



KINGS[®]

Steering Gear | Engine Control



STEERING GEAR SYSTEM
ENGINE CONTROL SYSTEM



CONTENTS

Introduction

Hydraulic Cylinders

Hydraulic Power Unit

Rudder Tillers

Steering Panels

Alarm Panels

Rudder Angle Indicator

Feedback unit

Steering Levers

Steering Controls

Contact



INTRODUCTION

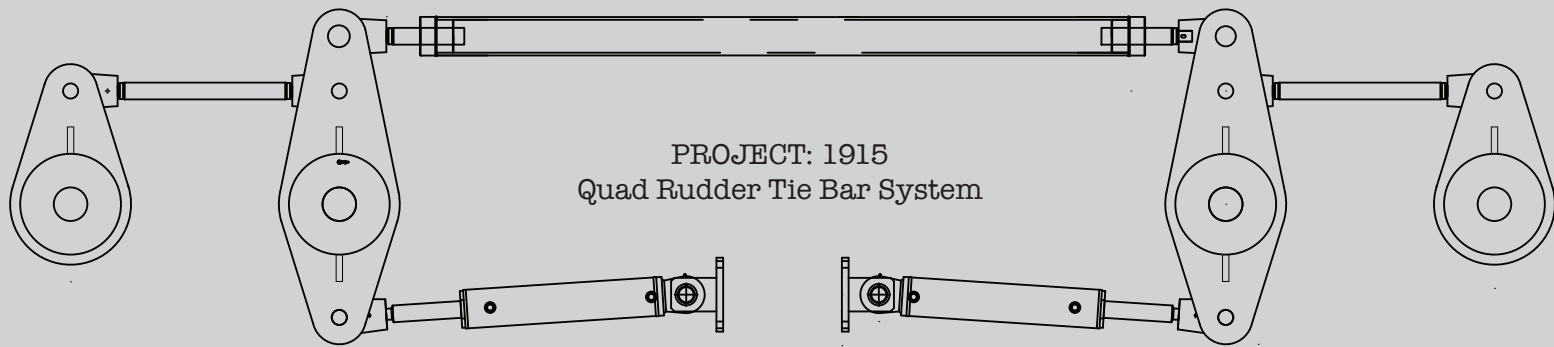
At KINGS we offer an extensive range of steering control system components and complete systems tailored to the vessel's requirements while complying with the regulations of the classification bodies

All our systems are designed inhouse to achieve the utmost efficiency, compatibility and cost effectiveness.

HYDRAULIC CYLINDERS

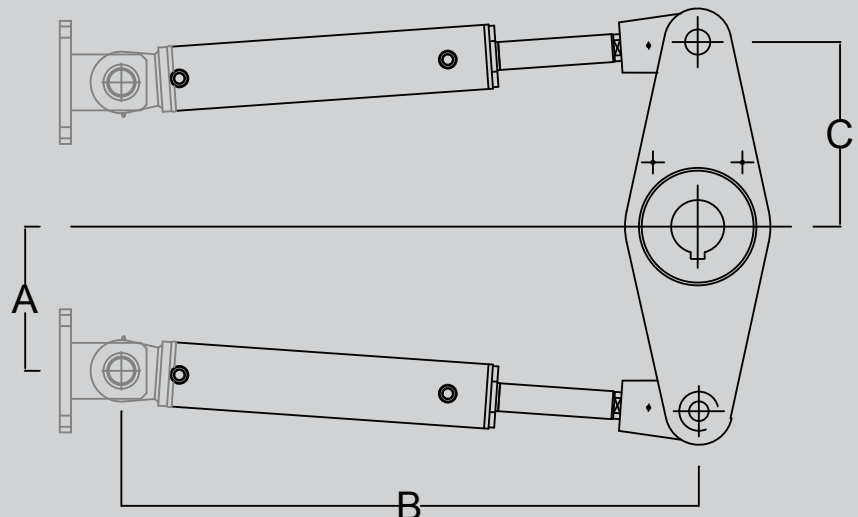
Our Hydraulic Cylinders are designed for heavy duty marine applications. They are produced by precise machineries and all welders are experienced with proper certifications.

Our Cylinders comes in various sizes to be fitted accordingly to the vessel's general arrangement & specifications. All our cylinders can be classed by an IS Classification Society.



