Unmatched comfort and control. Only with SeaStar, offering smooth, super-efficient steering designed for today's catamarans and pontoon boats with dual outboards up to 600 HP combined.

Applications:
The components listed in this section are ideal for outboard-powered catamarans and pontoon boats with dual non-power-assisted outboard engines up to 450 HP (600 combined HP for counter-rotating duals) that have ABYC standard engine tilt tubes.

These systems are suitable for speeds up to 75 MPH and dual station use as noted (with purchase of extra helm, hose & fittings). All systems allow for independent engine tilt.

Features:
- Patented steering lock valves.
- Low friction hydraulic steering system.
- Configurations to suit nearly any boat
- Compact helm has only a 4-7/16” footprint — needs only 3” dash hole (Tilt requires larger hole).
- Standard 3/4” tapered steering shaft.
- Fast, easy installation.
- Meets A.B.Y.C. standards and N.M.M.A. certification requirements.

How to Measure Hoses for Catamarans & Pontoon Boats:

For a New Installation:
Measure Hose Routing Path in Boat as follows:

A = Center line of wheel to gunwale,
B = Dash to transom,
C = Gunwale to centerline of cylinder connection at centered tiller.

Outboard cylinders move with engine; enough slack must be left in hoses to prevent sharp bends (less than 3” radius) and/or kinking.

For Tilt Tube Mounting only, add A, B & C + 24”, round up to next even foot. Order that length hose kit.

For “Hydraulic Tie Bar” installations only, note locations of helm, cylinders and alignment valve. (See diagram on Alignment Valve page for typical hose routing.) Hoses are sold in pairs.
3 Configurations:

There are three ways to steer dual engine pontoon boats and catamarans with SeaStar, summarized below in order of preference:

1. Mechanical Tie Bar System (Pivot mount or side mount cylinders required)

Dual engines should be connected with a mechanical tie bar whenever possible. This is the preferred method. Single or dual cylinders (pivot or side mount) can be used depending on steering effort and mounting space.

2. Drag Link System (Fixed-mount cylinders required)

An HC5343/HC5374 cylinder can be used where boat design allows. This requires 2 drag links (not supplied by SeaStar) to connect the engines to the cylinder.

NOTE: To establish whether or not this type of cylinder is suitable for your application, the following points should be considered: 1.) Fore and aft alignment of cylinder. If not mounted in line, each motor will have a different turning radius. 2.) Distance between motors. 3.) Distance of travel in tilt arc. 4.) Horizontal alignment of cylinder.

3. “Hydraulic Tie Bar” System (Pivot mount or side mount cylinders and alignment valve required)

“Hydraulic Tie Bar” — SeaStar Alignment Valve may be used in conjunction with a cylinder mounted to each engine (only if a tie bar or drag links cannot be used).

NOTE: The Cylinder Alignment Valve (part # HA5471-2) will allow for the periodic required realignment of two outboard motors or rudders that are linked together with a Hydraulic Tie Bar as opposed to a solid link or a Mechanical Tie Bar. Boats exceeding 55 mph must use the SeaStar Pro Helm Pump (part #HH5770) and SeaStar Pro Kevlar® Hoses.

For more information about SeaStar Pontoon/Catamaran steering, order (or download) SeaStar Selection Guide, Manual #9.1 and Document #705343-A. If you have questions, please contact technical service at www.teleflexmarine.com or 604-270-6899.
**SeaStar cat/pontoon steering**

**Tie Bar Type System:**
(26"-36" engine center distance required for SeaStar tie bars)

SeaStar 1.7 Helm .................. HH5271 or
SeaStar 2.4 Helm .................. HH5272
(2.4 Helm recommended if two cylinders are being utilized.)

Pivot Mt. Outboard Cylinder (Black). HC5345* or
(See SeaStar Pivot Mount Application Guide earlier in this catalog for some engines which may require HC5347, HC5348 or HC5358. When using two HC5370 cylinders, the rods must face each other.)
Side Mount Outboard Cylinder .......... HC5370

SeaStar Hose Kit (2 hoses) .......... HO51
SeaStar Oil (1 Quart Mil Spec H5606) .......... HA5430 (x2)

Tie Bar for Pivot Mount Cylinder ...... HO600__ or
Tie Bar for Side Mount Cylinder .......... HO5009
(For pivot mount cylinder, see dual engine application guide in SeaStar pivot mount cylinder section.)

