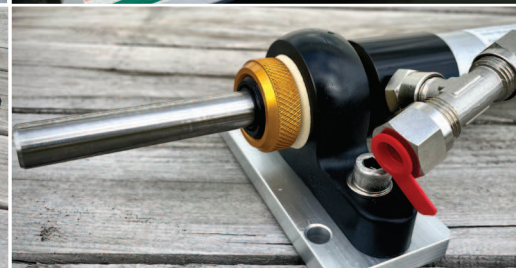


HYDRODRIVE®

Hydraulic Steering Systems

- *Outboard Hydraulic Steering Systems*
- *Inboard Hydraulic Steering Systems*
- *Stern-Drive Systems*
- *Stick Steering Systems*





OUR TECHNOLOGY

Techno Italia is the manufacturer of hydraulic steering systems branded **Hydrodrive®**. Our range has outboard applications up to 400Hp and Inboard/Stern-Drive applications for boats up to 16 m (52'). We have also hydraulic steering systems for **racing boats, sailboats and catamarans**. We do also manufacture **hydraulic stick steering** systems and we can manufacture special steering systems upon client requirement.

Good things come in threes. And we are motivated by our THREES philosophy which makes Hydrodrive Hydraulic Steering Systems different from other competitors.

- **T** as technology

Hydrodrive HSS are manufactured using technology from the **aviation industry**. The pump house comes from a single aluminium block, hardened and hot-pressed. The 10 mm thickness and the special material prevent leakage or oil film/fog formation even under extremely high working pressure. The three ball bearings in the pump ensure outstanding precision and exceptionally smooth, consistent functioning. Each pump house is anodized and due to the surface treatment is resistant to the highly corrosive effects of the sea.

The cylinders are also made of cold-drawn, hardened aluminium. The thick-walled cylinder is made of a special raw material with even higher tensile strength than the traditional bronze and therefore tolerates high working pressure. As the pump house, also all the cylinders and parts are anodized and are resistant to salt corrosion.

- **H** as history

The Gobbo family has more than 50 years of experience in hydraulic systems. Specializing in the manufacturing of hydraulic systems for the aircraft industry, the company in the past has supplied players such as Fiat-Avio, Agusta and Rolls Royce. That sense of purpose and mission has been always part of the Gobbo family's culture. The years of compassionate work are now the heritage for future challenges: we look for new opportunities in technology while retaining the key traditional

- **R** as reliability

There is no reliability without quality, and **quality is our benchmark**. We like to emphasize we are so sure about our quality, and we are so confident with it that we give **3 years of warranty**. Our data show the percentage of our Hydrodrive HSS replaced within the first 3 years is less than 0.1% and within the first 5 years is less than 0.3%. The **durability average** of our system **is more than 8 years without maintenance**.



- **EE** as environmentally engineered   PLASTIC FREE PRODUCT

Techno Italia has a simple but clear purpose: to make sustainable products, generating the gratitude of the other. All the Hydrodrive® HSS are designed to have less impact on the environment. Have you ever wondered how many litres of oil is used to fill any hydraulic steering system? And how many times do they have to be refilled during their lifetime? The figure will shock you. Can you imagine what it would be like if we all could give the best of ourselves? We are convinced that if we can imagine it, then it can be done! For this **Hydrodrive® HSS** is the only steering system that after the first filling **doesn't require any refill for the entire life**. All of our helms and main parts of our HSS are plastic free and recyclable. Considering our average durability, we give concrete help to our planet. We think this should be the best long-term way for the business to grow.

- **S** as simplicity

Simplicity is our mantra. The more simple and easy a product is more efficient will be. All the steering kits come all in one: pump house, cylinder, oil, hose set by made on twin hydraulic high-pressure tube, already with fittings. You don't have to do anything else than just install the pump and the cylinder, fix the hose set and fill the system; all systems are with fast-fit connection and are compatible with the main applications on market.

Saving time in installing means saving money, and we like to make the end user's life as easy as possible.

Hydrodrive® HSS stands for high-level quality, and we are proud to produce one of the up-to-date hydraulic steering systems. We like to emphasize that we do what we say.

Hydrodrive® Hydraulic Steering System: The comfort in driving your boat.

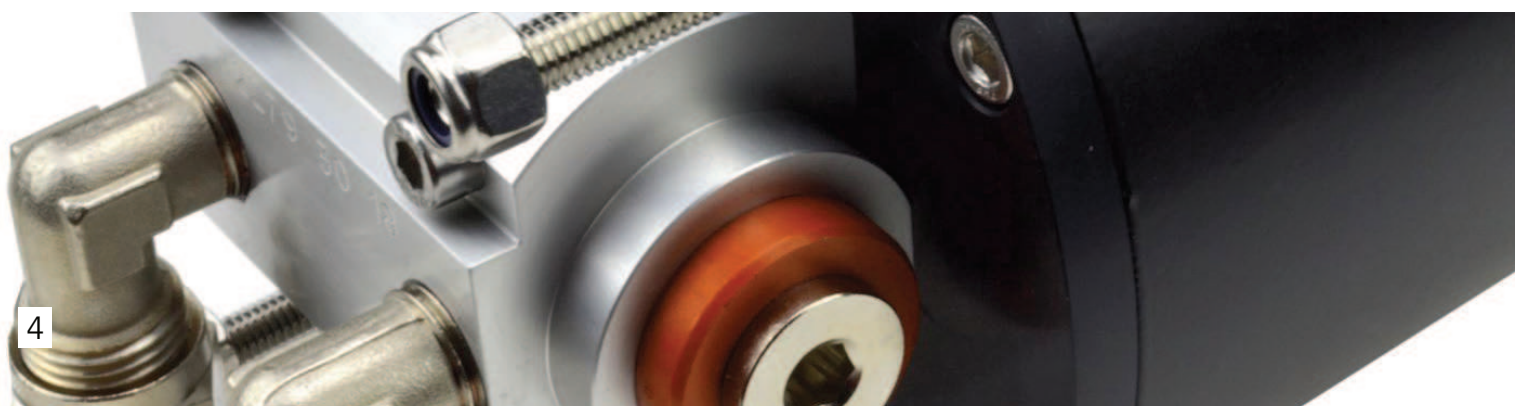


Made in EU
ISO 10592



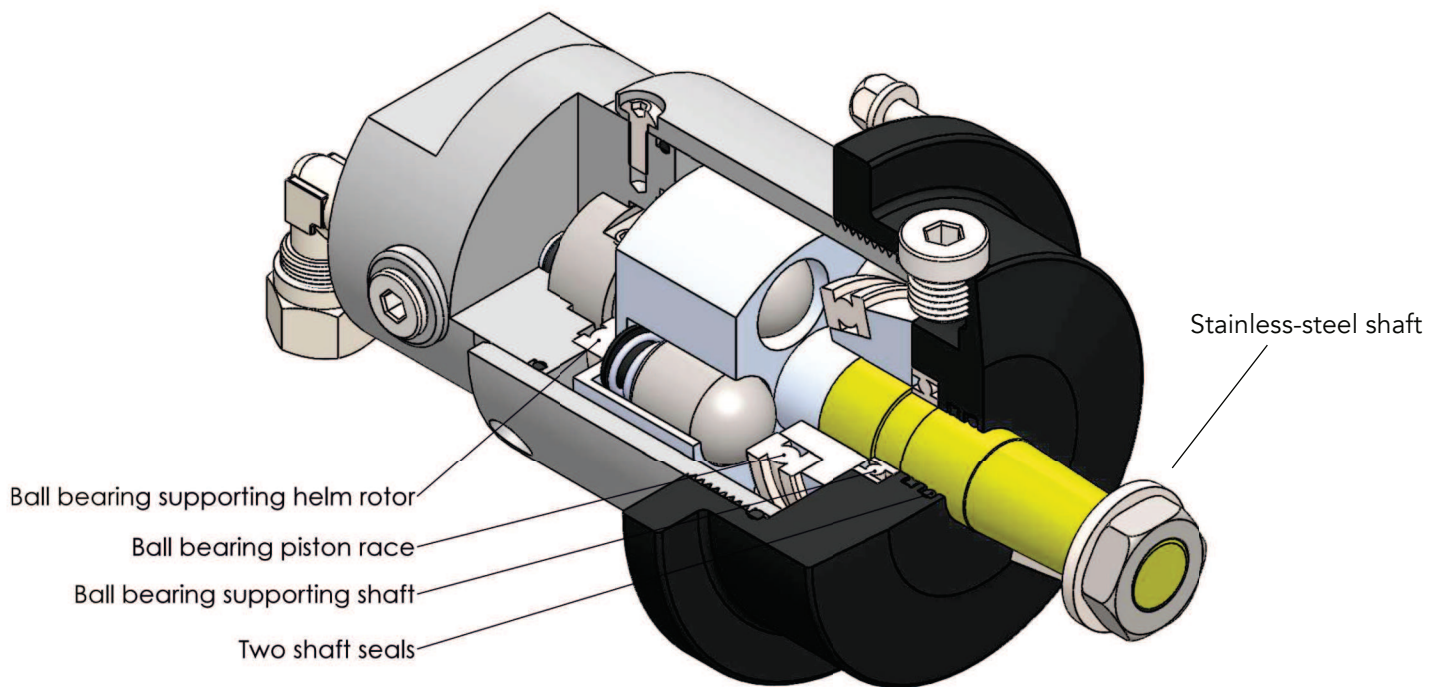
OUR MODELS:

Model:	Max power:	Anti-Feedback Autopilot port	Fix cylinder:	Slider cylinder: Horns
Outboard Systems - Entry Line				
MF75W	75 HP	–	✓	–
MF75WMRA	80 HP	✓	✓	–
MF90W	90 HP	–	✓	–
Outboard Systems - Comfort Line				
MF115MRA	120 HP	✓	✓	–
MF150MRA	150 HP	✓	✓	–
MF175W	175 HP	✓	✓	–
MF175 WTS	175 HP	✓	–	✓
Outboard Systems - Performance Line				
MF200WTS	200 HP	✓	–	✓
MF255 WTS	255 HP	✓	–	✓
MF255 WTS-TDF	200+200 HP	✓	–	✓
MF350W PLUS	350 HP	✓	✓	
MF350W-SP	350 HP racing	✓	✓	–
MF350W-TDF	300+300 HP	✓	✓	–
MF400 WTS	400 HP	✓	–	✓
Inboard Systems	Max boat lenght			
MU50TF	10 m (33 ft)	–	✓	–
MU50TFMRA	10 m (33 ft)	✓	✓	–
MU75TF	12 m (40 ft)	–	✓	–
MU75TFMRA	12 m (40 ft)	✓	✓	–
MU100TF (Sailing)	16 m (52 ft)	–	✓	–
MU100TFMRA (Sailing)	16 m (52 ft)	✓	✓	–
Stern-Drive Systems				
MSD70TF	12 m (40 ft)	–	✓	–
MSD70TFMRA	12 m (40 ft)	✓	✓	–
Stick-Steering Systems				
MSTK-150	150 HP	✓	✓	–



Outboard Systems

Entry Line - Comfort Line



TL1-16 MRA Hydraulic Pump

Applications for all type of engines.

