



# TECH TIP

MAY 2013

OUTBOARD MOTORS

OB13-011

## SUBJECT: Break-in Procedures — All Models

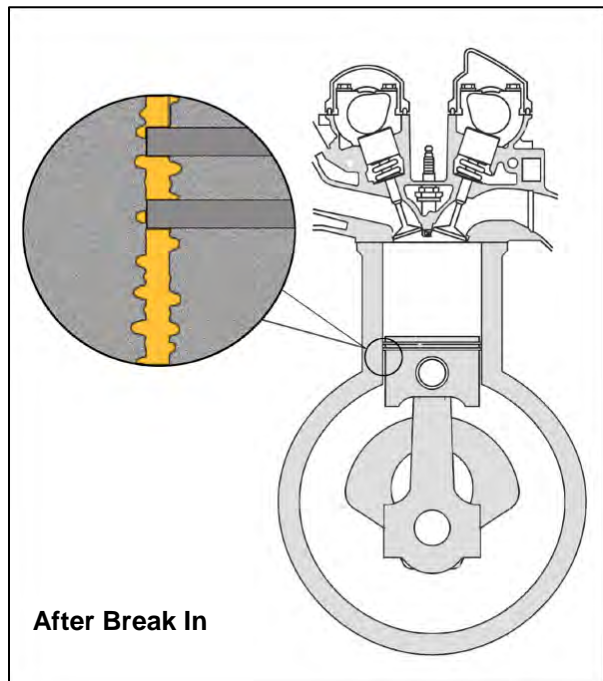
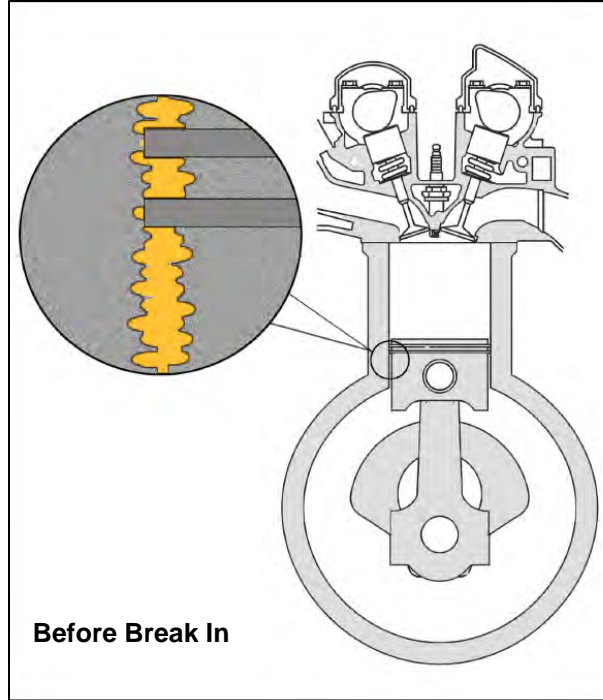
### Introduction

New motors require a period of break-in to allow mating surfaces of moving parts in the powerhead and lower unit to wear in evenly. Correct break-in will help ensure proper performance and longer motor life. Failure to follow the break-in procedure could result in reduced engine life or even severe motor damage. All current Yamaha four-stroke motors require a period of 10 hours break-in. The procedures are explained in the Owner's Manual and are repeated in this bulletin.

The boat must be operated under load, which means in the water (lake river, ocean, etc.), with a prop installed and unrestrained. The first 10 hours of operation should be run using the following running pattern.

1. First hour – run the motor at varying speeds up to 2000 rpm (approximately half throttle if there is no tachometer).
2. Second hour – accelerate hard enough to put the boat on plane (do not use full throttle) then back off of the throttle but keep the boat on plane.
3. Next 8 hours – run the motor at all speeds but avoid continuous running at Wide Open Throttle (WOT) for more than 5 minutes at a time.
4. After completing the 10 hours of break-in, commence normal operation.

Yamaha recommends waiting until after the second hour of break-in operation to conduct propeller testing to confirm correct WOT rpm. Refer to Yamaha performance bulletins or contact the boat manufacturer for general propeller recommendations to prevent over or under propping during break-in.



Route to:	Service	Parts
	Warranty	Sales



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Both during and after break-in, cold motors should be allowed to warm up until the engine speed stabilizes at the specified idle rpm. Failure to do so will also shorten motor life.

During break-in, microscopic peaks created during the machining process are shearing off. This shearing action creates the desired surface finish on mating parts while leaving microscopic valleys for oil retention, particularly on piston rings and cylinder walls as shown in the illustrations on the previous page. The factory prescribed break-in procedure has been developed to provide the loading necessary to generate the correct amount of pressure and temperatures required to ensure the desired surface finishes on moving parts.

While completing the Customer Delivery Checklist section of the PDI form during the Predelivery Inspection (PDI) process, thoroughly brief new four stroke outboard owners on the correct break-in procedure.

**This Tech Tip bulletin is for information purposes only.**