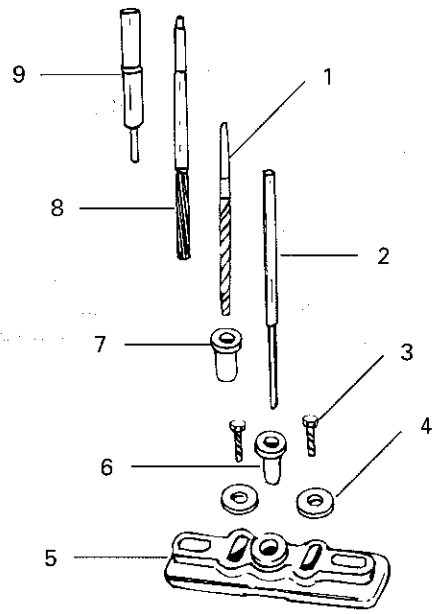


Fig. 1

MACHINING INSTRUCTIONS

Assuming the cylinder block has been removed from the engine and the valves, springs, seats and locks have been removed from the block, clean off the top and bottom machined surfaces of the block as well as the valve ports and guide holes, thoroughly of all carbon and gum deposits.

Proceed according to the following instructions.

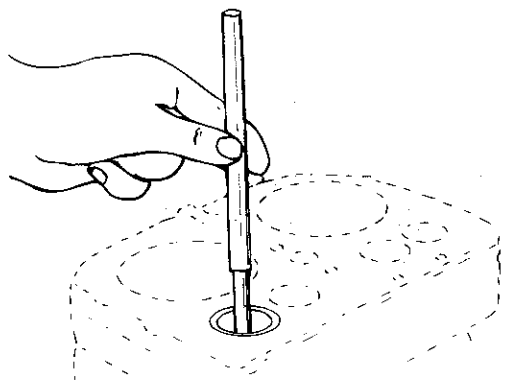


Fig. 2

Insert locating mandrel in valve stem guide hole.

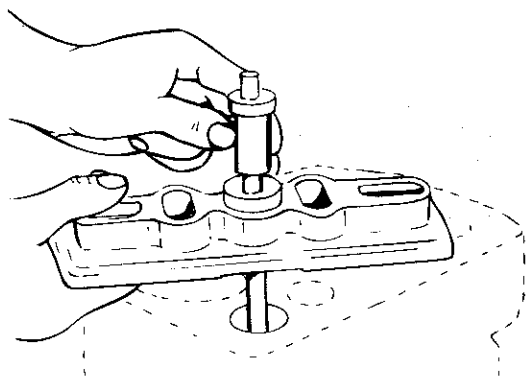


Fig. 3

VALVE STEM GUIDE TOOL KIT (For Adding Replaceable Valve Stem Guides To Cylinder Blocks With Worn Guide Holes) (Cont.)

USE WITH MODELS TE, TF, VE4, VP4D

Place base fixture and 7/16", centering and ream bushing over locating mandrel and insert bushing in base fixture permanent bushing. Two of the four slotted mounting holes in the base fixture can always be lined up with two cylinder head mounting holes in the cylinder block.

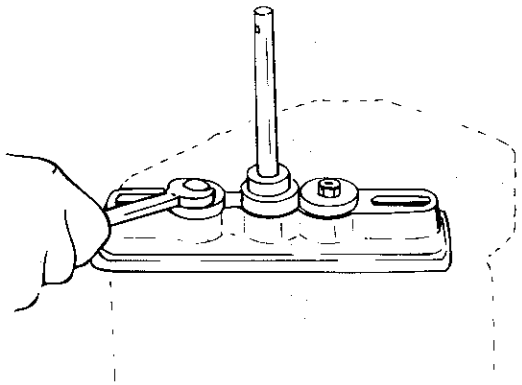


Fig. 4

With locating mandrel mounted firmly in bushing and two slotted mounting holes in base fixture lined up with holes in the top of the cylinder block, mount washers and screws and tighten securely in place. The 5/16"-18 thread cap screws are used for the TE, TF, VE4, VF4 engine cylinder block while the 3/8"-16 thread cap screws are for the VP4D engine cylinder block. The base fixture is now properly centered for drilling and reaming.

