

HANDLES

RANGE



HANDLES

The Hydreco Hydraulics handles are available for fitting either to Hydreco Hydraulics pilot valves or other types of devices. The handles can also be used as stand alone device in many applications.

The selected materials suit both indoor and outdoor environments and are reliable, strong and suitable for heavy duty applications. Wide range of knobs and straight lever are available with different options, integrating switches and push buttons. Ergonomical MFE, EXM, MFE2 and MHC handles offer multifunction and bespoke solutions for the most demanding applications; they can be equipped with a wide range of controls: rocker switch, proportional roller, minijoystick, latched or momentary push buttons, toggle switch, four way switch etc.

The ergonomic handles are available for both left and right operation selecting the proper tilting option. MFE2 Handle is ready for standalone applications, integrating a specific electronic board for CAN Bus feature. Different circuit arrangements can be accommodated within the handle and the wiring can be designed as per customer's specifications.

Our engineers can offer special support to meet customer's requirements.

BENEFITS

- Many configurations available for knobs and straight handles suitable for both single and dual axis control
- Extensive range of electrical switch and button options
- All handles suitable to both Hydreco Hydraulics and other manufacturers equipments
- Spare parts available for maintenance
- Configurable for right and left hand operation
- Suitable to many environmental conditions
- High durability, low maintenance
- Standard operator presence switch or capacitive operator presence function available

Hydreco Hydraulics reserves the right to update the information and data contained in this catalogue at any time without notice

KNOB AND STRAIGHT - MODEL CODING

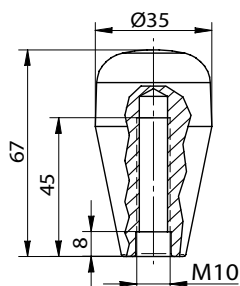
K- KNOB SERIES

KB	=	Duroplast knob
KC	=	Technopolymer knob
KD	=	Duroplast knob with switch
KK	=	Duroplast knob with rubber cap
KP	=	Duroplast spherical knob
KW	=	Duroplast knob with switch

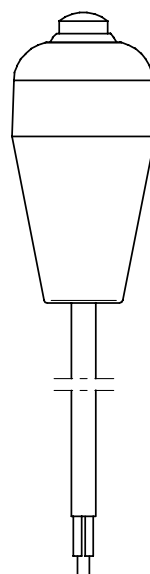
S- STRAIGHT SERIES

SA	=	Handle without electric switch
SD	=	Handle with electric switch
SS	=	Handles with electric switch to close and safety button
SX	=	Handle with electric switch to close
SY	=	Handle with electric switch dual rocker type
SZ	=	Handle with 2 or 3 positions latched rocker

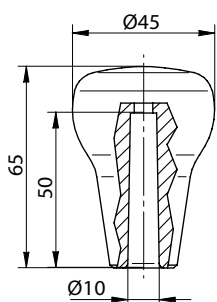
KB - DUROPLAST KNOB



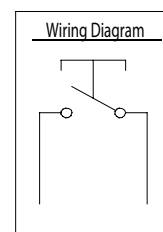
KD - DUROPLAST KNOB WITH SWITCH



KC - TECHNOPYMER KNOB

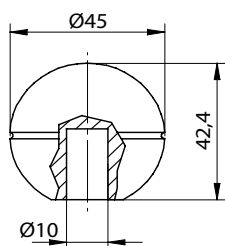


Rating current: 5A@28VDC
 resistive load
 Electrical life: 25,000 cycles
 Mechanical life: 10⁶ cycles

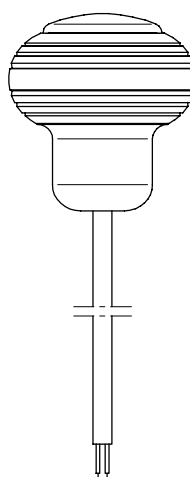


For installation dimensions see *Knob KB*

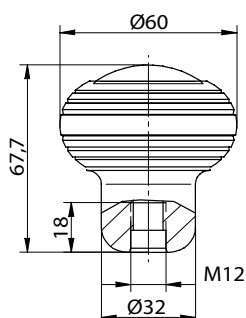
KP - DUROPLAST SPHERICAL KNOB



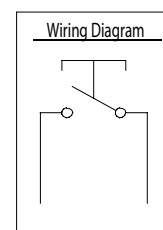
KW - DUROPLAST KNOB WITH SWITCH



KK - DUROPLAST KNOB WITH RUBBER CAP

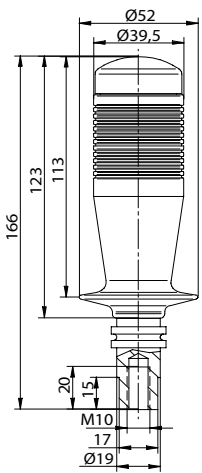


Rating current: 6A@250VAC
 Mechanical life: 10⁷ cycles

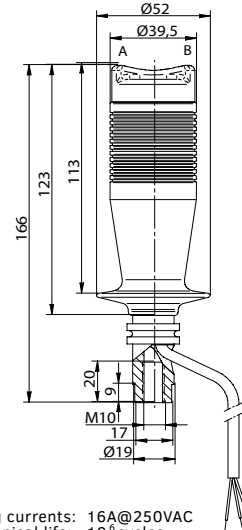


For installation dimensions see *Knob KK*

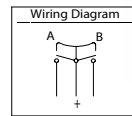
SA - WITHOUT SWITCH



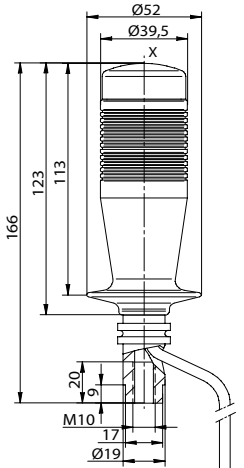
SY - WITH ONE MOMENTARY 3 POSITION ROCKER



