

Drive Choosing Outboard steering systems

2019

Bullhorn & Front-mount steering for OUTBOARDS

OBKIT1 BULLHORN STY

BULLHORN STYLE
OUTBOARD KIT
Complete with:1 x 401N8 helm
1 x 211BH cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit
Instructions



COMKIT1

BULLHORN STYLE
OUTBOARD KIT
Complete with:1 x 501N8 helm
1 x 511BH cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit
Instructions



COMKIT1-PRO BULLHORN STYLE

OUTBOARD KIT
Complete with:1 x 401N8 helm
1 x 511BH cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit
Instructions



COMKIT6

BULLHORN STYLE
OUTBOARD KIT
Complete with:1 x 501N8 helm
1 x 512BH cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit
Instructions



COMKIT5

FRONT MOUNT Style
OUTBOARD KIT
Complete with:1 x 501N8 helm
1 x 516FM cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit
Instructions



Selection of the most suitable steering system for your boat is a simple matter of:-

- 1) Matching the HP of your outboard to the recommended capacity of the steering system. *Note:* with the COMKIT6 which has a rated **maximum** capacity of 150HP motor, the **optimum** performance is from 40HP-120HP for comfortable handling. You should consider the COMKIT1 for higher HP motors for lightest control.
- 2) Deciding which TYPE of cylinder best suits your engine-well.
- 3) Considering your budget as to whether you want to go for the normal pleasure rated system or invest in the top-of-the-range commercial system.

TYPES

BULLHORN type steering is by far the most popular steering system for outboard motors as it is compact, simple to install and requires the minimum amount of clearance in an engine well.

FRONT MOUNT type steering is also popular because of the lower cost, combined with the fact that the hoses are in a fixed position and do not move. The disadvantage is the amount of space required in the engine well due to the piston rod travelling in each direction.

SERIES

The **Commander** Series (COMKIT models) are designed for use on pleasure boats only with outboard motor Horsepower limitations as shown. They utilise a state-of-the-art aluminium cylinder design, with unique electrolytic insulation between metals for maximum corrosion resistance. The **PRO** versions are designed for both pleasure and commercial use

The **Admiral** Series (OBKIT models) are designed for the most robust operation in both pleasure and commercial vessels and offer the strongest and most corrosion resistant steering cylinders on the market. There is no equivalent of these cylinders available from any other manufacturer.

MATCHING YOUR OUTBOARD TO THE CORRECT CYLINDER TYPE AND STYLE

Manufactured in Australia, HyDrive continues to manufacture the highest quality steering systems to suit the ever changing designs and developments in outboard motors. The following chart should be used as a guide to select the correct kit to match your motor(s). If in doubt, contact your nearest HyDrive distributor.

Also see mounting options for helm units - such as Rear-Mount kits and Wedges

Selection of steering for OUTBOARDS - SIDE-MOUNT STYLE

SPORTKIT OUTBOARD KIT

Complete with:1 x 401N8 helm
1 x 212T cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit



COMKIT-SPORT OUTBOARD KIT

Complete with:1 x 501N8 helm
1 x 212T cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit
Instructions



OBKIT-2 OUTBOARD KIT

Complete with:1 x 401N8 helm
1 x 210T cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit



OBKIT-3 OUTBOARD KIT

Complete with:1 x 401N8 helm
1 x 210TSE cylinder
2 litres ULTRA-15
15M nylon hydraulic
tubing
Fittings
Bleeding kit





Typical side-mount installation using 210TSE

SIDE- MOUNT or TUBE-MOUNT

The Side or Tube-mount type cylinders are very popular because of the ease of fitting and the economical price which allows a very simple upgrade from cable steering to hydraulic for vastly improved results.

Selection of this type of steering is entirely dependent on the HP of the outboard(s) as the type of mount is universal to all brands and HP of motors that are fitted with tilt-tubes. Some very small outboards do not have tilt-tubes and therefore must use the same pivoting bracket that is attached to the customer's current cable.

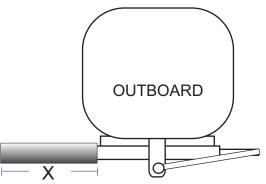
Fitting is very simple as the hydraulic cylinder screws directly onto the threaded tilt-tube in the same location as the existing cable steering. It connects to the tiller arm of the outboard using the standard drag-link already connecting the cable.