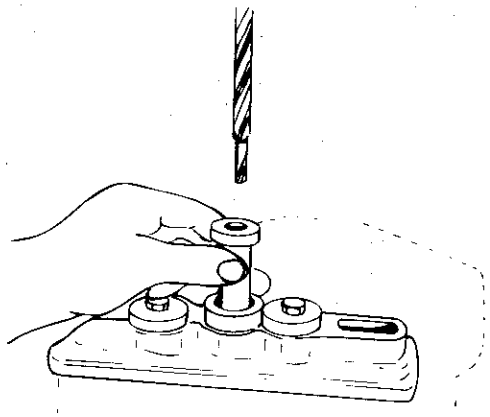


Fig. 5

Remove locating mandrel and 7/16" ream bushing. Insert .432" drill bushing in place and drill through valve stem guide in cylinder block.

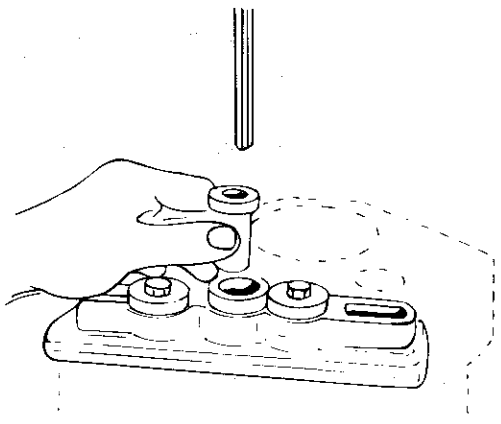


Fig. 6

VALVE STEM GUIDE TOOL KIT (For Adding Replaceable Valve Stem Guides To Cylinder Blocks With Worn Guide Holes) (Cont.)

USE WITH MODELS TE, TF, VE4, VP4D

Remove drill bushing and insert 7/16" ream bushing. Ream by hand through valve stem guide hole.

Note: DF70J Hand Reamer replaced DF70G machine chuking reamer.

Remove ream bushing and blow out metal chips. Dip valve stem guide in light oil and insert guide driver into guide. Place driver into base fixture bushing and press or drive valve stem guide flush with top of casting in valve port.

Continue these operations on the remaining guide holes of the cylinder block. It is not necessary to ream out the valve stem guides after they are pressed in place as they will compress to give the proper clearance of .003" to .005" between the valve stem and guide.

Be sure cylinder blocks are thoroughly cleaned before the valves and springs are reassembled.