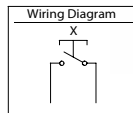
Rating currents: 16A@250VAC
Mechanical life: 10⁶ cycles
Electrical life: 5x10⁴ cycles



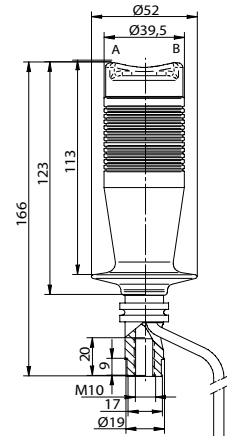
SX - WITH ONE SWITCH ON THE TOP



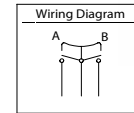
Rating currents: 16A@250VAC
Mechanical life: 10⁶ cycles
Electrical life: 5x10⁴ cycles



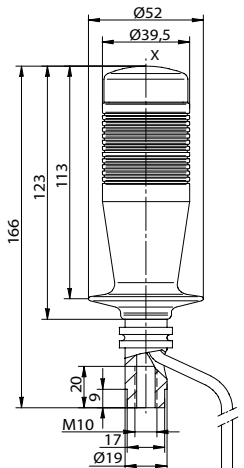
SZ3 - WITH 3 LATCHED Pos. | SZ2 - WITH 2 LATCHED Pos.



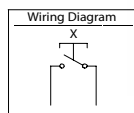
Rating currents: 16A@28VDC
Mechanical life: 10⁶ cycles
Electrical life: 25x10⁴ cycles



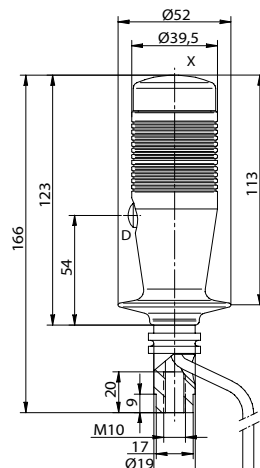
SS - WITH ONE SWITCH ON THE TOP WITH SAFETY CAGE



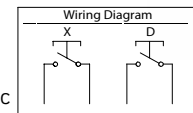
Rating currents: 16A@250VAC
Mechanical life: 10⁶ cycles
Electrical life: 5x10⁴ cycles



SD - WITH ONE SWITCH ON THE TOP AND ONE ON THE SIDE



Rating currents: 16A@250VAC/5A@28VDC
Mechanical life: 10⁶ cycles
Electrical life: 2x10⁴/25x10³ cycles



MFE - MODEL CODING

MFE - [] - [] - [] - [] [] [] [] - []

MODEL
MFE Multifunction Ergonomic

PUSH BUTTON SWITCH OPTION See page 5

- A Plastic push button with micro-switches
- C Push button with micro-switches
- E Sealed push button with micro-switches

PUSH BUTTON/SWITCH OPTION Pos. 1÷6 See page 5
(Insert ID letter for each button/switch chosen on the following list and in progressive sequence from 1 up to position 6)

- X No button switch
- B Blue
- G Green
- R Red
- Y Yellow
- W White Only type C & E
- L Signaling led
- K Black Only type C
- A Grey Only type C
- V Purple Only type C
- O Orange Only type C

PUSH BUTTON/SWITCH OPTION Pos. 8÷17 See page 8

For each push button/switch, insert ID position numbers and colours (see 1-6 position) and omit ones that are not required (i.e. 8R10G = red push button/switch in position 8 and green push button in position 10).

Note: push button/switch in position 13-14-15 are available only type C. Push button type A and B are not available in position 8.

ROCKER SWITCH OPTION
* Omit if not required

- TILTED OPTION** See page 9
- 0 Standard straight M10x1.5
 - 1 Tilted 15° forward
 - 2 Tilted 15° right (LH Handle)
 - 3 Tilted 15° left (RH Handle)
 - 4 Combined tilted forward and right (LH)
 - 5 Combined tilted forward and left (RH)
 - 6 With spherical joint, adjustable from 0° up to 20° in any direction
 - 7 Tilted 15° backward

- GAITER COLLAR** See page 8
- 0 Basic version without provision for protection boot
 - R With provision for round boot
 - S With provision for square boot

- WIRING TERMINATION**
- 0 Standard
 - 2 With connector (manufacturer and model number to be specified on order)

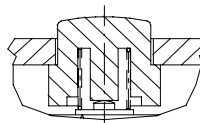
OPERATOR PRESENCE BUTTON Pos.7 See page 5

- X Without operator presence
- T With operator presence
- TCAP1** Operator presence capacitive sensor

Example: MULTIFUNCTION ERGONOMIC HANDLE, PUSH BUTTON C, POS.1 BLUE BUTTON, POS.4 RED BUTTON, WITHOUT OPERATOR PRESENCE STANDARD TERMINALS, SQUARE BOOT, TILTED 15° FORWARD: **MFE-C-1BXXRXX-XOS1**

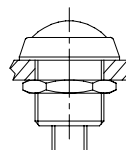
A - PLASTIC PUSH BUTTON

Rating currents:	5A@30VDC resistive load
Input voltage range:	30 VDC
Electrical life:	10 ⁴ cycles
Mechanical life:	2x10 ⁶ cycles



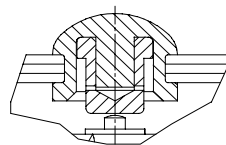
C - ISOLATED PUSH BUTTON

Rating currents:	5A@28VDC resistive load
Electrical life:	25x10 ³ cycles
Mechanical life:	10 ⁶ cycles



