



ADVANCED MARINE STEERING SOLUTIONS

Precision. Control. Reliability.



PRETECHCO., INC (SOUTH KOREA)
10, Bangdeung-gil, Docheok-myeon, Gwangju-si, Gyeonggi-do, South Korea 12818
Tel. +82-31-763-8178 **Fax.** +82-31-763-8175 **E-mail.** sales@pretechco.com
www.pretechco.com





OUTBOARD HYDRAULIC STEERING

Pretech delivers a wide range of Outboard Hydraulic Steering systems engineered for recreational, commercial, and fishing vessels. Built with advanced technology and superior craftsmanship, these steering solutions are designed for smooth handling, durability, and maximum safety on water. Every system is tested rigorously to meet stringent quality standards and comes with reliable warranty support. Pretech steering systems are compliant with international marine safety regulations and certified to ensure long-term performance and trust on every voyage.

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OUTBOARD HYDRAULIC STEERING SYSTEM

TECHNOLOGY INVOLVED IN THE STEERING SYSTEM



**HYDRAULIC
HELM PUMP**



**HYDRAULIC
CYLINDER**



**HYDRAULIC
FLUID**



**HYDRAULIC
HOSES**

HYDRAULIC HELM PUMP

An axial piston-driven pump that provides smooth and precise steering by circulating hydraulic fluid as the wheel turns. Built-in lock and pressure relief valves ensure safety and protect the system from feedback and excess pressure.

HYDRAULIC CYLINDER

The Steering Cylinder delivers precise linear movement to the engine, enabling smooth and reliable control of the boat to starboard or port.

HYDRAULIC FLUID

Hydraulic Steering Fluid is essential for system operation. As the helm pump is turned, it pushes fluid through the tubing, which in turn displaces the cylinder to steer the boat smoothly and efficiently.

HYDRAULIC HOSES

The Hose Tube transfers steering fluid between the helm pump and cylinder, ensuring smooth bidirectional flow. Designed with flexibility for routing through tight or complex bends, each hose is pressure-tested beyond maximum working limits to ensure durability and prevent oil leakage.



OUTBOARD
INSTALLATION
RECOMMENDATION

CHOOSING THE RIGHT OUTBOARD SYSTEM FOR OUTBOARDS ABOVE 150 HP

Drawing from extensive installation and application experience, we recommend front-mount outboard steering systems that strike the right balance between comfort, control, and performance—ensuring smooth operation even under demanding conditions.

Safety & Compatibility First: While we provide expert guidance, it is the boat manufacturer and installer's responsibility to thoroughly test and validate all components for safe and effective operation on the specific vessel.

Important Note: Our steering systems are engineered for specific applications only. Using them outside of their intended purpose can lead to compromised safety and reduced performance. Always verify compatibility before installation.

	REGULAR USE	AGGRESSIVE USE
OUTBOARD	STEERFLEX 350 FRONT MOUNT CYLINDER	STEERFLEX 350 FRONT MOUNT CYLINDER
SINGLE OUTBOARD	SINGLE CYLINDER Rating: 350 HP max. Speed: 75 MPH max. Model: SF-350 Cylinder	SINGLE CYLINDER Rating: 350 HP max. Speed: 75 MPH max. Model: SF-350P Cylinder
DUAL OUTBOARDS NON COUNTER-ROTATING	SINGLE CYLINDER Rating: 225 + 225 = 450 HP max. Speed: 75 MPH max. Model: SF-350 Cylinder with TRX Tie Bar	SINGLE CYLINDER Rating: 250 + 250 = 500 HP max Speed: 75 MPH max. Model: SF-350P Cylinder with TRX Tie Bar
	DUAL CYLINDERS Rating: 300 + 300 = 600 HP max. Speed: 55 MPH max. Model: SF-350 Cylinder with TRX Tie Bar	DUAL CYLINDERS Rating: 350 + 350 = 700 HP max. Speed: 75 MPH max. Model: SF-350P Cylinder with TRX Tie Bar
DUAL OUTBOARDS COUNTER-ROTATING	SINGLE CYLINDER Rating: 300 + 300 = 600 HP max. Speed: 55 MPH max. Model: SF-350 Cylinder with TRX Tie Bar	SINGLE CYLINDER Rating: 350 + 350 = 700 HP max. Speed: 75 MPH max. Model: SF-350P Cylinder with TRX Tie Bar
	DUAL CYLINDERS Rating: 350 + 350 = 700 HP max. Speed: 55 MPH max. Model: SF-350 Cylinder with TRX Tie Bar	DUAL CYLINDERS Rating: 350 + 350 = 700 HP max. Speed: 75 MPH max. Model: SF-350P Cylinder with TRX Tie Bar
TRIPLE OUTBOARDS ONE WITH COUNTER-ROTATING	DUAL CYLINDERS Rating: 250 + 250 + 250 = 750 HP max. Speed: 75 MPH max. Model: SF-350P Cylinder with TRX Tie Bar *maximum drop of central outboard <0.75" OR RECOMMENDED TO UPGRADE TO PRETECH POWER ASSIST	
	TRIPLE CYLINDERS Rating: 350 + 350 + 350 = 1050 HP max. Speed: 75 MPH max. Model: SF-350P Cylinder with TRX Tie Bar *maximum drop of central outboard <0.75" OR RECOMMENDED TO UPGRADE TO PRETECH POWER ASSIST	
QUAD OUTBOARDS TWO WITH COUNTER-ROTATING	DUAL CYLINDERS Rating: 350 + 350 + 350 + 350 = 1400 HP max. Speed: 75 MPH max. Model: SF-350P Cylinder with TRX Tie Bar *maximum drop of central outboard <0.75" OR RECOMMENDED TO UPGRADE TO PRETECH POWER ASSIST	

SINGLE OUTBOARD KITS



PACKAGED HYDRAULIC STEERING SYSTEM FOR OUTBOARD UP TO 115 HP: SF-115



THE STANDARD STEERING KIT SF-115 FOR SINGLE CYLINDER - SINGLE OUTBOARD INCLUDES:

Part No.	Description	Quantity
KHR18M	Mid Mount Helm Pump 18cc	1 No.
KC-115	Cylinder for Outboards up to 115Hp	1 No.
KO	Hydraulic Steering Fluid	2 Liters
CH-7.5	Hydraulic Hose 5.0 meters with factory crimped hose connectors	2 Nos.
Standard Wheel Turns : 5.2 Lock to Lock		

- Note:
- The steering wheel can be ordered with the standard kit. For more details, please contact us.
 - Hose length can be customized as per customer requirements.
 - For higher or lower number of turns, please consult our technical support team.

RELATED PARTS

Component	Description
Steering Wheel	350 mm Steering Wheel
Dual Station Kit	To add an additional station of Helm
Spare Parts	Helm Pump and Cylinder Spares

- Note:
- Related components are sold separately and packaged individually.

STEERFLEX SF-115 : SINGLE ENGINE APPLICATION GUIDE

Before selecting a cylinder from this application guide, always verify the model year of your outboard to ensure you are choosing the correct cylinder for your boat.

Important: The splashwell must be wide enough to accommodate cylinder installation. Please refer to the Installation Manual for detailed space requirements.

MANUFACTURER	YEAR	MODEL	CYLINDER	NOTES
HONDA	1992–DATE	30–50 HP 4-Stroke	KC-115	See Note A
	1996–DATE	75–90 HP 4-Stroke	KC-115	
	2015–DATE	100 HP 4-Stroke	KC-115	
	1998–2010	115 HP 4-Stroke	NA	
	2003–DATE	135–115 HP 4-Stroke	KC-115	
	2010–DATE	115 HP 4-Stroke	KC-115	
JOHNSON/EVINRUDE	1991–DATE	40–115 HP inc. E-Tec	KC-115	See Note A
	NOTE: Johnson 115 HP 2-stroke outboards, required the tiller plate to be inverted.	115 HP Ficht	KC-115I	See Note C
	2017–DATE	75–115 HP Ficht	KC-115I	Requires Spacer Kit SP1, See Note A
	1998–DATE	40–115 HP 4-Stroke	KC-115I	
MERCURY/MARINER	1984–DATE	75–115 HP	KC-115	See Note C
	1998–2007	40–60 HP 2-Stroke	KC-115N	Requires Spacer Kit SP1, See Note A
	2008–DATE	40 HP 4-Stroke	KC-115N	Requires Spacer Kit Sp1
	2008–DATE	60 HP 4-Stroke	KC-115	See Note A
SELVA	2000–DATE	25-70 HP 4-Stroke	KC-115N	Requires Spacer Kit SP1, See Note A
	2000–DATE	90-115 HP 4-Stroke	KC-115	See note 5
	2011–2013	115 HP 4-Stroke	KC-115I	
SUZUKI	1986–DATE	150 HP 2-Stroke	KC-115	See Note C
	1987–2002	115 HP 2-Stroke	KC-115	Requires Spacer Kit Sp1
	1990–2000	90–100 HP 2-Stroke	KC-115	Requires Spacer Kit SP1, See Note A
	1998–DATE	40–70 HP 4-Stroke	KC-115	Requires Spacer Kit SP1
	2001–DATE	90–115 HP 4-Stroke	KC-115I	
TOHATSU	1990–DATE	40–114 HP 2-Stroke	KC-115	See Note A
	2014–DATE	60–115 HP 4-Stroke	KC-115	
NEANDER MARINE	2017–DATE	Dtorque 111 - 90 HP	KC-115	
YAMAHA	1998–DATE	40–50 HP 2-Stroke	KC-115	See Note A
	1998–DATE	60 HP 2-Stroke	KC-115	See Note B
	1986–DATE	70–90 HP 2-Stroke	KC-115	Requires Spacer Kit Sp1
	1997–DATE	80–115 HP 4-Stroke	KC-115	See Note C
	2000–DATE	25–70 HP 4-Stroke	KC-115N	Requires Spacer Kit SP1, See Note A
	2011–2014	90–115 HP inc. A Series	KC-115I	
	2014–DATE	90–115 HP inc. B Series	KC-115	

- To prevent issues with outboard trim and tilt, the outboard clamp brackets must be cut or ground down, and the outboard should be bolted directly to the transom.
- A Steering Hook (Yamaha Part #63D-48511-00-4D) must be installed.
- High-performance 115 HP outboards, and any outboard equipped with a 4-3/4" gear case (such as COMMAND THRUST), must use the STEERFLEX 350 HP Cylinder.