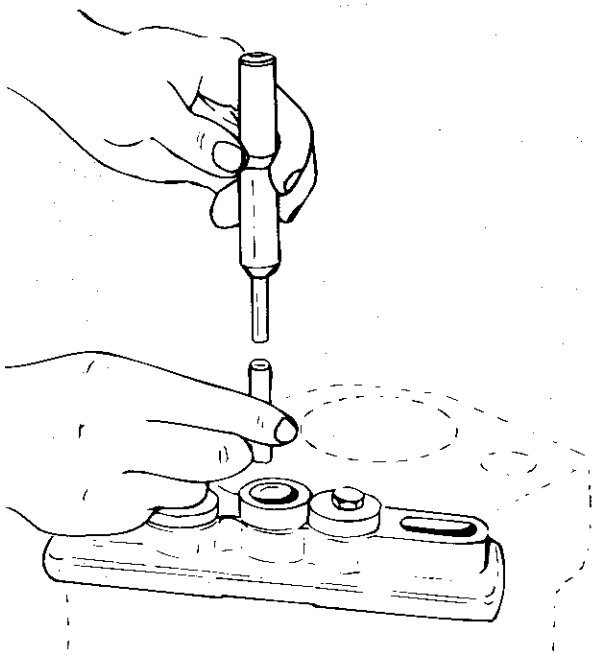
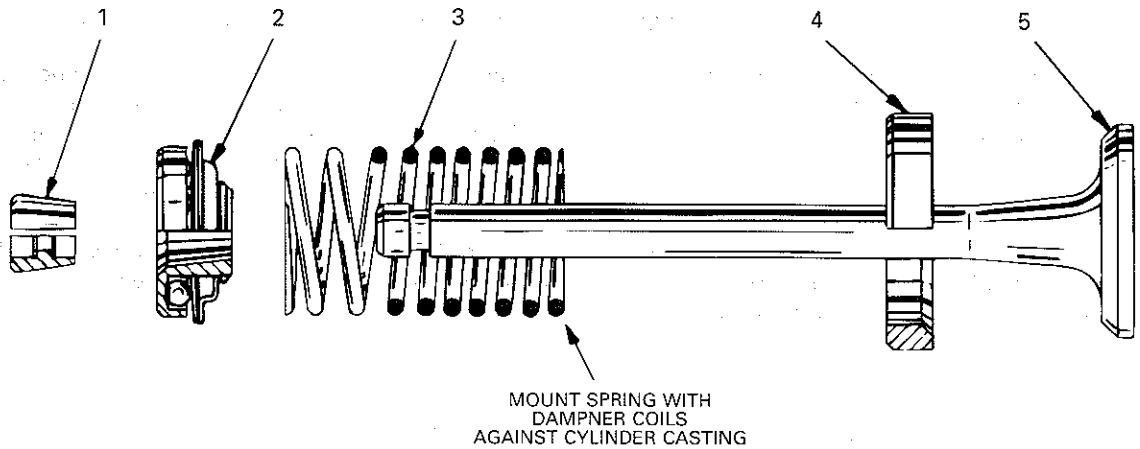


Fig. 7

ITEM	PART NO.	DESCRIPTION	QTY
1	DF70F	Drill, .432" (Special)	1
2	DF70A	Locating mandrel	1
3	XD22	Screw, 5/16"-18 thread x 1-3/4" long	2
—	XD31	Screw, 3/8"-16 thread x 1-3/4" long	2
4	PH421	Washer	2
5	DF70C1	Base fixture (includes permanent bushing)	1
6	DF70D	Bushing, 7/16" ream (Special)	1
7	DF70E	Bushing, .432" drill (Special)	1
8	DF70J	Hand reamer, 7/16" (replaces DF70G)	1
9	DF70H	Driver	1

AG31 Exhaust Valve Rotators (Positive Type)

USE WITH ALL MODELS



REF. NO.	Model ABND	Models ACND AKND BKND	Models AEHD AEND AENLD	Models AFHD AGHD AHHD	Model AGND
1	AH9 (Std) (1 pr)	AH9 (Std) (1 pr)	AH9 (Std) (1 pr)	AH9 (Std) (1 pr)	AH9 (Std) (1 pr)
2	AG31	AG31	AG31	AG31	AG31
3	AF43B	AF43B	AF54	AF55	AF55
4	HG156D	HG273D	HG273D	HG272D	HG272D
5	AE73D	AE74D	AE75D	AE76D	AE87D

REF. NO.	Models TED TFD THD	Models VE4D VF4D VH4D	Models VP4D VG4D	Model VR4D	DESCRIPTION
1	AH9 (Std) (2 pr req)	AH9 (Std) (4 pr req)	AH9 (Std) (4 pr req)	AH12 (Std) (NLA) (4 pr req)	LOCK for roto cap
2	AG31 (2 req)	AG31 (4 req)	AG31 (Std) (4 req)	AG33 (Std) (NLA) (4 req)	ROTO-CAP
3	AF54 (2 req)	AF54 (4 req)	AF55 (Std) (4 req)	AF53 (Std) (NLA) (4 req)	VALVE SPRING
4	HG273D (2 req)	HG273D (4 req)	HG272D (4 req)	HG222D (Std) (NLA) (4 req)	STELLITE VALVE SEAT INSERT
5	AE75D (2 req)	AE75D (4 req)	AE76D (Std) (4 req)	AE82D (Std) (4 req)	STELLITE VALVE

NOTE: One of each part required per engine, unless otherwise specified.