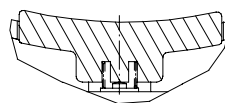
E - SEALED SERVICEABLE PUSH BUTTON

Rating currents:	5A@30VDC resistive load
Input voltage range:	30 VDC
Electrical life:	10 ⁴ cycles
Mechanical life:	2x10 ⁶ cycles



T - OPERATOR PRESENCE

Rating currents:	5A@30VDC resistive load
Input voltage range:	30 VDC
Electrical life:	10 ⁴ cycles
Mechanical life:	2x10 ⁶ cycles



TCAP1 - OPERATOR PRESENCE CAPACITIVE SENSOR

Rating currents:	100mA
Input voltage range:	10-30 VDC
Electrical life:	3x10 ⁶ cycles

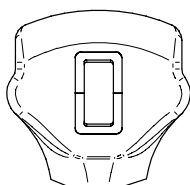


S - TYPE



Rating currents: 16A@28VDC
resistive load
Mechanical life: 10⁵ cycles
Electrical life: 25x10³ cycles

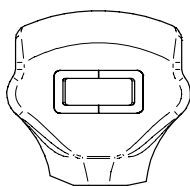
VERTICAL MOUNTED



S1B: 3 positions momentary rocker
S2B: 3 positions latched rocker

S5B: 2 positions latched rocker
S3B: 3 positions latched and momentary rocker

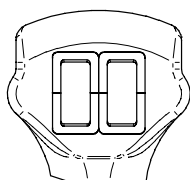
HORIZONTAL MOUNTED



S1A: 3 positions momentary rocker
S2A: 3 positions latched rocker

S5A: 2 positions latched rocker
S3A: 3 positions latched and momentary rocker

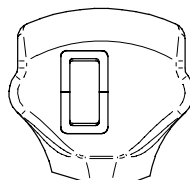
TWO VERTICAL MOUNTED



S4A: 3 positions momentary rocker
S4B: 3 positions latched rocker

S5E: 2 positions latched rocker
S3E: 3 positions latched and momentary rocker

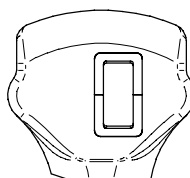
VERTICAL MOUNTED LEFT OFFSET



S1C: 3 positions momentary rocker
S2C: 3 positions latched rocker

S5C: 2 positions latched rocker
S3C: 3 positions latched and momentary rocker

VERTICAL MOUNTED RIGHT OFFSET



S1D: 3 positions momentary rocker
S2D: 3 positions latched rocker

S5D: 2 positions latched rocker
S3D: 3 positions latched and momentary rocker

D - 4 WAY ON-OFF SWITCH

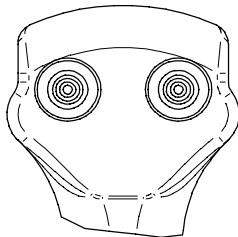


Rating current: 1A@28VDC inductive
Electrical life: 10⁵ Cycles

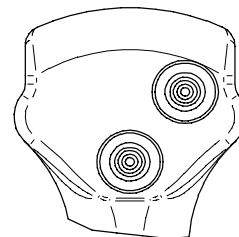
DLDRDB - 3 SWITCHES



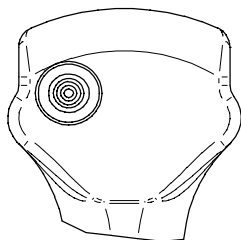
DLDR - 2 SWITCHES TOP



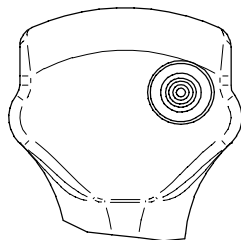
DRDB - 2 SWITCHES RIGHT



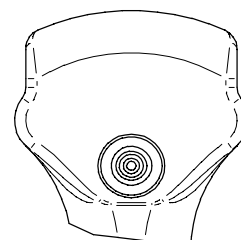
DL - 1 SWITCH LEFT



DR - 1 SWITCH RIGHT



DB - 1 SWITCH CENTER

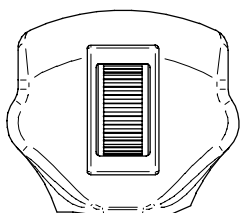


HYRP - PROPORTIONAL ROLLER

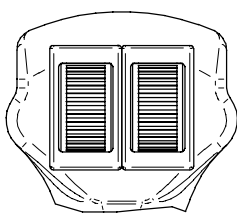


Supply voltage: 5 VDC
Output signal: 0,5-4,5 VDC with 2,5V in neutral position
Mechanical life: 3x10⁶ Cycles