**Drag Link Type System:**

SeaStar 1.7 Helm .................. HH5271
Catamaran Twin O/B Fixed Mount Cylinder
(7" wide mounting hole pattern) .......... HC5343
Catamaran Twin O/B Fixed Mount Cylinder
(13.25" wide mounting hole pattern) ...... HC5374
SeaStar Hose Kit (2 hoses) .......... HO51
SeaStar Oil (1 Quart) .......... HA5430 (x2)
Drag Link (not available from SeaStar) ........ (x2)

**“Hydraulic Tie Bar” System (to 55 MPH):**

SeaStar 1.7 Helm .................. HH5271 or
SeaStar 2.4 Helm .................. HH5272
(Use 2.4 Helm if two cylinders are being utilized.)

Pivot Mt. Outboard Cylinder (Black). HC5345* or
(See SeaStar Pivot Mount Application Guide earlier in this catalog for some engines which may require HC5347, HC5348 or HC5358. When using two HC5370 cylinders, the rods must face each other.)
Side Mount Outboard Cylinder .......... HC5370

Cylinder Alignment Valve ........... HA5471-2
SeaStar Hose Kit (2 hoses) .......... HO51
(5 hoses are needed; using Alignment Valve diagrams, plot hose routings and order in pairs.)
SeaStar Oil (1 Quart) ........ HA5430 (x3)
“Hydraulic Tie Bar” System (55 MPH+):

SeaStar PRO Helm ......................... HH5770
Pivot Mt. Outboard Cylinder (Black) . HC5345* or (See SeaStar Pivot Mount Application Guide earlier in this catalog for some engines which may require HC5347, HC5348 or HC5358. When using two HC5370 cylinders, the rods must face each other.)
Side Mount Outboard Cylinder ............ HC5370
Cylinder Alignment Valve ................. HA5471-2
SeaStar PRO Hose Kit (2 hoses) .......... HO57__
(5 hoses are needed; using Alignment Valve diagrams, plot hose routings and order in pairs.)
SeaStar Oil (1 Quart) ....................... HA5430 (x3)

Options:

SeaStar 1.7 Sport Tilt Helm/Mech. ......... HH5291
SeaStar 1.7 Traditional Tilt Helm/Mech. HH5741
SeaStar 1.7 Rear Mount Helm ............... HH5261
SeaStar 2.4 Front Mount Helm.............. HH5272
SeaStar 2.4 Rear Mount Helm ............... HH5262
SeaStar 2.4 Sport Tilt Helm/Mech. .......... HH5292
SeaStar 2.4 Traditional Tilt Helm/Mech. HH5742
SeaStar PRO Sport Tilt Helm/Mech. ....... HH5290
SeaStar PRO Traditional Tilt Helm/Mech HH5774
SeaStar 1.7 Commercial Duty Helm ......... HH5217
SeaStar 2.4 Commercial Duty Helm .......... HH5224
(Commercial Duty helms are designed for small Lobster and Crabbing vessels, these helms have a stainless steel shaft with heavy duty seal and wiper, which help protect the helm from the abrasive effects of sediment brought on board with traps or pots.)
Pivot Mount Cylinder (Silver) ............. HC53__SIL
Pivot Mount Cylinder — PRO (Black) .... HC63__
Pivot Mt. Cylinder — PRO (Red) ....... HC63__RED
(Silver & PRO Pivot Mount Cylinder P/Ns: Second two digits are the same as standard black pivot mount cylinders. For example, silver equivalent of HC5345 is HC5345SIL; black PRO equivalent of HC5345 is HC6345; red PRO equivalent of HC5345 is HC6345RED. For cylinder applications, see those for HC53__ series in Pivot Mount Application Guide, earlier in this catalog.)
SeaStar Round Bezel Kit ..................... HA5417
(Reduces helm protrusion by 3.75")
SeaStar Backplate Kit ...................... HA5418
(Reduces helm protrusion by thickness of dash and allows clean retrofit of SeaStar helm where following helms were previously installed: pre-1991 SeaStar, SyTen, and mechanical rotary steering.)
SeaStar 20° Dash Mounting Wedge Kit HA5419
SeaStar Bulkhead Hose Kit (2 hoses) ... HO81__
(Allows through-bulkhead installation without additional fittings.)
Add-A-Station/Autopilot Fitting Kit ....... HF5501