ADVANTAGES

Low cost system
Ease of fitting
Hoses remain stationary

DISADVANTAGES

The amount of side-clearance required.



Side Clearance requirements

Model 210T (balanced) - 540mm (21.2") Model 210TSE - 330mm (13") Model 212T/512T - 315mm (12.4")

HYDRIVE MODEL SELECTION - OUTBOARD MOTORS ONLY

Note:- The model COMKIT6 can be used in place of the COMKIT1 on all SINGLE motors up to 150HP maximum.

Optimum performance range for comfortable wheel effort on COMKIT6 is 40HP - 120HP

The same version should be used as indicated in the listed options - Honda, Mercury etc.

BRAND YEAR	MOTOR	HP	HYDRIVE KIT OPTIONS	NOTES
JOHNSON EVINRUDE ALL YEARS	2 Stroke Single	up to 200HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
	2 Stroke Single	up to 300HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
	2 Stroke Twin counter-rotating	up to 400HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
	2 Stroke Twin counter-rotating	up to 600HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
HONDA PRE-2006	4 Stroke Single	75HP-90HP	Budget - COMKIT1- HONDA Bullhorn style Admiral-OBKIT1- HONDA Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
	4 Stroke single	100НР-200НР	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note: The 130HP requires the use of the Honda version
	4 Stroke Single	225HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
	4 Stroke Twin counter-rotating	up to 400HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note - if using twin 75HP, 90HP or 130HP motors then Honda version required
	4 Stroke Twin counter-rotating	twin 225HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
POST-2000		75-90HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
	4-Stroke single	115HP	Budget - COMKIT1- HONDA Bullhorn style Admiral-OBKIT1- HONDA Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
	4-Stroke single	135HP-200HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
	4-Stroke single	225HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
	4 Stroke Twin counter-rotating	up to 400HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note - if using twin 115HP motors then Honda version required
	4 Stroke Twin counter-rotating	twin 225HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
	4-Stroke single	30 - 40HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style	
YAMAHA ALL YEARS	4-Stroke single	50-70HP PLUS 80B	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note: The transom clamps on these motors must be cut off to allow full tilt of the steering system which would otherwise interfere on the clamps. These clamps will interfere on ALL makes and brands of bullhorn or front-mount steering cylinders.
	4-Stroke single	80A-90HP PLUS 115B	Budget - COMKIT1- HONDA Bullhorn style Admiral-OBKIT1- HONDA Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note: The transom clamps on these motors must be cut off to allow full tilt of the steering system which would otherwise interfere on the clamps. These clamps will interfere on ALL makes and brands of bullhorn or front-mount steering cylinders.
	4-Stroke single	100-200HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
	4-stroke single	200-300HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	

HYDRIVE MODEL SELECTION - OUTBOARD MOTORS ONLY

Note:- The model COMKIT6 can be used in place of the COMKIT1 on all SINGLE motors up to 150HP maximum.

Optimum performance range for comfortable wheel effort on COMKIT6 is 40HP - 120HP

The same version should be used as indicated in the listed options - Honda, Mercury etc.