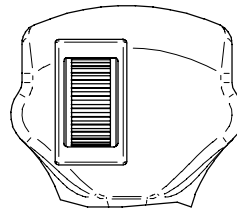
RP - ONE CENTERED



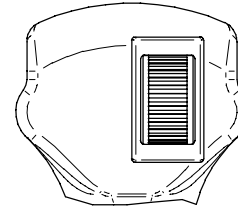
2RP - TWO CENTERED



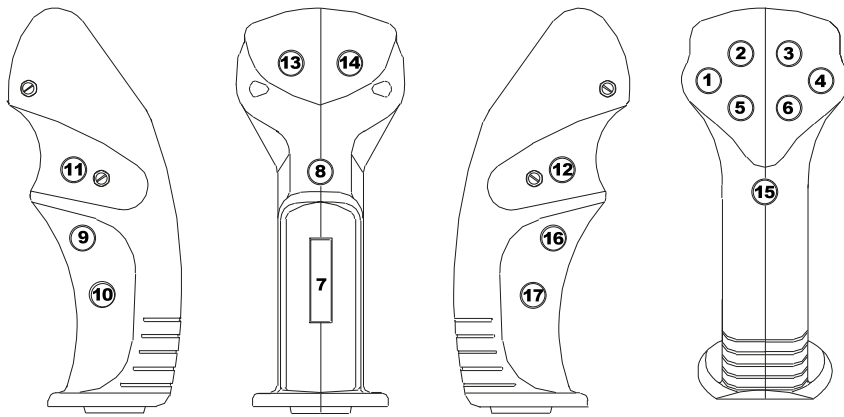
RPS - ONE LEFT OFFSET



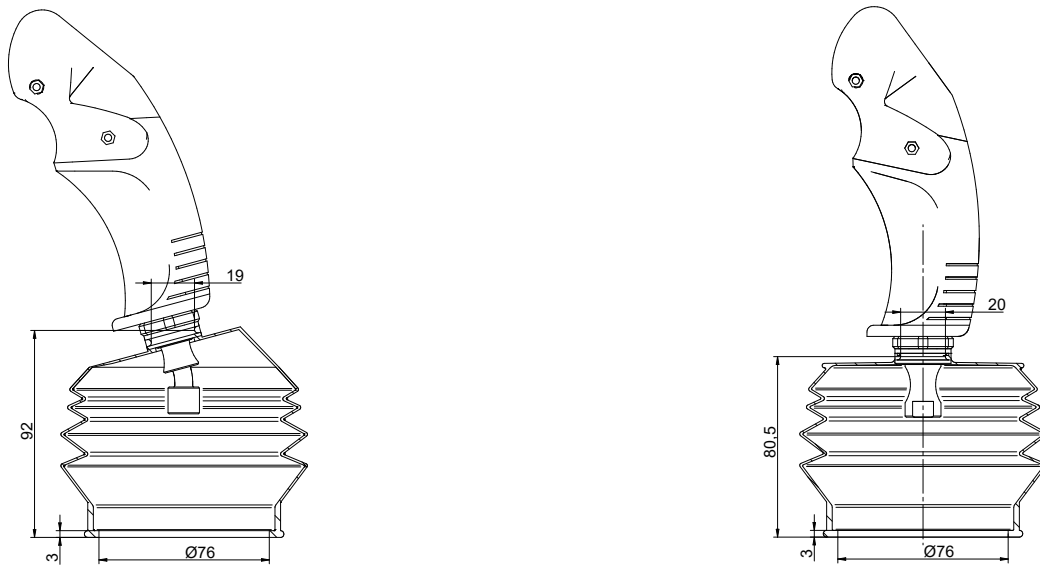
RPD - ONE RIGHT OFFSET



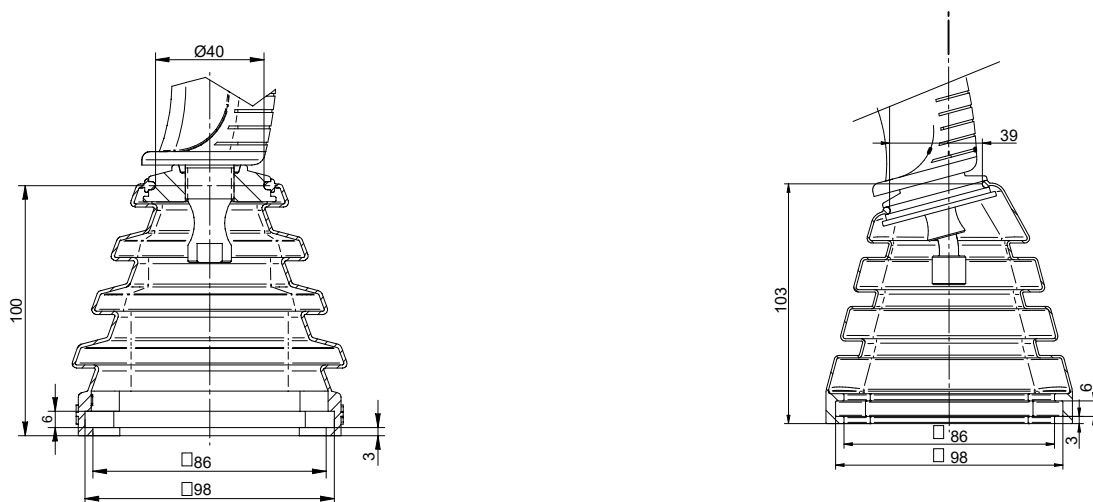
MFE



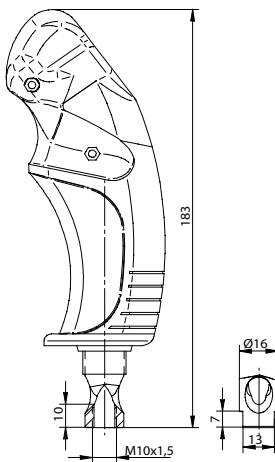
R - ROUND PROTECTION BOOT



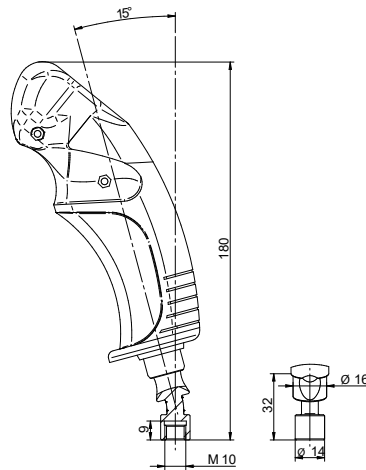
S - SQUARE PROTECTION BOOT



0 - STANDARD STRAIGHT

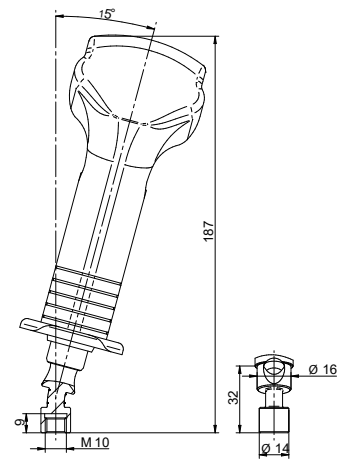


1 - TILTED 15° FORWARD



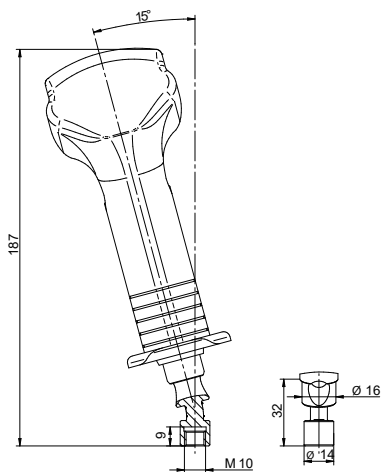
2 - TILTED 15° RIGHT

LH Handle



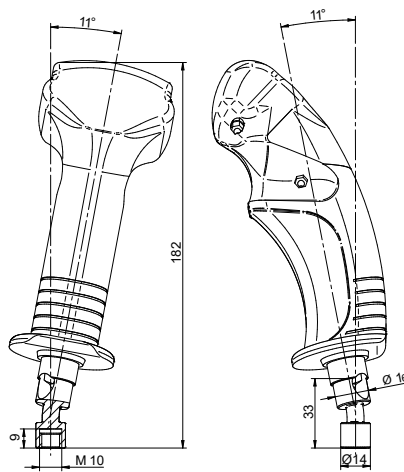
3 - TILTED 15° LEFT

RH Handle



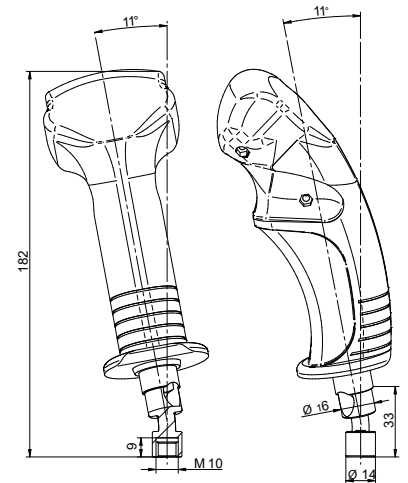
4 - COMBINED TILTED FRW & RIGHT

LH Handle

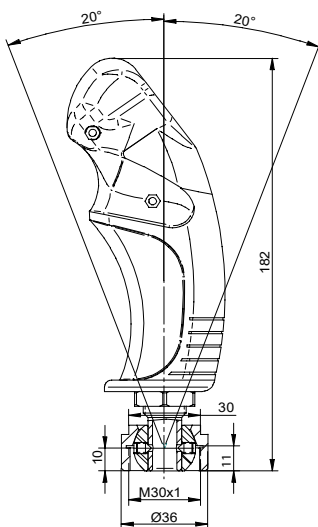


5 - COMBINED TILTED FRW & LEFT

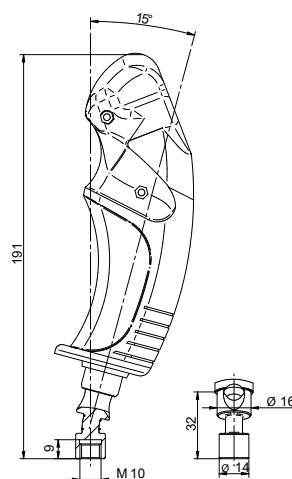
RH Handle



6 - WITH SPHERICAL JOINT



7 - TILTED 15° BACKWARD



MFE2 - MODEL CODING

MFE2 - [] - [] - [] [] []

MODEL _____
MFE Multifunction Ergonomic Handle 2

PUSH BUTTON / SWITCH Pos. 1÷18 See page 11 _____
 (For each control selected, insert position number and ID letter chosen on the following list. Note: #=color code. Example: for a push button blue in position 2 and a mini joystick in position 5, type 2B 5J)

- X** No button switch
- B** Blue push button
- K** Black push button
- G** Green push button
- O** Orange push button
- #L** Latched button with led