Service Items:

SeaStar Oil (1 Gallon) ..................... HA5440
Steering Wheel Locknut .................... 747521
NOTE: Use only SeaStar outboard steering hoses (HO51/HH57 type) with SeaStar outboard steering systems. Use of nylon tubing is not recommended for SeaStar outboard steering.
### Ordering Guide:

**Catamaran/Pontoon Dual Engines**

<table>
<thead>
<tr>
<th>ENGINE/CYLINDER CONFIGURATION</th>
<th>COMPONENT DESCRIPTION</th>
<th>QTY. REQ'D</th>
<th>MODEL</th>
<th>PART NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(MECHANICAL TIE BAR SYSTEM DUAL ENGINES, SINGLE CYLINDER:)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(SINGLE PIVOT MOUNT CYLINDER)</strong></td>
<td>CYLINDER</td>
<td>1</td>
<td>PIVOT MOUNT*</td>
<td>HC53__</td>
</tr>
<tr>
<td>Non-Counter-Rotating Applications</td>
<td>TIE BAR KIT (26-36&quot; center distance)</td>
<td>1</td>
<td>SEE APPLICATION GUIDE***</td>
<td>H060__</td>
</tr>
<tr>
<td>to 450 HP max; Counter-Rotating</td>
<td>HELM</td>
<td>1</td>
<td>SEASTAR 1.7</td>
<td>HH5271</td>
</tr>
<tr>
<td>Applications to 600 HP maximum.</td>
<td>HOSE KIT</td>
<td>1</td>
<td>OUTBOARD HOSE</td>
<td>H051__</td>
</tr>
<tr>
<td>NUMBER OF TURNS: 5</td>
<td>OIL</td>
<td>2</td>
<td>SEASTAR OIL (QT.)</td>
<td>HA5430</td>
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<tr>
<td><strong>(SINGLE SIDE MOUNT CYLINDER)</strong></td>
<td>CYLINDER</td>
<td>1</td>
<td>SIDE MOUNT **</td>
<td>HC5370</td>
</tr>
<tr>
<td>Non-Counter-Rotating Applications</td>
<td>TIE BAR KIT (26-36&quot; center distance)</td>
<td>1</td>
<td>TIE BAR ONLY</td>
<td>H05009</td>
</tr>
<tr>
<td>to 300 HP max; Counter-Rotating</td>
<td>HELM</td>
<td>1</td>
<td>SEASTAR 1.7</td>
<td>HH5271</td>
</tr>
<tr>
<td>Applications to 600 HP maximum.</td>
<td>HOSE KIT</td>
<td>1</td>
<td>OUTBOARD HOSE</td>
<td>H051__</td>
</tr>
<tr>
<td>NUMBER OF TURNS: 4.8/5.7</td>
<td>OIL</td>
<td>2</td>
<td>SEASTAR OIL (QT.)</td>
<td>HA5430</td>
</tr>
<tr>
<td><strong>(DUAL PIVOT MOUNT CYLINDERS)</strong></td>
<td>CYLINDER</td>
<td>2</td>
<td>PIVOT MOUNT*</td>
<td>HC53__</td>
</tr>
<tr>
<td>Non-Counter-Rotating Applications</td>
<td>TIE BAR KIT (26-36&quot; center distance)</td>
<td>1</td>
<td>SEE APPLICATION GUIDE***</td>
<td>H060__</td>
</tr>
<tr>
<td>to 600 HP max; All Counter-Rotating</td>
<td>HELM</td>
<td>1</td>
<td>SEASTAR 2.4</td>
<td>HH5272</td>
</tr>
<tr>
<td>Engine Applications</td>
<td>HOSE KIT</td>
<td>3</td>
<td>OUTBOARD HOSE</td>
<td>H051__</td>
</tr>
<tr>
<td>NUMBER OF TURNS: 7</td>
<td>FITTING KIT</td>
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<td>TEE FITTINGS</td>
