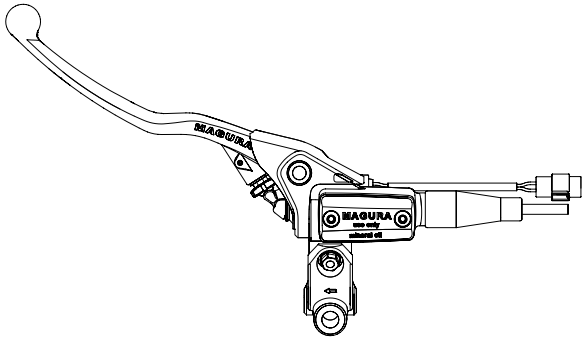
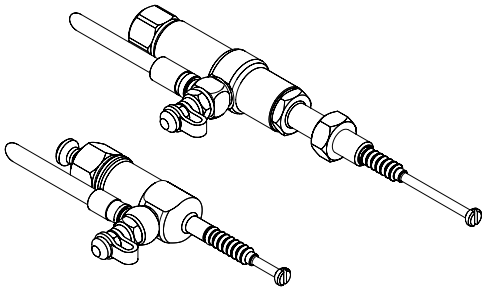
POWERSPORTS

HYMEC

OWNER'S MANUAL





MAGURA

CONTENTS

GRAPHIC AREA

INTRODUCTION

Preface 8

Legend 8

TECHNICAL SPECIFICATIONS – OVERVIEW

..... 9

SAFETY

Intended use 10

Basic safety instructions 10

INSTALLATION

Installing the HYMEC 12

Preparing the motorcycle 12

Installing the clutch control (master cylinder) 12

Aligning & laying out the hydraulic hose 13

Opening the hydraulic hose 13

Installing the clutch actuator (slave cylinder) 14

Checking/setting clutch clearance 15

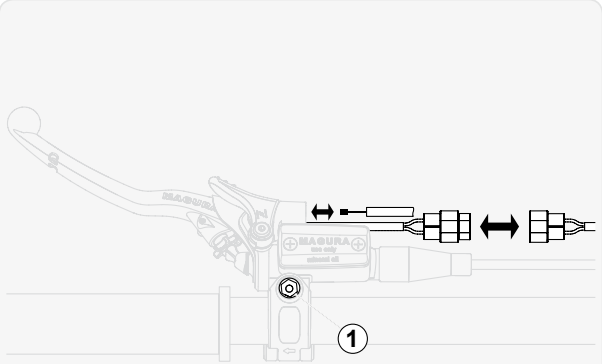
Adjusting the control lever 15

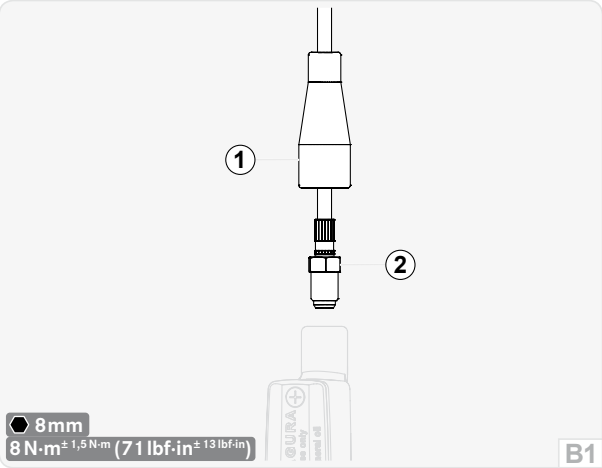
ON THE ROAD

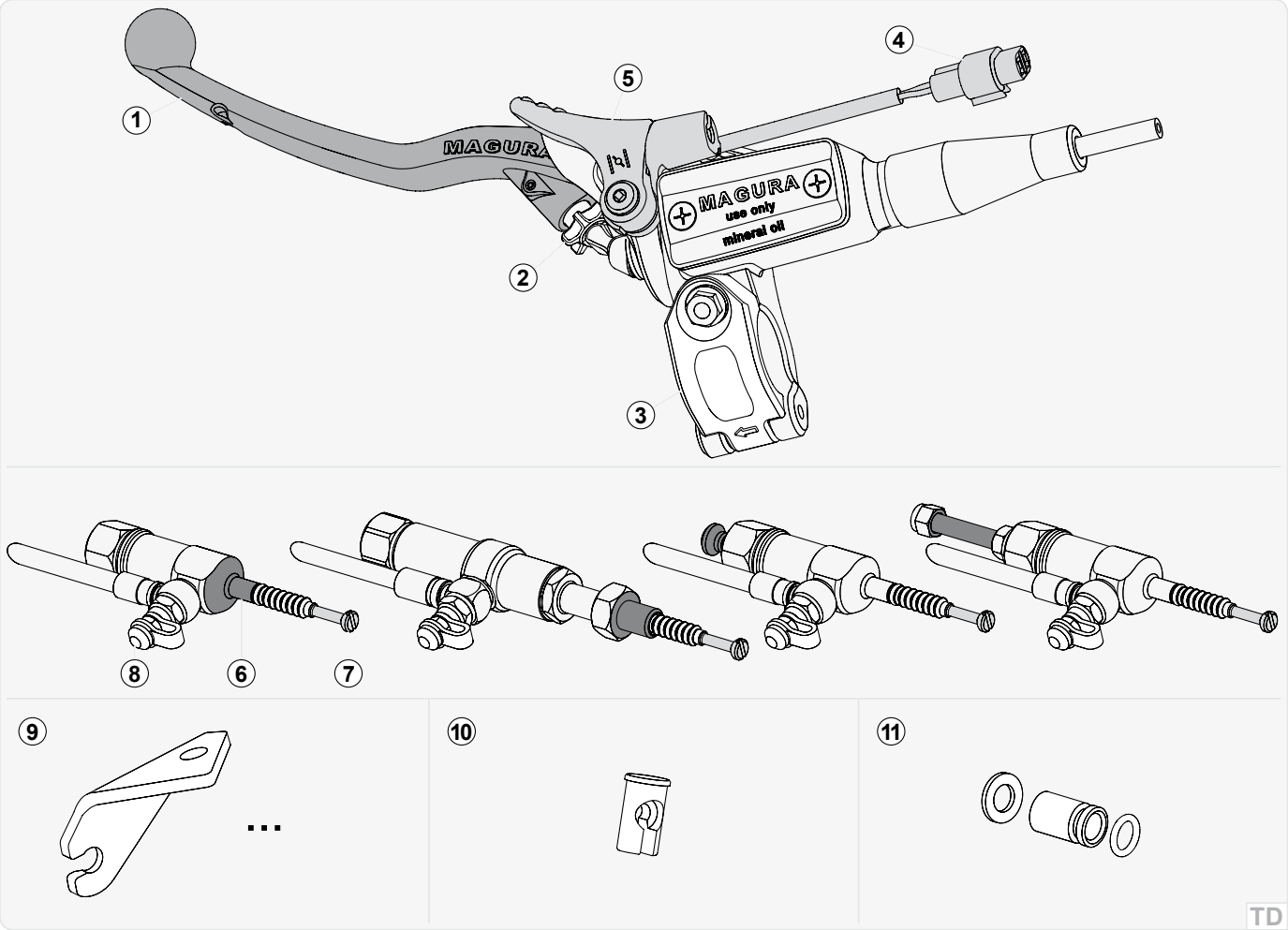
Filling/bleeding the clutch actuation system 16

