

Circulate to: Sales Manager Accounting Service Manager Technician Parts Manager

CMD Service Bulletin 2004-04 - Alpha / Bravo Stern Drive Improvements

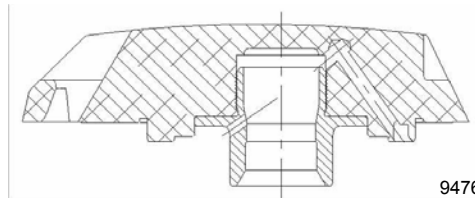
Models Affected

Application	Model	Serial No.
CMD	ALPHA	0W535000 and above
CMD	BRAVO I, II, III	0W250000 and above
CMD	BRAVO X	ALL

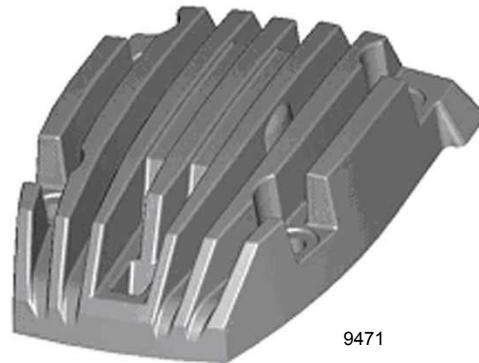
Situation: Product Improvement Changes

BRAVO X I, II, III CHANGES

Redesigned top cover includes a new ribbed design that reduces oil temperatures and steel chimney that reduces bearing deflection by 50%.



9476

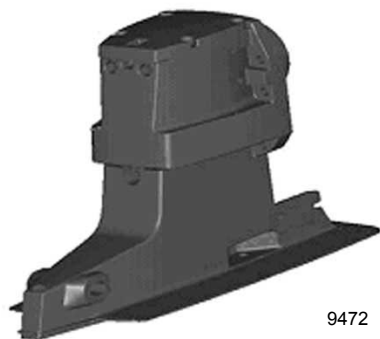


9471

THE INFORMATION IN THIS DOCUMENT IS CONFIDENTIAL AND PROTECTED BY COPYRIGHT AND IS THE PROPERTY OF MERCURY MARINE.

This document is provided for the sole and exclusive use of the original recipient as prescribed by Mercury Marine and may not be distributed or copied, digitally or otherwise, without the prior written consent of Mercury Marine.

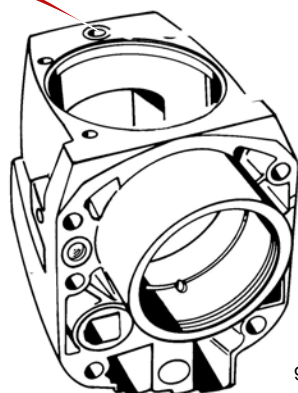
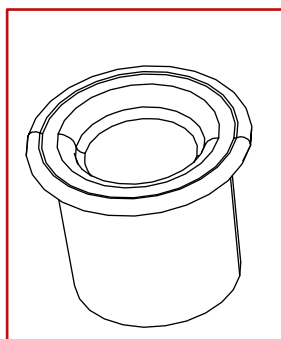
Restyling of Upper Driveshaft Housing (DSH) – See below. Other changes also include increased oil capacity and improved oil cooling, new drain plug and seal to reduce leaks, newly designed drive shaft housing U-joint bearing pack, bearing cup, totally shimable upper to improve gear position and durability, and improved manufacturing processes to achieve tighter assembly tolerances.



Old Housing



New Housing



Plug for New Housing

⚠ CAUTION

Assemble the correct propshaft by identifying the number of stampings located next to the oil passage and identify the propshaft thrust bearing cage.