<td>HF5530</td>
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<tr>
<td></td>
<td>OIL</td>
<td>3</td>
<td>SEASTAR OIL (QT.)</td>
<td>HA5430</td>
</tr>
<tr>
<td><strong>(DUAL SIDE MOUNT CYLINDERS)</strong></td>
<td>CYLINDER</td>
<td>2</td>
<td>SIDE MOUNT **</td>
<td>HC5370</td>
</tr>
<tr>
<td>Non-Counter-Rotating Applications</td>
<td>TIE BAR KIT (26-36&quot; center distance)</td>
<td>1</td>
<td>TIE BAR ONLY</td>
<td>H05009</td>
</tr>
<tr>
<td>to 600 HP max; All Counter-Rotating</td>
<td>HELM</td>
<td>1</td>
<td>SEASTAR 2.4</td>
<td>HH5272</td>
</tr>
<tr>
<td>Engine Applications</td>
<td>HOSE KIT</td>
<td>3</td>
<td>OUTBOARD HOSE</td>
<td>H051__</td>
</tr>
<tr>
<td>NUMBER OF TURNS: 7.5</td>
<td>FITTING KIT</td>
<td>1</td>
<td>TEE FITTINGS</td>
<td>HF5530</td>
</tr>
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<td></td>
<td>OIL</td>
<td>3</td>
<td>SEASTAR OIL (QT.)</td>
<td>HA5430</td>
</tr>
<tr>
<td><strong>DRAG LINK SYSTEM (TWIN ENGINES, SINGLE CYLINDER;)</strong></td>
<td>CYLINDER</td>
<td>1</td>
<td>CATAMARAN TYPE</td>
<td>HC5343</td>
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<tr>
<td>Non-Counter-Rotating Applications</td>
<td>HELM</td>
<td>1</td>
<td>SEASTAR 1.7</td>
<td>HH5271</td>
</tr>
<tr>
<td>to 450 HP max; Counter-Rotating</td>
<td>HOSE KIT</td>
<td>1</td>
<td>OUTBOARD HOSE</td>
<td>H051__</td>
</tr>
<tr>
<td>Applications to 600 HP maximum.</td>
<td>OIL</td>
<td>3</td>
<td>SEASTAR OIL (QT.)</td>
<td>HA5430</td>
</tr>
<tr>
<td>NUMBER OF TURNS: 5</td>
<td>DRAG LINKS</td>
<td>2</td>
<td>CUSTOMER-SUPPLIED</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>(SINGLE CATAMARAN CYLINDER)</strong></td>
<td>CYLINDER</td>
<td>1</td>
<td>CATAMARAN TYPE</td>
<td>HC5343</td>
</tr>
<tr>
<td>Non-Counter-Rotating Applications</td>
<td>HELM</td>
<td>1</td>
<td>SEASTAR 2.4</td>
<td>HH5272</td>
</tr>
<tr>
<td>to 450 HP max; Counter-Rotating</td>
<td>HOSE KIT</td>
<td>1</td>
<td>OUTBOARD HOSE</td>
<td>H051__</td>
</tr>
<tr>
<td>Applications to 600 HP maximum.</td>
<td>OIL</td>
<td>3</td>
<td>SEASTAR OIL (QT.)</td>
<td>HA5430</td>
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<tr>
<td>NUMBER OF TURNS: 5.5</td>
<td>DRAG LINKS</td>
<td>2</td>
<td>CUSTOMER-SUPPLIED</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Recommendations shown on these two pages apply to factory stock outboards only. Modified installations may require a higher capacity steering system. If in doubt, contact our Teleflex Canada tech service for assistance. (Cylinder volume/helm displacement = number of turns.)
## Ordering Guide (continued):
### Catamaran/Pontoon Dual Engines