AD41, AD42, AD43 Valve Guide Instruction Sheet

REMOVAL OF VALVE STEM GUIDES AND RE-INSTALLATION OF NEW VALVE STEM GUIDES IN MILITARY ENGINES BUILT BY WISCONSIN MOTOR CORPORATION

All military engines built by Wisconsin Motor Corporation have replaceable valve stem guides in the cylinder blocks.

During disassembly of the valves, springs, seats and valve locks, it is then very simple to replace the valve stem guides, if they are worn to such an extent that the guides need replacing.

First take a DF72 driver (Manufactured by Wisconsin Motor) and insert the pilot on the driver into the guide, then use a hammer and pound on the upper end of the driver until the guide comes out of the cylinder block.

After the guide is out of the cylinder block be sure that the valve guide hole in the cylinder block is thoroughly cleaned out. Dip the new valve stem guide in light oil and insert DF70H driver (Manufactured by Wisconsin Motor) into guide. Place driver into valve guide hole in cylinder block then press or drive valve stem guide flush with top of casting in valve port.

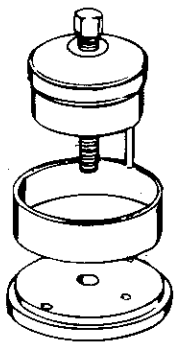
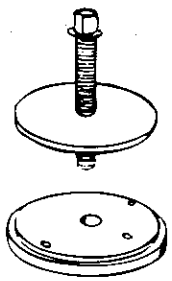
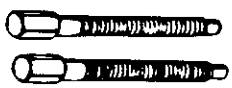
Continue these operations on the remaining guide holes of the cylinder block. It is not necessary to ream out the valve stem guides after they are pressed in place as they will compress to give the proper clearance of .003" to .005" between the valve stem and guide. Again be sure cylinder blocks are cleaned before the valves and springs are re-assembled.

The following information will give you the correct tolerances for the military engine valve guides.

ENGINE MODEL	VALVE GUIDE	FINISHED I.D. OF GUIDE AFTER INSTALLATION
MACND-MBKND	AD41 (Replaced by AD47)	.313 - .312 I.D.
MAENLD	AD43	.313 - .312 I.D.
MTHD	AD41A	.345 - .344 I.D.
MVE4D-MVF4D (A & B Spec.) and MVH4D	AD41A	.345 - .344 I.D.
MVG4D (A & B Spec.)	AD42A	.345 - .344 I.D.

Special Service Tools

ORDER SPECIAL SERVICE TOOLS FROM: OWATONNA TOOL COMPANY
OWATONNA, MN 55060

ORDER NO.	DESCRIPTION	APPLICATION
TW 1001 (Not Illustrated)	SERVICE SET FOR WISCONSIN MOTORS. Consists of 303659, 208198, 303660, 303657, 303576, and 208200. See individual tools for usage. Packaged in a plastic carrying case.	W2-1230 W2-1235 W2-1250
TW 1001-1 	CRANKSHAFT MAIN BEARING TOOL: Used to install and remove main bearings. Aligns oil holes of bearings with oil passages in crankcase. Consists of: 303659 Installer Tool 208198 Receiver Tube 303660 Alignment Plate 202874 Forcing Screw	W2-1230 W2-1235 W2-1250
TW1001-2 	CRANKSHAFT SEAL INSTALLER: Used to install crankshaft seals bearing retainer take-off end. Consists of: 303657 Seal Driver 303660 Alignment Plate 202674 Forcing Screw	W2-1230 W2-1235 W2-1250
303576 	FORCING SCREWS: Used to remove main bearing retainer plate from crankcase.	W2-1230 W2-1235 W2-1250
208200 	SEAL DRIVER: Used to install crankshaft oil seal in gear cover.	W2-1230 W2-1235 W2-1250