- From 75 HP to 90 HP - Entry Line
- From 120 HP to 175 HP Comfort Line



MF75W / MF75W MRA

Steering System kit up to 75 HP / MRA version up to 80 HP



A new technology of Hydraulic Steering System, for small engines up to 80 HP.

MRA version is:
with Anti-Feedback Valve
Automatic Pilot Connection Port

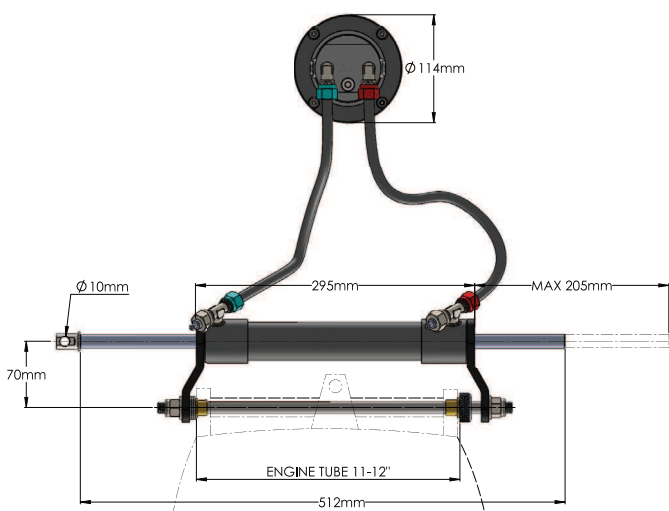
Output Force: 220 kgf. (485 lbf)
Torque: 46 Kgm. (333 lbf-ft)
Max Speed: 30 knots
Turns: 4,4

- The pump is made from a full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- High-Pressure Hose Set
- Application for all type of engines
- Easy installation method

Kit contains:

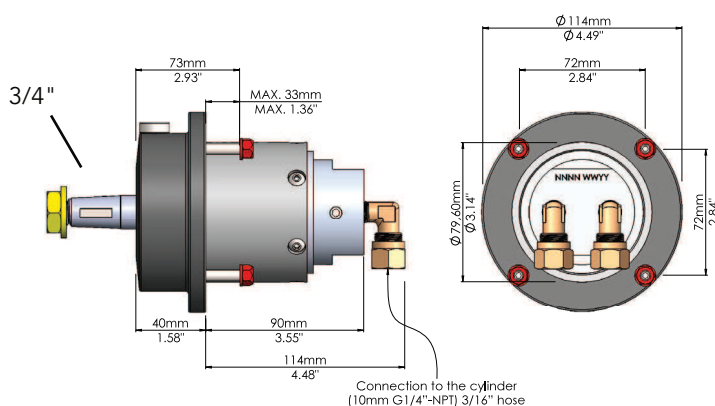
TL1-16 Hydraulic Pump for MF75W	16cc./rev	Max 60 bar	with Fittings installed	-
TL1-16 MRA Hyd. Pump for MF75W MRA	16cc./rev	Max 60 bar	with Fittings installed	Lock-Valve
MC75W Hydraulic Cylinder	68 cc.vol	Max 60 bar	with Fittings installed	Stroke 202 mm
High pressure hose set	5/16 twin	B.P. 380 bar	with Fittings installed	Twin 4,5+4,5 m (15')
HROL - Hydraulic Oil	1 L bottle	E-HVLP 46	Temp: +60/-30	-

BR72 Engine Arm not included (optional see page 29)



Total 720 mm (28")

TL1-16 flush mount
TL1-16 MRA flush mount





MF90W

Steering System kit up to 90 HP



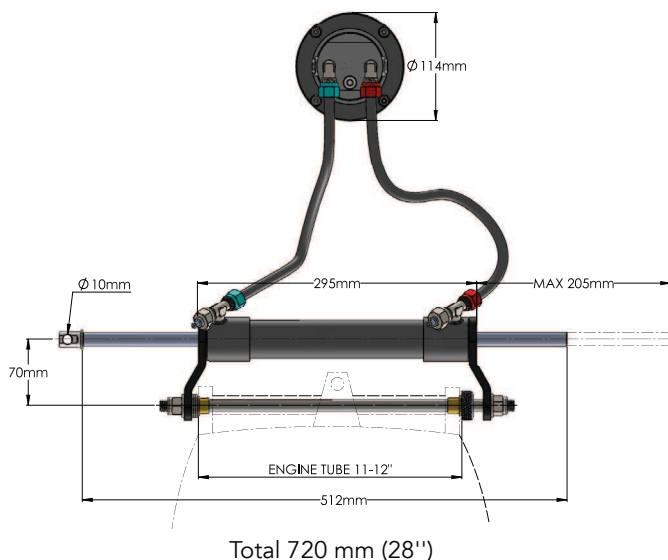
A new technology of Hydraulic Steering System, for engines up to 90 HP.

Output Force: 236 kgf. (520 lbf)
Torque: 50 Kgm. (362 lbf-ft)
Max Speed: 35 knots
Turns: 4,5

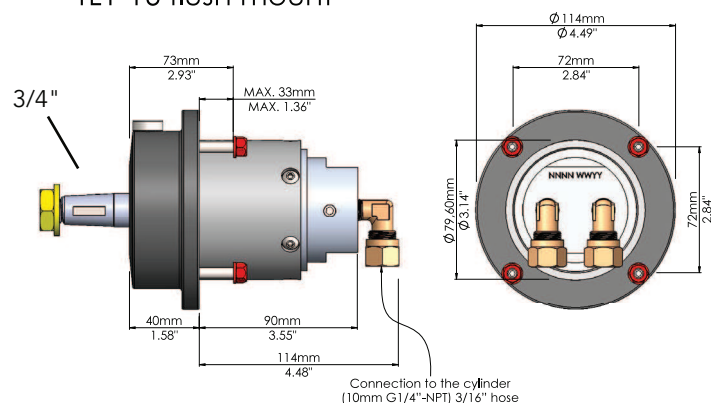
- The pump is made from a full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- High-Pressure Hose Set (1700 PSI- 120 bar)
- Application for all type of engines
- Easy installation method

Kit contains:

TL1-16 Hydraulic Pump	16cc./rev	Max 70 bar	with Fittings installed	-
MC90W Hydraulic Cylinder	71 cc.vol	Max 70 bar	with Fittings installed	Stroke 210 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 5+5 m (16')
HROL - Hydraulic Oil	1 L bottle	E-HVLP 46	Temp: +60/-30	-
BR72 Engine Arm not included (optional see page 29)				



TL1-16 flush mount





MF115 MRA

Steering System kit up to 120 HP.



A new technology of Hydraulic Steering System, for engines up to 120 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

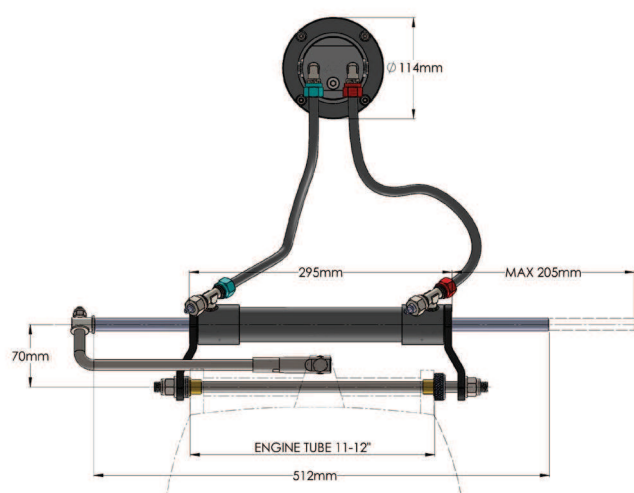
Output Force: 236 kgf. (520 lbf)
Torque: 50 Kgm. (362 lbf-ft)
Max Speed: 50 knots
Turns: 4,5

- The pump is made from a full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- High-Pressure Hose Set (1700 PSI-120 bar)
- Application for all type of engines
- Easy installation method

Kit contains:

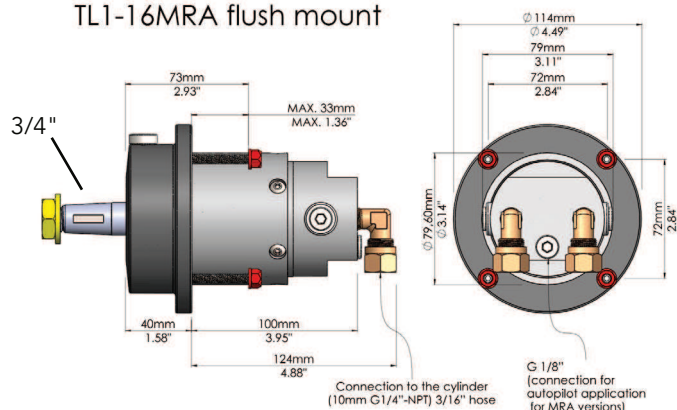
TL1-16 MRA Hydraulic Pump	16cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
MC115W Hydraulic Cylinder	71 cc.vol	Max 80 bar	with Fittings installed	Stroke 210 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 5,5+5,5 m (18')
HROL - Hydraulic Oil	1 L bottle	E-HVLP 46	Temp: +60/-30	-

Adjustable BR72 Engine Arm with fork included - Universal application



Total 720 mm (28")

TL1-16MRA flush mount





MF150 MRA / MF175W

System kit up to 150 HP and 175 HP with two position engine plate.