BRAND	YEAR	MOTOR	НР	HYDRIVE KIT OPTIONS	NOTES
YАМАНА	ALL YEARS	4-stroke single	350HP	Admiral OBKIT1- HP OR OBKIT1-HP-XT	High peformance unit required on 350HP
		4 Stroke Twin counter-rotating	50-70HP PLUS 80B	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note: The transom clamps on these motors must be cut off to allow full tilt of the steering system which would otherwise interfere on the clamps. These clamps will interfere on ALL makes and brands of bullhorn or front-mount steering cylinders.
		4 Stroke Twin counter-rotating	80A-90HP	Budget - COMKIT1- HONDA Bullhorn style Admiral-OBKIT1- HONDA Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note: The transom clamps on these motors must be cut off to allow full tilt of the steering system which would otherwise interfere on the clamps. These clamps will interfere on ALL makes and brands of bullhorn or front-mount steering cylinders.
		4-Stroke Twin counter rotating	100-200НР	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
		4 Stroke Twin counter-rotating	200-300HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
		4 Stroke Twin counter-rotating	350HP	Admiral OBKIT1- HP OR OBKIT1-HP-XT	High peformance unit required on 350HP
		2-Stroke single	115-200HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
		2-Stroke single	50-90НР	Budget - COMKIT1 -MERC Bullhorn style Admiral-OBKIT1- MERC Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note- Merc versions required on bullhorn type steering for these motors
MERCURY	ALL YEARS	VERADO SINGLE	135-175HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
		VERADO DUAL Counter rotating	135-175HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
		OPTIMAX SINGLE	75-115HP	Budget - COMKIT1- MERC Bullhorn style Admiral-OBKIT1- MERC Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note- Merc versions required on bullhorn type steering for these motors
		OPTIMAX SINGLE	135-200HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
		OPTIMAX DUAL counter rotating	75-115HP	Budget - COMKIT1- MERC Bullhorn style Admiral-OBKIT1- MERC Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note- Merc versions required on bullhorn type steering for these motors
		OPTIMAX DUAL counter rotating	135-200HP	Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
		OPTIMAX SINGLE	225HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
		OPTIMAX DUAL counter rotating	225HP	Budget - COMKIT1- PRO Bullhorn style Admiral-OBKIT1 Bullhorn style	
		4-Stroke single	60-115HP NEW 150HP USES STANDARD ARM	Budget - COMKIT1- MERC Bullhorn style Admiral-OBKIT1- MERC Bullhorn style Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	Note- Merc versions required on bullhorn type steering for these motors - <i>Except new 150HP uses standard tiller</i> arm

HYDRIVE MODEL SELECTION - OUTBOARD MOTORS ONLY

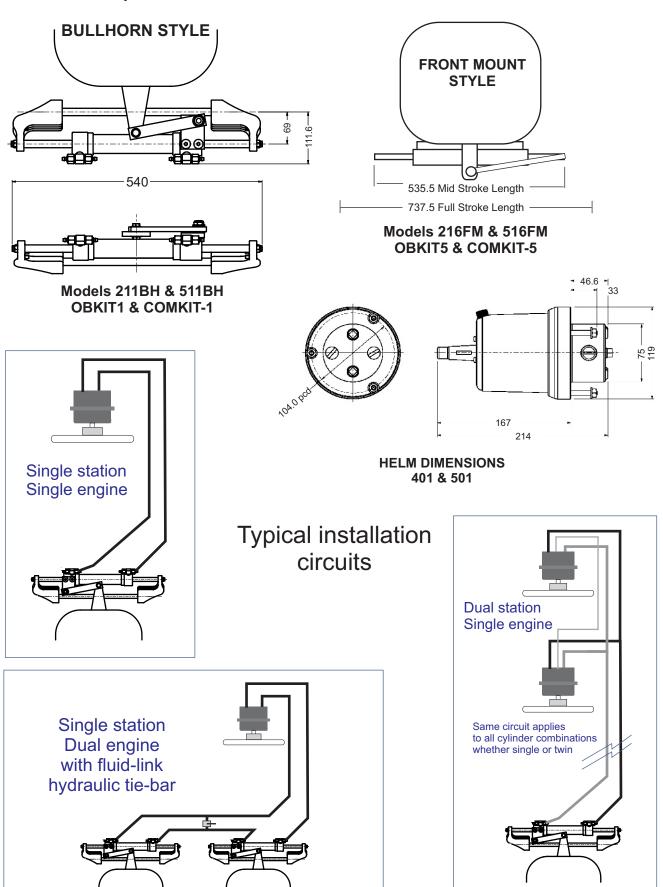
Note:- The model COMKIT6 can be used in place of the COMKIT1 on all SINGLE motors up to 150HP maximum.

Optimum performance range for comfortable wheel effort on COMKIT6 is 40HP - 120HP

The same version should be used as indicated in the listed options - Honda, Mercury etc.