SINGLE OUTBOARD KITS



PACKAGED HYDRAULIC STEERING SYSTEM FOR OUTBOARD UP TO 175 HP: SF-175



THE STANDARD STEERING KIT SF-175 FOR SINGLE CYLINDER - SINGLE OUTBOARD INCLUDES:

Part No.	Description	Quantity
KH22	Helm Pump 22cc	1 No.
KC-175	Cylinder For Outboards up to 175Hp	1 No.
KO	Hydraulic Steering Fluid	2 Liters
CH-7.5	Hydraulic Hose of 7.5 meters with factory crimped hose connectors	2 Nos.
Standard Wheel Turns : 5.6 Lock to Lock		

- Note:
- The steering wheel can be ordered with the standard kit. For more details, please contact us.
 - Hose length can be customized as per customer requirements.
 - For higher or lower number of turns, please consult our technical support team.

RELATED PARTS

Component	Description
Steering Wheel	350 mm Steering Wheel
Dual Station Kit	To add an additional station of Helm
Spare Parts	Helm Pump and Cylinder Spares
Tiller Plate	For choosing correct Cylinder Variant

- Note:
- Related components are sold separately and packaged individually.

STEERFLEX SF-175 : SINGLE ENGINE APPLICATION GUIDE

Before choosing a cylinder from this application guide, always verify the model year of your outboard to ensure proper compatibility.

Important: The splashwell must be wide enough for cylinder installation. Please consult the Installation Manual for exact space requirements.

MANUFACTURER	YEAR	MODEL	CYLINDER	NOTES
HONDA	1992–DATE	30–50 HP 4-Stroke	KC-175	See Note A
	1996–DATE	75–90 HP 4-Stroke	KC-175	
	2015–DATE	100 HP 4-Stroke	KC-175	
	1998–2010	115 HP 4-Stroke	NA	
	2003–DATE	135–115 HP 4-Stroke	KC-175	
	2010–DATE	115 HP 4-Stroke	KC-175	
JOHNSON/EVINRUDE	1991–DATE	40–115 HP inc. E-Tec	KC-175	See Note A See Note C Requires Spacer Kit SP1, See Note A
	NOTE: Johnson 115 HP 2-stroke outboards, required the tiller plate to be inverted.	115 HP Ficht	KC-175I	
	2017–DATE	75–115 HP Ficht	KC-175I	
	1998–DATE	40–115 HP 4-Stroke	KC-175I	
MERCURY/MARINER	1984–DATE	75–115 HP	KC-175	See Note C Requires Spacer Kit SP1, See Note A Requires Spacer Kit Sp1 See Note A
	1998–2007	40–60 HP 2-Stroke	KC-175N	
	2008–DATE	40 HP 4-Stroke	KC-175N	
	2008–DATE	60 HP 4-Stroke	KC-175	
SELVA	2000–DATE	25–70 HP 4-Stroke	KC-175N	Requires Spacer Kit SP1, See Note A See note 5
	2000–DATE	90–115 HP 4-Stroke	KC-175	
	2011–2013	115 HP 4-Stroke	KC-175I	
SUZUKI	1986–DATE	150 HP 2-Stroke	KC-175	See Note C Requires Spacer Kit Sp1 Requires Spacer Kit SP1, See Note A Requires Spacer Kit SP1
	1987–2002	115 HP 2-Stroke	KC-175	
	1990–2000	90–100 HP 2-Stroke	KC-175	
	1998–DATE	40–70 HP 4-Stroke	KC-175	
	2001–DATE	90–115 HP 4-Stroke	KC-175I	
TOHATSU	1990–DATE	40–114 HP 2-Stroke	KC-175	See Note A
	2014–DATE	60–115 HP 4-Stroke	KC-175	
NEANDER MARINE	2017–DATE	Dtorque 111 - 90 HP	KC-175	
YAMAHA	1998–DATE	40–50 HP 2-Stroke	KC-175	See Note A See Note B Requires Spacer Kit Sp1 See Note C Requires Spacer Kit SP1, See Note A
	1998–DATE	60 HP 2-Stroke	KC-175	
	1986–DATE	70–90 HP 2-Stroke	KC-175	
	1997–DATE	80–115 HP 4-Stroke	KC-175	
	2000–DATE	25–70 HP 4-Stroke	KC-175N	
	2011–2014	90–115 HP inc. A Series	KC-175I	
	2014–DATE	90–115 HP inc. B Series	KC-175	

- A. To avoid issues with outboard trim and tilt, the outboard clamp brackets must be cut or ground down, and the outboard should be bolted directly to the transom.
- B. A Steering Hook (Yamaha Part #63D-48511-00-4D) must be installed.
- C. High-performance outboards up to 175 HP, and any outboard equipped with a 4-3/4" gear case (such as COMMAND THRUST), must use the STEERFLEX 350 HP Cylinder.

SINGLE OUTBOARD KITS



PACKAGED HYDRAULIC STEERING SYSTEM FOR OUTBOARD UP TO 350 HP: SF-350



THE STANDARD STEERING KIT SF-350 FOR SINGLE CYLINDER - SINGLE OUTBOARD INCLUDES:

Part No.	Description	Quantity
KH25	Helm Pump 25cc	1 No.
KC-350	Cylinder For Outboards up to 350 Hp	1 No.
KO	Hydraulic Steering Fluid	2 Liters
CH-7.5	Hydraulic Hose of 7.5 meters with factory crimped hose connectors	2 Nos.
Standard Wheel Turns : 5.3 Lock to Lock		

- Note:
- The steering wheel can be ordered with the standard kit. For more details, please contact us.
 - Hose length can be customized as per customer requirements.
 - For higher or lower number of turns, please consult our technical support team.

RELATED PARTS

Component	Description
Steering Wheel	350 mm Steering Wheel
Dual Station Kit	To add an additional station of Helm
Spare Parts	Helm Pump and Cylinder Spares
Tiller Plate	For choosing correct Cylinder Variant

- Note:
- Related components are sold separately and packaged individually.

STEERFLEX SF-350P: SINGLE ENGINE APPLICATION GUIDE (REGULAR USE)

MANUFACTURER	YEAR	MODEL	CYLINDER	NOTES
COX MARINE	2022–DATE	300 HP Diesel	KC-350I	
HONDA	1996–DATE	60–90 HP 4-Stroke	KC-350	Requires Spacer Kit SP1
	1998–2009	115–130 HP 4-Stroke	NA	
	1998–DATE	30–50 HP 4-Stroke	KC-350	
	2001–DATE	150 HP 4-Stroke	KC-350	
	2001–2022	200–250 4-Stroke	KC-350L	
	2003–DATE	135 HP 4-Stroke	KC-350	
	2011–DATE	115HP 4-Stroke	KC-350	
	2015–DATE	100 HP 4-Stroke	KC-350	
	2023–DATE	200–250 4-Stroke	KC-350	
JOHNSON/EVINRUDE	1991–DATE	40–300 HP 2-Stroke	KC-350	Inc. ETech engines
	1997–DATE	75–300 HP Ficht	KC-350	Requires Spacer Kit SP1
	1998–DATE	40–140 HP 4-Stroke	KC-350I	
	2000–2003	115 HP Ficht	KC-350I	
	2002–DATE	200–225 HP 4-Stroke	KC-350	Requires Spacer Kit SP1
	2007–DATE	3.3L V6 200–250HP	KC-350	
MERCURY	1989–DATE	75–300 HP 2-Stroke	KC-350	Requires Spacer Kit SP1
	1998–2007	30–60 HP 4-Stroke	KC-350N	
	2008–DATE	60 HP 4-Stroke	KC-350	
	2004–DATE	115–300 HP PRO XS	KC-350	
	2003–DATE	150–200 HP Verado	KC-350	
	2017–DATE	175–225 HP 3.4L V6 4-Stroke	KC-350	
	2018–DATE	250–300 HP 4.6L V8 4-Stroke	KC-350P	
OXE	2017–DATE	125–200 HP Diesel, L4	KC-350P	
	2020–DATE	300 HP Diesel, L6	KC-350P	
SELVA	2000–2013	90–115 HP 4-Stroke	KC-350N	
	2014–DATE	115 HP 4-Stroke	KC-350	
	2000–DATE	150 HP 4-Stroke	KC-350	
	2007–DATE	200–300 HP 4.2L V6	KC-350	
SUZUKI	1986–2000	100 HP 2-Stroke	KC-350	Requires Spacer Kit SP1 NOT 1996
	1998–DATE	40–140 HP 4-Stroke inc. A Series	KC-350I	
	1986–2002	115–140 HP 2-Stroke	KC-350	
	2020–DATE	115–140 HP B Series	KC-350I	
	1986–2013	150–225 HP 2 and 4-Stroke	KC-350	
	2004–DATE	200–300 HP 3.6 4.0L V6	KC-350I	
	2013–DATE	150–200 HP 4 Cylinder	KC-350	
	2017–DATE	300–350 HP Duoprop 4.4L	KC-350P	
TOHATSU	1990–DATE	40–140 HP 2-Stroke	KC-350	Must use Power Assisted Steering
	2014–DATE	60–150 HP 4-Stroke	KC-350	
	2014–DATE	200–250 HP 4-Stroke	KC-350L	
	2023–DATE	75–150 HP 4-Stroke	KC-350	
YAMAHA	1990–2003	40–90 HP 2-Stroke	KC-350	Requires Spacer Kit SP1
	1986–DATE	100–300 HP 2-Stroke	KC-350	
	1997–DATE	80–250 HP 4-Stroke	KC-350	
	2000–DATE	150–300 HPDI	KC-350	
	2003–DATE	25–70 HP 4-Stroke	KC-350N	
	2007–DATE	200–300 HP 4.2L V6 4-Stroke	KC-350	
	2007–DATE	300–350 HP 5.3V8	KC-350	
	2011–2014	90–115 HP inc. A Series	KC-350I	
	2012–DATE	150–200 HP 2.8L 4 Cylinder	KC-350	
	2014–DATE	75–115 HP inc. B Series	KC-350	
NEANDER MARINE	2017–DATE	Dtorque 111 - 90 HP	KC-350	