PISTON PIN REMOVER/ INSTALLER SET

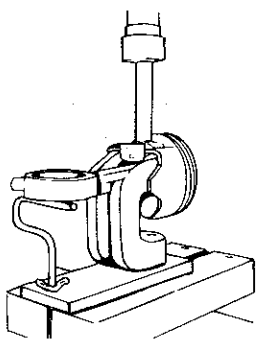
- **Services a wide range of piston/pin assemblies up to 4-3/8 in. dia.**
- **Versatility every shop can use.**
- **Unique design of anvil support avoids any pressure on piston.**
- **Set comes complete with handy storage case and full set of adapters.**

Having on hand all the tooling and adapters necessary for piston pin work has long been a problem for most automotive repair shops. The tooling in the crib never seems to be the right size to fit the engine that was disassembled for repair. Well, CTC has solved that problem and more with this new No. 7082B Piston Pin Removing Installing Set. With this package and the aid of a shop press of 10 ton or greater capacity, you will be able to service a wide range of the most popular automotive piston-pin assemblies. And you will do so with unparalleled ease and security.

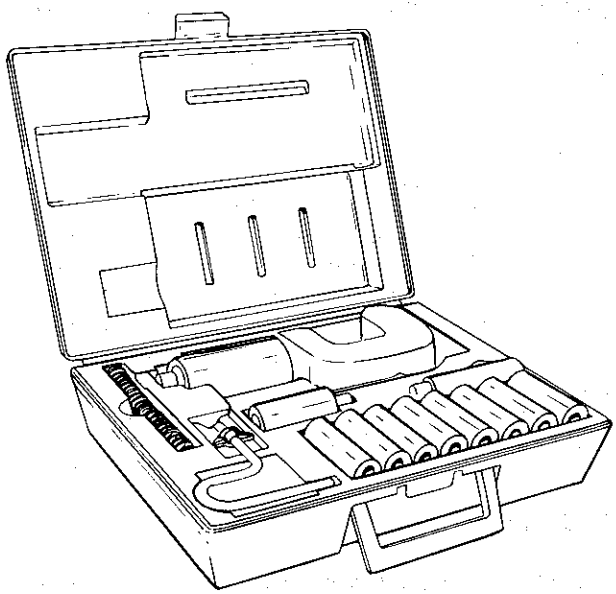
This set comes as the tooling necessary to service assemblies with pistons up to 4 3/8 inches in diameter. But the feature that makes this piece of equipment truly unique is the design of the anvil support. Whether you are installing or removing the wrist pin, the pressing force is never applied to the piston – eliminating any possible damage to the assembly.

Easy to use, just . . .

. . . assemble the components of the set as shown for pin removal. Next, place the piston and connecting rod over the anvil so the tip of the replaceable insert is between the connecting rod boss and the inside surface of the piston. Then, simply adjust the connecting rod rear support so that the rod is level, position the pin pusher, and remove the pin. Notice there is no stress on the piston.



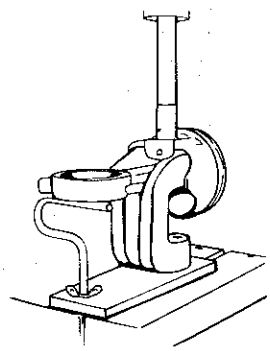
Unique design of anvil support permits the piston to float free during piston pin removal and installation.



Set No. 7082B

Pin installation . . .

. . . means first selecting and assembling the proper tooling according to the instructions. Place the rod and piston on the anvil. Here, the spring loaded piston guide will pass through the piston and pin, aligning them. Finally, press the pin in place until it reaches the limit pre-set by the stop plug.