BRAND	YEAR	MOTOR	НР	HYDRIVE KIT OPTIONS	NOTES
			60-115HP -	Budget - COMKIT1-MERC Bullhorn style	Note- Merc versions required on bullhorn type steering
MERCURY	ALL YEARS	4-Stroke DUAL	see above for	Admiral-OBKIT1-MERC Bullhorn style	for these motors - Except new 150HP uses standard tiller
	7.22 727.110	Counter rotating	150HP	Budget - COMKIT5 Front-mount style	arm
				Admiral- OBKIT5 Front-mount style	
				Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style	
		2-Stroke single	40-200HP	Budget - COMKIT5 Front-mount style	
				Admiral- OBKIT5 Front-mount style	
		2 Stroko singlo	EFI 250HP	Budget - COMKIT1- PRO Bullhorn style	
		2-Stroke single	EFI 250HP	Admiral-OBKIT1 Bullhorn style	
				Budget - COMKIT1 Bullhorn style	
		2-Stroke single	40-90HP	Admiral-OBKIT1 Bullhorn style	
				Budget - COMKIT5 Front-mount style Admiral- OBKIT5 Front-mount style	
				Budget - COMKIT1 Bullhorn style	
			Bigfoot	Admiral-OBKIT1 Bullhorn style	
		2-Stroke single	40-60HP	Budget - COMKIT5 Front-mount style	
				Admiral- OBKIT5 Front-mount style	
				Budget - COMKIT1 Bullhorn style	
		2-Stroke DUAL	40-200HP	Admiral-OBKIT1 Bullhorn style	
		Counter rotating		Budget - COMKIT5 Front-mount style	
		2-Stroke DUAL		Admiral- OBKIT5 Front-mount style Budget - COMKIT1- PRO Bullhorn style	
		Counter rotating	EFI 250HP	Admiral-OBKIT1 Bullhorn style	
		oounter rotating		Budget - COMKIT1 Bullhorn style	
		2-Stroke DUAL	40.00110	Admiral-OBKIT1 Bullhorn style	
		Counter rotating	40-90HP	Budget - COMKIT5 Front-mount style	
				Admiral- OBKIT5 Front-mount style	
			_	Budget - COMKIT1 Bullhorn style	
		2-Stroke DUAL	Bigfoot	Admiral-OBKIT1 Bullhorn style	
		Counter rotating	40-60HP	Budget - COMKIT5 Front-mount style	
				Admiral- OBKIT5 Front-mount style Budget - COMKIT1 Bullhorn style	
		S 4-stroke single	40-140HP	Admiral-OBKIT1 Bullhorn style	Note: some older models may requre a spacer to fit into
SUZUKI	ALL YEARS			Budget - COMKIT5 Front-mount style	the recess under the tiller arm. These are available on
				Admiral- OBKIT5 Front-mount style	request. Current motors do not require them.
				Budget - COMKIT1 Bullhorn style	
		4-Stroke single	150-200HP	Admiral-OBKIT1 Bullhorn style	
				Budget - COMKIT5 Front-mount style	
				Admiral- OBKIT5 Front-mount style Budget - COMKIT1- PRO Bullhorn style	
		4-Stroke single	225-250HP	Admiral-OBKIT1 Bullhorn style	
				Budget - COMKIT1 Bullhorn style	
		4-Stroke DUAL	40-140HP	Admiral-OBKIT1 Bullhorn style	Note: some older models may requre a spacer to fit into the recess under the tiller arm. These are available on
		Counter rotating	40-14011	Budget - COMKIT5 Front-mount style	request. Current motors do not require them.
				Admiral- OBKIT5 Front-mount style	request. Current motors do not require them.
		A Charles DUIAL		Budget - COMKIT1 Bullhorn style	
		4-Stroke DUAL Counter rotating	150-200HP	Admiral-OBKIT1 Bullhorn style Budget - COMKIT5 Front-mount style	
		Counter rotating		Admiral- OBKIT5 Front-mount style	
		4-Stroke DUAL		Budget - COMKIT1- PRO Bullhorn style	
		Counter rotating	225-250HP	Admiral-OBKIT1 Bullhorn style	
				Budget - COMKIT1- MERC Bullhorn style	
TOHATSU	ALL YEARS	ARS SINGLE	60-90HP	Admiral-OBKIT1-MERC Bullhorn style	Note- Merc versions required on bullhorn type steering
				Budget - COMKIT5 Front-mount style	for these motors
				Admiral- OBKIT5 Front-mount style Budget - COMKIT1 Bullhorn style	
				Admiral-OBKIT1 Bullhorn style	
		SINGLE	100-200HP	Budget - COMKIT5 Front-mount style	
				Admiral- OBKIT5 Front-mount style	
				Budget - COMKIT1- MERC Bullhorn style	
		DUAL	60-90HP	Admiral-OBKIT1-MERC Bullhorn style	Note- Merc versions required on bullhorn type steering
		Counter rotating	23 33/11	Budget - COMKIT5 Front-mount style	for these motors
				Admiral- OBKIT5 Front-mount style	
		DUAL		Budget - COMKIT1 Bullhorn style Admiral-OBKIT1 Bullhorn style	
		Counter rotating	100-200HP	Budget - COMKIT5 Front-mount style	
		oouci rotuting		Admiral- OBKIT5 Front-mount style	

BASIC DIMENSIONS AND CLEARANCE REQUIREMENTS FOR CYLINDERS







FLEXIBLE HOSE OPTIONS



Hose kits to make installation with flexible hose even better.