SERVICE

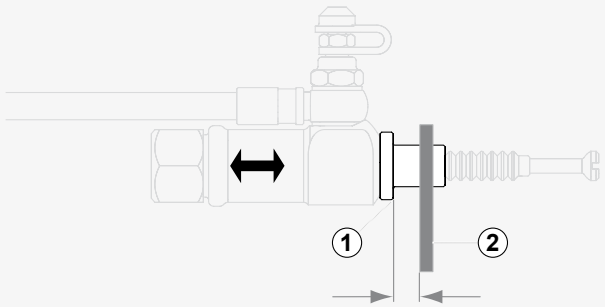
..... 17


1
8mm
6 N·m ± 0,5 N·m (53 lbf·in ± 4 lbf·in)
A1


1
2
8mm
8 N·m ± 1,5 N·m (71 lbf·in ± 13 lbf·in)
B1

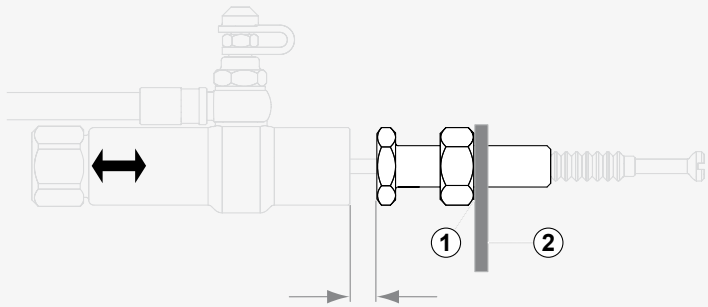

1
2
3
4
5
MAGURA
use only
mineral oil
6
7
8
9
10
11
TD

STANDARD



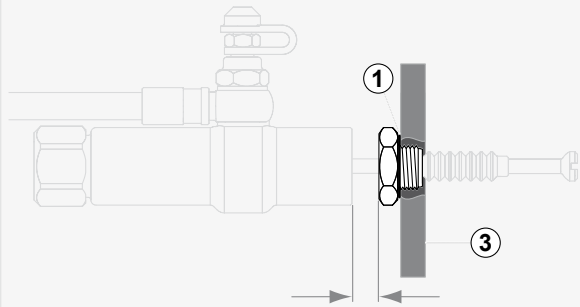
4–6 mm

STANDARD vario



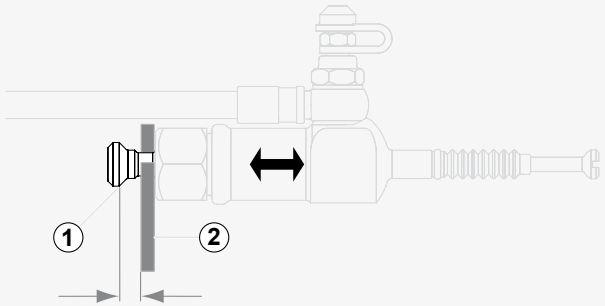
4–6 mm

STANDARD bolt



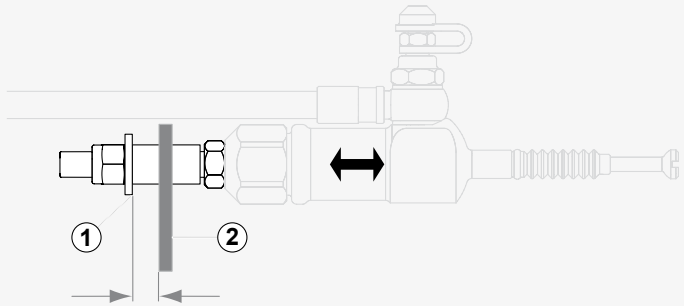
4–6 mm

REARMOUNT



4–6 mm

REARMOUNT vario

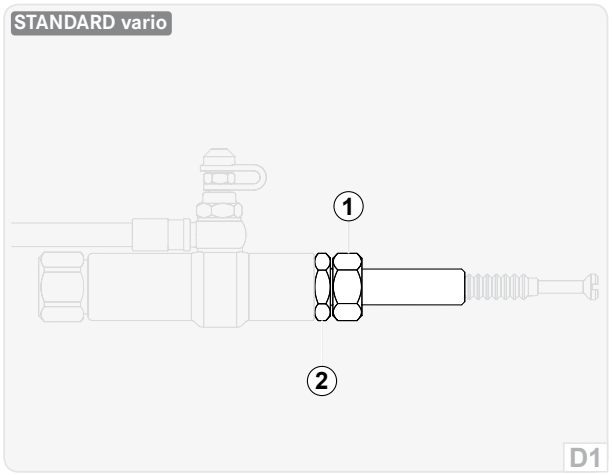


4–6 mm

C1

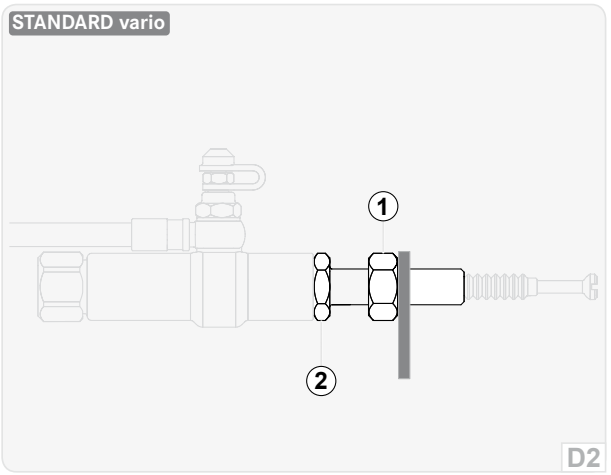
GRAPHIC AREA

STANDARD vario



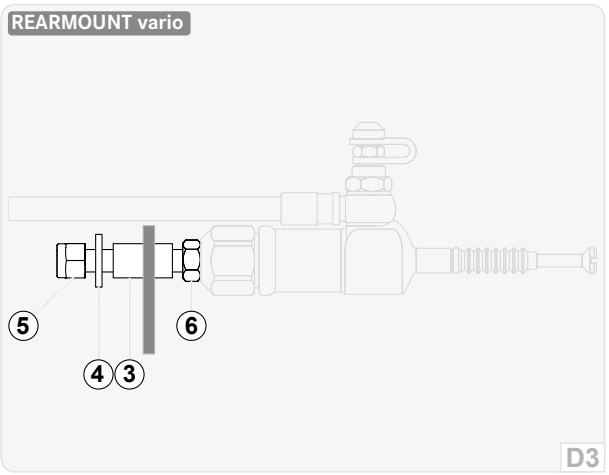
D1

STANDARD vario