<table>
<thead>
<tr>
<th>ENGINE/CYLINDER CONFIGURATION</th>
<th>COMPONENT DESCRIPTION</th>
<th>QTY. REQ'D</th>
<th>MODEL</th>
<th>PART NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“HYDRAULIC TIE BAR” SYSTEM TO 55 MPH (TWIN ENGINES, TWIN CYLINDERS:)</strong></td>
<td>CYLINDER</td>
<td>2</td>
<td>PIVOT MOUNT*</td>
<td>HC53__</td>
</tr>
<tr>
<td>Non-Counter-Rotating Applications</td>
<td>TIE BAR KIT (26-36&quot; center distance)</td>
<td>1</td>
<td>SEE APPLICATION GUIDE***</td>
<td>H060__</td>
</tr>
<tr>
<td>to 600 HP max; All Counter-Rotating</td>
<td>HELM</td>
<td>1</td>
<td>SEASTAR 2.4</td>
<td>HH5272</td>
</tr>
<tr>
<td>Engine Applications</td>
<td>HOSE KIT</td>
<td>3</td>
<td>OUTBOARD HOSE</td>
<td>H051__</td>
</tr>
<tr>
<td><strong>NUMBER OF TURNS: 6.7</strong></td>
<td>ALIGNMENT VALVE</td>
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<td>TIE BAR VALVE</td>
<td>HA5471-2</td>
</tr>
<tr>
<td></td>
<td>OIL</td>
<td>3</td>
<td>SEASTAR OIL (QT.)</td>
<td>HA5430</td>
</tr>
</tbody>
</table>

| **“HYDRAULIC TIE BAR” SYSTEM FOR 55+ MPH (TWIN ENGINES, TWIN CYLINDERS:)** | CYLINDER | 2 | SIDE MOUNT ** | HC5370 |
| (DUAL SIDE MOUNT CYLINDERS) | TIE BAR KIT (26-36" center distance) | 1 | TIE BAR ONLY | H05009 |
| Non-Counter-Rotating Applications | HELM | 1 | SEASTAR PRO | HH5770 |
| to 600 HP max; All Counter-Rotating | HOSE KIT | 3 | SEASTAR PRO HOSE | H057__ |
| Engine Applications | ALIGNMENT VALVE | 1 | TIE BAR VALVE | HA5471-2 |
| **NUMBER OF TURNS: 8** | OIL | 3 | SEASTAR OIL (QT.) | HA5430 |

| **“HYDRAULIC TIE BAR” SYSTEM FOR 55+ MPH (TWIN ENGINES, TWIN CYLINDERS:)** | CYLINDER | 2 | SIDE MOUNT ** | HC5370 |
| (DUAL SIDE MOUNT CYLINDERS) | TIE BAR KIT (26-36" center distance) | 1 | TIE BAR ONLY | H05009 |
| Non-Counter-Rotating Applications | HELM | 1 | SEASTAR PRO | HH5770 |
| to 600 HP max; All Counter-Rotating | HOSE KIT | 3 | SEASTAR PRO HOSE | H057__ |
| Engine Applications | ALIGNMENT VALVE | 1 | TIE BAR VALVE | HA5471-2 |
| **NUMBER OF TURNS: 9** | OIL | 3 | SEASTAR OIL (QT.) | HA5430 |

**NOTES:**
* See SeaStar Outboard Pivot Mount Cylinder application guide earlier in this catalog for some engines which may require HC5347, HC5348 or HC5358.

** **When using two HC5370 cylinders, the rods must face each other.

*** For HC5345, HC5347, HC5348 and HC5358 cylinders, tie bars vary by engine make & model (see application guide in the SeaStar Outboard Pivot Mount Cylinder section) or use engine manufacturer’s tie bar.

For HC5370 cylinders, use SeaStar tie bar HO5009.

For dual engines with engine center distances from 26-36”, use the appropriate SeaStar tie bar. For dual engines with center distances greater than 36”, obtain longer tie bar, use HC5343/HC5374 cylinder with drag links, or use “Hydraulic Tie Bar” system with SeaStar Alignment Valve.

