

Circulate to: Sales Manager Accounting Service Manager Technician Parts Manager

Engine Repower of Existing Joystick Piloting for Outboards (JPO) Boats

Models Affected

Models Covered
All Joystick Piloting for Outboards (JPO) equipped boats

Scope

Worldwide

Situation

When a customer requests an engine repower on a boat that is an existing Joystick Piloting for Outboards (JPO) vessel, the following information is required for the sales department to process the request.

IMPORTANT: Non-JPO vessels cannot be converted to JPO vessels.

NOTE: The engines that have been removed from the boat can be used or resold in a non-JPO installation.

Existing Engines 250/300 HP (Serial Number 2B144122 and Below)

1. Fill out the **Information Required for Repower Engine Order**.
 - Mercury Marine sales department will request this information prior to placing an order.
2. Refer to **Section 1, Engine Repower Information and Required Parts**.
3. For a change in horsepower:
 - a. Approval must be obtained in advance from Mercury Marine.
 - b. Refer to **Section 3, Engine Repower Information and Required Parts**.

Existing Engines 250/300 HP (Serial Number 2B144123 and Above) and all 350/400R

1. Fill out the **Information Required for Repower Engine Order**.
 - Mercury Marine sales department will request this information prior to placing an order.
2. Refer to **Section 2, Engine Repower Information and Required Parts**.
3. For a change in horsepower:
 - a. Approval must be obtained in advance from Mercury Marine.
 - b. Refer to **Section 3, Engine Repower Information and Required Parts**.

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Information Required for Repower Engine Order

Boat Information	
Boat make	
Boat model	
Model year	
Hull identification number (HIN)	
Number of engines	
Number of helms	
Vessel personality name	

Current Engines				
	PORT	PORT INNER	STARBOARD INNER	STARBOARD
Serial number				
Horsepower				
Cambered skeg (see cambered skeg ID)				
Shaft length/ rotation (e.g. XL/CXL)				
Prop model and pitch				

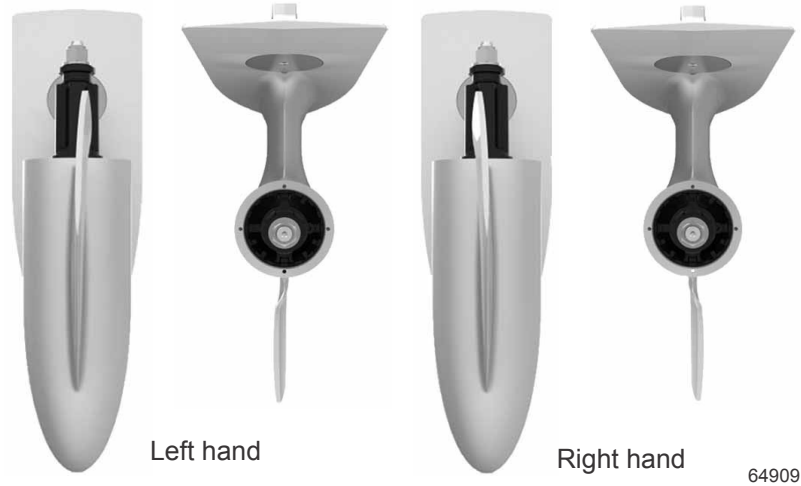
Repower Request				
	PORT	PORT INNER	STARBOARD INNER	STARBOARD
Horsepower				
Cambered skeg*				
Model number				
Shaft length/ rotation (e.g. XL/CXL)				

NOTE: *If the existing engines do not have cambered skegs, contact Mercury Technical Service to see if a vessel personality (VSL) exists for your specific boat model and cambered skeg gearcases. Upgrading to cambered skeg gearcases will be a benefit to boat handling and steering system performance and is a recommended upgrade if the VSL exists.