SINGLE & DUAL OUTBOARD ORDER GUIDE

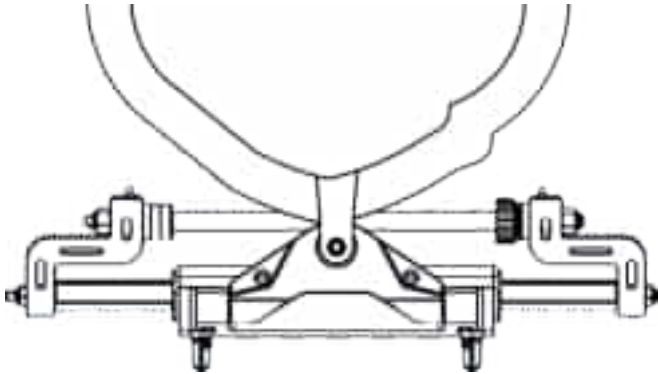


SINGLE & DUAL OUTBOARD ORDER GUIDE



ORDER GUIDE (REGULAR USE) :
SF-350 TYPE(SINGLE CYLINDER - SINGLE OUTBOARD)

Application	Component	Part No.	Qty.	Wheel Turns
Up to 350 Hp	Helm Pump	KH25	1	5.3
	Cylinder	KC-350	1	
	Hydraulic Hose	CH-7.5	2	
	Hydraulic Oil	KO	2	

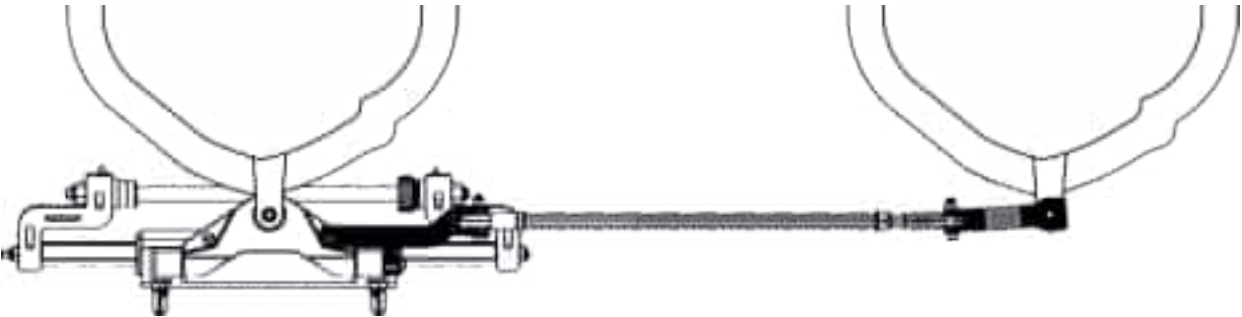


SF-350-1CD (SINGLE CYLINDER - DUAL OUTBOARDS)

Application	Component	Part No.	Qty.	Wheel Turns
Up to 450 Hp (Non-Counter Rotating Outboard)	Helm Pump	KH25	1	5.3
	Cylinder	KC-350	1	
Up to 600 Hp (Counter Rotating Outboard)	Hydraulic Hose	CH-7.5	2	
	Hydraulic Oil	KO	2	
Additional Component	Tie Rod Kit	TRX	1	

Note:

- The Additional Component will be sold separately.

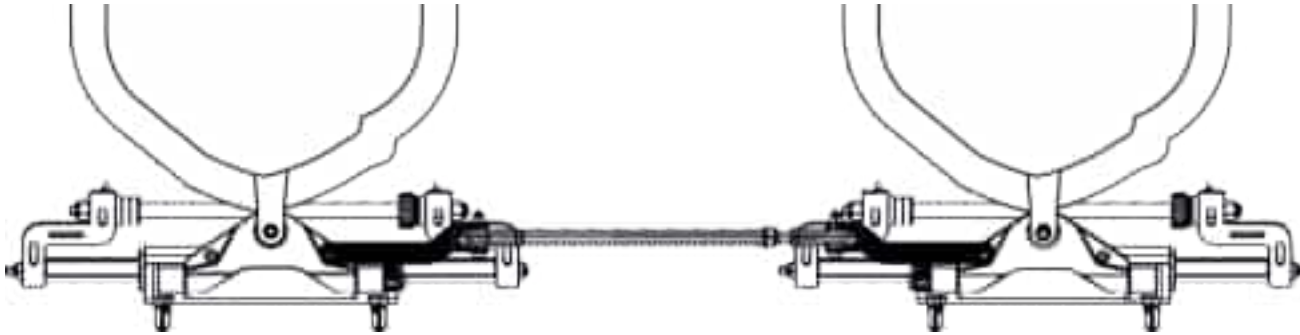


SF-350-2CD (DUAL CYLINDERS - DUAL OUTBOARDS)

Application	Component	Part No.	Qty.	Wheel Turns
Up to 600 Hp	Helm Pump	KH33	1	8
	Cylinder	KC-350	2	
	Hydraulic Hose	CH-7.5	2	
	Hydraulic Hose	CH-1.0	4	
	T-Fitting	TF	2	
	Hydraulic Oil	KO	2	
Additional Component	Tie Rod Kit	TRX	1	

Note:

- The Additional Component will be sold separately.



SINGLE OUTBOARD KITS



PACKAGED HYDRAULIC STEERING SYSTEM FOR OUTBOARD UP TO 350 HP: SF-350P



THE STANDARD STEERING KIT SF-350P FOR SINGLE CYLINDER - SINGLE OUTBOARD INCLUDES:

Part No.	Description	Quantity
KH25	Helm Pump 25cc	1 No.
SF-350P	Cylinder For Outboards up to 350 Hp	1 No.
KO	Hydraulic Steering Fluid	2 Liters
CH-7.5	Hydraulic Hose of 7.5 meters with factory crimped hose connectors	2 Nos.

Standard Wheel Turns : 5.3 Lock to Lock

- Note:
- The steering wheel can be ordered with the standard kit. For more details, please contact us.
 - Hose length can be customized as per customer requirements.
 - For higher or lower number of turns, please consult our technical support team.

RELATED PARTS

Component	Description
Steering Wheel	350 mm Steering Wheel
Dual Station Kit	To add an additional station of Helm
Spare Parts	Helm Pump and Cylinder Spares
Tiller Plate	For choosing correct Cylinder Variant

- Note:
- Related components are sold separately and packaged individually.

STEERFLEX SF-350P: SINGLE ENGINE APPLICATION GUIDE (AGGRESSIVE USE)

Before selecting a cylinder from this application guide, please verify the model year of your outboard to ensure you are choosing the correct cylinder for your boat.

NOTE: Your splashwell should be wide enough for the installation of the Cylinder. Check Installation Manual for space requirements.

MANUFACTURER	YEAR	MODEL	CYLINDER	NOTES
COX MARINE	2022–DATE	300 HP Diesel	KC-350P	
HONDA	2001–DATE	200–350 HP 4-Stroke	KC-350P	
JOHNSON/EVINRUDE	1991–DATE	200–300 HP 2-Stroke	KC-350P	Inc. ETech engines
	1997–DATE	200–300 HP Ficht	KC-350P	
	2002–DATE	200–225 HP 4-Stroke	KC-350P	
	2007–DATE	200–250HP 3.3L V6	KC-350P	
MERCURY	1989–DATE	200–300 HP 2-Stroke EFI	KC-350P	Inc. H.O. models
	2004–DATE	200–300 HP PRO XS/OPTIMAX	KC-350P	
	2003–DATE	200 HP Verado L4	KC-350P	
	2017–DATE	200–225 HP 3.4L V6 4-Stroke	KC-350P	
	2018–DATE	225–350 HP 4.6L V8 4-Stroke	KC-350P	
OXE	2017–DATE	125–200 HP Diesel, L4	KC-350P	
	2020–DATE	300 HP Diesel, L6	KC-350P	
SELVA	2007–DATE	200–300 HP 4.2L V6	KC-350P	
SUZUKI	1986–2013	200–225 HP 2 / 4-Stroke	KC-350P	Must use Glydus Power Assisted Steering
	2004–DATE	200–350 HP 3.6 4.0L V6	KC-350PI	
	2013–DATE	200 HP 4 Cylinder	KC-350P	
	2017–DATE	300–350 HP Duoprop 4.4L	KC-350PI	
TOHATSU	2014–DATE	200–250 HP 4-Stroke	KC-350P	Must use Tohatsu tiller bolt 3E0-84917-0
YAMAHA	1986–DATE	200–300 HP 2-Stroke	KC-350P	
	1997–DATE	200–250 HP 4-Stroke	KC-350P	
	2000–DATE	200–300 HPDI	KC-350P	
	2007–DATE	200–300 HP 4.2L V6 4-Stroke	KC-350P	
	2007–DATE	300–350 HP 5.3 V8 4-Stroke	KC-350P	
NEANDER MARINE	2012–DATE	200 HP 2.8L 4 Cylinder	KC-350P	
NEANDER MARINE	2017–DATE	Dtorque111 - 90 HP	KC-350P	

SINGLE & DUAL OUTBOARD ORDER GUIDE

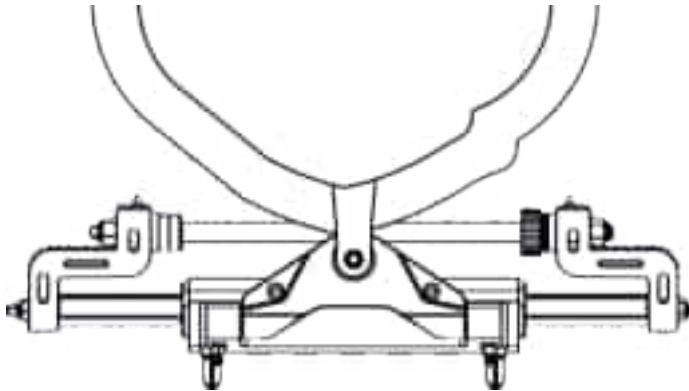


SINGLE & DUAL OUTBOARD ORDER GUIDE



ORDER GUIDE (AGGRESSIVE USE) :
SF-350P TYPE(SINGLE CYLINDER - SINGLE OUTBOARD)

Application	Component	Part No.	Qty.	Wheel Turns
Up to 350 Hp	Helm Pump	KH25	1	6.1
	Cylinder	KC-350P	1	
	Hydraulic Hose	CK-7.5	2	
	Hydraulic Oil	KO	2	

