FORCE Outboards

service bulletin

No. 97-1

Excessive RPM
Force 40/50 HP

Models Affected

1995, 1996 AND 1997 MODELS STARTING SERIAL NUMBER 0E093728 AND ABOVE.

All outboard motors have a recommended operating range at wide open throttle (WOT). If the outboard motor operates above or below that recommended range at WOT, it greatly increases the probability of premature engine failure. Analysis of some returned powerheads from the Force 40/50 HP have attributed the failures to over-revving.

1995 Force 40/50 HP engines are not to be operated above 5500 rpm.

1996 and newer Force 40 and 50 HP engines are not to be operated above 5250 RPM.

Operation at excessive RPM causes extreme vibration which can lead to one or more of the following failures:

1. Loose driveshaft housing to powerhead bolts.
2. Loose starter bolts and/or broken starter mounting flange.
3. Cylinder base gasket water leaks.
4. Fretting of mating surfaces on the powerhead and the adaptor plate.

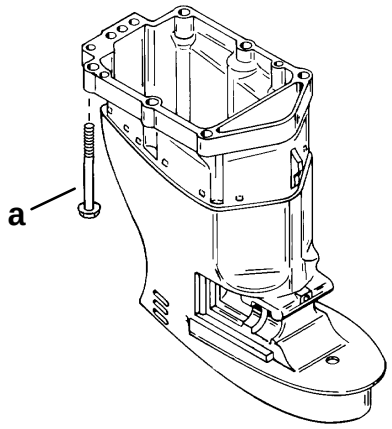
CAUSE

Problems listed above can be attributed to:

1. Improper mounting of motor - too high which increases possibility of the motor to ventilate or cavitate easily.
2. Wrong propeller pitch - too low which will allow motor to exceed upper limit of operating range.
3. Improper torque of driveshaft housing to powerhead screws.
4. Weight distribution in boat (bow heavy).

CORRECTIVE ACTION

1. Check that the engine RPM is within the operating range at wide open throttle with a normal load in the boat.
2. Check performance in normal turns. Does motor have a tendency to cavitate easily?
3. Check torque of driveshaft housing to powerhead screws. Torque should be 55 lb. ft. (75 N·m). Check other bolts on the powerhead if engine has operated above the top of operating range.



a - Driveshaft Housing to Powerhead Screws

PARTS REQUIRED

Propeller, as required to limit the maximum RPM.

Propeller 48-42738A12 (12-1/2 in. diameter by 8 in. pitch) with additional cup is available to minimize cavitation/ventilation and excessive engine RPM on pontoon boats and work applications.

Propellers with other pitches may have to be cupped to minimize cavitation/ventilation on pontoon boats.

NOTE: *Cupped propellers help to reduce the amount of cavitation/ventilation. Adding a cup to the blades of a propeller will have about the same effect as adding 1" of pitch or reducing rpm by approximately 100 rpm. A double cup will reduce engine rpm by approximately 200 rpm.*

WARRANTY

Engine failures caused by operation at excessive RPM are not covered by warranty.

If the outboard and propeller are part of an OEM boat package and the propeller is determined to be the source of the problem, contact that boat manufacturer. It is the boat manufacturer's responsibility to ensure that the outboard is shipped with the proper propeller.

If the propeller is not supplied with the outboard and boat package, it is the dealer's responsibility to select and install the proper propeller for the application.

If the outboard is sold from dealer inventory, it is the dealer's responsibility to select and install the proper propeller.