



## TECHNICAL BULLETIN – TB008

### Recommended Installation Procedure to Minimize Effects of Noise & Vibration – Reversing Pumps

#### Affected Parts:

All Reversing Pumps & LAR Style Hydraulic Sailboat Drives

#### Overview

Noise & Vibration always develop in 3 definite stages.

1. Generation
2. Transmission
3. Amplification

The following steps are recommended to minimize the affects of noise and vibration when installing and operating Octopus Reversing pumps.

#### Step 1 – Minimize Generation

See Service procedure SP002 – Flow Adjustment

Set the pump flow rate to produce a minimum HO to HO speed as specified by the autopilot manufacturer. The steering cylinder volume can vary so a **DOCKSIDE** speed adjustment is **HIGHLY** recommended. A HO to HO speed of 12-15 seconds will satisfy most autopilots.

Note: **Bigger** is not always better – **Faster** is not always desirable. A pump running too fast will generate more noise and vibration and consume more electrical power. This puts additional stress on **all** the system components (electronic – electric- mechanical). A faster HO to HO does **NOT** result in improved autopilot system performance.

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### Step 2 – Minimize Transmission

There are 2 ways for any noise & vibration to be transmitted from the pump to the surrounding structure. The first way is via the pump mount; the second way is via the hydraulic lines that connect the pump to the steering system.

#### a. Pump Mount

- Legacy Mounts - All Octopus Reversing Pumps & LAR style Linear Drives ship from the factory with molded rubber mounting feet that reduce transmission.
- Improved Mounts – A new mounting system was introduced in 2006. The new mount incorporates an additional integral isolating feature that greatly reduces transmission. This mounting system is easily retro-fitted to all Octopus Reversing Pumps and LAR style Linear Drives. Order OC14SUK27 – Motor Mount Assembly – Kit.



#### b. Hydraulic Lines

- It is **STRONGLY** recommended that a short length of suitable flexible hydraulic hose be used to connect the Octopus Pump (3 lines) to the steering system. This method of connecting the hydraulic lines **MINIMIZES** transmission of noise & vibration.
- It is **NOT** recommended to use semi-rigid nylon tube to connect the pump to the steering system even when the steering systems use semi-rigid nylon tube. This method will **NOT** minimize transmission of noise & vibration.
- Octopus Pumps **MUST NEVER** be connected to the steering system using rigid copper or steel tubing. This method can result in tube fracturing due to fatigue with resulting loss of steering control.



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### Step 3 – Minimize Amplification

Care must be taken that any noise & vibration that has been generated and transferred to the surrounding structure is **NOT** amplified.

- Do **NOT** mount the pump on large unsupported panel type structures. This type of structure can freely vibrate and amplify.
- If possible – locate the pump away from living quarters – near to the engine or in the engine bay.