A new technology of Hydraulic Steering System, for engines up to 175 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

MF150 MRA specification:

Output Force: 236 kgf. (520 lbf)
Torque: 50 Kgm. (362 lbf-ft)
Max Speed: 50 knots
Turns: 4,5

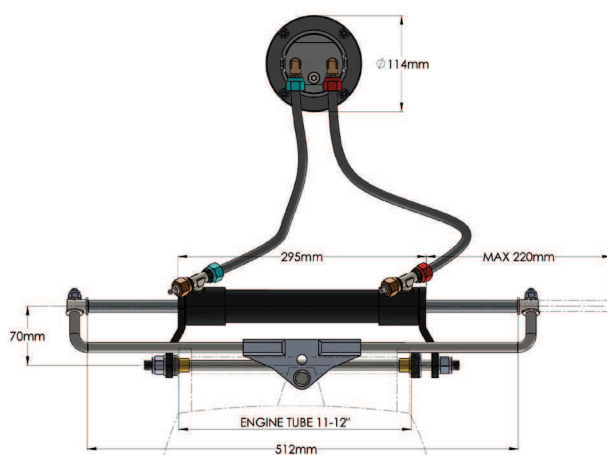
MF175W specification:

Output Force: 290 kgf. (640 lbf)
Torque: 60 Kgm. (434 lbf-ft)
Max Speed: 55 kts.
Turns: 5,4

Kit contains:

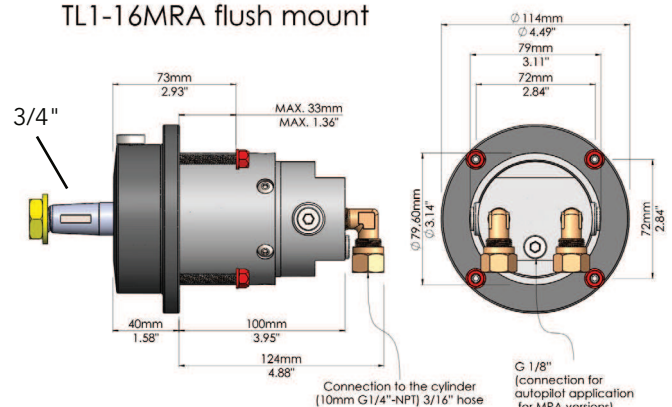
TL1-16 MRA Hydraulic Pump	16cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
MC150W Hydraulic Cyl. for MF150 MRA	71cc./rev	Max 80 bar	with Fittings installed	Stroke 210 mm
MC175W Hydraulic Cyl. for MF175W	86 cc.vol	Max 80 bar	with Fittings installed	Stroke 208 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 6+6 m (20')
HROL - Hydraulic Oil	2x1 L bottle	E-HVLP 46	Temp: +60/-30	-

New Stainless Steel Twin Engine Arm included - with Two Positions Engine Plate



Total 720 mm (28")

TL1-16MRA flush mount





MF175 WTS

Steering System kit up to 175 HP with slider cylinder - Horns mount



Steering system with **compact horns mount** for engines up to 175 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

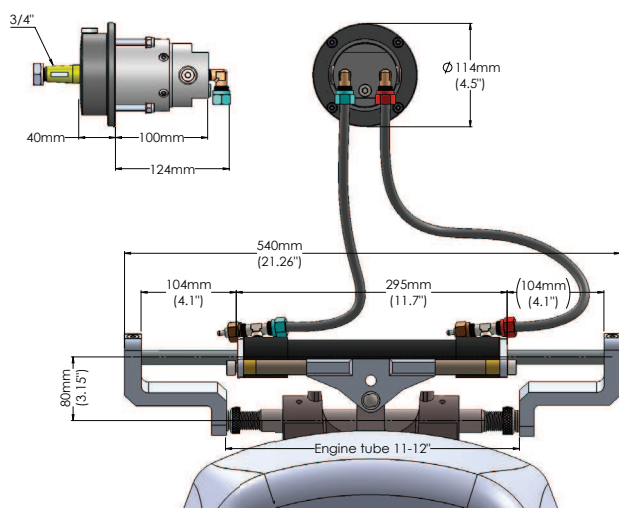
Output Force: 290 kgf. (640 lbf)
Torque: 60 Kgm. (434 lbf-ft)
Max Speed: 55 knots
Turns: 5,4

- The pump is made from a full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- High-Pressure Hose Set (1700 PSI-120 bar)
- Application for all type of engines
- Easy installation process
- New Cutting-Edge Technology fixing system

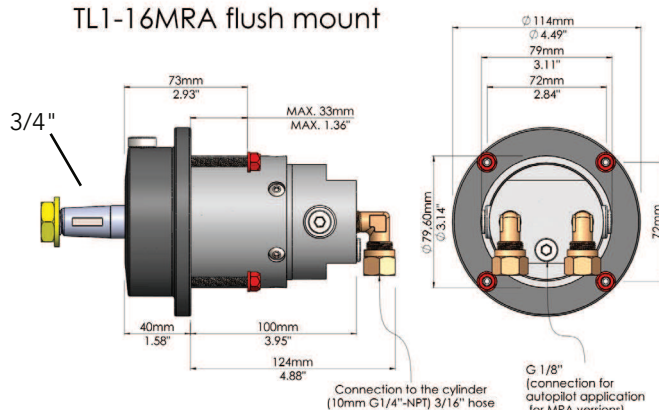
Kit contains:

TL1-16 MRA Hydraulic Pump	16 cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
MC175WTS Hydraulic Cylinder	86 cc.vol	Max 80 bar	with Fittings installed	Stroke 208 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 6+6 m (20')
HROL - Hydraulic Oil	2x1 L bottle	E-HVLP 46	Temp: +60/-30	-

New easy mounting system - Cylinder with two position engine plate



TL1-16MRA flush mount





MSTK-150 Stick Steering System

up to 150 HP

New technology of Hydraulic Stick-Steering for Outboard application up to 150 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

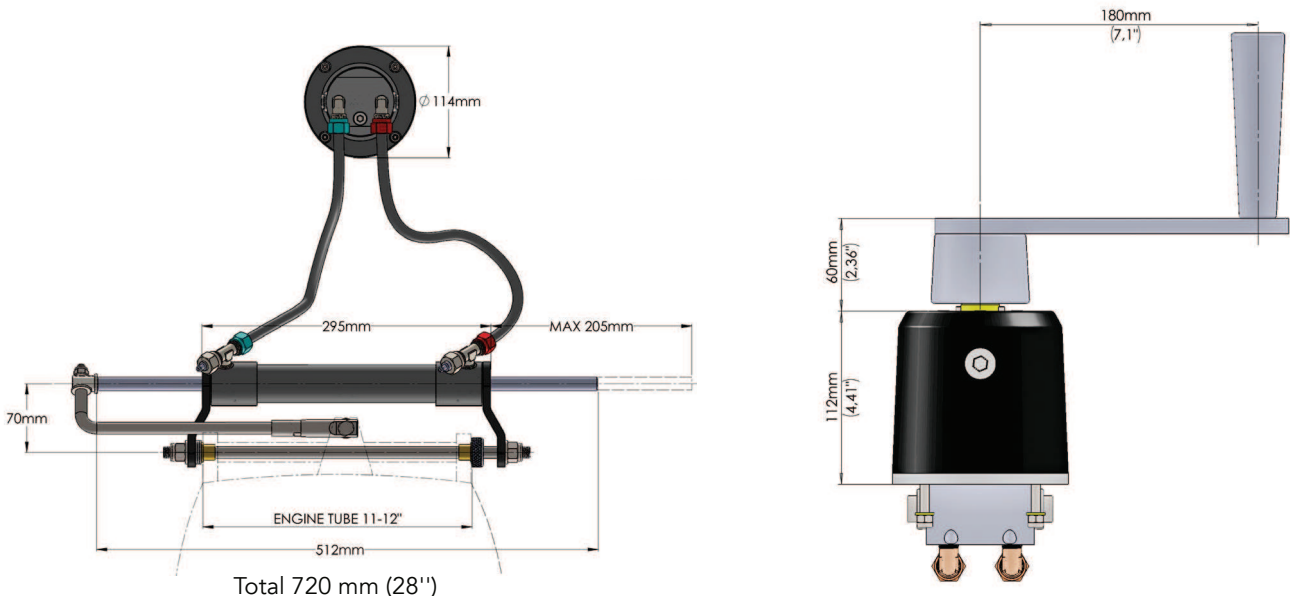
Output Force: 236 kgf. (520 lbf)
Torque: 50 Kgm. (362 lbf-ft)
Max Speed: 50 knots
Turns: 2,5

- High Precision Pump
- Removable cup to replace the shaft seals without opening the pump.
- Adjustable BR72 Engine Arm with fork included
- High Pressure Hose Set
- Universal application for all type of engines
- Easy installation process
- New Cutting-Edge Technology

Kit contains:

TL2-30 MRA Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
MC115W Hydraulic Cylinder	71 cc.vol	Max 80 bar	with Fittings installed	Stroke 210 mm
High-Pressure hose set	5/16 twin	B.P. 480 bar	with fittings installed	Twin 5,5+5,5 m (18')
Hydraulic Oil	2x1 l bottle	E-HVLP 46	Temp: +60/-30	-