The use of HDSH-05 flexible hose is not as common as the standard nylon tubing, but in certain markets the advantages of the more flexible HDSH-05 has outweighed the increased cost of installation.

To further assist installers, HyDrive has produced a range of fully pre-assembled hoses which include a very neat and practical transom or well-mount gland and bend restrictor for the outside of the transom as well as the cylinder itself.

The hoses are either supplied with *fully swaged* fittings on each end, and the restrictors already in place, or they can be supplied as one *continuous length* with swage fitting on each end plus two field-attachable fittings so that adjustments to length can be made on site.

You can also choose to buy the hose by the roll and purchase the fittings in bulk for local assembly for your market/customers at the prices indicated in the price list.

See previous page for the fitting types available in both swage and field-attachable styles.



SOME KIT OPTIONS AND PART NUMBERS:-

To Upgrade a standard kit to Flexible hose there is a part number **UPGRADE TO FLEX** in the price list. This provides you with a pair of **6 metre** preassembled hoses with swaged fittings (2TFMS-6-5B) on each end. If you want longer hoses then add the price per metre of MSH5 hose and add the length to the order. For example on an order for an OBKIT-1 the order would look like this:-

1 x OBKIT1 complete kit 1 x UPGRADE TO FLEX - 8 METRES

This would give you one pair of 8 metre long hose. The price would be as per the UPGRADE price plus 4 extra metres of MSH5 as per the price list.

Note: the upgrade price is only for a pair of hoses included with a complete steering kit - not the cost of supplying a single pair of hoses. The upgrade price includes a credit for the non-use of the standard coil of semi-rigid tubing and some fittings.

For **A Continuous Length**, with swaged ends & field-attachable fittings, then the part number would be **HOSEKIT-FA-**and the total length required to make the pair of hoses - once again in metres. E.g. **HOSEKIT-FA-18** would provide a single length of 18 metres plus the fittings which could be cut to length on site.

You can also order the bend-restrictors and strain-reliefs to be fitted to the hoses if required.

See price list for more details.

Helm accessories

The Series 401, 402 and 501 helm units come with a range of fitting options.



WEDGE-401 20 degree wedge kit for mounting horizontal to vertical installations fits any standard model 401, 402 & 501 helm unit.





REAR-MOUNT Kit - fits any model 401,402 and 501 helm unit - adjustable from low-profile to full protrusion for maximum flexibility in helm placement. Simply trim the spacers and studs to adjust the amount of penetration into the helm position. The front dash or console ring is fully O-ring sealed against pump body to prevent water ingress to the rear of the console. Easy to fit - easy to adjust - looks great.

The new 401, 402 & 501 series helms - now the most versatile helm on the market!





DUAL STATION PARTS

DSKIT-N8 Dual station kit to suit 3/8" nylon tubing. Required for connection of two steering helm units. Kit includes two T-pieces with nuts & olives, two balance-line nipples with nuts & olives plus one non-vented filler cap.

CATAMARAN DUAL CYLINDER PARTS

CATN-8 FLUID-LINK ball valve to suit 3/8" nylon tubing. Required for connection, bleeding and synchronising of two independent hydraulic cylinders. Kit includes pre-fitted T-pieces with nuts & olives.

Manufactured in Australia by

HYDRIVE ENGINEERING PTY LTD

59 Wingfield Road, Wingfield
South Australia 5013
Tel +61 8 82431633 Fax +61 8 84457938
email: sales@hydrive.com.au Web: www.hydrive.com.au

Distributed in New South Wales by

Coursemaster Autopilots Pty Ltd

2/66 Gibbes Street, Chatswood, 2067 Tel: 02 94177097 Fax 02 94177557 email: sales@coursemaster.com Web: www.coursemaster.com