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Cambered Skeg Identification



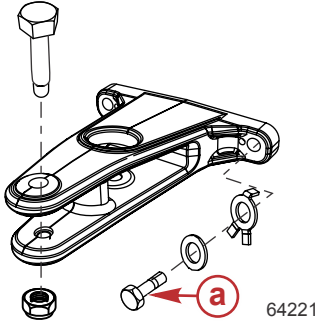
Engine Repower Information and Required Parts

Section 1, Engine Repower Information and Required Parts

250/300 HP (Serial Number 2B144122 and Below)

1. All engines **must** be replaced.
2. New extension arm kits are needed, the fastener size on the new engines has increased from 8 mm to 10 mm (a).

Required Kit (one per engine)	
Extension arm kit	8M0087880

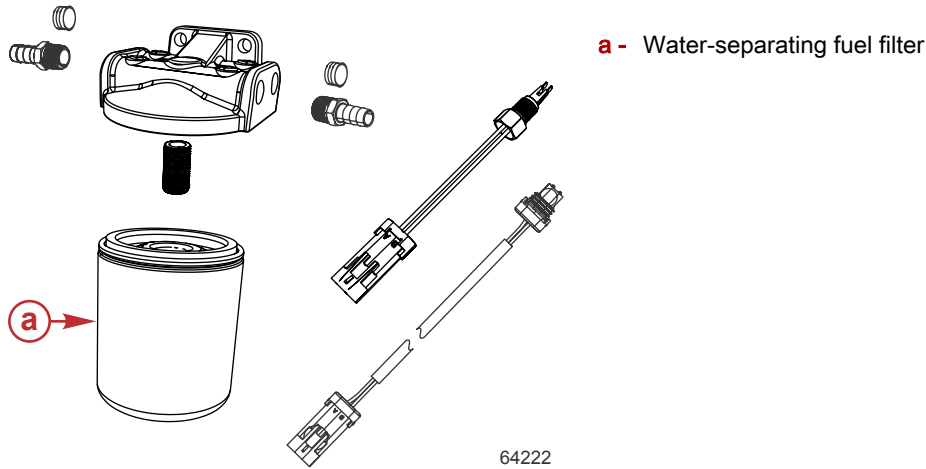


Fastener diameter change
a - Fastener

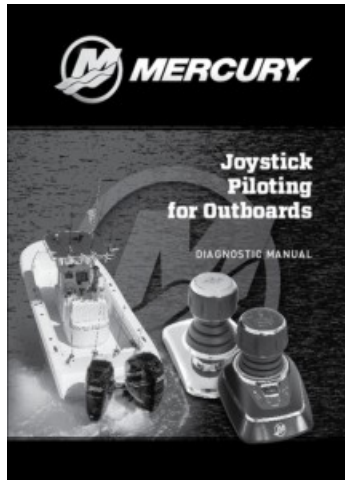
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3. The new engines require a boat mounted water-separating fuel filter, which is included with the engines.



4. If the replacement engines are equipped with HD gearcases and the 1-1/4" diameter propeller shaft, it is recommended to upgrade the propeller hub to the new SSR hub kit (8M0101601).
5. For steering component removal and installation, refer to **Joystick Piloting for Outboards** diagnostic manual (90-8M0110489).



6. After installing the new engines, the following setup steps need to be performed:
 - a. Engine location assignment using G3
 - i. Select **Configuration**.
 - ii. Select **Helm Configuration**.
 - iii. Select **Helm Device Setup**.
 - iv. Select **Helm Setup**.
 - v. Select the number of **Helms** and **Engines**.
 - vi. Select **Assign City ID**.
 - vii. Select **Lever Adapt**.
 - b. Manual drive alignment
 - Refer to **Joystick Piloting for Outboards** service manual (90-8M0110489) for the procedure.

Section 2, Engine Repower Information and Required Parts

250/300 HP (Serial Number 2B144123 and Above), 350/400R (All Serial Numbers)

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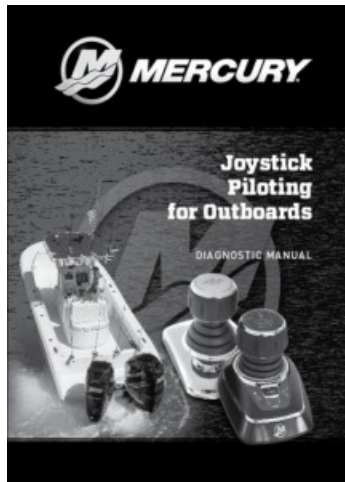
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1. New hardware for the extension arms is required.