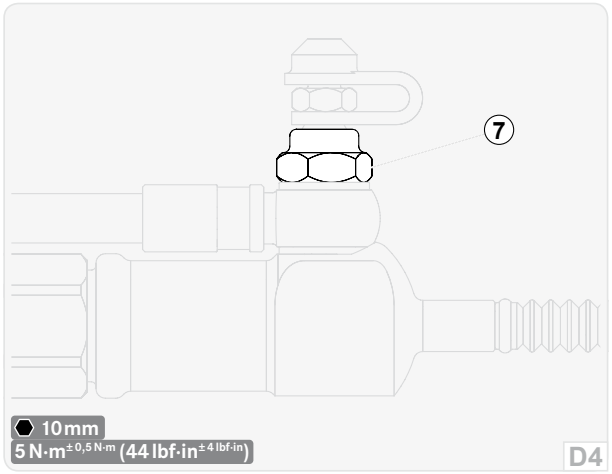


D2

REARMOUNT vario



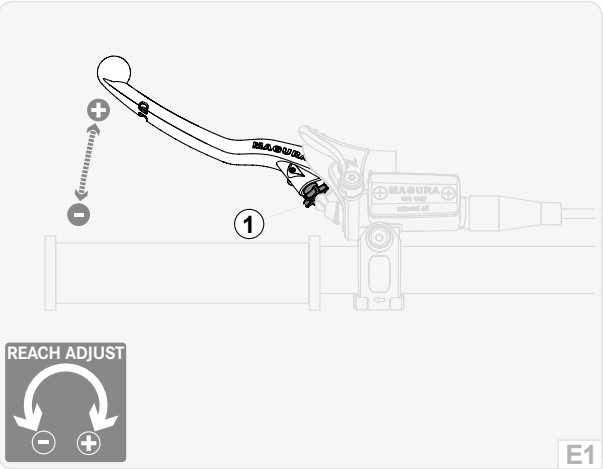
D3



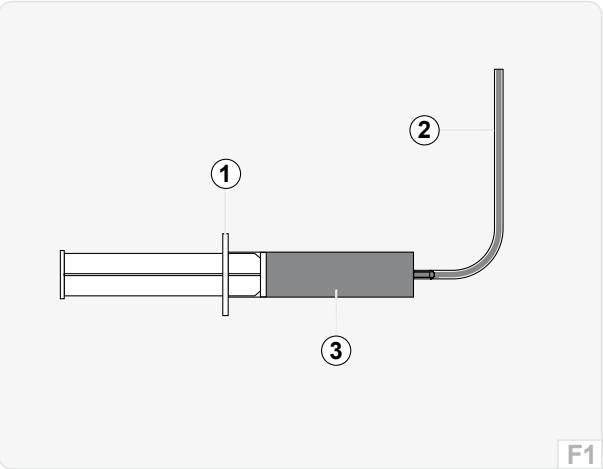
10 mm

5 N·m$^{\pm 0,5\ N\cdot m}$ (44 lbf·in$^{\pm 4\ lbf\cdot in}$)

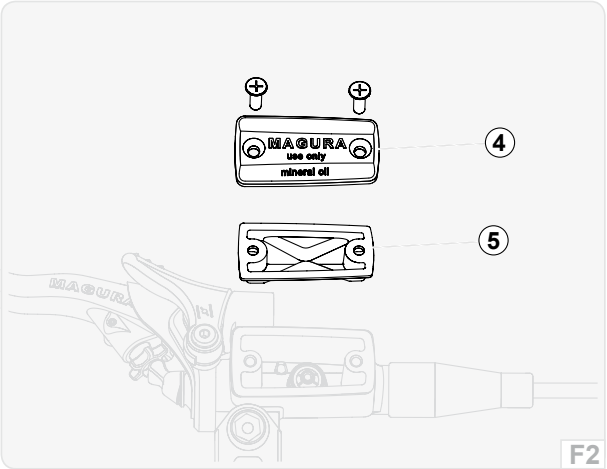
D4


1
REACH ADJUST

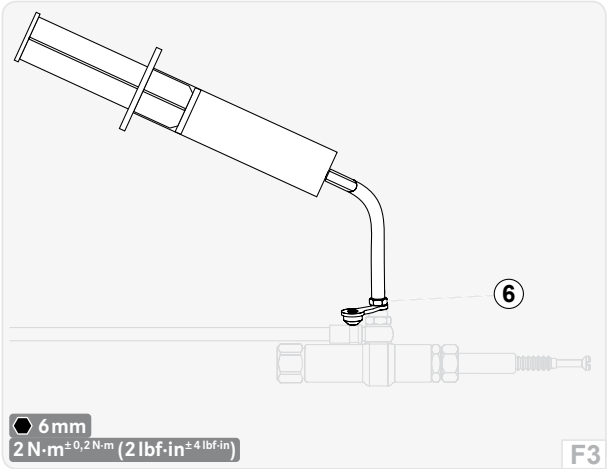
E1


1
2
3

F1


MAGURA
use only
mineral oil
4
5

F2


6
6 mm
2 N·m±0,2 N·m (2 lbf·in±4 lbf·in)

F3

PREFACE

Thank you for your selection of a MAGURA product
– Made in Germany.

This owner's manual is an integral part of your MAGURA product and gives you details of the required tools, correct installation, safe use, maintenance and setup options.

Please read this manual carefully before you install or use your MAGURA product. Observe and follow all instructions for assembly, operation and maintenance in this manual – and also in the user instructions for your motorcycle.

⚠ WARNING

Failure to observe the instructions in this manual can lead to serious or fatal accidents.

Remember that the mechanic who installs your MAGURA product is responsible for the suitability and compatibility of all the components technically linked to your MAGURA product.

You can find the figures referred to below in the folder in the cover. The figures may differ slightly from your MAGURA product; however, the required steps are the same for all types and variants – if not stated to the contrary.