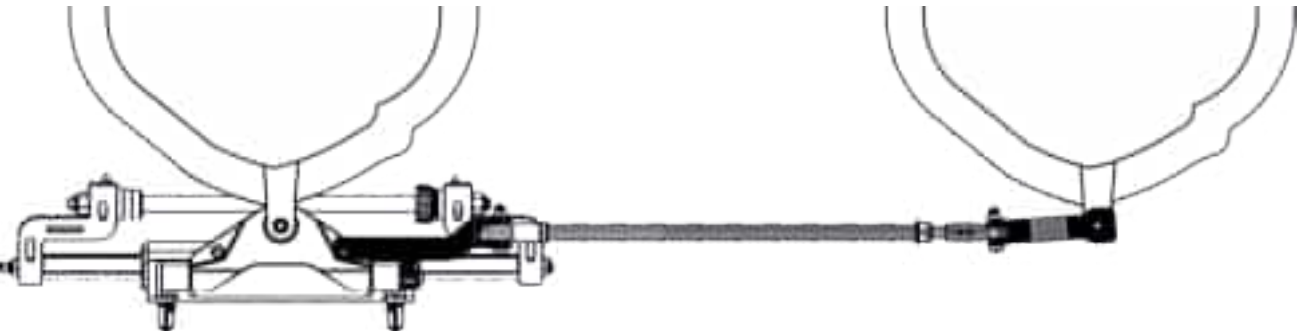


SF-350P-1CD (SINGLE CYLINDER - DUAL OUTBOARDS)

Application	Component	Part No.	Qty.	Wheel Turns
Up to 500 Hp (Non-Counter Rotating Outboard)	Helm Pump	KH25	1	6.1
	Cylinder	KC-350P	1	
Up to 700 Hp (Counter Rotating Outboard)	Hydraulic Hose	CH-7.5	2	
	Hydraulic Oil	KO	2	
Additional Component	Tie Rod Kit	TRX	1	

Note:

- The Additional Component will be sold separately.

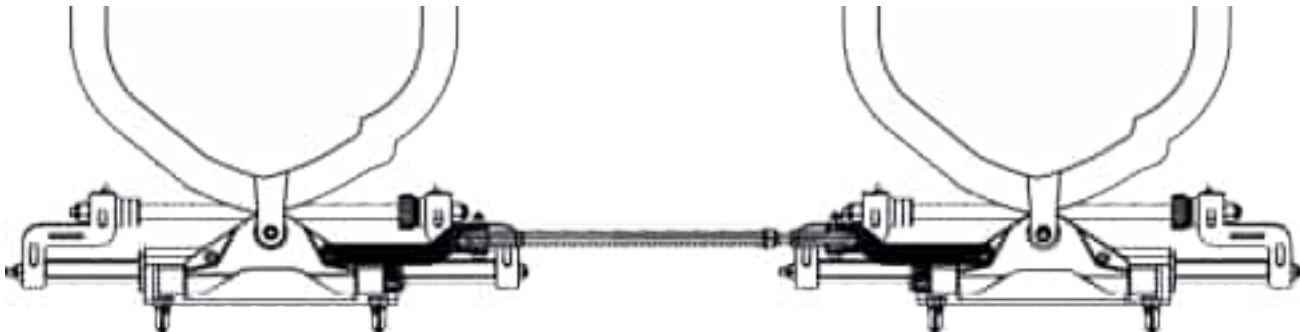


SF-350P-2CD (DUAL CYLINDERS - DUAL OUTBOARDS)

Application	Component	Part No.	Qty.	Wheel Turns
Up to 700 Hp	Helm Pump	KH33	1	9.3
	Cylinder	KC-350P	2	
	Hydraulic Hose	CH-7.5	2	
	Hydraulic Hose	CH-1.0	4	
	T-Fitting	TF	2	
	Hydraulic Oil	KO	2	
Additional Component	Tie Rod Kit	TRX	1	

Note:

- The Additional Component will be sold separately.



SPLASHWELL SIZE REQUIRERMENT

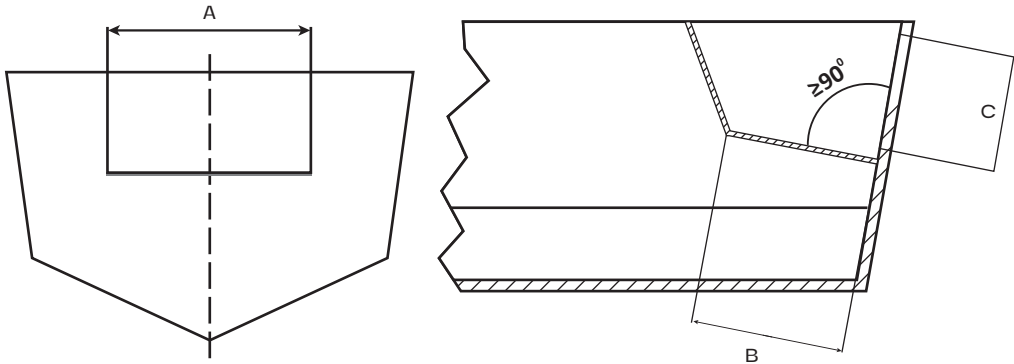


DUAL OUTBOARD ARRANGEMENTS



CYLINDER PART NO.	NO. OF ENGINE	SPASHWELL DIAGRAM DIMENTION		
		A	B	C
KC-115	1	21" (535mm)	6" (153mm)	5" (127mm)
KC-175	1	21" (535mm)	6" (153mm)	5" (127mm)
KC-350	1	22" (560mm)	6" (153mm)	5" (127mm)
KC-350P	1	22" (560mm)	6" (153mm)	5" (127mm)

- Note:
- Ensure there is no interference between the cylinder rod and the splashwell boot, engine controls, or cables.
 - Dimensional restrictions apply when using external motor mount brackets.
 - Maintain dimension "A" at 32" (813 mm) throughout the full trim/tilt range.
 - The maximum allowable transom thickness for cylinders is 3" (76 mm).
 - Engines below 70 HP may require up to 1" (25 mm) of additional splashwell clearance.



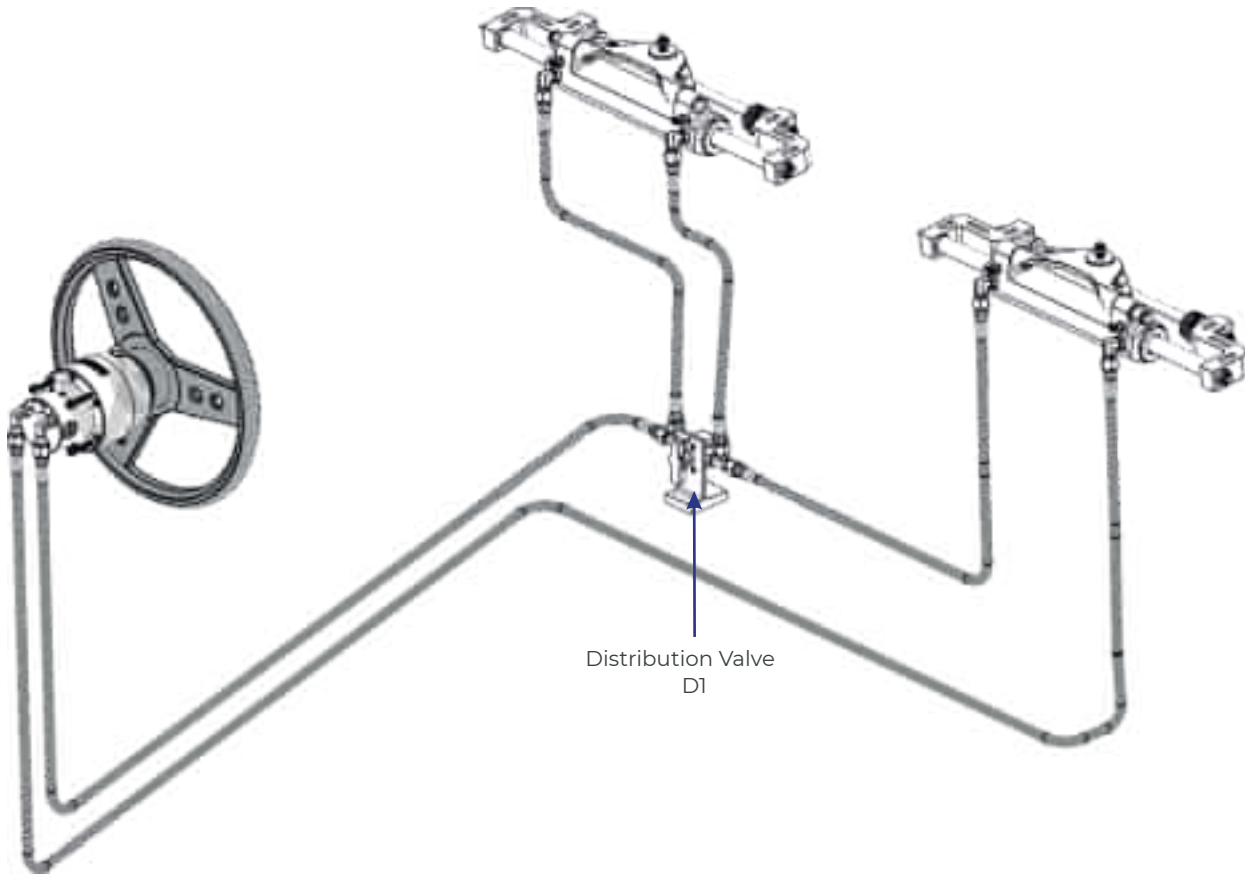
APPLICATION GUIDE : KITS AND TIE ROD KIT

CONFIGURATION	KIT		TIE ROD KIT			NOTES
	PART NO.	QTY.	PART NO.	QTY.	CENTER TO CENTER (MM)	
Dual Outboards- Single Cylinder	SF-350	1	TR1	1	660-914	1, 3, 4, 5, 7
	SF-350P		TR1S		660-914	1, 3, 4, 5, 7
			TR2		660-914	1, 3, 4, 5, 7
			TR2S		660-914	1, 3, 4, 5, 7
Dual Outboards- Dual Cylinders	SF-350-2CD	1	TR1D	1	660-914	1, 3, 4, 5, 7
	SF-350P-2CD		TR2D		660-914	1, 3, 4, 5, 7

- Note:
- Installation may vary according to the following factors: engine mounting height, transom thickness, use of transom savers, tiller bolt location, engine tilt range, and engine size.
 - Tie Rod length may vary depending on toe in/toe out setup. To allow for toe, add or subtract from your nominal engine center to center distance.
 - Based on recommended engine manufacturer minimum center to center distances. Deviating from these recommendations may require stroke limiting cylinders and/or engine tilt limiting, please consult Glydus Technical Service.
 - Cylinder's must be plumbed in parallel only, no series connections. Only exception is if cylinders are utilizing liquid tie bar.