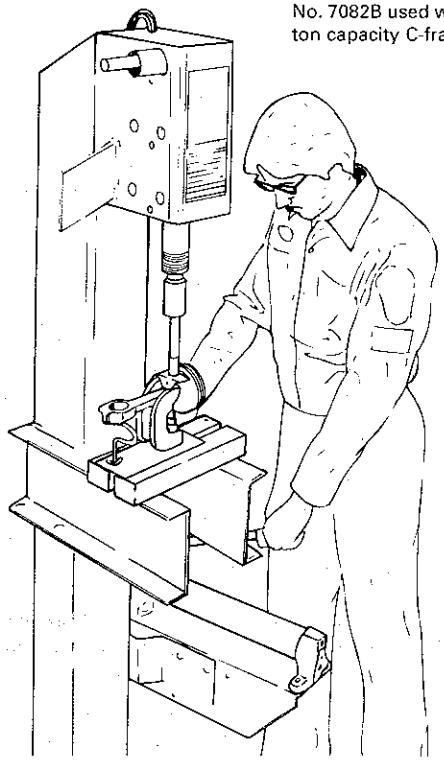
The spring loaded guide keeps the rod and piston aligned while you simply press the wrist pin in place.

Product Profile

remove/install piston pins quickly and easily with this set . . .

an OTC shop press is ideal for piston service operations . . .

The 7082B Piston Pin Remover Installer Set requires use of a 10 ton or greater capacity shop press. The OTC Y225A is just the ticket for this and many other pressing jobs. This new C-frame open throat press includes a hand pump and single acting ram with 6-1/4 in. stroke. The ram head adjusts to three convenient work heights. This 25 ton capacity press can be either mounted or used on its optional pedastal. No. 60846 is shown in use at right. With 25 tons of capacity this press can handle piston pin service with ease and tackle many other pressing jobs you have. For a complete look at our full line of shop presses accessories, pumps and rams see OTC's A79 catalog.



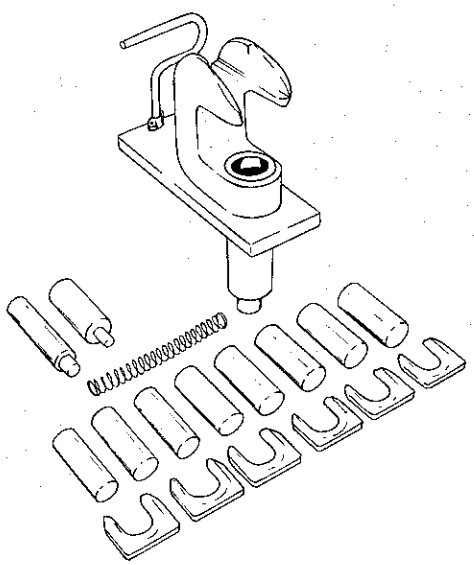
No. 7082B used with No. Y225A 25 ton capacity C-frame press.

Order Information

No. 7082B – Piston Pin Remover installer includes all parts listed below plus handy storage case and complete instructions. Wt. 15-1/2 lbs.

Contents of Set

302186	Anvil	17938	Pin Guide
17929	Base for anvil and receiving tube	17939	Pin Guide
		17940	Pin Guide
17931-B	Receiving Tube	17941	Pin Guide
17945	Snap Ring	17942	Pin Guide
17930-B	Stop Plug	17934	Spring
17935	Pin Pusher	39886	Insert
17932-B	Spacer	39887	Insert
302224	Rear Support	39888	Insert
10589	Nut	39889	Insert
18729	Pin Guide	39890	Insert
17936	Pin Guide	39922	Insert
17937	Pin Guide	60835	Storage Case



Optional Equipment

No. Y225A – 25 ton capacity C-frame press complete with hydraulic hand pump and ram.
No. 60846 – Pedestal base for Y225A press. (Must be ordered separately.)
No. Y-379-A – Pair of V-blocks, 30 ton capacity.