Due to the many different models of motorcycles, it is unfortunately not possible to cover every variant in this manual.
See **www.magura.com** for specific mounting instructions for various models of motorcycles – you can find assistance with specific questions in SERVICE, FAQs, DOWNLOADS or CONTACT.

During the first few rides using your new MAGURA product, familiarise yourself with characteristics that may have changed (lever paths, pressure points etc.) on your motorcycle.

LEGEND

☞ The pointing finger prompts you to perform an action.
➔ The arrow shows results or requirements.
ⓘ This notice gives you additional information or tips.
(3) refers to an item number in the graphic area – e. g. Pos. ③.
[B2] refers to a figure in the graphic area – e. g. Fig. B2.

STANDARD This symbol means that notices or figures exclusively apply to the corresponding type or variant.

This symbol refers to a specific mounting instruction – download from **www.magura.com**.

⚠ WARNING

This notice warns you about a dangerous situation which can lead to serious or fatal injury if not avoided.

⚠ CAUTION

This notice warns you about a dangerous situation which can lead to minor or slight injury if not avoided.

NOTICE ***NOTICE – ENVIRONMENT***

This notice warns you about the risk of material or environmental damage.

Keep this manual for other users of your MAGURA product. Make sure that each user reads, understands and observes this manual.

If you sell or give away your MAGURA product, be sure to hand over this manual to the new owner.

We wish you great success and a great ride
Your MAGURA Team

ⓘ Some of the features detailed are optional variants. Your *MAGURA HYMEC* clutch actuation system is designed the way it was specified by you or your dealer.

Type name				HYMEC	
Variant				Off-Road	Street
Hydraulic hose				Fiber-reinforced high-pressure pipeline	
Hydraulic fluid				MAGURA *Blood* (mineral oil)	
Clutch control (master cylinder) [TD]				Axial	
Clutch lever	(1)			Long • Short	Black • Silver
Reach Adjust – grip width adjustment	(2)			tools not required	
clamp	(3)	Ø, mm	22.2	Standard clamp • mirror clamp	
Starter switch	(4)			Option	
Choke lever	(5)			Option	
Decompression lever					
Hot-start lever					
Clutch actuator (slave cylinder) [TD]				STANDARD	REARMOUNT
Slave fixture (fastening point)	(6)			Before slave cylinder	After slave cylinder
Actuating rod (dimension)	(7)	mm		Option[1]	
Bleed/fill	(8)			Easy Fill	
Dolly block	(9)			Option[1]	
Nipple adapter	(10)			Option[1]	
Built-in sleeve	(11)			Option[1]	

[1] Depending on the make and model of motorcycle.

ⓘ See the current MAGURA Powersports catalog at **www.magura.com** for much more information on options, variants, accessories and extras.

INTENDED USE

⚠ WARNING

Any use other than the intended use can lead to accidents that cause serious or fatal injury.

The hydraulic MAGURA *HYMEC* clutch actuation system is designed and intended exclusively for

- replacing an existing system for clutch actuation on motorbikes.
- combination with a motorcycle clutch in an original manufacturer's condition.
- operation without a return spring.
- operation with mineral oil (MAGURA *Blood*).

The MAGURA *HYMEC* clutch control (master cylinder) is designed and intended exclusively for

- installation on conventional motorcycle handlebars.

The hydraulic MAGURA *HYMEC* clutch actuation system must under no circumstances be combined and used with parts (clutch lever, hose, etc.) of other manufacturers!

Before installing your hydraulic MAGURA *HYMEC* clutch actuation system and any associated dolly block, make sure that they are compatible with the model of your motorcycle!
For information see the current MAGURA Powersports catalogue and **www.magura.com**.

BASIC SAFETY INSTRUCTIONS

Always remember that riding a motorcycle entails risk both for the rider and other road users, and for the motorcycle and its components. Despite the use of safety gear and complete safety equipment, accidents that cause serious or fatal injury can occur.

Always use your common sense and avoid any unreasonable actions!

Installation & Maintenance

⚠ WARNING

Danger of accident due to system failure caused by incorrect or impermissible installation work.

- In many motorcycle models work steps that are only schematically shown in this manual are demanding and may in many cases only be possible with specialised manufacturer's tools and new parts (gaskets, holders, etc.).
  Do not overestimate your technical skills. Have installation and maintenance work carried out in a motorcycle repair workshop. This is the only way to ensure that work is conducted in a professional manner.
- Never carry out any work or make any changes (e.g. disassembly, shortening hoses, grinding/painting, etc.) to your MAGURA product that are not specifically permitted and described in the owner's manual.
- Do not press the actuating rod of the *HYMEC* clutch actuation system into the slave cylinder by hand. Move the actuating rod only with the clutch control.
- Always observe all min./max. values stated.
- For assembly steps that require a specific tightening torque for a screw union, always use a torque wrench set up for the required torque.
- Always make sure that your motorcycle is securely supported (main stand, workshop stands) before starting installation or

maintenance work.
- Always disconnect the earth wire from your motorcycle battery before starting installation or maintenance work.
- Always maintain your motorcycle in technically perfect working order.
- Check the clutch for correct clearance and for wear at regular intervals.