- D** Four way switch
- TS** Toggle switch
- Y** Yellow push button
- A** Grey push button
- R** Red push button
- W** White push button
- L#** Signalling led
- #M** Momentary button with led
- J** Four way mini joystick
- V** Purple push button

- ROCKER SWITCH OR ROLLER Pos. A÷L** See page 11 _____
- GR1** R1 Rocker in position G (See page 12) First letter = position, other 2 letters = control type, repeat if necessary
 - RL** Proportional roller with lever
 - R1** Latched rocker switch 3 positions
 - R2** Latched rocker switch 2 positions
 - R3** Momentary rocker switch 3 positions

- TILTED OPTION** See page 13
- Standard straight M10x1.5
 - S2** Tilted 15° right (LH Handle)
 - S3** Tilted 15° left (RH Handle)

- WIRING TERMINATION**
- 0** Flying leads
 - 2** With connector (Manufacturer and model number to be specified on order)

- OPERATOR PRESENCE BUTTON** See page 5
- X** Without operator presence
 - T** With standard operator presence
 - TCAP1** Operator presence capacitive sensor

Example: MULTIFUNCTION ERGONOMIC HANDLE 2, POSITION 1 BLUE BUTTON, POSITION 4 GREEN BUTTON, POSITION 5 RED BUTTON, POSITION 8 FOUR WAY SWITCH, POSITION E PROPORTIONAL ROLLER WITH LEVER, STANDARD OPERATOR PRESENCE, FLYING LEADS:
MFE2-1B4G5R8D-ERL-T0

** For special configuration, please contact Hydreco Hydraulics

PUSH BUTTON TYPE C

Rating currents: 5A@28VDC resistive load
Electrical life: 25,000 cycles
Mechanical life: 10^6 cycles