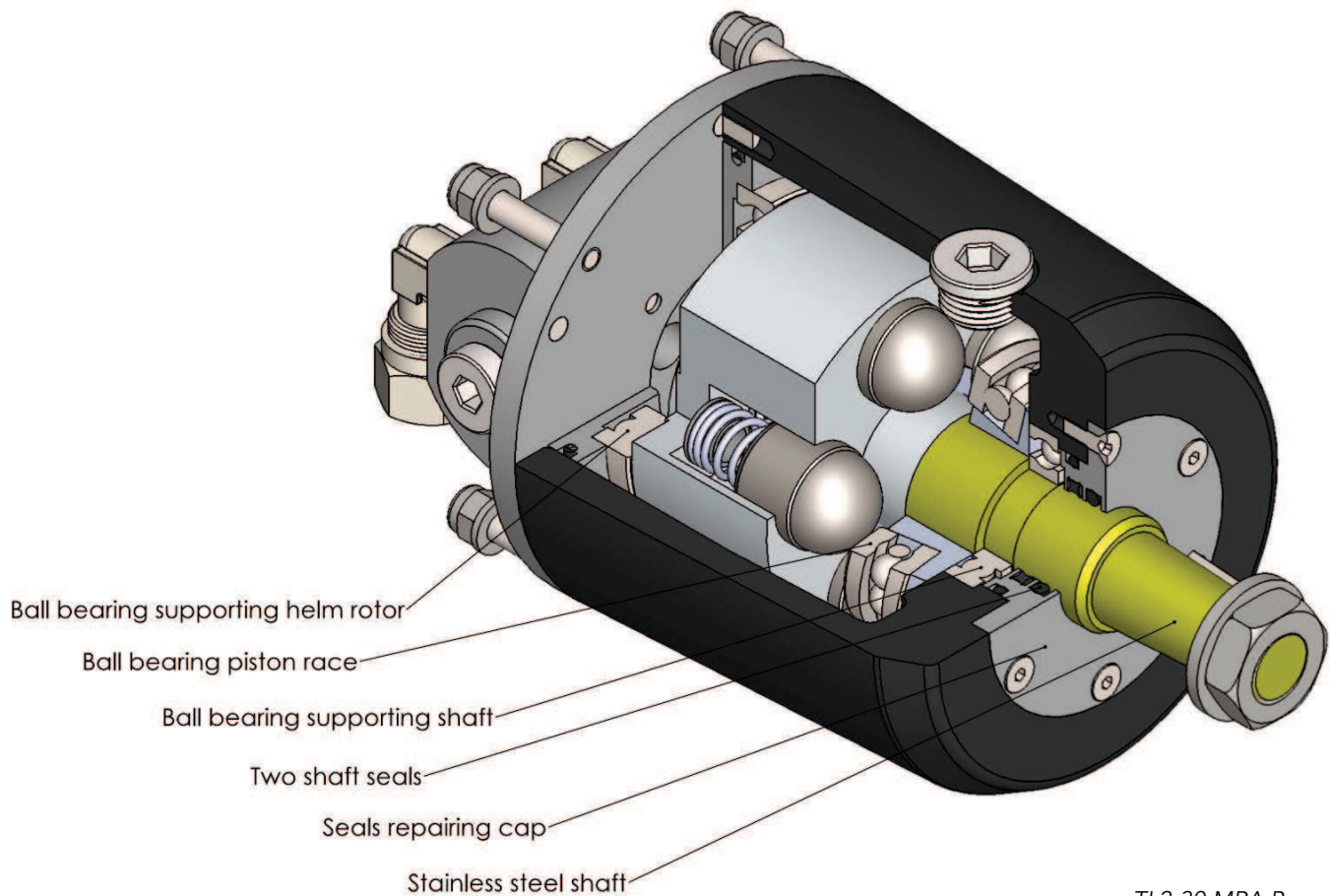
LTK Lever with HUB, and screws



Hydrodrive®

Outboard Systems

Performance Line



TL2-30 MRA Pump

Applications up to 400 HP with Fix or Slider cylinder for all type of engines.

New Era of Easy Steering

Hydrodrive® Hydraulic Steering System is supplier of the MMSZ® Hungarian Powerboat Federation and SP80®



SP80® - Innovative boat, which will outperform the standing World Sailing Speed Record with Hydrodrive® steering system.



- Hydrodrive® Hydraulic Steering System has equipped Soffio, racing boat Endurance Group B Class S1. Soffio is the winner of the stage Salerno-Formia of the race Venice-Montecarlo.
- The Hungarian Aquatic Motorsports Federation is representing us at European and World Championships.



MF200 WTS

Steering System kit up to 200 HP with slider cylinder - with Horns mount

Steering system with **compact horns mount** for engines up to 200 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

Output Force: 320 kgf. (705 lbf)
Torque: 66 Kgm. (477 lbf-ft)
Max Speed: 55 knots
Turns: 3,1

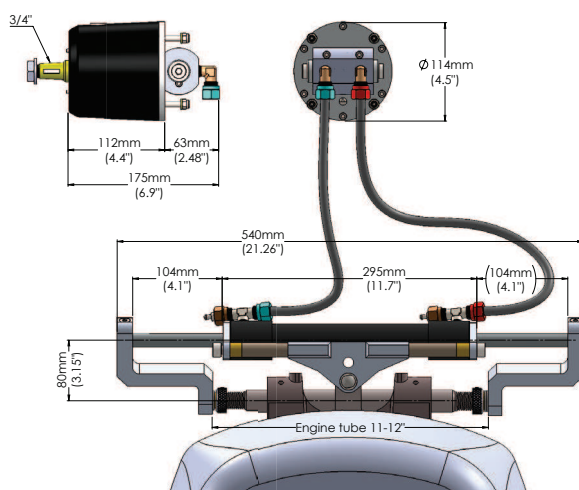
- High Precision Pump
- Removable cup to replace the shaft seals without opening the pump.
- Pump made from full block hardened aluminium
- High Pressure Hose Set
- Universal application for all type of engines
- Easy installation process
- New Cutting-Edge Technology



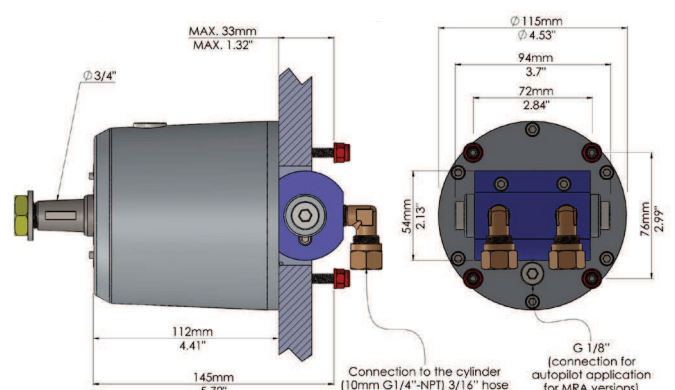
Kit contains:

TL2-30 MRA Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	
MC175WTS Hydraulic Cylinder	86 cc.vol	Max 80 bar	with Fittings installed	Stroke 208 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 6+6 m (20')
HROL - Hydraulic Oil	2x1 L bottle	E-HVLP 46	Temp: +60/-30	-

New easy mounting system - Cylinder with two position engine plate



Pump: TL2-30 MRA Front mounting





MF175 WTS-TDF

Steering System kit with twin slider cylinders up to 150 HP+150 HP for double engines with Horns mount.



Steering system with **compact horns mount** for engines up to 150 HP+150 HP

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

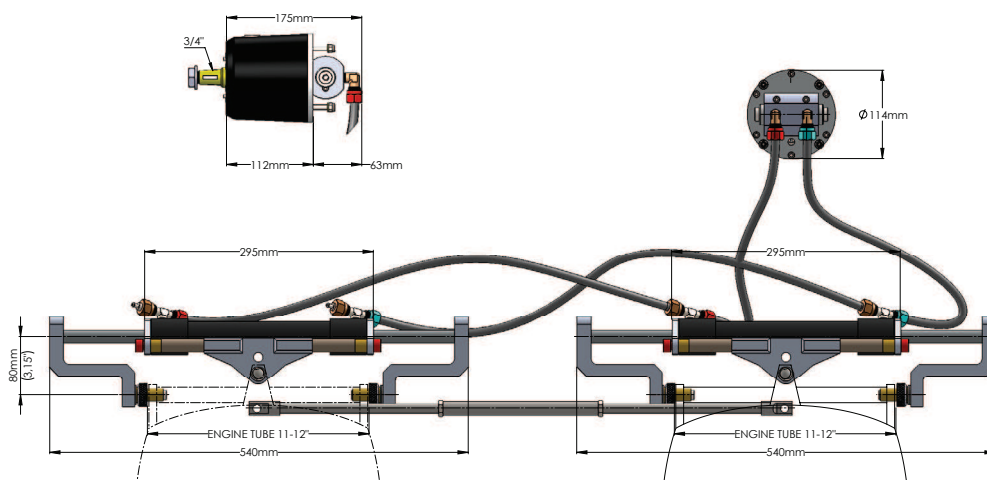
Output Force: 2x290 kgf. (2x640 lbf)
Torque: 2x60 Kgm. (2x434 lbf-ft)
Max Speed: 55 knots
Turns: 6,2

- High Precision Pump
- Removable cup to replace the shaft seals without opening the pump.
- Pump made from full block hardened aluminium
- High Pressure Hose Set
- Universal application for all type of engines
- Easy installation process
- New Cutting-Edge Technology
- Easy installation method

Kit contains:

TL2-30 MRA Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
2 x MC175WTS Hydraulic Cylinder	86 cc.vol	Max 80 bar	with Fittings installed	Stroke 208 mm
BTW62 Adjustable Tie bar	540-620 mm	(Option BTW70 Adjustable Tie bar 620-700 mm)		
High pressure hose set Hose set 0,75	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 6+6 m (20')
HROL - Hydraulic Oil	3x1 L bottle	E-HVLP 46	Temp: +60/-30	-

New easy mounting system - Cylinder with two position engine plate





MF255 WTS / MF255WTS-SP

Steering System kit up to 250 HP with slider cylinder with Horns mount.



