

Are You Seeing These Problems?

PROBLEM:

Piston ring dowel pin migration

Engine: 1993 & up carbureted 185/200/225/250 HP Evinrude & Johnson Outboards (90 degree closed deck loopers)

Description: Approximately 70% of the 90 degree closed-deck loopers we receive for machine work need repair because of piston ring dowel pin migration. This typically occurs when cylinder/piston temperatures are sustained at slightly over their threshold for extended running periods. As a result, the aluminum piston *lets go* of the steel dowel pin in the top ring groove. The pin will usually leave a notch or groove above the corresponding fingerport in the sleeve. In several cases, exhaust port damage will result from the top ring trying to exit out the exhaust port. This occurs when the dowel pin forces the top ring gap open while the pin is exiting the piston. Re-sleeving is required in 80% of these occurrences.

Cause: The cause of *dowel pin migration* in these cases is not a defective piston, but a lack



of water (coolant) in particular areas of the block, resulting in elevated temperatures in the cylinder/ piston.

Repair and results – closed-deck cooling modification: By modifying the cooling passages around the cylinders, dowel pin migration has been significantly improved. MarFab has been doing cooling modifications since mid-summer of 2001. We have had no returns with dowel pin migration thus far.

Warranty: MarFab does not claim that the above procedures will eliminate *dowel pin migration*, as it can occur from multiple factors. Through testing, we have discovered that the cooling modification is an expedient measure to prevent a potential problem. Therefore, MarFab does not warranty against dowel pin migration.

Note: The original OEM 1/4" red and/or white plastic water deflectors are removed and substituted as part of the cooling modification. The original deflectors **should not** be replaced.

Please call (931) 738-2815 for pricing

Monday-Friday 8:00 a.m. to 6:00 p.m. CST

ORDERS or CATALOG REQUESTS: 800-476-1554 • www.mar-fab.com
technical advice & support: 931-738-2815 • 931-738-2819 fax

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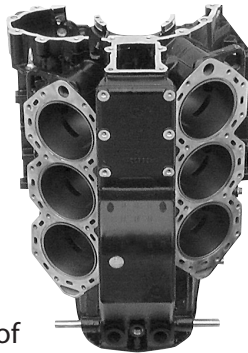
PROBLEM:

Internal water cavity leaking into #1 cylinder.

Engine: 1991 & up carbureted 150/175 HP 60 degree V-6 Evinrude and Johnson outboards (6V-6 Eagle)

Description: Approximately 25% of the 6V-6 blocks we test will show a leak into the #1 cylinder from the center water cavity underneath the regulator/rectifier. In certain cases, a *leaking* engine may develop a *knock* at around 3500 rpms. The sparkplug may also show signs of water, and the cylinder head's combustion chamber, piston dome, and/or exhaust port may show signs of being *steam cleaned* by water. It is important to note that some engines in the early stages of leaking may not show the mentioned symptoms and can only be detected by *pressure testing* the block.

Cause: The leak develops from a thin section



in the block. Due to engine vibration, varying pressures, expanding and contracting, the aluminum cracks over time and causes water to leak from behind the sleeve.

Repair & Results: MarFab can provide its dealers with a remanufactured block or powerhead, or can repair the leaking block by welding and re-sleeving. MarFab

has been repairing 6V-6 *leaker blocks* since early 2002. Blocks are pressure tested after all work is performed to ensure proper repair has been made.

Limited Warranty: MarFab warrants its 6V-6 powerheads, blocks, and repairs for 1 year from date of purchase and/or repairs against water leaking into #1 cyl from area discussed above. MarFab's warranty is limited to repair or replacement of block only. Other warranties may apply to a MarFab remanufactured powerhead. (See Mar-Fab powerhead warranty sheet)

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