PROPORTIONAL ROLLER

Supply voltage: 5 VDC
Output signal: 0,5-4,5 VDC with 2,5V in neutral position
Mechanical life: 3×10^6 cycles



ROCKER SWITCH

Rating currents: 16A@28VDC resistive load
Mechanical life: 10^5 cycles
Electrical life: 25×10^3 cycles



FOUR WAYS SWITCH

Rating currents: 1A@28VDC inductive
Electrical life: 10^5 cycles



SIGNALING LED

Color available: White, Red, Yellow, Green, Blue
Supply voltage: 12 or 24 VDC
Mounted: On panel with support



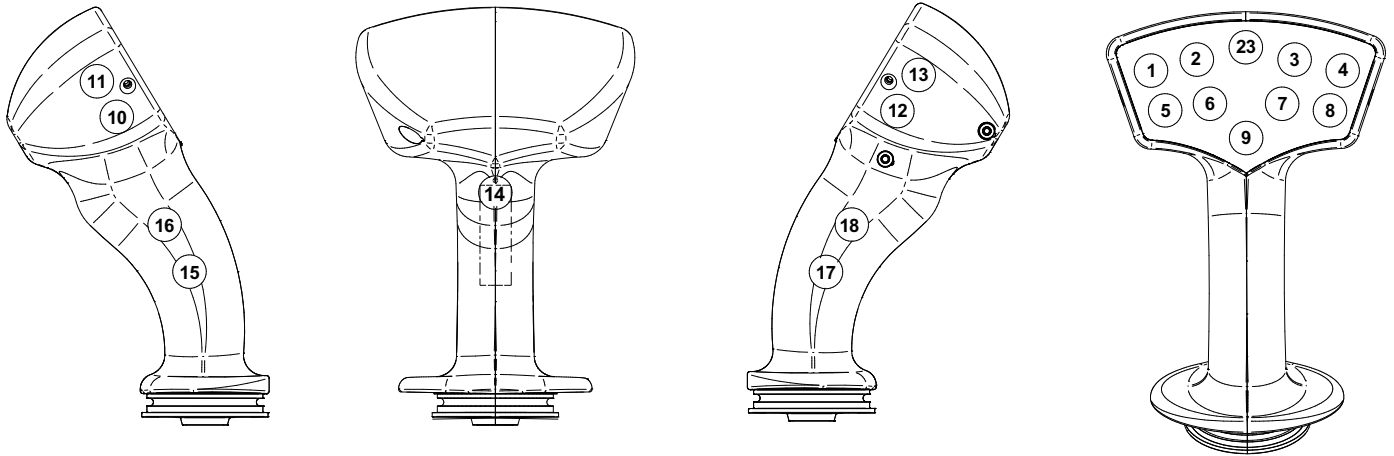
FOUR WAY PROPORTIONAL MINI-JOYSTICK

Supply voltage: 5 VDC
Output voltage: 0.5-4.5 V with 2.5 V in neutral, for each axis
Mechanical life: 10^6 cycles



Note: Other controls available on request.

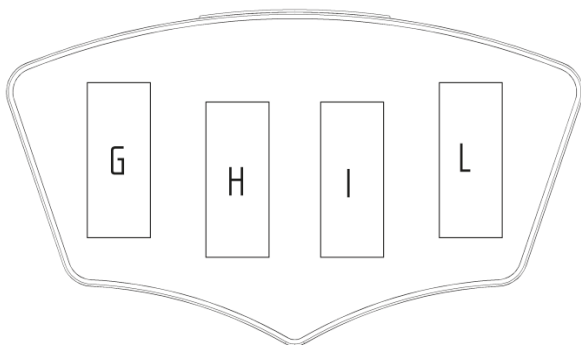
MFE2



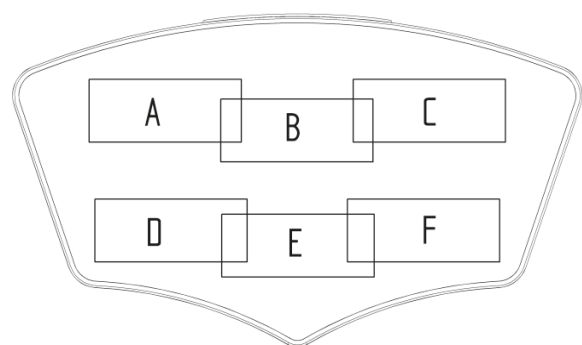
In case standard operator presence is required, push buttons in position n.14, 15, 16, 17, 18 cannot be added.

POSITIONS FOR CONTROLS

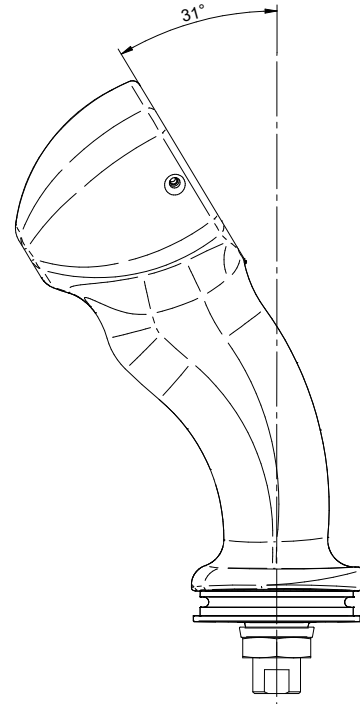
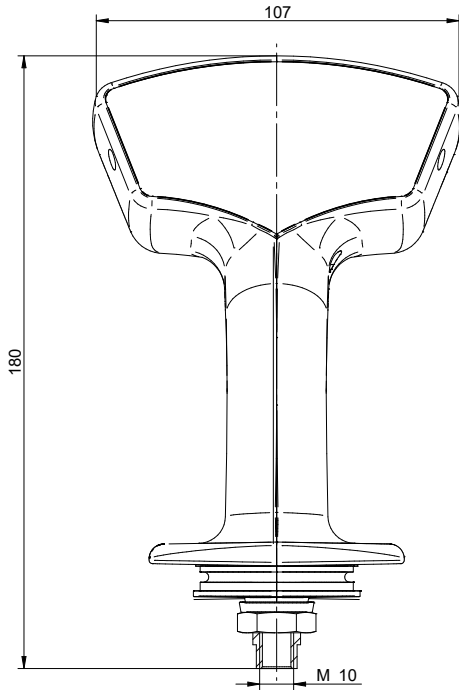
Standard positions for rocker and proportional roller, vertical mounted