Steering system with **compact horns mount** for engines up to 250 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

MF255WTS specification:

Output Force: 422 kgf. (930 lbf)
Torque: 88 Kgm. (637 lbf-ft)
Max Speed: 55 knots
Turns: 4,5

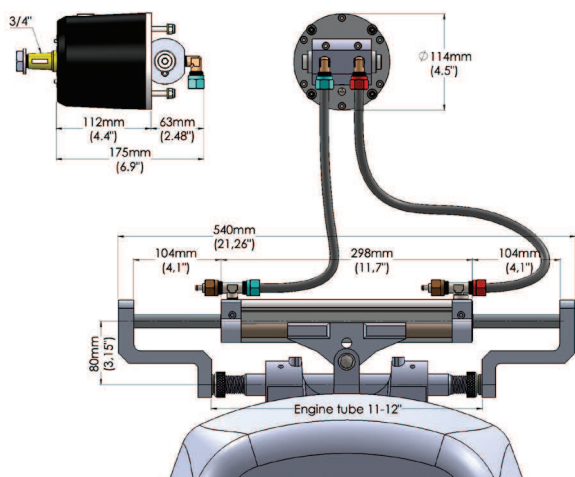
MF255WTS-SP specification: (Racing system)

Output Force: 422 kgf. (930 lbf)
Torque: 88 Kgm. (637 lbf-ft)
Max Speed: 55 knots
Turns: 3,3

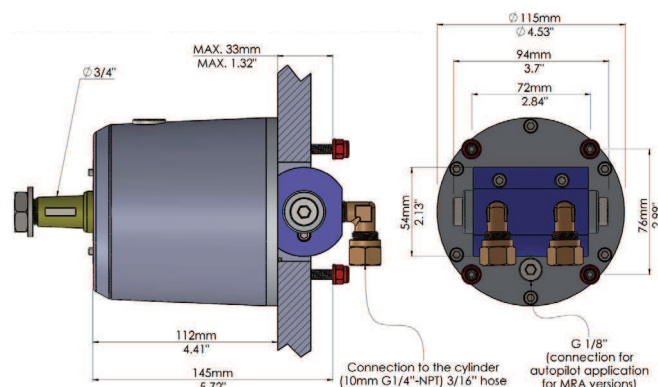
- High Precision Pump with Purge Valve fittings
- Removable cup to replace the shaft seals without opening the pump.

Kit contains:

TL2-30 MRA Hydraulic Pump for MF255 WTS	28 cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
TL2-40SP MRA Hydraulic Pump for MF255WTS-SP	38 cc./rev	Max 100 bar	with Fittings installed	Lock-Valve
MC255WTS Hydraulic Cylinder	125 cc.vol	Max 100 bar	with Fittings installed	Stroke 206 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 6+6 m (20')
HROL - Hydraulic Oil	2x1 L bottle	E-HVLP 46	Temp: +60/-30	-



TL2-30 MRA/TL2-40 SP-MRA front mount





MF255 WTS-TDF

Steering System kit with twin slider cylinders up to 200 HP+200 HP for double engines with Horns mount.



Steering system with **compact horns mount** for engines up to 200 HP + 200 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

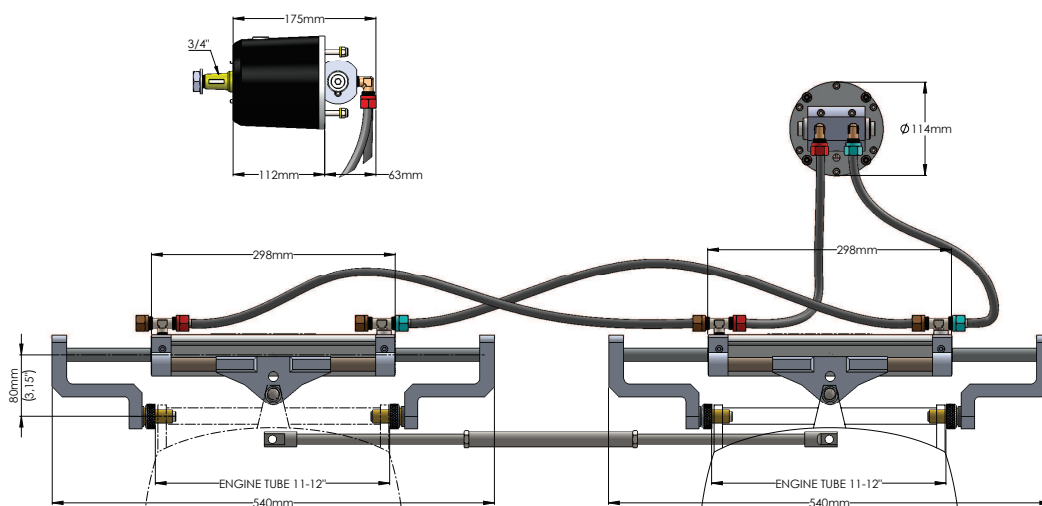
Output Force: 2x422 kgf. (930 lbf)
Torque: 2x88 Kgm. (637 lbf-ft)
Max Speed: 55 knots
Turns: 6,5

- High Precision Pump
- Removable cup to replace the shaft seals without opening the pump.
- New Cutting-Edge technology
- High-Pressure Hose Set
- Universal application for all types of engines.
- Easy installation process

Kit contains:

TL2-40SP MRA Hydraulic Pump	38 cc./rev	Max 100 bar	with Fittings installed	Lock-Valve
2x MC255-WTS Hydraulic Cyl.	125 cc.vol	Max 100 bar	with Fittings installed	Stroke 206 mm
BTW62 Adjustable Tie bar	540-620 mm	(Option BTW70 Adjustable Tie bar 620-700 mm)		
High pressure hose set Hose set 0,75	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 7+7m (23')
HROL - Hydraulic Oil	3x1 L bottle	E-HVLP 46	Temp: +60/-30	-

New easy mounting system - Cylinders with two position engine plate





MF400 WTS

Steering System kit up to 400HP with slider cylinder with Horns mount.



Steering system with **compact horns mount** for engines up to 400 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

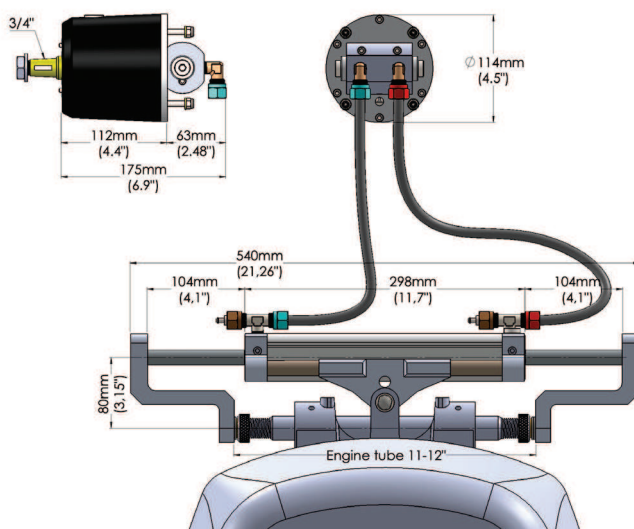
Output Force: 700 kgf. (1543 lbf)
Torque: 146 Kgm. (1056 lbf-ft)
Max Speed: 60 knots
Turns: 5,3

- High Precision Pump with Purge Valve fittings
- Removable cup to replace the shaft seals without opening the pump.
- Pump made from full block hardened aluminium
- High Pressure Hose Set
- Universal application for all type of engines
- Easy installation process
- New Cutting-Edge Technology

Kit contains:

TL2-40SP MRA Hydraulic Pump	38 cc./rev	Max 100 bar	with Fittings installed	Lock-Valve
MC400WTS Hydraulic Cylinder	208 cc.vol	Max 100 bar	with Fittings installed	Stroke 208 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 7+7 m (23')
HROL - Hydraulic Oil	3x1 L bottle	E-HVLP 46	Temp: +60/-30	-

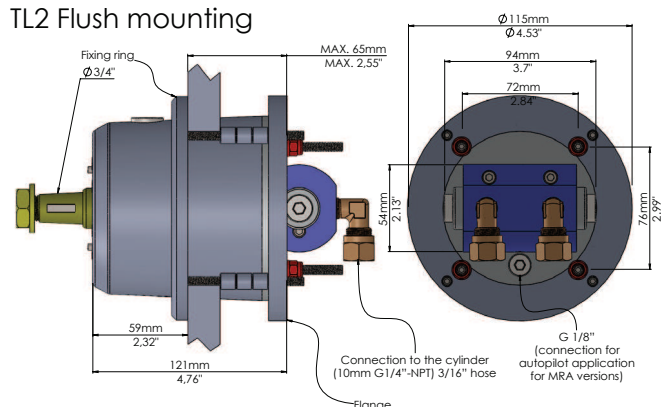
New easy mounting system - Cylinder with two position engine plate



Option:

Flush mount Pump with FR10+PL140+AD10 (see page 28)

TL2 Flush mounting





MF350W plus / MF350W-SP

Steering Steering System kit up to 350HP with two position engine plate.



New technology of Outboard Hydraulic Steering System, for engines up to 350 HP.