DIFFERENT TYPES OF STEERING ASSEMBLIES FOR FRONT MOUNT CYLINDER

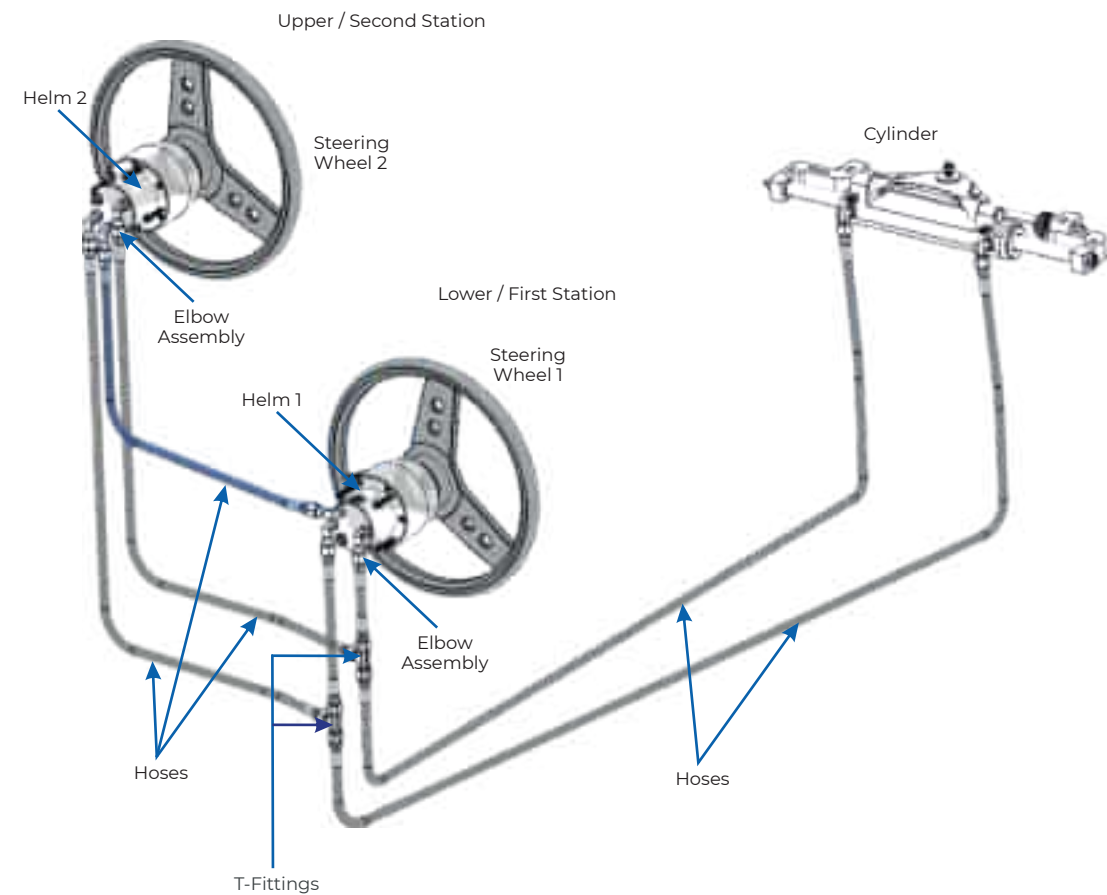
Dual Cylinders - Dual Outboards in Same / Counter Rotating Direction with Liquid Tie Bar



DUAL STATION COMPONENT



DUAL STATION COMPONENT



THE COMPONENT REQUIRED FOR DUAL STATION ARRANGEMENT INCLUDES FOLLOWING:

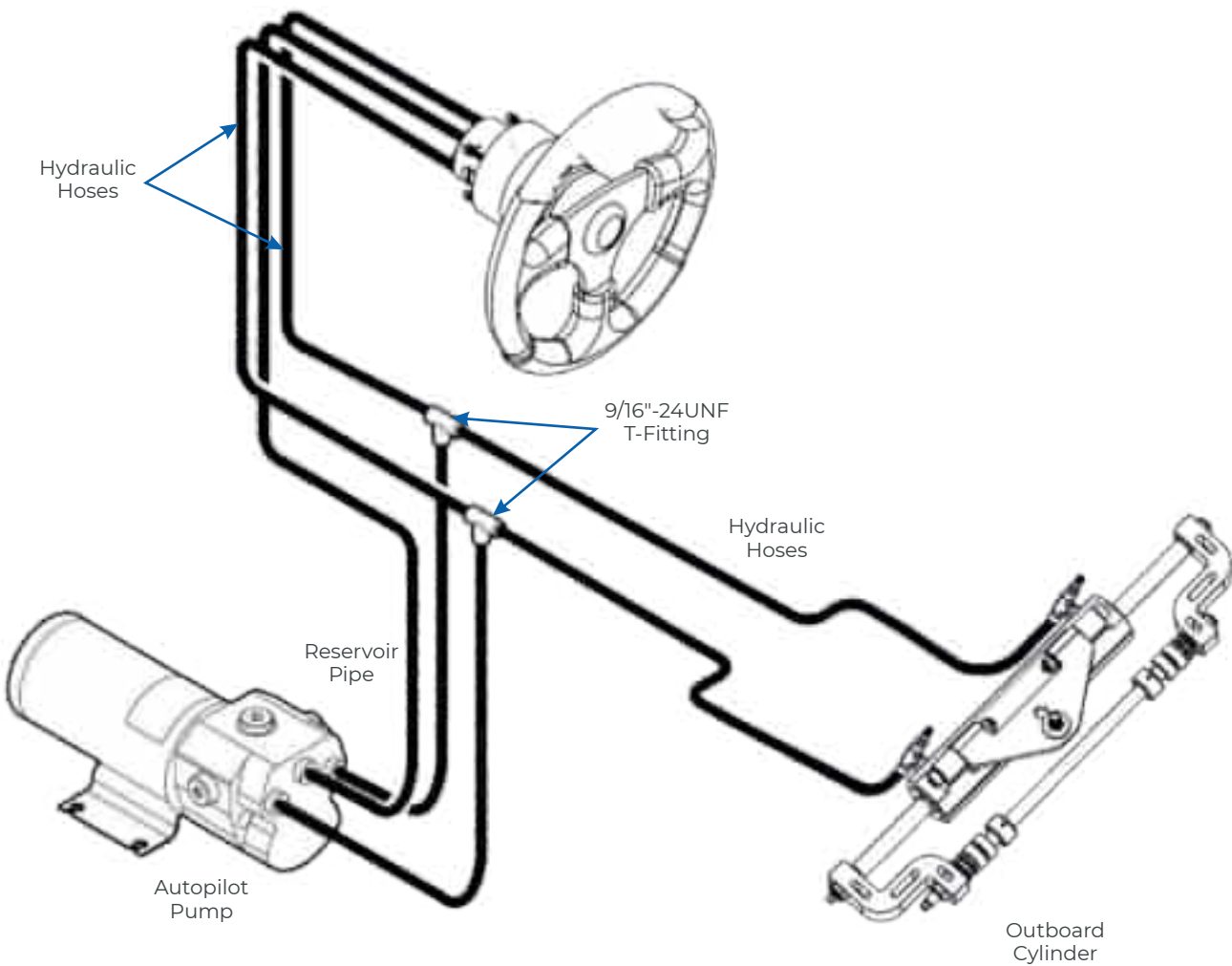
Part No.	Description	Quantity
KH18M/18/20/22/25/33	Front Mount Hydraulic Helm Pump (Select Model)	1 No.
EA	Elbow Assembly	1 No.
RC	Reusable End Fittings	14 Nos.
H-XX	Hose Tube XX Meters	1 No.
TF	T-Fittings 9/16"-9/16"-9/16"	2 Nos.
KO	Hydraulic Steering Fluid	2 Liters
OFK	Oil Filling Kit	1 No.

- Note:
- The above components should be ordered separately. Always mention the hose length when placing an order.
 - If the hose length is calculated, always prefer factory-crimped hoses over reusable hoses to prevent oil leakage issues.
 - Hose length can be customized as per customer requirements.

APPLICATIONS FOR HYDRAULIC STEERING

INTERFACE WITH AUTOPILOT

- The Glydus Power-Assisted Steering System is engineered for effortless handling and integrates seamlessly with the latest autopilot technologies from Garmin®, Raymarine®, and Simrad®.





PRODUCT HYDRAULIC STEERING

Our Hydraulic Steering Systems are purpose-built to deliver smooth, precise, and reliable control for all types of boats. Designed with advanced engineering, they provide effortless maneuverability, durability in harsh marine environments, and enhanced safety on the water. Each product is rigorously tested, certified to international standards, and backed with trusted warranty support — ensuring long-term performance and confidence on every voyage.

FRONT MOUNT HELM PUMP



H-18/20/22/25/33/40



H-18M

SALIENT FEATURES

- **Purpose-Built for Outboard Engines** – Engineered specifically for outboard applications, ensuring smooth and reliable control.
- **Low-Friction Hydraulic Steering** – Delivers effortless handling and enhanced comfort.
- **5-Position Tilt Helm*** – Adjustable in five steps for superior ergonomics and flexibility.
- **Compact Footprint** – Requires only 5” mounting space with a 3” hole (standard or tilt) on the dashboard, perfect for tight installations.
- **All-in-One Package** – Includes the helm unit, filling kit, and a comprehensive installation guide.
- **Standard 3/4” Tapered Steering Shaft** – Compatible with a wide range of steering wheels.
- **Quick & Easy Installation** – Simplified design reduces installation time and effort.
- **Certified Quality** – Fully compliant with CE, ABYC, and NMMA safety and performance standards.