Required Kit (one per engine)	
Extension arm hardware kit	8M0099091
Components Contained in Kit	

Ref.	Qty.	Description	Part Number
a	1	M10 x 1.5 shoulder screw	NSS
b	2	M10 x 1.5 hex head cap screw	NSS
	1	Extreme Grease 0.5 oz to be used between Ref. b and Ref. c	NSS
c	2	Hardened washer	NSS
d	1	M10 jam nut	NSS
e	2	Tab washer	NSS

2. If the replacement engines are equipped with HD gearcases and the 1-1/4" diameter propeller shaft, it is recommended to upgrade the propeller hub to the new SSR hub kit (8M0101601).
3. For steering component removal and installation, refer to **Joystick Piloting for Outboards** diagnostic manual (90-8M0110489).



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4. After installing the new engines, the following setup steps need to be performed:
 - a. Engine location assignment using G3
 - i. Select **Configuration**.
 - ii. Select **Helm Configuration**.
 - iii. Select **Helm Device Setup**.

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- iv. Select **Helm Setup**.
- v. Select the number of **Helms** and **Engines**.
- vi. Select **Assign City ID**.
- vii. Select **Lever Adapt**.
- b. Manual drive alignment
 - Refer to **Joystick Piloting for Outboards** service manual (90-8M0110489) for the procedure.

Section 3, Engine Repower Information and Required Parts

Change in Horsepower Repower

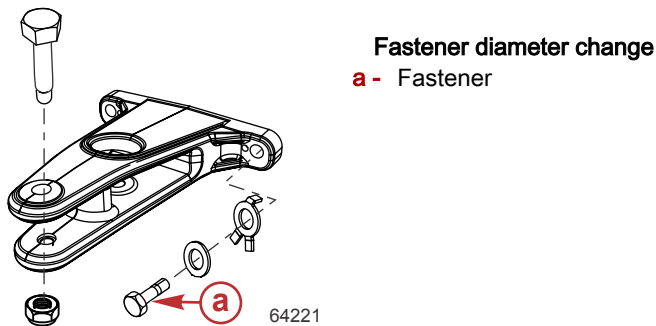
NOTE: Authorization from Mercury Marine is required before proceeding.

To receive approval, fill out the **Information Required for Repower Engine Order** and contact the Mercury Sales Department.

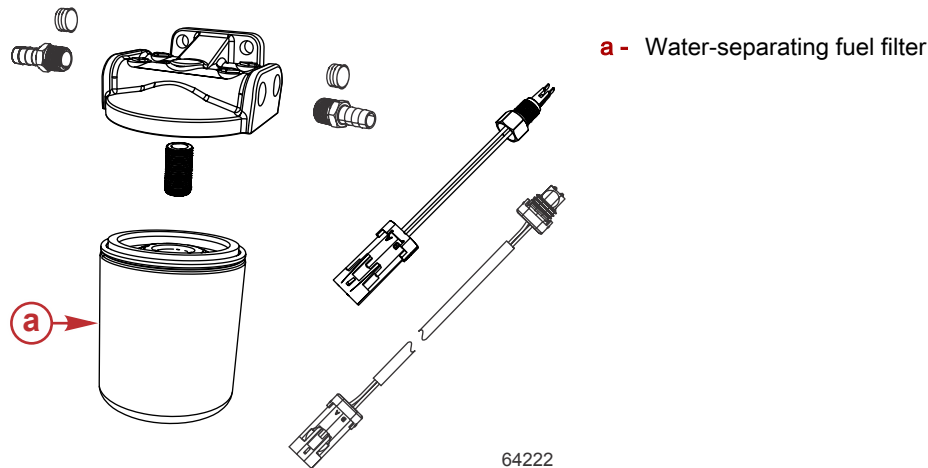
If the horsepower change is approved, the following components will be needed.