Standard positions for rocker and proportional roller, horizontal mounted

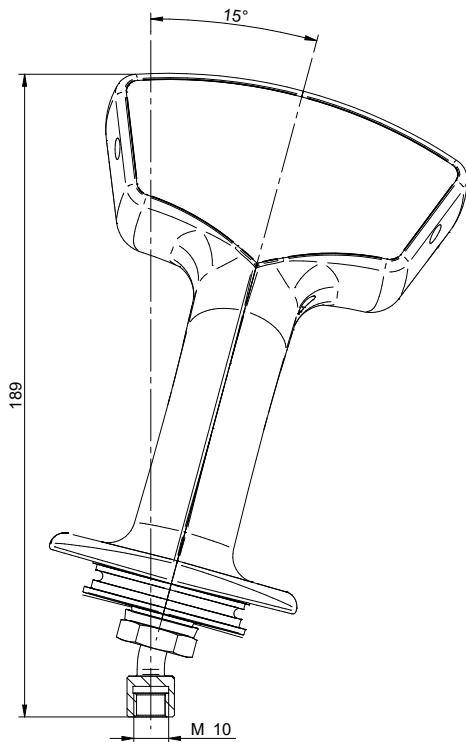


0 - STANDARD STRAIGHT



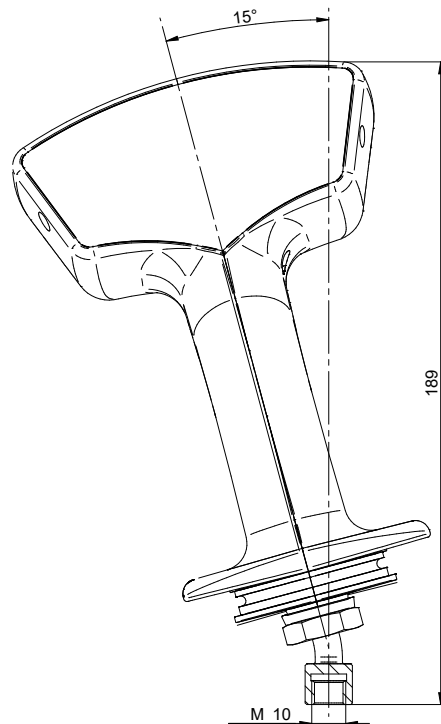
S2 - TILTED 15° RIGHT

LH Handle



S3 - TILTED 15° LEFT

RH Handle



MHC - MODEL CODING

MHC - [] - [] - [] - [] - []

MODEL _____
MHC Multifunction Handle Control

PUSH BUTTON / SWITCH Pos. 1÷11 See page 16 _____
 (For each control selected, insert position number and ID letter chosen on the following list. Note: #=color code. Example: for a push button blue in position 2 and a green push button in position 3 type: **2B3G**)

- X** No button switch
- B** Blue push button
- K** Black push button
- G** Green push button
- O** Orange push button
- #L** Latched button with led
- D** Four way switch
- TS** Toggle switch
- Y** Yellow push button
- A** Grey push button
- R** Red push button
- W** White push button
- L#** Signalling led
- #M** Momentary button with led
- J** 4 way mini joystick
- V** Purple push button

ROCKER SWITCH OR ROLLER Pos. A÷L See page 16 _____

- GR1** R1 Rocker in position G (See page 12) First letter = position, other 2 letters = control type, repeat if necessary
- RL** Proportional roller with lever
- R1** Latched rocker switch 3 positions
- R2** Latched rocker switch 2 positions
- R3** Momentary rocker switch 3 positions

- TILTED OPTION** See page 17
- Standard straight M10x1.5
 - S2** Tilted 15° right (LH Handle)
 - S3** Tilted 15° left (RH Handle)

- WIRING TERMINATION**
- 0** Flying leads
 - 2** With connector (maker and model number to be specified on order)

- OPERATOR PRESENCE BUTTON** See page 5
- X** Without operator presence
 - TCAP1** Operator presence capacitive sensor

= Assigned color

Example: MULTIFUNCTION HANDLE CONTROL, POS 1 BLUE BUTTON, POS 4 GREEN BUTTON , POS 5 RED PUSH BUTTON, POS 8 FOUR WAY SWITCH, POS E PROPORTIONAL ROLLER WITH LEVER, STANDARD OPERATOR PRESENCE CAPACITIVE SENSOR, FLYING LEADS:
MHC-1B4G5R8D-ERL-TCAP10

** For special configuration, please contact Hydreco Hydraulics

PUSH BUTTON TYPE C

Rating currents: 5A@28VDC resistive load
Electrical life: 25,000 cycles
Mechanical life: 10⁶ cycles



PROPORTIONAL ROLLER

Supply voltage: 5 VDC
Output signal: 0,5-4,5 VDC with 2,5V in neutral position
Mechanical life: 3x10⁶ cycles



ROCKER SWITCH

Rating currents: 16A@28VDC resistive load
Mechanical life: 10⁵ cycles
Electrical life: 25x10³ cycles



FOUR WAYS SWITCH

Rating currents: 1A@28VDC inductive
Electrical life: 10⁵ cycles



SIGNALING LED

Color available: White, Red, Yellow, Green, Blue
Supply voltage: 12 or 24 VDC
Mounted: On panel with support



