

# 91-12349A05

## PINION GEAR LOCATING TOOL

### OUTBOARD

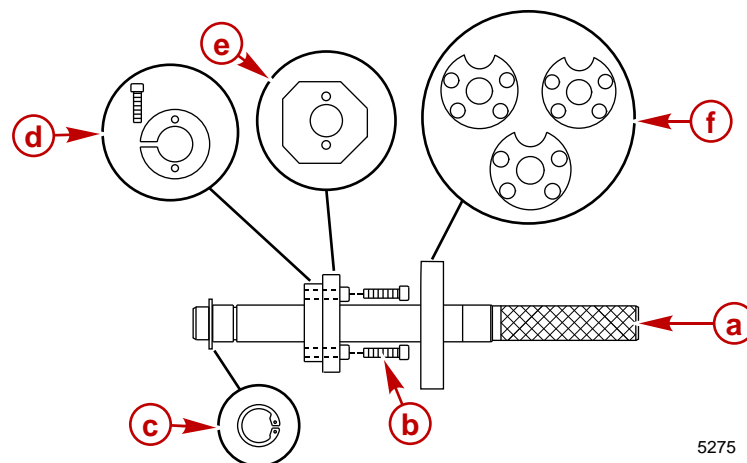
#### NOTICE

After completing installation, these instructions should be placed with the product for the owner's future use.

#### NOTICE

This document is written to aid our dealers and company service personnel in the proper installation or service of our products. Persons who are not familiar with these or similar products produced by Mercury Marine, and who have not been trained in the recommended servicing or installation procedures should have the work performed by an authorized Mercury Marine dealer technician. Improper installation or servicing of the Mercury product could result in damage to the product or personal injury to the installer or persons operating the product.

### Components Contained in Kit



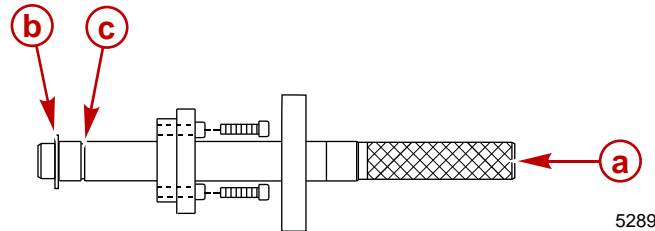
Ref.	Qty.	Description	Part Number
a	1	Arbor	91-12349001
b	2	Socket head cap screws	10-70084--2
c	1	Retaining ring	53-79601
d	1	Split clamp collar with retaining screw	91-12347
e	1	Gaging block	91-12348
f	1	Locating disc #1	91-12346--1
		Locating disc #2	91-12346--2
		Locating disc #3	91-12346--3

## Assembly and Application Instructions

**IMPORTANT:** Forward gear assembly (or reverse gear assembly in counter rotation gearcases) must be installed in gear housing when checking pinion gear depth or an inaccurate measurement will be obtained.

**NOTE:** Install Bearing Preload Tool (if required) on driveshaft following instructions in appropriate service manual.

Two retaining ring grooves are provided on the arbor. The outer most groove is for Verado gearcases only. All other gearcases use the inner most groove. Install the retaining ring in the appropriate groove as required.

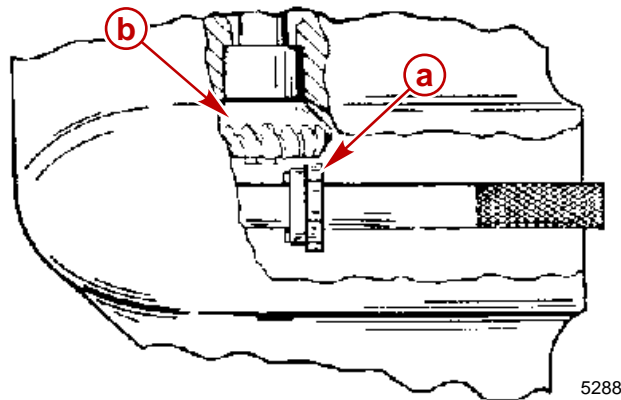


**a** - Arbor

**b** - Retaining ring in outer groove (for Verado gearcases)

**c** - Inner retaining ring groove (for all other gearcases except Verado)

1. Assemble tool as shown; do not tighten collar tension screw at this time.
2. Clean the gear housing bearing carrier shoulder and inside gearcase.
3. Insert tool into forward gear assembly (or reverse gear assembly for counter rotation gearcases); position gaging block under pinion gear as shown.

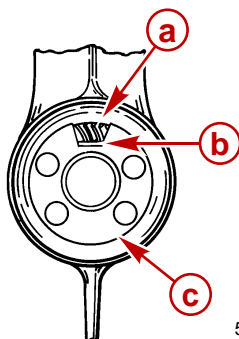


**a** - Gaging block

**b** - Pinion gear

4. Remove tool, taking care not to change gaging block position, and tighten collar retaining screw.
5. Insert tool into forward gear assembly (or reverse gear assembly for counter rotation gearcases); position proper numbered flat (from chart) of gaging block under pinion gear.
6. Install proper locating disc (from chart) against bearing carrier shoulder in gear housing.

7. Position access hole as shown.



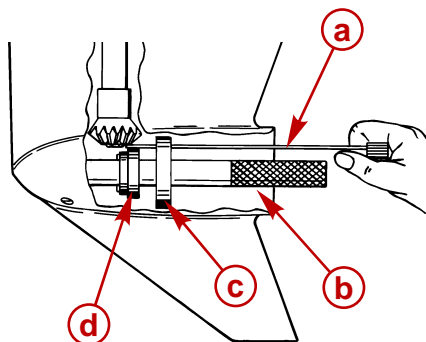
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- a - Pinion gear
- b - Access hole
- c - Locating disc

**IMPORTANT:** Refer to appropriate service manual for the amount of pressure (if any) that is applied to driveshaft while checking clearance with feeler gauge.

8. Determine pinion gear depth by inserting a feeler gauge through access hole in locating disc.
9. The correct clearance between gaging block and pinion gear is 0.64 mm (0.025 in.) . If clearance is incorrect, refer to appropriate service manual for proper shimming adjustment procedures.

**IMPORTANT:** On V-6 outboards using 13/30 gearset, clearance between pinion gear and gaging block is 1.27 mm (0.050 in.) .



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- a - Feeler gauge
- b - Arbor
- c - Locating disc
- d - Gaging block

Model	Gear Ratio Pinion Gear Teeth / Reverse Gear Teeth	Use Flat Number	Use Disc Number
In-Line Outboards 40/50/60 bigfoot 70 through 150	2.31:1 (13/30)	8	1
	1.78:1 (14/25)	1	1
	2.00:1 (14/28)	1	1
	2.07:1 (14/29)	2	3
	2.33:1 (12/28)	8	3

## PINION GEAR LOCATING TOOL

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Model	Gear Ratio Pinion Gear Teeth / Reverse Gear Teeth	Use Flat Number	Use Disc Number
V-6 Outboards 2 Liter 2.4 Liter 2.5 Liter	2.30:1 (13/30)*	6	2
	2.30:1 (13/30)**	7	2
	1.78:1 (14/25)	1	1
	2.00:1 (14/28)	7	2
	1.87:1 (15/28)	7	2
V-6 Outboard 3 Liter	1.64:1 (17/28)	4	2
	1.75:1 (12/21)	4	2
V-6 Outboard 3.4 Liter	1.64:1 (17/28)	7	2
In-Line Outboard Verado	1.85:1 (13/24)	4	2

\* Driveshaft with preload pin.

\*\* Driveshaft without preload pin

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