Danger of accident due to improper accessories.
- Use only original MAGURA screws and spare parts and for bleeding and filling the MAGURA *Blood* (mineral oil).
- Do not use DOT brake fluids, hydraulic oils or other fill media.
- To fix the *HYMEC* hydraulic hose, always use the original fasteners of your motorcycle manufacturer.

On the Road

⚠ WARNING

Danger of accident due to component failure.
- Check that the clutch separates correctly before every ride.
- After each crash, check your clutch for damage and make sure it operates correctly.
- Never use your clutch if damage (e.g. traces of oil, cracks, etc.) is visible, you can hear unusual noises or if you have any doubts about its integrity. In this case, have your clutch checked in a specialist motorcycle workshop.

⚠ WARNING

Danger of accident due to improper behaviour or improper equipment during riding.
- Always match your speed to the current road, weather conditions and the total weight.
  Particularly in wet conditions and a high gross weight (e.g. luggage), your braking distance will be significantly increased – always ride cautiously and be ready to brake.
- Always use the front and rear wheel brakes simultaneously.
- Always observe the traffic regulations in the country where you are riding with your motorcycle (lighting, reflectors, etc.).
- When riding, always wear a high quality (e.g. ECE standard 22/05), undamaged motorcycle helmet and clothing that fits snugly but does not impair your actions.
- Only ride your motorcycle if you are in good physical condition and your motorcycle and all of its components are in perfect working order.

Transport & Storage

⚠ WARNING

Danger of accident due to damaged components.
- Do not store your MAGURA *HYMEC* clutch actuation system at ambient temperatures below -15 °C (5 °F) or above 55 °C (131 °F).

Protection of the environment

NOTICE – ENVIRONMENT

Dispose of used hydraulic fluid, lubricants and oil correctly and in accordance with the legal requirements – never discard them in the sewage system or in the ground.

INSTALLING THE HYMEC

Before installing your hydraulic MAGURA *HYMEC* clutch actuation system and any associated dolly block, make sure that they are compatible with the model of your motorcycle!
For information see the current MAGURA Powersports catalogue and **www.magura.com**.

☞ See if applicable.

Preparing the motorcycle

Important – see **BASIC SAFETY INSTRUCTIONS**, page 10!

☞ Remove panels (cowlings, seat, clutch cover, etc.) if necessary – handle, clean and store gaskets, fasteners, buffers, etc. carefully.
➔ The clutch actuation system to be replaced is easy to access at all fastening points.
☞ If necessary, hook off the Bowden cable on the choke, hot start, or decompression lever.
☞ If necessary, disconnect cables of the starter switch.
☞ Remove rear-view mirror if necessary.
☞ Remove the clutch control.
☞ Note down the routing of the Bowden cable (e.g. photograph).
☞ Loosen the Bowden cable on all fastening points.
☞ If necessary, clean fasteners and fastening points.
☞ Store fasteners.
☞ Hook off the clutch cable on the release lever.
☞ Dismantle the Bowden cable from the dolly block.
☞ Remove the Bowden cable or pull it out of the eyelets, ducts, etc.
➔ The clutch actuation system to be replaced is dismantled.
☞ Dismantle the return spring on the release lever.
☞ Clean the release lever, nipple seat and surroundings.
☞ Dismantle, clean and store the dolly block.

Installing the clutch control (master cylinder)

☞ Make sure that the size of your handlebar fits your control – see **TECHNICAL SPECIFICATIONS – OVERVIEW**, page 9.
☞ Make sure that your control does not interfere with the operation of other controls (switches, levers etc.).
☞ Make sure that the retaining screws are always coated with fresh screwlock (medium strength) before installation.

NOTICE

Damage to the hydraulic hose.
Prior to installing the clutch control ensure the optimum routing of the hydraulic hose – see **Aligning & laying out the hydraulic hose**, page 13 – use the existing fastening points.
- If necessary, rout the slave cylinder with hydraulic hose through the corresponding openings (cable ducts, etc.) – according to the routing of the dismantled Bowden cable.
- Do not buckle the hydraulic hose.

☞ Install and align the control on the handlebar. [A1]
➔ Arrow points to the outside.
☞ Tighten the retaining screw (1) with a tightening torque of **6 N·m ± 0.5 N·m (53 lbf·in ± 4 lbf·in)**.
ⓘ Controls can be rotated by hand when forced. It is advantageous if the control can rotate in the event of a fall. This reduces the danger of irreparable damage to the handlebar or control.
☞ If necessary, hook the Bowden cable onto the choke, hot start, or decompression lever – and set later.
☞ Connect the starter switch.
☞ If necessary, install the rear-view mirror – and set later.

Aligning & laying out the hydraulic hose

ⓘ The MAGURA HYMEC hydraulic hose cannot be shortened or lengthened.
The length of the hydraulic hose is such that it corresponds to the original condition of the model of your motorcycle. If you require a shorter or longer hydraulic hose, you can obtain this from your specialist supplier.

⚠ WARNING

Danger of accident due to restricted or blocked steering and riding movements because hydraulic hose is too short or too long.