*sold separately

TECHNICAL SPECIFICATIONS

Part No.	Volume		Port Threads (UNEF)	Relief Pressure (Bar)	Recommended Steering Wheel Diameter	Weight (Kg)
	CC	Ci				
KHR18 KH18	18	1.0	9/16-24	70/105	350 mm	3.9
KHR20 KH20	20	1.2	9/16-24	70/105	350 mm	3.9
KHR22 KH22	22	1.3	9/16-24	70/105	400 mm	3.9
KHR25 KH25	25	1.5	9/16-24	70/105	400 mm	3.9
KHR33 KH33	33	2.0	9/16-24	70/105	400 mm	3.9
KHR40 KH40	40	2.4	9/16-24	70/105	400 mm	3.9

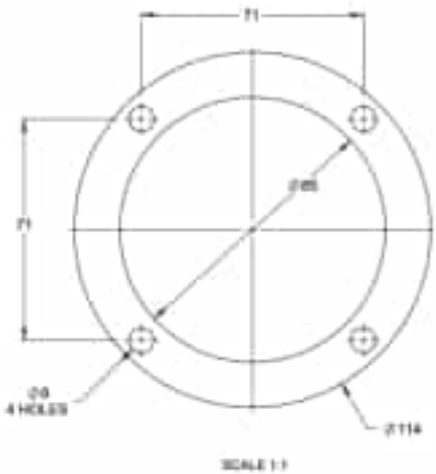
Part No.	Volume		Port Threads (UNEF)	Relief Pressure (Bar)	Recommended Steering Wheel Diameter	Weight (Kg)
	CC	Ci				
KHR18M KH18M	18	1.0	9/16-24	70/105	350 mm	3.9

RELATED PARTS:

Sr.No.	Description	Part No.
1	Elbow Assembly	EB
2	Vented Plug	VP
3	Woodruff Key	WK
4	Seal Kit	SK-115, SK-175, SK-350, SK-350P

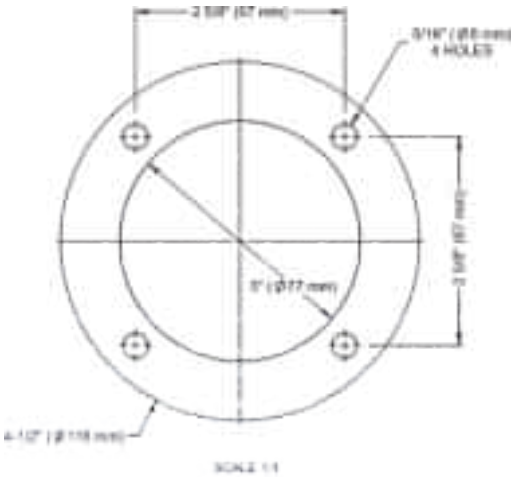
DRAWINGS WITH DIMENSIONS (MM / INCH)

Kh18



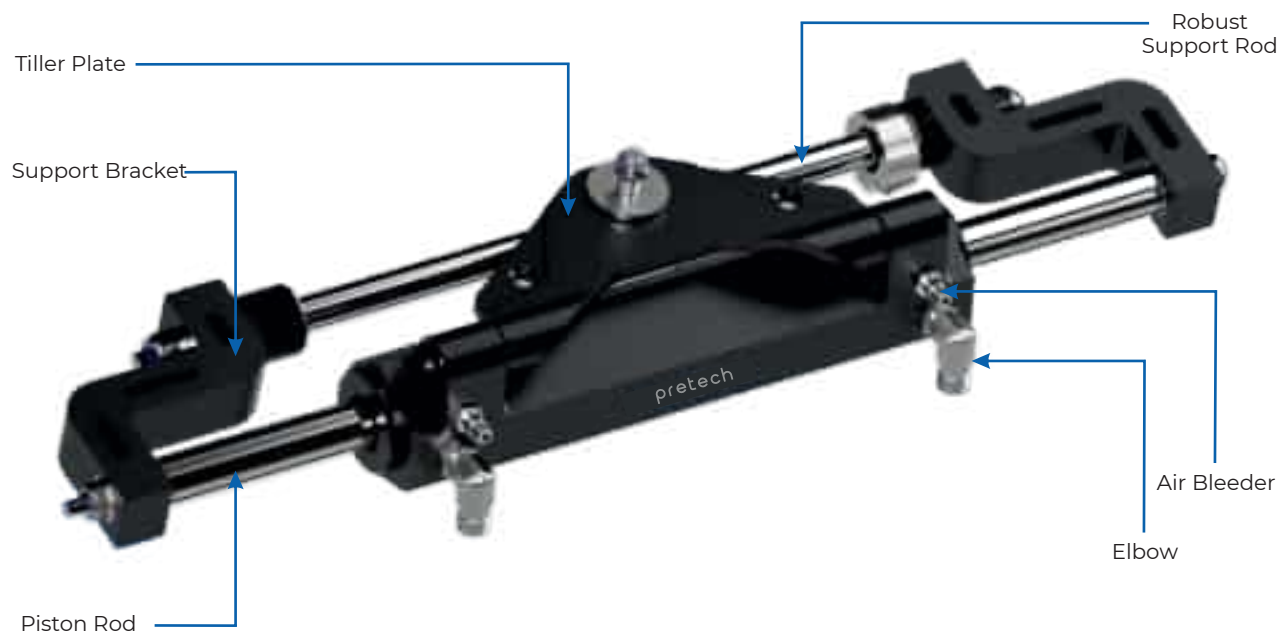
All Dimensions are in mm.

KH18/20/22/25/33/40



All Dimensions are in mm.

FRONT MOUNT OUTBOARD CYLINDERS:



SALIENT FEATURES

- **Independent Outboard Tilt** – Designed for dual, triple, and quad outboard setups, enabling optimal positioning of each outboard.
- **Effortless Steering** – Provides smooth, easy control for superior maneuverability.
- **Wide Compatibility** – Works seamlessly with all Steerflex Helms and Steerflex Power-Assisted Steering Systems.
- **Customizable Turn Ratio** – Lock-to-lock turn ratios vary by helm selection, allowing performance to be tailored to user preference.
- **Advanced Sealing System** – State-of-the-art seals deliver enhanced durability and leak prevention.
- **Easy Maintenance** – Equipped with grease fittings on the cylinder support bracket, simplifying upkeep and extending service life.

Engineered for performance, reliability, and ease of use, this cylinder is the ideal choice for a wide range of boating applications.

CYLINDERS: SF-115

TECHNICAL SPECIFICATION

VOLUME	94cc
PORT THREADS	9/16" UNEF
FORCE	323 Kg
STROKE	184 mm
WEIGHT	2.1 Kg



RELATED PARTS:

Sr.No.	Description	Part No.
1	Piston Rod Assembly	KC-115-PR
2	Center Shaft Assembly	CSA 115
3	Support Bracket Assembly	SBA 115
4	Hex Stud Assembly / Engine Connector Stud	HSA 115
5	Air Bleed Plug	AB
6	Seal Kit	SKH
7	T-Fitting	TF

CYLINDER VARIANT



KC-115I

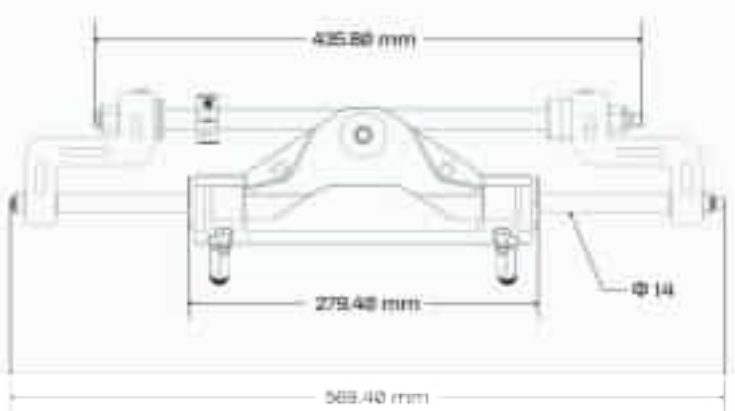


KC-115N



KC-115

DIMENSIONAL DIAGRAM



CYLINDERS: SF-175

TECHNICAL SPECIFICATION

VOLUME	123 cc
PORT THREADS	9/16" UNEF
FORCE	422 Kg
STROKE	204 mm
WEIGHT	4.5 Kg



RELATED PARTS:

Sr.No.	Description	Part No.
1	Piston Rod Assembly	KC-175-PR
2	Center Shaft Assembly	CSA 175
3	Support Bracket Assembly	SBA 175
4	Hex Stud Assembly / Engine Connector Stud	HSA 175
5	Spacer Kit	SC
6	Air Bleed Plug	AB
7	Seal Kit	SKH
8	T-Fitting	EB

CYLINDER VARIANT

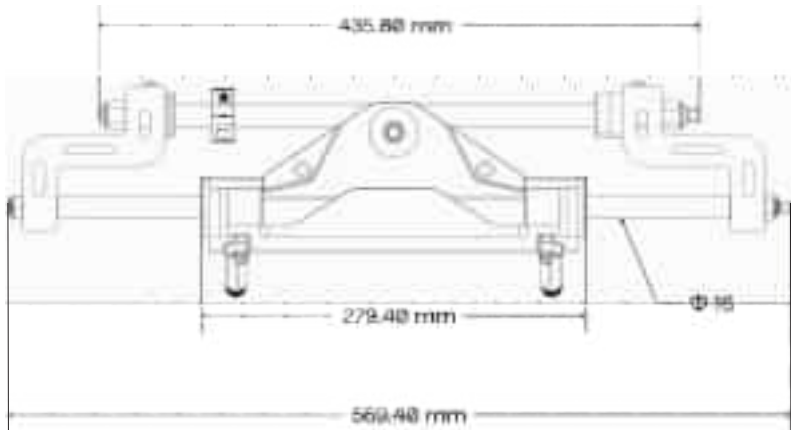


KC-175I

KC-175N

KC-175

DIMENSIONAL DIAGRAM



CYLINDERS: SF-350

TECHNICAL SPECIFICATION

VOLUME	132 cc
PORT THREADS	9/16" UNEF
FORCE	462 Kg
STROKE	204 mm
WEIGHT	4.5 Kg



RELATED PARTS:

Sr.No.	Description	Part No.
1	Piston Rod Assembly	KC-350-PR
2	Center Shaft Assembly	CSA 350
3	Support Bracket Assembly	SBA 350
4	Hex Stud Assembly / Engine Connector Stud	HSA 350
5	Spacer Kit	SC
6	Air Bleed Plug	AB
7	Seal Kit	SKH
8	Elbow Fitting	EB

CYLINDER VARIANT

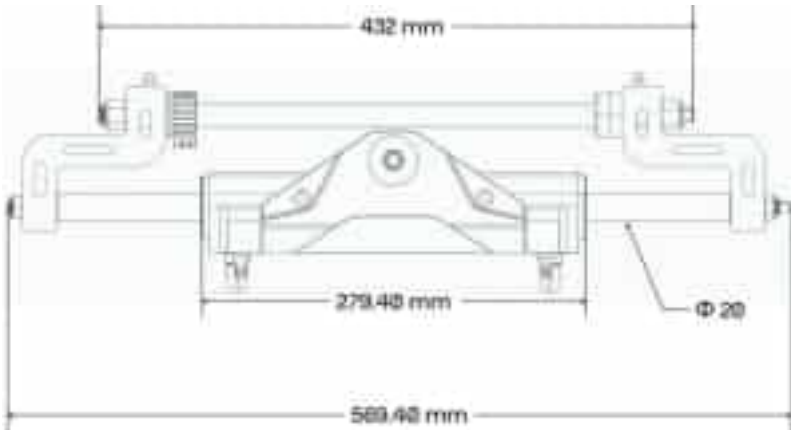


KC-350I

KC-350N

KC-350

DIMENSIONAL DIAGRAM



CYLINDERS: SF-350P

TECHNICAL SPECIFICATION

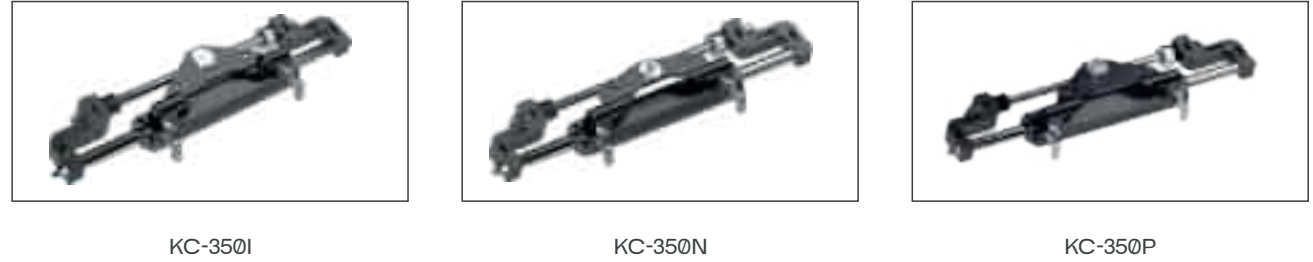
VOLUME	154 cc
PORT THREADS	9/16" UNEF
FORCE	538Kg
STROKE	204 mm
WEIGHT	5 Kg



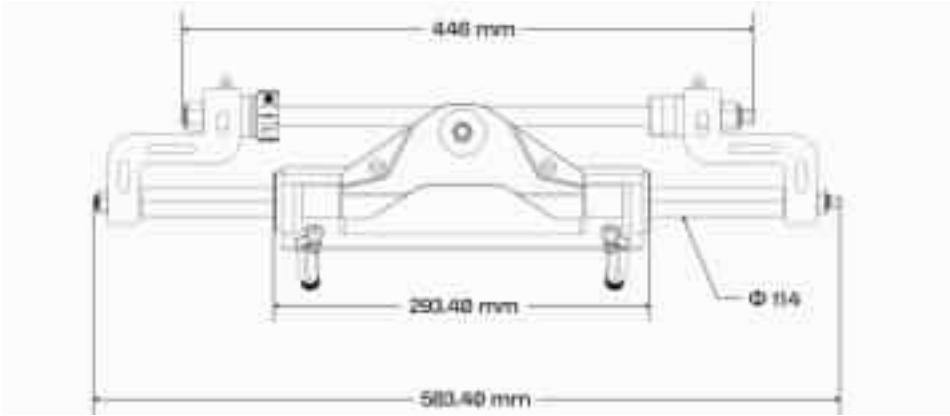
RELATED PARTS:

Sr.No.	Description	Part No.
1	Piston Rod Assembly	KC-350-PR
2	Center Shaft Assembly	CSA 350P
3	Support Bracket Assembly	SBA 350P
4	Hex Stud Assembly / Engine Connector Stud	HSA 350P
5	Spacer Kit	SC
6	Air Bleed Plug	AB
7	Seal Kit	SKH
8	Elbow Fitting	EB

CYLINDER VARIANT



DIMENSIONAL DIAGRAM



Note:

HOSE KIT FOR HYDRAULIC STEERING



CH

TECHNICAL SPECIFICATION

Hose Kit with Factory Crimped End Connectors		
Part No.	Discription	End Connector
CH-3.0	3 Meters	CC
CH-3.5	3.5 Meters	CC
CH-4.0	4 Meters	CC
CH-4.5	4.5 Meters	CC
CH-5.0	5 Meters	CC

Note : Hose length can be customised as per customer requirements.



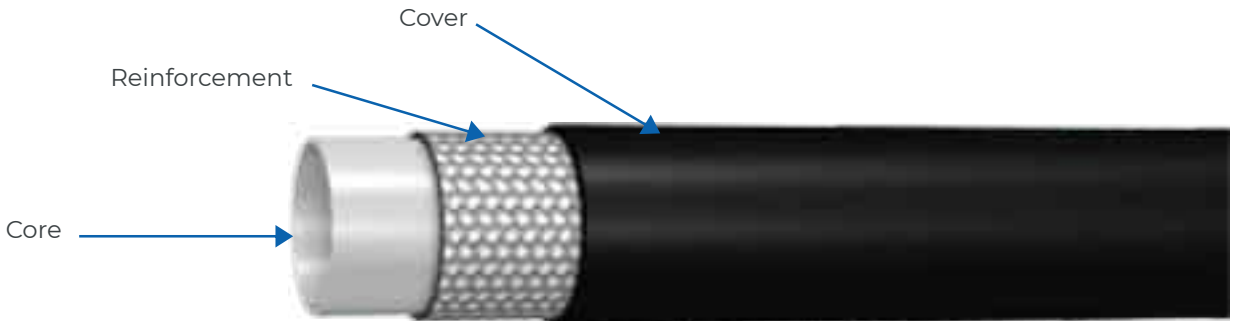
RH

Hose Kit with Reusable End Connectors		
Part No.	Discription	End Connector
RH-3.0	3 Meters	RC
RH-3.5	3.5 Meters	RC
RH-4.0	4 Meters	RC
RH-4.5	4.5 Meters	RC
RH-5.0	5 Meters	RC

Note : Hose length can be customised as per customer requirements.

Part No.	Description	Size	Working Pressure
H-XX	Thermoplastic Hose Tube. (XX-length in Meters)	5/16" R7	70 Bar / 1000 psi
XP-XX	Thermoplastic Hose Tube. (XX-length in Meters)	1/2" R7	140 Bar / 2050 psi

Model	Description
Core	Thermoplastic Elastomer
Reinforcement	Single Braid of Synthetic Fiber
Cover	Polyurethane, Black Colour, Pin Pricked
Temperature Range	Continuous: -40°C to +100°C Temp



BULKHEAD, STRAIN RELIEF FITTINGS & HOSE END CONNECTORS



HT-HB
Bulkhead Fitting (Black)



HT-SB
Bulkhead Strain Relief Fitting Plastic



HT-RB
Bulkhead Strain Relief Fitting Rubber



RC
Reusable Hose Fitting for
Hose Kit : RT-XX



CC
Crimped Hose Fitting for
Hose Kit : CT-XX

Note: XX-length in Meters

TIE-ROD CONNECTION



TIE-ROD

The Tie-Rod is designed to provide precise and reliable synchronization between dual outboard engines, ensuring safe and balanced steering control. Built with high-quality, corrosion-resistant materials, it offers long-lasting durability and dependable performance in both freshwater and saltwater environments.

TR1



TR1D



TRIS



TIE ROD ARRANGEMENT:

TR1



TR1D



TRIS



TECHNICAL SPECIFICATIONS

Part No.	Size (mm)	Port	Description
TR1	660-914	M12x1.25	For Dual Outboards Single Cylinder
TR1D	660-914	M12x1.25	For Dual Outboards Dual Cylinders
TRIS	660-914	M12x1.25	For Dual Outboards Single Cylinder

ADJUSTABLE TIE ROD : TRA



TECHNICAL SPECIFICATIONS

Part No.	Size (mm)	Port	Description
TRA3	635-654	1/2" UNEF	For Dual Outboards Single Cylinder
TRA4	655-779	1/2" UNEF	For Dual Outboards Single Cylinder
TRA5	780-999	1/2" UNEF	For Dual Outboards Single Cylinder
TRA6	1000-1384	1/2" UNEF	For Dual Outboards Single Cylinder



TECHNICAL SPECIFICATIONS

Part No.	Size (mm)	Port	Description
TRAD1	711-739	1/2" UNEF	For Dual Outboards Dual Cylinders
TRAD2	740-779	1/2" UNEF	For Dual Outboards Dual Cylinders
TRAD3	780-849	1/2" UNEF	For Dual Outboards Dual Cylinders
TRAD4	850-976	1/2" UNEF	For Dual Outboards Dual Cylinders
TRAD5	997-1197	1/2" UNEF	For Dual Outboards Dual Cylinders
TRAD6	1198-1580	1/2" UNEF	For Dual Outboards Dual Cylinders

TIE-ROD ARRANGEMENTS

Single Cylinder - Dual Outboard



Dual Cylinder - Dual Outboard



Dual Cylinder - Triple Outboard



Triple Cylinder - Triple Outboard



Dual Cylinder - Quad Outboard



Triple Cylinder - Penta Outboard



NOTE

TILT MECHANISM



HYDRAULIC HELM PUMP WITH TILT MECHANISM

An adjustable **tilt steering system** is one of the most valuable features for high-speed cruising. It reduces strain on the driver's arms, allowing longer, more comfortable operation without frequent breaks.