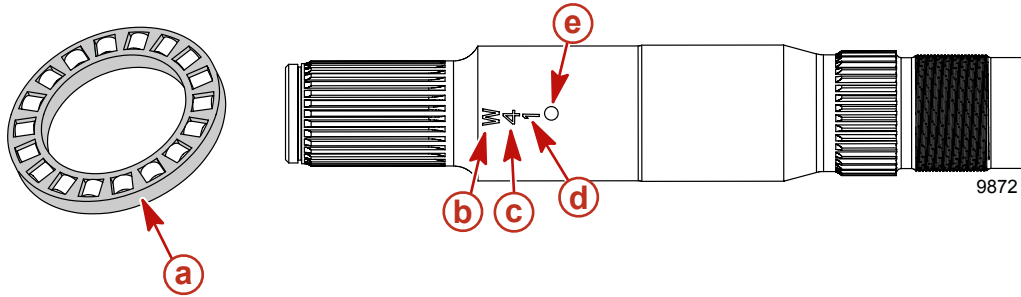
IMPORTANT: The propshaft thrust bearing and the propshaft are a matched set.

The New Design: Propshaft is identified by the 3 stampings (1 letter, 2 numbers) located next to the oil passage.

THE INFORMATION IN THIS DOCUMENT IS CONFIDENTIAL AND PROTECTED BY COPYRIGHT AND IS THE PROPERTY OF MERCURY MARINE.

This document is provided for the sole and exclusive use of the original recipient as prescribed by Mercury Marine and may not be distributed or copied, digitally or otherwise, without the prior written consent of Mercury Marine.

The New Design: Propshaft thrust bearing is identified by it's BLACK composite cage.



Propshaft thrust bearing (New Design)

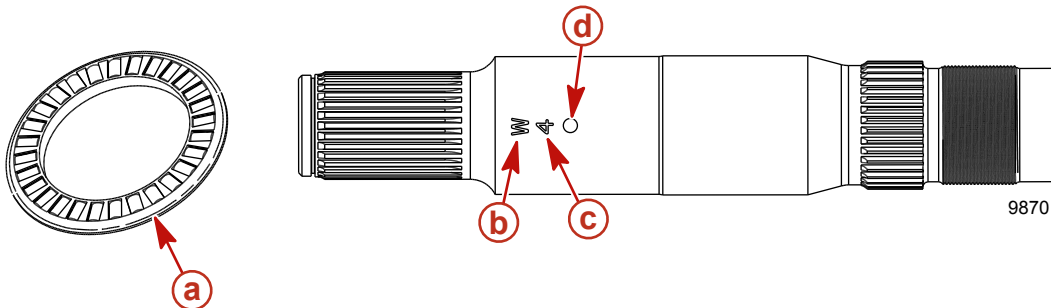
- a** - BLACK composite cage
- b** - Letter
- c** - Number

Propshaft

- d** - Number
- e** - Oil passage

The Old Design: Propshaft is identified by the 2 stampings (1 letter, 1 number) located next to the oil passage.

The Old Design: Propshaft thrust bearing is identified by it's SILVER steel cage.



Propshaft thrust bearing (Old Design)