- Make sure that there is full steering movement in both directions.
- Make sure that all springs can function freely.
- Keep the length of the hydraulic hose as short as possible and as long as necessary.

Danger of accident due to system failure caused by faulty installation.

- Make sure that the hydraulic hose cannot be crushed, jammed or stretched in any position (steering, suspension).
- Make sure that the hydraulic hose cannot exert tension or pressure in any position (steering, suspension) on the slave cylinder.
- Make sure that the hydraulic hose remains at least 30 mm from the hot exhaust or engine parts in all positions (steering, suspension).

☞ Fix the hydraulic hose along the optimum position at the specified or suitable points – use available fasteners and fastening points.
☞ If necessary, fix the hydraulic hose to suitable points with additional cable ties.
☞ If necessary, adjust the hose connection to the slave cylinder to the optimum routing of the hose – see **Installing the clutch actuator (slave cylinder)**, page 14.

ⓘ If you want to lay the hydraulic hose inside the motorcycle frame or through narrow openings (cable ducts, etc.), you must open the clutch actuation system on the clutch control – see **Opening the hydraulic hose**, page 13.
A thin wire may be helpful for inserting.
Thread it through the appropriate openings in the opposite direction and attach it to the end of the hydraulic hose with adhesive tape. However, do not insert the wire into the hydraulic hose – oil loss!
Carefully pulling with the wire and pushing the hydraulic hose at the same time will make it easier to find the outlet.

Opening the hydraulic hose

NOTICE

Oil loss.

- Do not actuate the control lever if the hydraulic hose is disconnected.
- Handle the open control carefully – store in a vertical position.
- Handle the open hydraulic hose carefully – do not shake it, knock it or hit it.
- Have clean, absorbent and lint-free cloths ready – wipe any leaking oil away immediately.

☞ Dismantle the control from handlebar.
☞ Push the hose cover (1) upwards. [B1]
☞ Screw the hose connection (2) out of the control.
☞ If necessary, now lay out the hydraulic hose – see **Aligning & laying out the hydraulic hose**, page 13.
☞ First screw the hose connection into the brake lever by hand, then tighten it with a tightening torque of **8 N·m ± 1.5 N·m (71 lbf·in ± 13 lbf·in)**.
☞ Remove any oil residues thoroughly.

☞ Pull and hold the clutch lever several times and check:
No oil is leaking from any part of the clutch actuation system.
Pressure point is clearly noticeable and does not change.

ⓘ In general it is not necessary to bleed the hydraulic hose after opening/closing it. However, if air has entered the system and the slave cylinder no longer responds to the pull on the lever, you must bleed the clutch actuation system.

☞ Push hose cover on the sleeve nut.

☞ Install the clutch control to the handlebar – see **Installing the clutch control (master cylinder)**, page 12.

Installing the clutch actuator (slave cylinder)

There are 5 different fastening variants of the HYMEC slave cylinder:

STANDARD	Fastening point is at the front, plugged floating, non-adjustable
STANDARD vario	Fastening point is at the front, plugged floating, adjustable
STANDARD bolt	Fastening point is at the front, screwed, non-adjustable
REARMOUNT	Fastening point is at the rear, hooked in floating, non-adjustable
REARMOUNT vario	Fastening point is at the rear, plugged floating, adjustable

At the fastening point (1) the slave cylinder supports itself on the dolly block (2) or clutch housing (3), [C1].

ⓘ If a MAGURA dolly block (9) [TD] is enclosed with your *HYMEC*, use it – otherwise use the original.

ⓘ The following installation sequence is of a schematic nature – the clutch construction of your motorcycle may specify a different, more practical sequence.

ⓘ Your hydraulic MAGURA *HYMEC* clutch actuation system is such that it corresponds to the original condition of your motorcycle model.
If difficulties arise during installation, it is possible that the original condition of your motorcycle has been changed (different clutch, holder offset, etc.).

☞ Make sure that the retaining screws are always coated with fresh screwlock (medium strength) before installation.

☞ STANDARD bolt – see ✚.

⚠ WARNING

Danger of accident due to a failing clutch caused by incorrect or impermissible installation work.
- Do not press the actuating rod into the slave cylinder by hand.
- Move the actuating rod only with the clutch control.
- Do not damage the actuating rod (bend, scratch, squash, etc.).
- Always secure the actuating rod in the nipple seat.

☞ STANDARD vario Screw the adjusting nut (1) on the thread up to the stop – hold the setscrew against the hexagon (2) [D1].

☞ Plug or hang the slave cylinder onto the dolly block.

☞ REARMOUNT vario Plug the sleeve (3) and washer (4) onto the thread. Screw the adjusting nut (5) flush on the thread – hold the setscrew against the hexagon (6) [D3].

☞ Hang the actuating rod in the nipple seat on the release lever – if necessary, use nipple adapter (10) [TD].

☞ Secure the actuating rod in the nipple seat (split pin, or similar).

☞ Ensure that the actuating rod can be moved freely – bend the nipple seat slightly open.