1. New propellers (Mercury Technical Service will provide details about model and pitch as required).
2. If the existing engines are serial number 2B144122 and below, new extension arm kits are needed because the fastener size on the new engines has increased from 8 mm to 10 mm (a).

Required Kit (one per engine)	
Extension arm kit	8M0087880



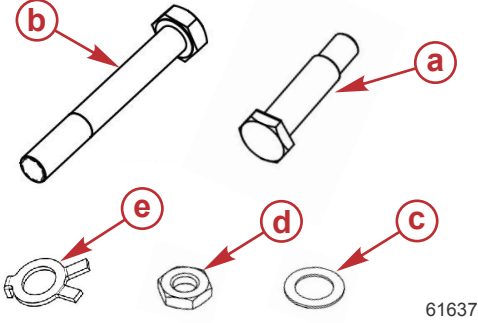
3. The new engines require a boat mounted water-separating fuel filter, which is included with the engines. Follow installation instructions included with the kit to ensure ABYC compliance.



4. If the existing engines are serial number 2B144123 and above, new hardware for the extension arms is required.

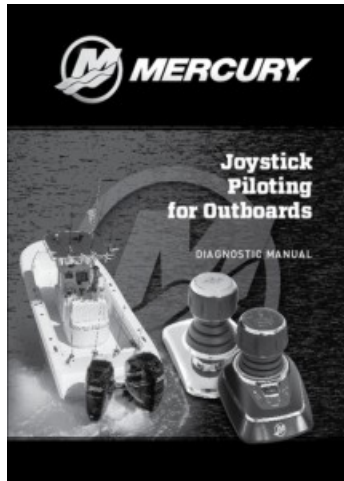
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Required Kit (one per engine)	
Extension arm hardware kit	8M0099091
Components Contained in Kit	
	

Ref.	Qty.	Description	Part Number
a	1	M10 x 1.5 shoulder screw	NSS
b	2	M10 x 1.5 hex head cap screw	NSS
	1	Extreme Grease 0.5 oz to be used between Ref. b and Ref. c	NSS
c	2	Hardened washer	NSS
d	1	M10 jam nut	NSS
e	2	Tab washer	NSS

5. For steering component removal and installation, refer to **Joystick Piloting for Outboards** diagnostic manual (90-8M0110489).



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6. After installing the new engines, the following setup steps need to be performed:
 - a. Engine location assignment using G3
 - i. Select **Configuration**.
 - ii. Select **Helm Configuration**.
 - iii. Select **Helm Device Setup**.
 - iv. Select **Helm Setup**.
 - v. Select the number of **Helms** and **Engines**.
 - vi. Select **Assign City ID**.

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- vii. Select **Lever Adapt**.
- b. Manual drive alignment
 - Refer to **Joystick Piloting for Outboards** diagnostic manual (90-8M0110489) for the procedure.
- c. A new vessel personality (VSL) needs to be installed. This will be provided by Mercury Technical Service.

IMPORTANT: The Vessel Personality will contain information that is critical to proper rigging and operation. The information can be viewed using G3 and selecting the show details button on the Vessel Personality Import screen. The following information will be displayed:

- **Set-Up**
 - **Drive separation:** Example: 660.4 mm (26 in.) (not adjustable for repower)
 - **Mounting hole:** Example: #4, #4, #4 (read PORT to STBD—#1-Top - top hole of transom bracket, #5-Bottom - bottom hole of transom bracket)
- **Engines and Propellers**
 - **Engine HP and gear ratio, propeller type and pitch** (read PORT to STBD)
 - Example: 350 HP L6SC (1.75:1)->Rev4 (20p, 21p, 20p)
- **Gearcases**
 - **Gearcase length:** Example: CXL, XXL, XL (read PORT to STBD)
 - **Gearcase type:** Example: 5.44" cambered skeg

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