For speeds over 55 MPH, use SeaStar PRO helm #HH5770. (Must NOT be used with single side mount [unbalanced] cylinder.)

For information on additional steering stations or other optional helms, refer to the ordering guides in the SeaStar Outboard Pivot Mount Cylinder and/or Side Mount Cylinder steering sections.

SeaStar Power Assist (P/A) is an option for most of these systems. For SeaStar helms, use SeaStar P/A systems; for SeaStar PRO helms, use SeaStar P/A PRO systems.
SeaStar cat/pontoon steering

Alignment Valve for “Hydraulic Tie Bar”
(when a mechanical tie bar cannot be used)

The SeaStar® Cylinder Alignment Valve (part # HA5471-2) will allow for the periodic required realignment of two outboard motors or rudders that are linked together with a Hydraulic Tie Bar as opposed to a solid link or a Mechanical Tie Bar.

A standard helm and SeaStar hoses may be used on vessels not exceeding speeds of 55 MPH. Boats exceeding 55 MPH must use the SeaStar Pro Helm Pump (part # HH5770) and SeaStar Pro Kevlar® Hoses.

**Bleeding Instructions:**

**NOTE:** See diagrams at right for bleed fitting numbers.

1. Fill helm with oil and attach filler device/container to helm.
2. Open valve.
3. Open bleed fitting no. 1 and pull cylinder shaft all the way out on fitting no. 1 side of cylinder.
4. Turn steering wheel clockwise until an air free stream of oil comes forth from bleed fitting no. 1. **DO NOT ALLOW SHAFT TO MOVE BACK INTO CYLINDER. DO NOT USE A WRENCH TO HOLD SHAFT.**
5. Close bleed fitting no. 1.
6. Open bleed fitting no. 2 and pull cylinder shaft all the way out on fitting no. 2 side of cylinder.
7. Turn steering wheel counter-clockwise until an air free stream of oil comes forth from bleed fitting no. 2, then close bleed fitting no. 2.
8. Open bleed fitting no. 3 and pull cylinder shaft all the way out on fitting no. 3 side of cylinder.
9. Turn steering wheel counter-clockwise until an air free stream of oil comes forth from bleed fitting no. 3, then close bleed fitting no. 3.
10. Open bleed fitting no. 4 and pull cylinder shaft all the way out on fitting no. 4 side of cylinder.
11. Turn steering wheel counter-clockwise until an air free stream of oil comes forth from bleed fitting no. 4, then close bleed fitting no. 4.
12. Turn steering wheel back and forth from hardover to hardover a couple of times. Align cylinders by pulling cylinder rod all the way out on the same side of each cylinder and close valve.
Realignment Instructions:

Engines Toed Outwards (propellers too far apart):
1. Turn the wheel hard over to Starboard.
   (Both cylinders move; cylinder B reaches hard over first).
2. Open the valve.
3. Continue to turn the wheel hard over to Starboard. (Only cylinder A moves and reaches hard over).
4. Close the valve.

Engines Toed Inwards (propellers too close together):
1. Turn the wheel hard over to Port.
   (Both cylinders move; cylinder B reaches hard over first).
2. Open the valve.
3. Continue to turn the wheel hard over to Port. (Only cylinder A moves and reaches hard over).
4. Close the valve.

NOTE: Due to the potential for leakage across the piston seals, it is possible for the engines to get out of synchronization. We are unable to predict, due to circumstances beyond our control, the frequency that misalignment may occur, therefore engine alignment should be checked and corrected as required before leaving the dock.

CAUTION: Side Mount or Unbalanced Cylinders, such as SeaStar cylinder HC5370 can only be used with the valve by re-orienting the port engine tilt tube, to allow for mounting cylinder on the port (left) side of the port engine. Cylinder rods must face each other.

WARNING: The use of a standard helm at high speed (55 MPH+) or a high load, e.g.: full throttle forward/reverse, may cause a vacuum in the liquid tie bar and cause engine/rudders to misalign, resulting in momentary loss of steering control. This will not occur if a SeaStar Pro Helm Pump (part # HH5770) is used.