☞ Install the dolly block on the motorcycle.

☞ STANDARD vario REARMOUNT vario Screw the adjusting nut in the direction of the dolly block up to the stop – hold the setscrew against the hexagon. [D2]/[D3]

In case the hydraulic hose does not run optimally:

☞ Unscrew the screw plug (7) slightly – maximum 30° – and hold it [D4].

☞ Press the hose connection towards the optimum path.

☞ Tighten screw plug with a tightening torque of **5 N·m ± 0.5 N·m (44 lbf·in ± 4 lbf·in)**.

Checking/setting clutch clearance

NOTICE

Increased clutch wear.

- Always maintain the specified clutch clearance.
- The clutch clearance cannot be checked on the clutch control. Always check the clutch clearance on the slave cylinder!

☞ Pull the slave cylinder from the dolly block (2) or clutch housing (3) [C1].

☞ Make sure that the gap (clutch clearance) lies in the range between 4–6 mm. [C1]

Clutch clearance is too high:

☞ STANDARD Fit a suitable spacer washer in between – if necessary, adjust the dolly block (2) [C1].

☞ STANDARD vario Adjust the adjusting nut (1) – hold the setscrew against the hexagon (2) [D3].

☞ STANDARD bolt – see ✚🕮🔧.

☞ REARMOUNT Adjust the dolly block (2) [C1].

☞ REARMOUNT vario Adjust the adjusting nut (5) – hold the setscrew against the hexagon (6) [D3] – if necessary, use a shorter sleeve (3).

Clutch clearance is too small:

☞ STANDARD Adjust the dolly block (2) [C1].

☞ STANDARD vario Adjust the adjusting nut (1) – hold the setscrew against the hexagon (2) [D3].

☞ STANDARD bolt – see ✚🕮🔧.

☞ REARMOUNT Adjust the dolly block (2) [C1].

☞ REARMOUNT vario Adjust the adjusting nut (5) – hold the setscrew against the hexagon (6) [D3] – if necessary, use a longer sleeve (3).

Adjusting the control lever

ⓘ You can adjust the position of the lever (Reach Adjust – grip width) of your MAGURA control as required.
This adjustment does not affect the clutch clearance!

⚠ WARNING

Danger of accident due to a failing clutch caused by lever travel that is too short.

- Make sure that the clutch separates correctly.
- Enlarge the reach if necessary.

☞ Turn the adjusting wheel (1) out (-) or in (+). [E1]

➔ The clutch lever moves closer to or further away from the handlebar.

Filling/bleeding the clutch actuation system

⚠ WARNING

Danger of accident due to system failure caused by incorrect or impermissible installation work.

- Always take the specified precautions and care when working with hydraulic fluids.
- Use only MAGURA *Blood* (mineral oil).
- Use only fresh, clean hydraulic fluid from tightly closed containers.

ⓘ To fill and bleed your MAGURA clutch actuation system you will require a filling syringe (1), an appropriate filling line (2) and the correct hydraulic fluid (3). [F1]

☞ Fill the filling syringe and hose with hydraulic fluid.
☞ Make sure that there is no air in the filling syringe and filling line.
☞ Loosen the retaining screw (1). [A1]
☞ Align the control horizontally.
☞ Tighten the retaining screw with a tightening torque of **6 N·m ± 0.5 N·m (53 lbf·in ± 4 lbf·in)**.
☞ Remove the lid (4) and bellows (5) from the expansion reservoir. [F2]
☞ Connect the filling syringe with hose tightly to the bleed valve (6) of the slave cylinder (clutch actuator). [F3]
☞ Open the bleed valve of the slave cylinder.
☞ Press hydraulic fluid slowly through the system from the filling syringe.
☞ Make sure that the expansion reservoir does not overflow.
☞ Actuate the control lever several times and let it snap.
➔ Air bubbles will rise in the expansion reservoir.
☞ Draw the hydraulic fluid slowly through the system into the filling syringe.
☞ Make sure that the expansion reservoir does not run empty.
☞ Continue the process until you cannot see any more air bubbles.
☞ Tighten the bleed valve with a tightening torque of **2 N·m ± 0.2 N·m (18 lbf·in ± 2 lbf·in)**.
☞ Disconnect filling syringe with hose.
☞ Remove any hydraulic fluid residues thoroughly.
☞ Pull and hold the control lever several times and check:
No hydraulic fluid is leaking from any part of the system.
The pressure in the clutch actuation system is immediate, the clutch is actuated correctly.
☞ Repeat the filling and bleeding process if necessary.
☞ Make sure that the level of the hydraulic fluid is 8 mm below the upper edge of the expansion reservoir.
☞ Add or remove hydraulic fluid as required.
☞ Insert bellows (5) into the expansion reservoir. [F2]
☞ Close the expansion reservoir with the lid.

ⓘ For information about spare parts and accessories, as well as contact data in the expert MAGURA supplier network, see the current MAGURA Powersports catalogue and **www.magura.com**.

ⓘ Unsere weltweiten Handelspartner und Service Center finden Sie unter **www.magura.com**

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