- a** - SILVER steel cage
- b** - Letter

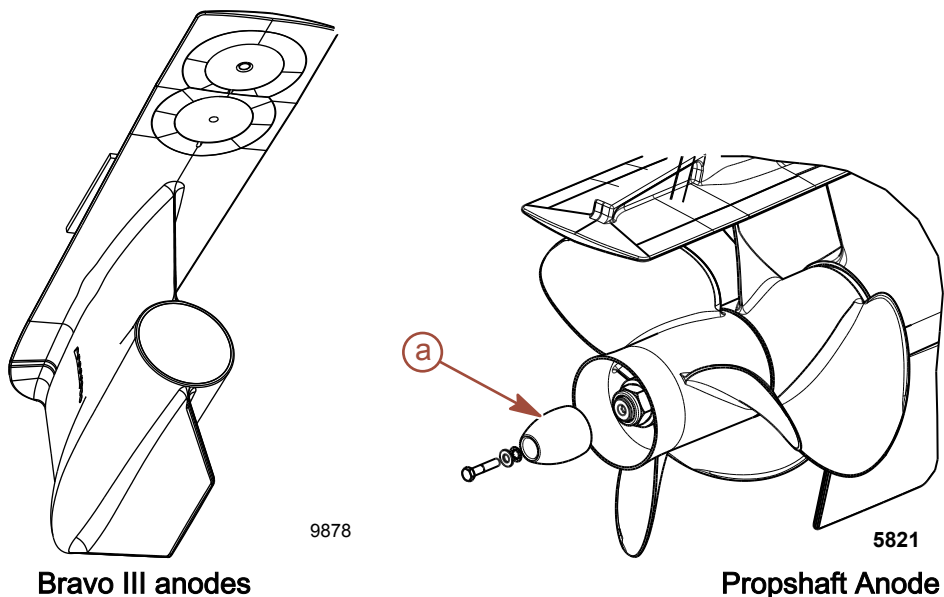
Propshaft

- c** - Number
- d** - Oil passage

THE INFORMATION IN THIS DOCUMENT IS CONFIDENTIAL AND PROTECTED BY COPYRIGHT AND IS THE PROPERTY OF MERCURY MARINE.

This document is provided for the sole and exclusive use of the original recipient as prescribed by Mercury Marine and may not be distributed or copied, digitally or otherwise, without the prior written consent of Mercury Marine.

Newly designed propeller shaft and thrust bearing (see above) for Bravo III drives improves durability with increased roller diameters. Benefits include longer bearing life and higher dynamic load rating.



Bravo III anodes

a - Propshaft anode

Propshaft Anode

The Bravo III will also include two additional alum anodes (see above) on the lower gear housing to improve corrosion resistance caused by the additional propeller.

IMPORTANT: The applications with dual engines use the same style drive. Old style drives will be available in stock for this purpose and can be ordered using the old option number.

Coordination on a twin drive vessel is critical.

ALPHA CHANGES

Only cosmetic changes are occurring on the Alpha, which include a redesigned decal. Again, it is important that applications with dual engines use the same style drive.

OPTION NUMBERS

Model	Ratio	Rotation	Old option	New Option
Alpha	1.81	RH	RG9170	RG9279
Alpha	1.81	LH	RG9169	RG9278
Alpha	2.0	RH	RG9172	RG9281
Alpha	2.0	LH	RG9171	RG9280
Bravo I	1.36	-	RG9174	RG9284
Bravo I	1.5	-	RG9175	RG9259
Bravo I	1.65	-	RG9176	RG9260
Bravo II	1.5	-	RG9179	RG9177
Bravo II	1.65	-	RG9181	RG9261

THE INFORMATION IN THIS DOCUMENT IS CONFIDENTIAL AND PROTECTED BY COPYRIGHT AND IS THE PROPERTY OF MERCURY MARINE.

This document is provided for the sole and exclusive use of the original recipient as prescribed by Mercury Marine and may not be distributed or copied, digitally or otherwise, without the prior written consent of Mercury Marine.

Model	Ratio	Rotation	Old option	New Option
Bravo II	1.81	-	RG9182	RG9262
Bravo II	2.0	-	RG9183	RG9263
Bravo II	2.2	-	RG9184	RG9264
Bravo III	1.36	-	RG9185	RG9285
Bravo III	1.5	-	RG9186	RG9265
Bravo III	1.65	-	RG9187	RG9266
Bravo III	1.81	-	RG9188	RG9267
Bravo III	2.0	-	RG9189	RG9268
Bravo III	2.2	-	RG9190	RG9269
Bravo III	2.43	-	RG9191	RG9270

THE INFORMATION IN THIS DOCUMENT IS CONFIDENTIAL AND PROTECTED BY COPYRIGHT AND IS THE PROPERTY OF MERCURY MARINE.

This document is provided for the sole and exclusive use of the original recipient as prescribed by Mercury Marine and may not be distributed or copied, digitally or otherwise, without the prior written consent of Mercury Marine.