Technical Dimensions

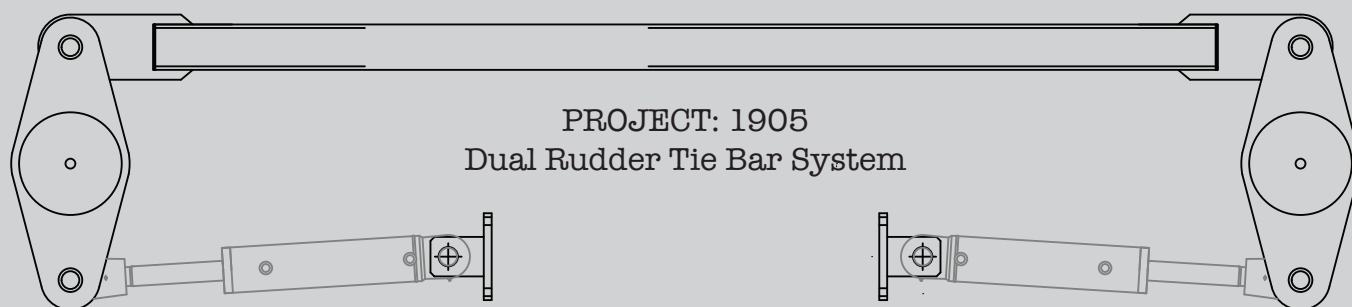
Stroke	A	B	C
406	307	1035	335
	237		275
508	384	1188	420
	297		345
610	461	1373	505
	356		415
762	576	1682	630
	445		520



Technical Specifications

Model	Bore, Rod, Stroke - mm	Torque - Kgm @ 110.0 bar	Displacement - cc
KS3112-YY-ZZ	80 - 40 - 305	1959 / 1476	2682
KS3116-YY-ZZ	80 - 40 - 406	2607 / 1965	3570
KS4212-YY-ZZ	100 - 50 - 305	3060 / 2306	4190
KS4216-YY-ZZ	100 - 50 - 406	4178 / 3070	5577
KS4220-YY-ZZ	100 - 50 - 508	5228 / 3714	6979
KS5316-YY-ZZ	125 - 70 - 406	6291 / 4470	8398
KS5320-YY-ZZ	125 - 70 - 508	7872 / 5592	10508
KS5324-YY-ZZ	125 - 70 - 610	9446 / 6715	12618
KS6320-YY-ZZ	150 - 75 - 508	11468 / 8643	15702
KS5324-YY-ZZ	150 - 75 - 610	13771 / 10378	18855
KS5330-YY-ZZ	150 - 75 - 762	17202 / 12964	23553

YY - Torque, ZZ - Rudder Angle

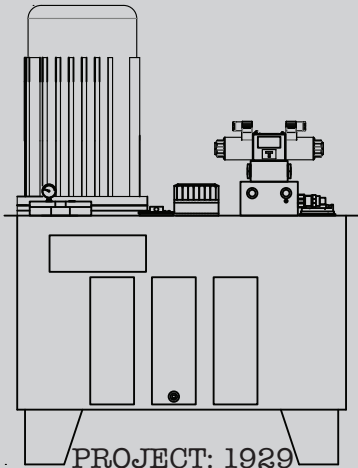


Cylinders features varies from application to application.
We may adjust the stroke, length, thickness, pressure to fit require application.

HYDRAULIC POWER UNIT

KINGS Hydraulic Power Units produced and assembled in-house according to the vessel's requirement and customer's needs

Each set of HPU are monitored individually by an attached engineer from the beginning to the end surveying.



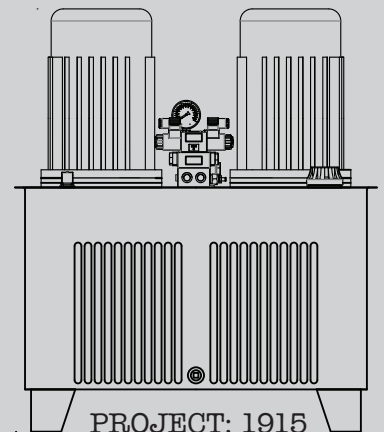
PROJECT: 1929
3kW HPU Tie Bar System

General Features:

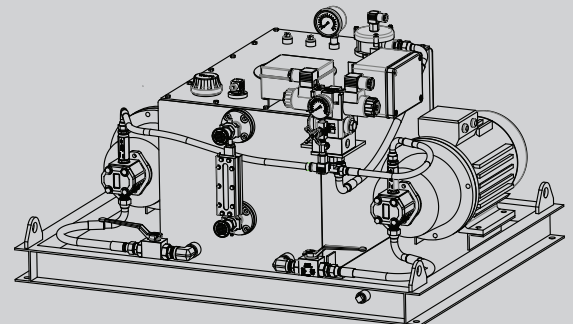
Motor	: 3-Phase AC with Type Approval
Power Rating	: Up to 37kW
Pump	: Up to 100cc
Check Valve	: Yes, if > 1 pump
Solenoid & DPO	: Up to CETOP 10
Subplate	: Up to CETOP 10, with Relief Valve
Filter Housing	: Aluminium with Self Etching Primer
Filter Element	: 25micron Filter
Pressure Gauge	: Up to 300bar with Isolating Valve
Level Gauge	: Tank Top Level Indicator
Tank	: Powder Coated Steel (Inside & Outside)
Switches	: NC Low Oil Level Switch
Junction Box	: IP67 c/w 18 Terminal Blocks
Hoses, Fittings	: Up to 400bar

Options:

- Skid Plate with drain port
- Manual helm pump reservoirs



PROJECT: 1915
Twin 5.5kW HPU Tie Bar System



PROJECT: 160
Twin 5.5kW HPU for Independent
DP2 System

Our HPU are tested with a calibrated pressure gauge.

Information above are for reference only.

Contact us so we can provide you with the most accurate scope of supply.

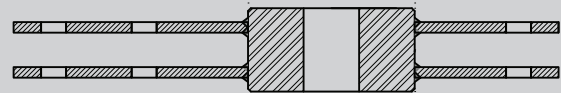
RUDDER TILLERS

We design and can include the Rudder Tillers as part of our steering gear system. This allow us to carefully design the design to meet the steering requirements as well as the torque requirements.

Our tillers are forged by industrial leading experts and comes with the IS Class Certificate.

Tiller Arm

Mild Steel	: KA or equivalent
Forged Steel	: KSF45 or equivalent
Yield	: > 235 MPa
Tensile	: > 450 MPa
Welding	: Full penetration welding



PROJECT: 160
Double Arm Tiller for
Independent DP2 System

Quadrant Plate

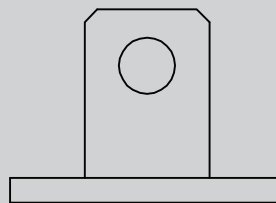
Material	: Brass or SS304
Scale	: 45° PORT to 45° STBD
Markings	: Black



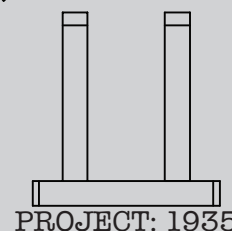
Quadrant
Plate

Foot Mount

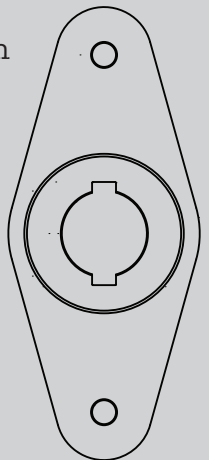
Material	: Mild Steel
Coating	: Anti Rust Primer
Series	: 42 & 94 Series



PROJECT: 1917
94 Series
Foot Mount



PROJECT: 1935
42 Series
Foot Mount



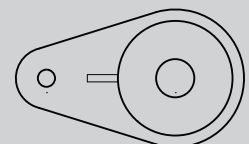
PROJECT: 100
Double Arm Tiller
for Tie Bar System

Pin

Material	: Mild Steel
Yield	: > 235 MPa
Tensile	: > 450 MPa



Tiller Pins



PROJECT: 1915
Single Arm Tiller for
Quad Tie Bar System

Spacer

Material	: Mild Steel
----------	--------------

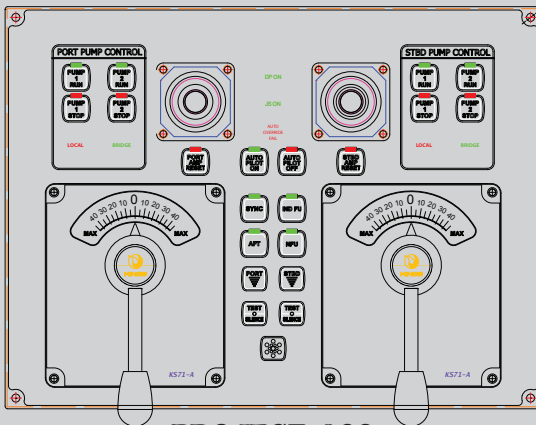


Tiller Spacer

Information above are for reference only.
Contact us so we can provide you with the most accurate scope of supply.