Adjusting the steering wheel angle is vital for both comfort and performance. When fatigue sets in, the ability to tilt the wheel makes navigation easier, while also adding a sporty feel and allowing the driver to adapt steering height to personal preference.

The **Steerflex Power-Assisted Steering System** includes a 5-position tilt helm, with stops provided at 12° increments, covering a total range of 0° to 48°. A ratchet lock beneath the housing secures the position, enabling the driver to adjust steering height safely on the move without losing control of the boat.



HXXT
(XX is Part No. of Helm)

HYDRAULIC HELM PUMP WITH TILT MECHANISM

- Built-in lock valve and over-pressure valve for safety and reliability
- Tilt range: 0° to 48° with five secure locking positions
- Constructed from high-quality, corrosion-resistant materials
- Lightweight yet robust design for durability
- Equipped with a Stainless Steel AISI 316L shaft for superior strength and longevity



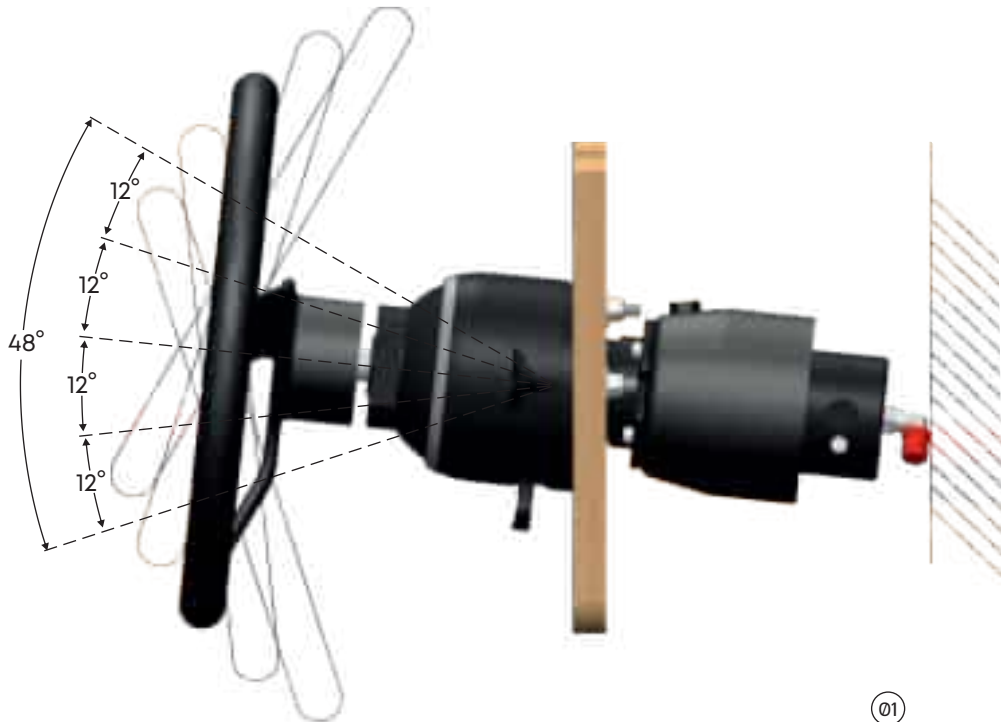
TM
Tilt Mechanism for Hydraulic Steering



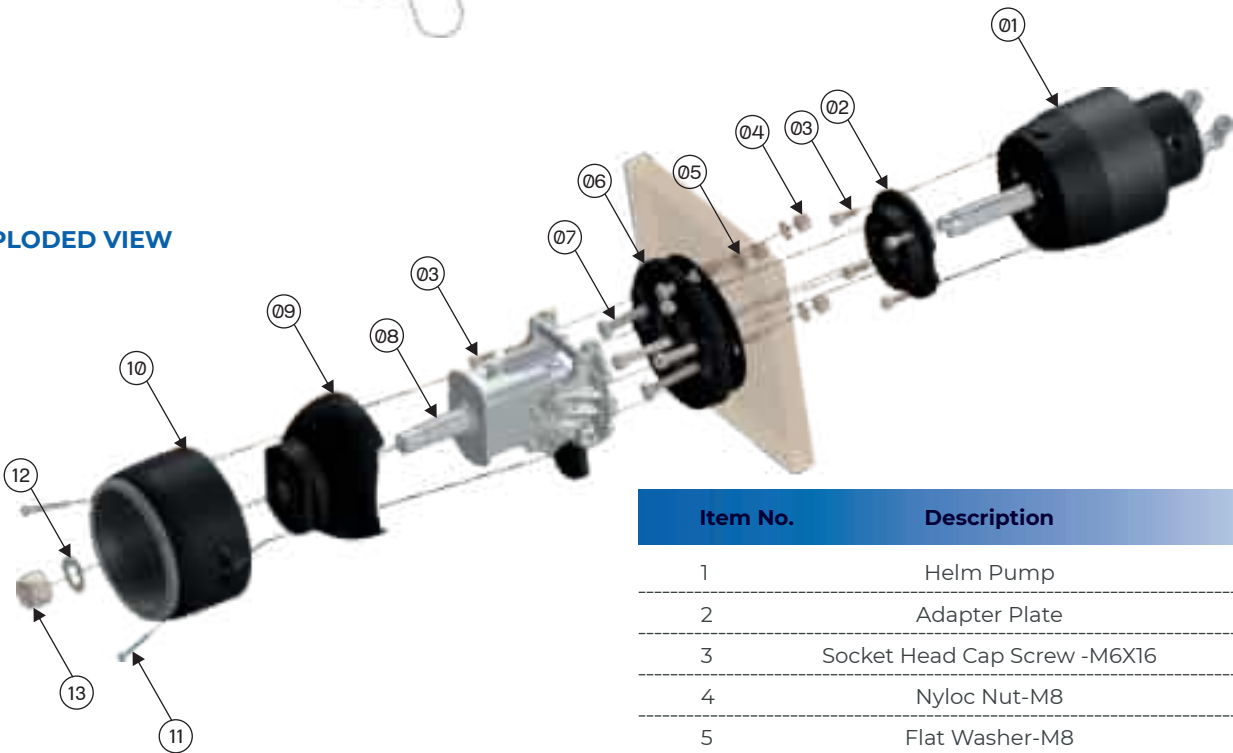
TMP
Tilt Mechanism for Power Steering

Part No. Hydraulic	Part No. Power Assist	Volume		Tilt Mechanism Hydraulic	Tilt Mechanism Power Assist	Weight (Kg)
		CC	Ci			
KH18T	H18P	18	1.0	TM	TMP	5.5
KH20T	H20P	20	1.2	TM	TMP	5.5
KH22T	H22P	22	1.3	TM	TMP	5.5
KH25T	H25P	25	1.5	TM	TMP	5.6
KH33T	H33P	33	2.0	TM	TMP	5.6
KH40T	H40P	40	2.4	TM	TMP	5.6

HYDRAULIC HELM PUMP WITH TILT MECHANISM



EXPLODED VIEW



Item No.	Description	Qty.
1	Helm Pump	01
2	Adapter Plate	01
3	Socket Head Cap Screw -M6X16	08
4	Nyloc Nut-M8	03
5	Flat Washer-M8	03
6	Mounting Plate	01
7	Hex Bolt-Washer Face-M8X45	03
8	Tilt Mechanism	01
9	Swivel Cover	01
10	Plastic Cover Base	01
11	Pan Head Bolt-M4X20	02
12	Shaft Washer	01
13	Nyloc Nut-5/8-18 UNF	01



ACCESSORIES

Pretech offers a comprehensive range of accessories that perfectly complement its hydraulic steering systems. Each accessory is engineered with precision and durability in mind, ensuring seamless integration, enhanced performance, and reliable operation in all marine conditions. From installation aids to performance enhancers, Pretech accessories are designed to deliver convenience, safety, and long-term dependability for every voyage.

OUTBOARD PRODUCT ACCESSORIES



AB
SS Air Bleeder Fitting for
KC-115, KC-175, KC-350 & KC-350P



EC
SS Elbow to Connect Hoses to Cylinders
& Helms with ports 9/16 UNEF



TF
T-Fittings 9/16 UNEF
All Ports



BV
Bypass Valve 9/16 UNEF
All Ports



PN
Piston Rod Nut to Connect
Support Brackets



SN
Support Rod Nut to Connect
Support Brackets



VP
Vented Plug for Helm Pump



ECS
Engine Connector Stud for
KC-350, KC-350P, KC-175, KC-115



FK
Oil Filling Kit to pour oil into
Helm during Purging



SB
Support Brackets for OB Cylinder
KC-115, KC-175, KC-350, KC-350P



SC-01
Spacer Kit for
KC-115, KC-175, KC-350.



SC-02
Spacer Kit for
KC-350P



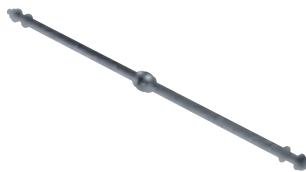
WK
SS Elbow to Connect Hoses to
Cylinders & Helms with ports
9/16 UNEF



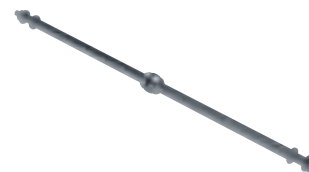
SKH
Seal Kit for Helms
KH18/ KH18M/ KH20/ KH22/
KH25/ KH33/ KH40



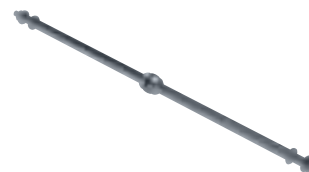
SR
Support Rod for OB Cylinder
KC-115, KC-175, KC-350, KC-350P



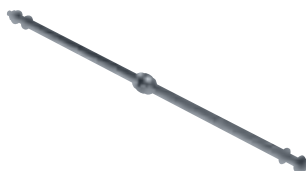
K75-PR
Piston Rod for OB Cylinder
KC-175



K350-PR
Piston Rod for OB Cylinder
KC-350



K350P-PR
Piston Rod for OB Cylinder
KC-350P



K115-PR
Piston Rod for OB Cylinder KC-115



SK-115
Seal Kit for OB Cylinder KC-115



SK-175
Seal Kit for OB Cylinder KC-175



SK-350
Seal Kit for OB Cylinder KC-350



SK-350P
Seal Kit for OB Cylinder KC-350P