**with Anti-Feedback Valve
Automatic Pilot Connection Port**

MF350W Specification:

Output Force: 495 kgf. (1090 lbf)
Torque: 102 Kgm. (738 lbf-ft)
Max Speed: 60 knots
Turns: 5,2

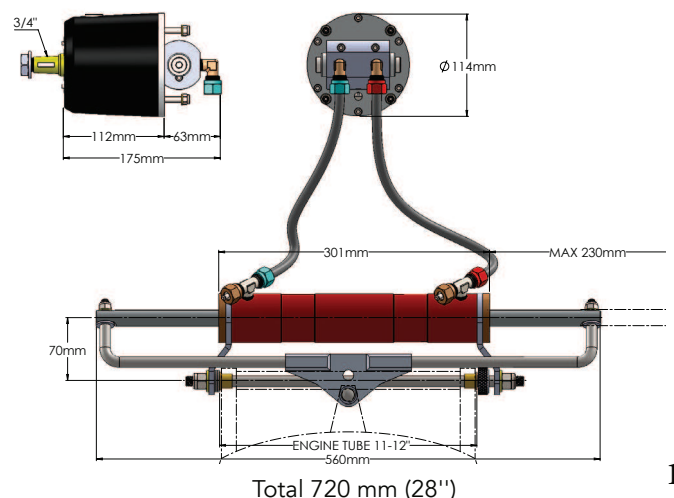
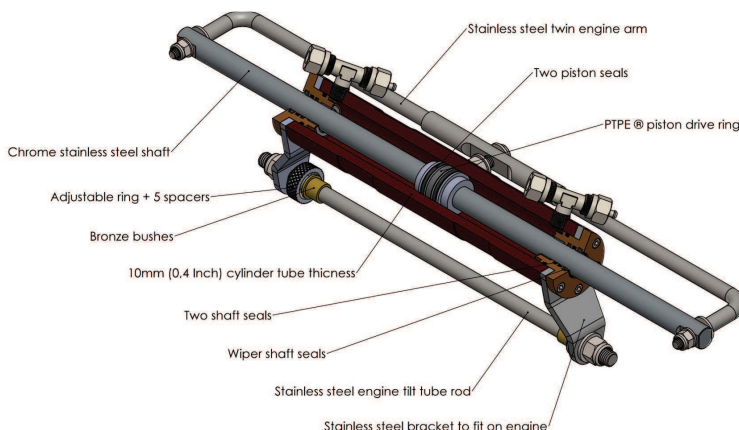
MF350W-SP Specification (Racing):

Output Force: 495 kgf. (1090 lbf)
Torque: 102 Kgm. (738 lbf-ft)
Max Speed: 75 kts.
Turns: 3,8

- High Precision Pump with Purge Valve fittings
- Removable cup to replace the shaft seals without opening the pump.

Kit contains:

TL2-30 MRA Hydraulic Pump- for MF350W plus	28 cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
TL2-40SP-MRA Hydraulic pump for MF350W-SP (Racing)	38 cc./rev	Max 100 bar	with Fittings installed	Lock-Valve
MC350W Hydraulic Cylinder	146 cc.vol	Max 100 bar	with Fittings installed	Stroke 206 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 7+7 m (23')
Hydraulic Oil	2x1 L bottle	E-HVLP 46	Temp: +60/-30	-





MF350W-TDF

Steering System kit, for double engines twin cylinder
(max 300 HP + 300 HP)

New technology of Outboard Hydraulic Steering System, for engines up to 300 HP + 300 HP

with Anti-Feedback Valve
Automatic Pilot Connection Port

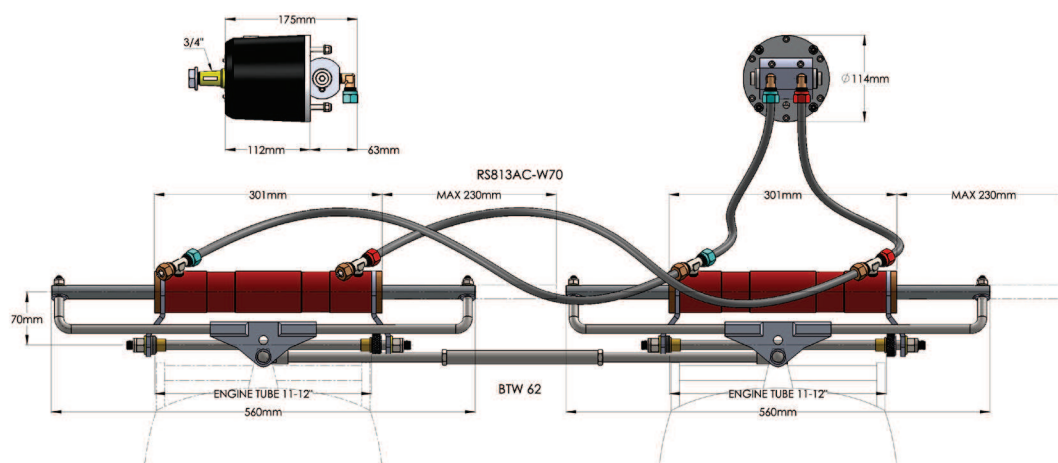
Output Force: 2x495 kgf. (2x1090 lbf)
Torque: 2x102 Kgm. (2x738 lbf-ft)
Max Speed: 75 knots
Turns: 7,2

- Pump made from full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- Application for all type of engines
- Extremely easy to Install
- High pressure hose set (1700 PSI-120 bar)
- High precision pump with Purge Valve Fittings

Kit contains:

TL2-40SP MRA Hydraulic Pump	38 cc./rev	Max 100 bar	with Fittings installed	Lock-Valve
2xMC350W Hydraulic Cylinder	146 cc.vol	Max 100 bar	with Fittings installed	Stroke 206 mm
BTW 62 Adjustable Tie bar	540-620 mm	(Option BTW 70 Adjustable Tie bar 620-700 mm)		
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 7+7 m (23')
Hose set	5/16 twin	B.P. 480 bar	with fittings installed	Twin 0,75 + 0,75m (2,5')
Hydraulic Oil	3x1 L bottle	E-HVLP 46	temp: +60/-30	

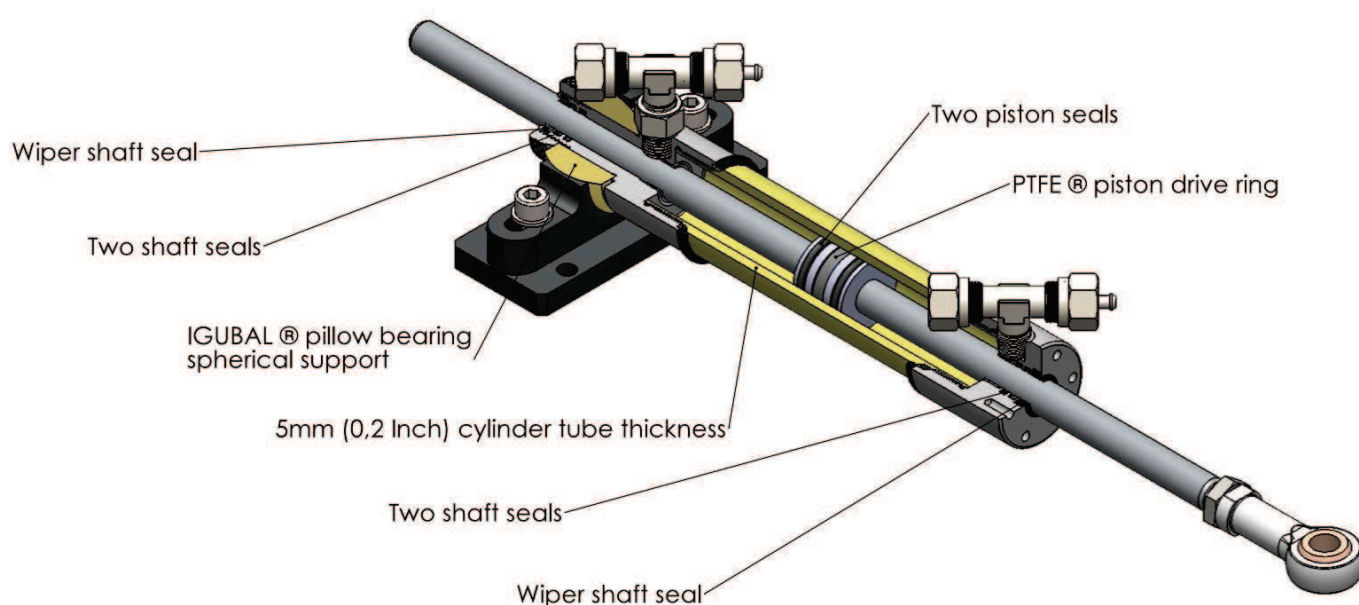
New Stainless Steel Engine Arm included - with Two Positions Engine Plate



Hydrodrive®

Inboard Systems

Complete range for boats up to 16 m (52 ft)



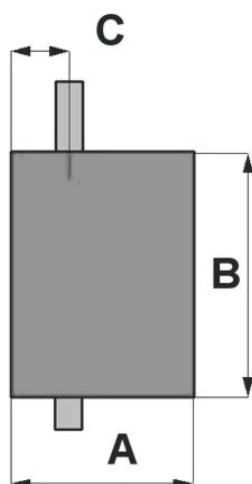
Calculation of the rudder torque M (kg./m)

$$M = F \times D$$

(Kg./Mt.)

$$D = (0,4 \times A) - C$$

$$F = 2,3 \times S \times V^2$$



B= rudder height
A= rudder length
C= rudder compensation

V= speed (km/h)
S= rudder surface

(1 knot=1,852 km/h)
(AxB in m)



MU50TF / MU50TF-MRA

Steering System kit for boats up to 10 m (33Ft)

New technology of Inboard Hydraulic Steering System, for boats up to 10 m (33Ft)

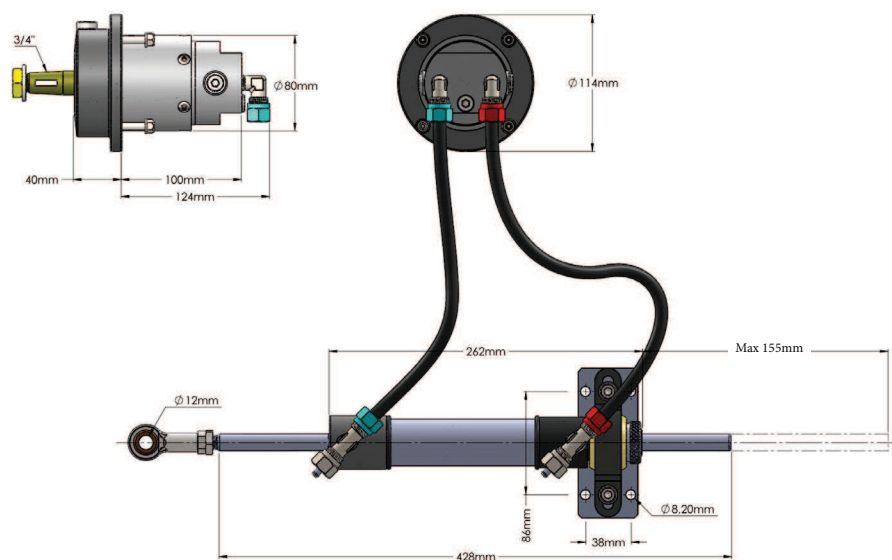
**MRA version is:
with Anti-Feedback Valve
Automatic Pilot Connection Port**