STEERING PANELS

We have several options of steering panels with different uses. This ranges are mainly for independent steering of rudders, tie-bar FU & NFU controls, both can be configured with integrated alarms.



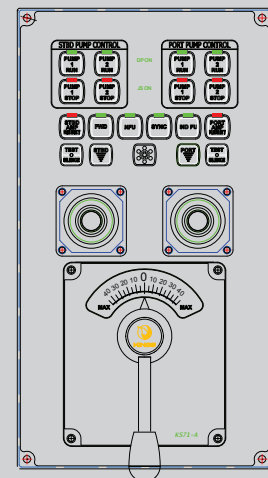
PROJECT: 160
Independent DP2 System
FWD Station

KS81F STEERING PANEL

- Dual NFU Joysticks & FU Levers
- Pump Controls
- Joystick & Autopilot indication
- Local & Bridge indication
- PT & SB Sync Control
- Aluminium Body
- 24VDC

KS81A STEERING PANEL

- Dual NFU Joysticks
- Single Synchronised FU lever
- Individual Pump Controls
- Joystick & Autopilot indication
- Local & Bridge indication
- PT & SB Sync Control
- Aluminium Body
- Up to 2 stations
- 24VDC



PROJECT: 160
Independent DP2 System
AFT Station

SCP21 STEERING PANEL

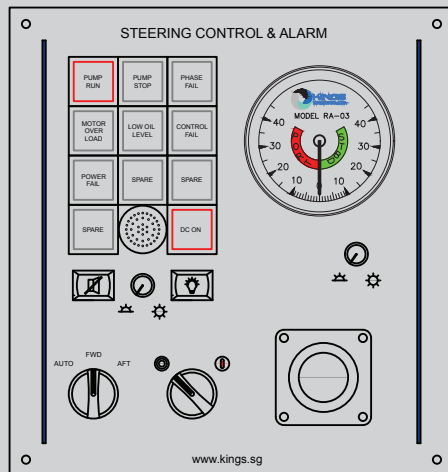
- RA03 Rudder Angle Indicator c/w Dimmer Control
- Station Selector Switch
- Non Follow Up Lever

Optionals

- Follow Up Lever



SCA110 STEERING CONTROL & ALARM PANEL



- RA03 Rudder Angle Indicator c/w Dimmer Control
- Station Selector Switch
- Single Pump Selector Switch
- Non Follow Up Lever
- HPU Alarms w Spare Ports
- Mute and Lamp Tests

Optionals

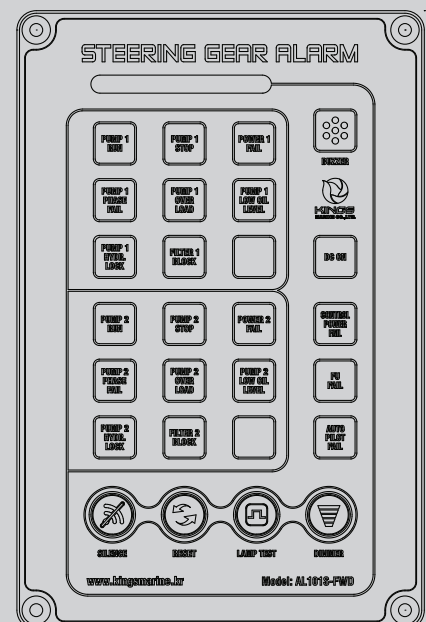
- Follow Up Lever
- Additional Pilot Lamps

STEERING GEAR ALARM PANEL

- Available in FWD, AFT, ECR
- Synchronised multiple alarm panels

Indications & Alarms:

- Twin Pump Run/Stop Indication
- Pump Failure
- Pump Overload
- Phase Failure
- Hydraulic lock
- Autopilot Fail
- FU Fail





KINGS[®]

Steering Gear | Engine Control



KINGS CM PTE LTD

13 Buroh Street,
2nd Mezzanine Floor,
Singapore 627551

Tel: +65 8201 4028, +65 8809 0043

Email: contact@kings.sg

Homepage: www.kings.sg