Output Force: 387 kgf. (853 lbf)
Torque: 58 Kgm. (420 lbf-ft)
Max Speed: 35 knots
Turns: 5

- Auto lubricating IGUBAL® Spherical bearing support
- Pump made from full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- High pressure hose set (1700 PSI-120 bar)
- Universal application
- Easy installation process

Kit contains:

TL1-16 Hydraulic Pump	16 cc./rev	Max 70 bar	with Fittings installed	-
TL1-16 MRA Hydraulic Pump	16 cc.vol	Max 70 bar	with Fittings installed	Lock-Valve
MC50 Hydraulic Cylinder	83 cc vol.	Max 70 bar	with Fittings installed	Stroke 150 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 5+5 m (16')
Hydraulic Oil	1 L bottle	E-HVLP 46	temp: +60/-30	-





MU75TF / MU75TF-MRA

Steering System kit for boats up to 12 m (40Ft)

New technology of Inboard Hydraulic Steering System, for boats up to 12 m (40Ft). Universal application,

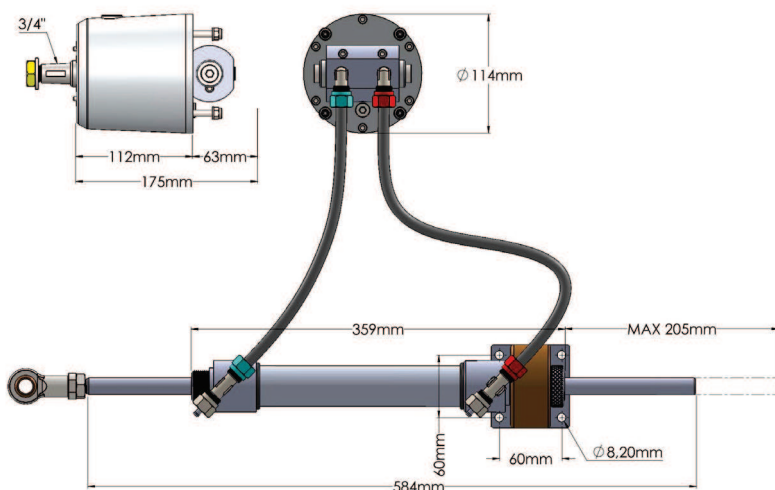
**MRA version is:
with Anti-Feedback Valve
Automatic Pilot Connection Port**

Output Force: 354 kgf. (780 lbf)
Torque: 80 Kgm. (579 lbf-ft)
Max Speed: 45 knots
Turns: 4

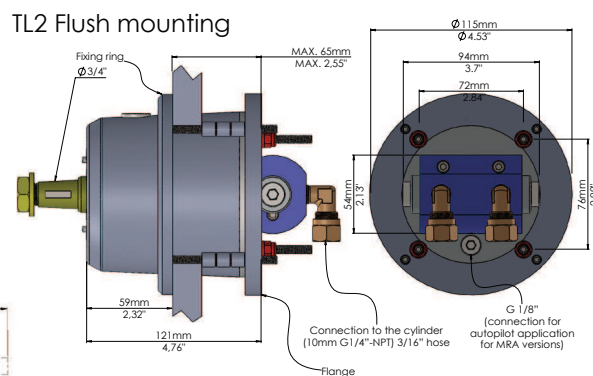
- Auto lubricating IGUBAL® Spherical bearing support
- Pump made from full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- High Pressure Hose Set (1700 PSI- 120 bar)
- Easy installation process

Kit contains:

TL2-30 Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	-
TL2-30 MRA Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
MC75 Hydraulic Cylinder	114 cc.vol	Max 80 bar	with fittings installed	Stroke 225 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 7+7 m (23')
Hydraulic Oil	2x1 L bottle	E-HVLP 46	Temp: +60/-30	-



Flush mount Pump with FR10+PL140+AD10 (see page 28)





MU100TF / MU100TF-MRA

Steering System kit for Sailing boats up to 16 m (52Ft)



Special Hydraulic Steering System for Sailing boats up to 16 m (52Ft). High precision, not back-lash on wheel.

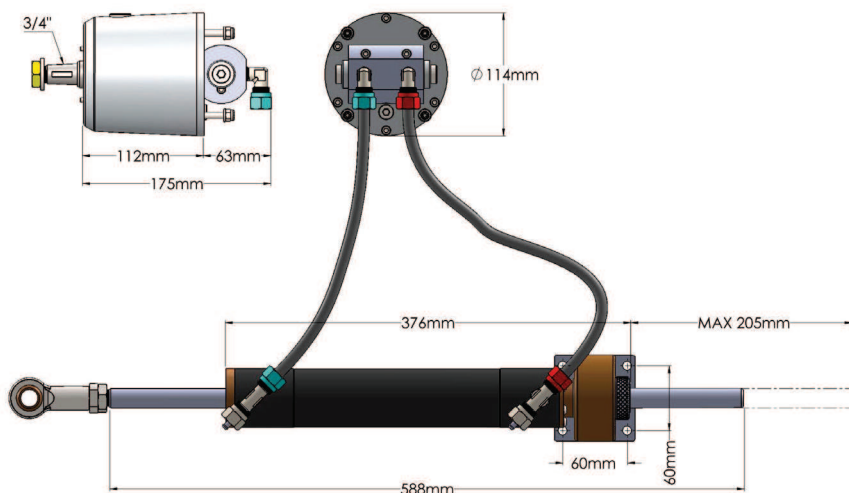
**MRA version is:
with Anti-Feedback Valve
Automatic Pilot Connection Port**

Output Force: 495 kgf. (1091lbf)
Torque: 112 Kgm. (810 lbf-ft)
Max Speed: 45 kts.
Turns: 5,7

- Auto lubricating IGUBAL® Spherical bearing support
- Pump made from full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- High Pressure Hose Set (1700 PSI-120 bar)

Kit contains:

TL2-30 Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	-
TL2-30 MRA Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
MC1000 Hydraulic Cylinder	160 cc.vol	Max 100 bar	with fittings installed	Stroke 225 mm
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 8+8 m (26')
Hydraulic Oil	3x1 L bottle	E-HVLP 46	Temp: +60/-30	-





MSD70TF / MSD70TF-MRA

Steering System kit for boats up to 12 m (40Ft)

● Stern-Drive application



New technology of Inboard Hydraulic Steering System, for boats up to 12 m (40Ft)

**MRA version is:
with Anti-Feedback Valve
Automatic Pilot Connection Port**

Output Force: 387 kgf. (853 lbf)

Torque: 78 Kgm. (564 lbf-ft)

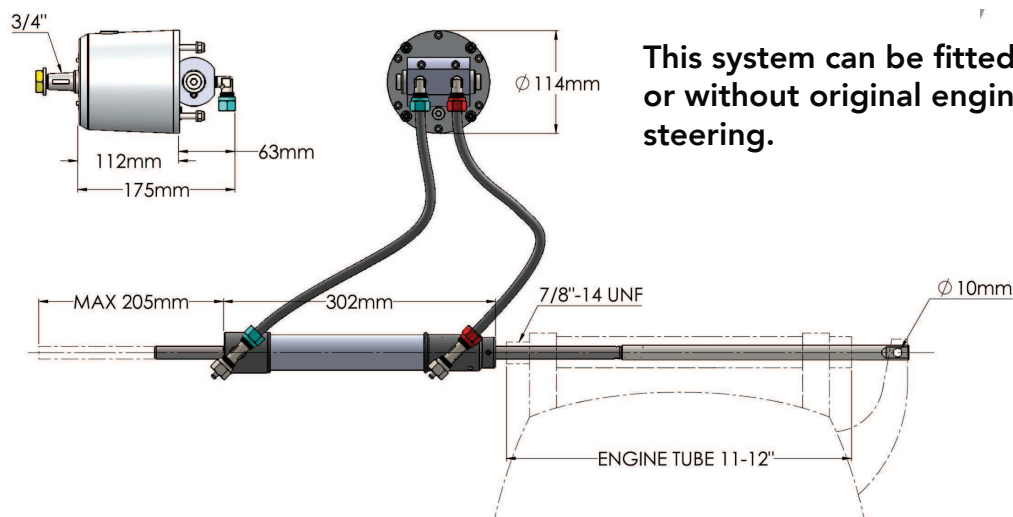
Max Speed: 55 kts.

Turns: 4

- Pump made from full block hardened aluminium
- Cylinder made from cold drawn, hardened aluminium
- High Pressure Hose Set (1700 PSI-120 bar)
- Universal application
- Stainless-Steel fixing system
- Easy installation process

Kit contains:

TL2-30 Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	-
TL2-30 MRA Hydraulic Pump	28 cc./rev	Max 80 bar	with Fittings installed	Lock-Valve
MC70 Hydraulic Cylinder	112 cc.vol	Max 80 bar	with fittings installed	Stroke 202 mm
Extension Rod	1x 320 mm (12,6")	1x 400 mm (13,7")	-	-
High pressure hose set	5/16 twin	B.P. 480 bar	with Fittings installed	Twin 6+6 m (20')
Hydraulic Oil	2x1 L bottle	E-HVLP 46	Temp: +60/-30	-



**This system can be fitted with
or without original engine servo
steering.**

Hydraulic Pumps

TL1-16



TL1-16 MRA



TL2-30



TL2-30 MRA



TL2-40SP MRA






Pumps:	Description:	Application:		Lock-Valve/ Auto Pilot port:
		Outboard	Inboard	
TL1-16	16 cc pump	MF75W, MF90W	MU50TF	–
TL1-16 MRA	16 cc pump	MF75W MRA, MF115 MRA, MF150 MRA, MF175W, MF175WTS	MU50TF-MRA	✓
TL2-30	28 cc High precision pump	–	MU75TF, MU100TF, MSD70TF	–
TL2-30 MRA	28 cc High precision pump	MF200-WTS, MF255WTS, MF350W, MSTK-150	MU75TF-MRA MU100TF-MRA MSD70TF-MRA	✓
TL2-40SP MRA	38 cc High precision pump	MF350W-SP, MF350W-TDF, MF400 WTS, MF255W-TDF, MF255WTS-SP	–	✓




Hydraulic Cylinders



Cylinders:	Stroke:	Application:		Volume:
		Outboard	Inboard	
MC75W	202 mm	MF75W, MF75W MRA	–	68 cc.
MC90W	210 mm	MF90W	–	71cc.
MC115W (single arm)	210 mm	MF115 MRA, MSTK 150	–	71 cc.
MC175W (Twin Arm)	208 mm	MF175W	–	86 cc.
MC175 WTS (Horns)	208 mm	MF175 WTS/MF200-WTS	–	86 cc.
MC255 WTS (Horns)	206 mm	MF255 WTS	–	125 cc.
MC400 WTS (Horns)	208 mm	MF400 WTS	–	208 cc.
MC350W (Twin Arm)	206 mm	MF350W, MF350W-SP	–	146 cc.
MC50	150 mm	–	MU50TF, MU50TF-MRA	83 cc.
MC70	202 mm	–	MSD70TF, MSD70TF-MRA	112 cc.
MC75	225 mm	–	MU75TF, MU75TF MRA	114 cc.
MC1000	225 mm	–	MU100TF, MU100TF MRA	160 cc.

Fittings and Accessories

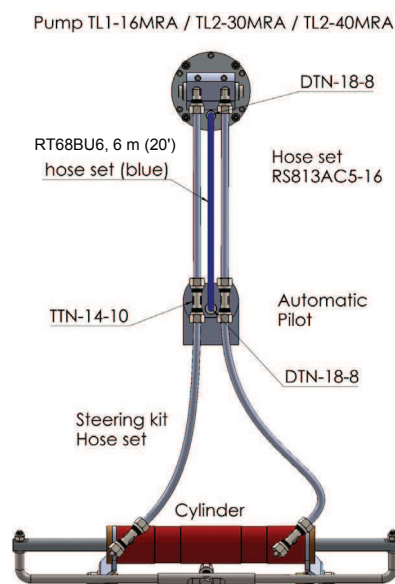
Seals repairing kit for TL1 pumps series	Seals repairing kit for TL2 pumps series	Seals repairing kit for Cylinders
<p>Kit includes: All seals, ball bearings, bushes, screws, nut and all parts needed to repair the pump.</p> 	<p>Kit includes: All seals, ball bearings, bushes, screws, nut and all parts needed to repair the pump.</p> 	<p>Kit includes: All seals, bushes, screws, nut and all parts needed to repair the cylinder.</p> 

EBE-01	EXTGTN-14-10	151.00.00
 <p>Engine bracket extension for all outboard engines. Screws included</p>	 <p>90° elbow extension fitting for TL1 and TL2 pumps series. 1/4" fittings</p>	 <p>Straight bulkhead twin connector</p> <ul style="list-style-type: none"> Fittings included Anodized Aluminium Bulkhead thickness 60 mm

APMF - Automatic Pilot Application kit









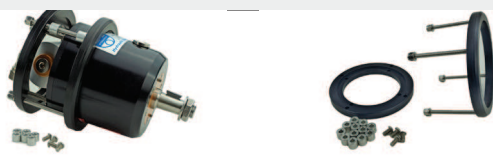



Universal Application
Available for pump: TL1-16 MRA, TL2-30/40 MRA

Kit includes:
All needed to connect the Hydraulic Steering System to the main Autopilot brand in the market.



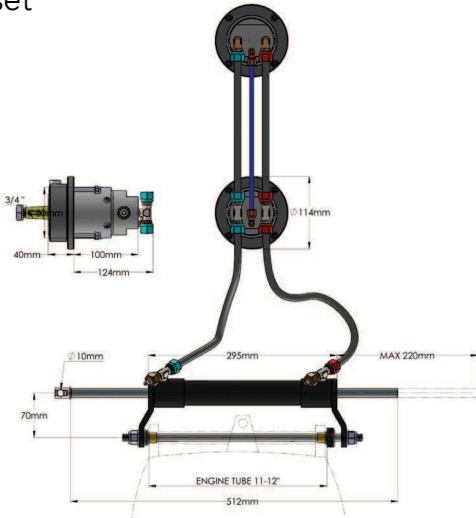
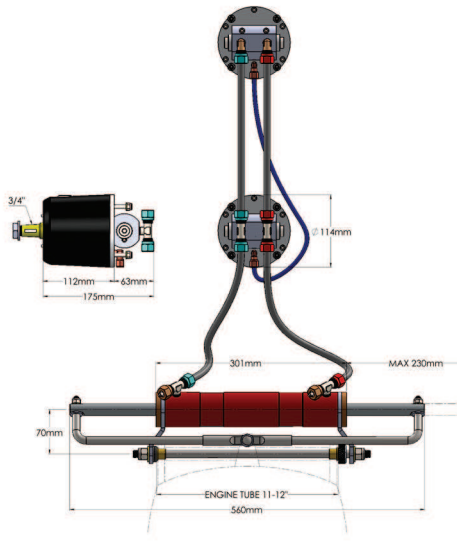






Fittings and Accessories

724.0014  Tee fitting 1/4-10 mm Purge Valve Cylinder application	TTN-10/TTN-8  Tee Fitting 3 ways 10 mm tube 8 mm tube Hose connection	TTN-14-10/TTN-18-8  Tee fitting 1/4-10 mm, 8 mm Cylinder application Autopilot application	GTN-14-10/GTN-18-8  Elbow fitting (90°) 1/4-10 mm Pump application G1/8-8 mm tube Autopilot Application
AC516  5/16-10 mm Hose set application Hose set end fitting	DTN-14-10/DTN-18-8  Straight fittings DTN-14-10: G 1/4"-10 mm tube DTN-18-8: G 1/8"-8 mm tube	9460.00.004  10 mm straight connection fitting Hose extension application (AC516)	97.40.00  Olive 10 mm fittings application 98.40.00: 8 mm
FR10+PL140+AD10  Fixing ring/flange for TL2 Flush mount Spacers 10-30 mm (0,4"-1,2")	MBY4 By-Pass Valve  Twin hose set of 2 m (6,5 Ft) and fittings included. (Stainless-Steel)		
RS813ACX-Y, Twin hose set (with fittings) Customized twin hose set lenght from 0,75 m (2,5') up to 12 m (39') Set code: RS813ACX-Y X= lenght in m Y= lenght in ft 	RS813EXTACX-Y Extension twin hose set (to extend the hose set lenght) Hose set supplied with 2 x 9460.00.004 straight connector fittings, 1 x AC516 fitting and standard or customized hose set.  		







Fittings and Accessories

<p>TL1-16 MRA-DS Second station kit</p> <ul style="list-style-type: none"> • TL1-16 MRA-T Pump with Tee Fittings • 5 m (16') twin hose set • Fittings 1/8" • 1 L bottle of Hydraulic Oil • Pumps connection • Hose set 	<p>TL2-30/40 MRA-DS Second station kit</p> <ul style="list-style-type: none"> • TL2-30/40 MRA-T Pump with Tee Fittings • 7-8 m (23Ft-26Ft) twin hose set • Fittings 1/8" • 2 L bottles of Hydraulic Oil • Pumps connection • Hose set 
<p>BTW62, BTW70, BTW75 Adjustable Tie Bar</p>  <p>Suitable for twin engine application. BTW62: 540-620 mm, BTW70: 620-700 mm BTW75: 700-760 mm</p>	<p>BR72 Adjustable Engine Arm</p>  <p>Fork connection. Standard on the model MF115 MRA and MSTK-150. Option for MF75W and MF90W</p>
<p>MRA Line</p>  <p>Lock-Valve for In line mounting applications, kit includes hose set of 0,75m+0,75m and fittings.</p>	<p>SYN-MRA Line</p>  <p>Synchronization and Lock-Valve for Catamarans - two cylinders, kit includes hose set of 0,75m+0,75m and fittings.</p>



Steering Wheels

LTK Lever		<p>Description:</p> <ul style="list-style-type: none"> • Level for Stick-Steering System • Anodized aluminium • Stainless-Steel Techno Polymer Revolving handle elesa® • Anodized Aluminium HUB with stainless-steel screws
		
16020-VRB (black)	16010-VRW (white)	<p>Description</p> <ul style="list-style-type: none"> • Megol-Polished Stainless Steel spokes • Aluminium hub <p>Available models:</p> <ul style="list-style-type: none"> • 16020-VRB: 350 mm (13,8'') black • 16020-VRW: 350 mm (13,8'') white • 16020-VRB: 400 mm (15,8'') black • 16020-VRW: 400 mm (15,8'') white
		
16100-HDS37, 16100-HDS42		<p>Description</p> <ul style="list-style-type: none"> • Material: Stainless-Steel • Aluminium hub • Connection: Standard 3/4" taper • Shape: 15 Degree • Grip: Stainless Steel <p>Available models:</p> <ul style="list-style-type: none"> • Diameter: 370 mm (13,4'') • Diameter: 420 mm (16,5'')
		
16121-VSB		<p>Description</p> <ul style="list-style-type: none"> • Material: Polyurethane - Polished Stainless-Steel • Aluminium hub • Diameter: 350 mm (13,8'') • Polished Stainless steel spokes
		
16100-HEE		<p>Description</p> <ul style="list-style-type: none"> • Material: Anodized Aluminium soft PU foam • Aluminium hub • Diameter: 350 mm (13,4'') • Soft grip for control and comfort