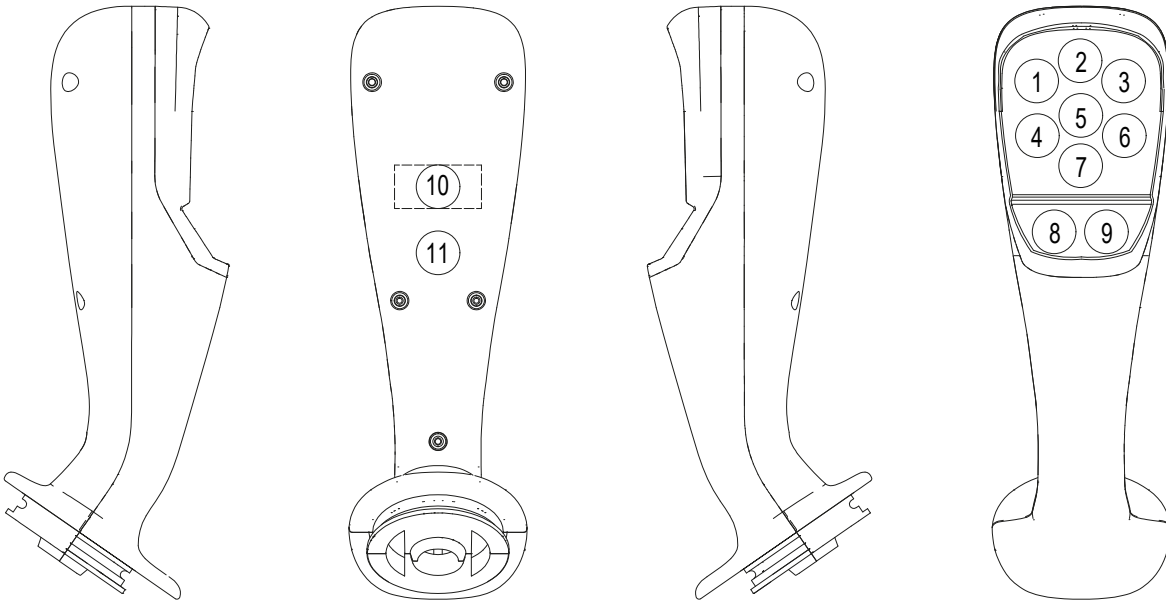
FOUR WAY PROPORTIONAL MINI-JOYSTICK

Supply voltage: 5 VDC
Output voltage: 0.5-4.5 V with 2.5 V in neutral, for each axis
Mechanical life: 10⁶ cycles



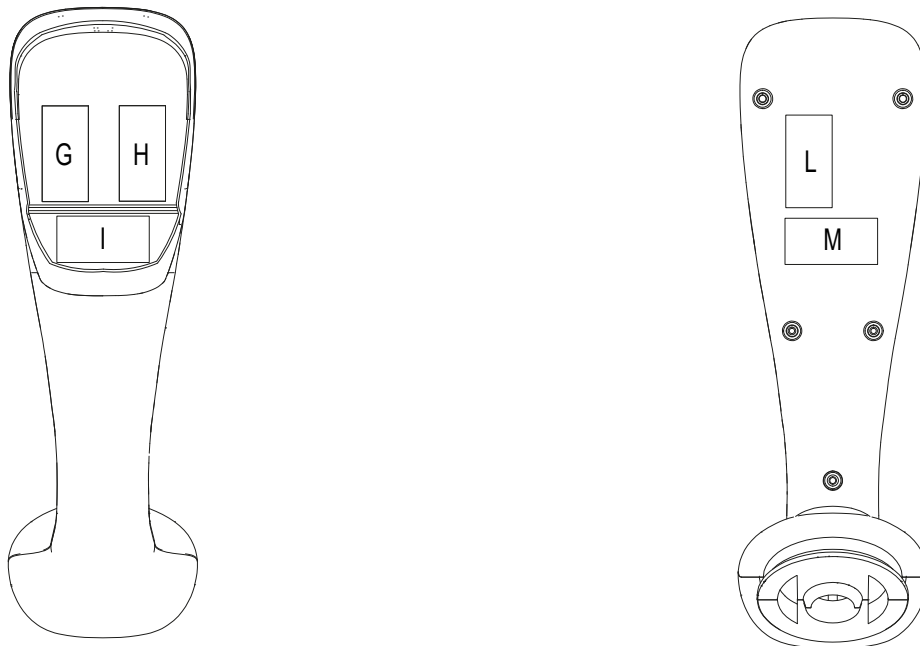
Note: Other controls available on request.

POSITIONS FOR PUSH BUTTONS

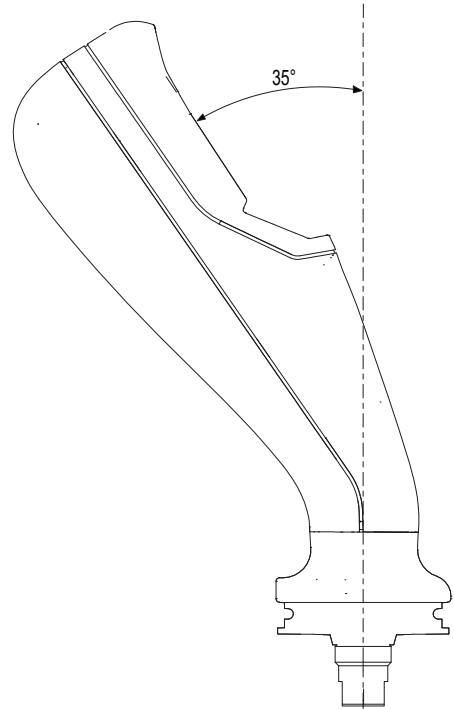
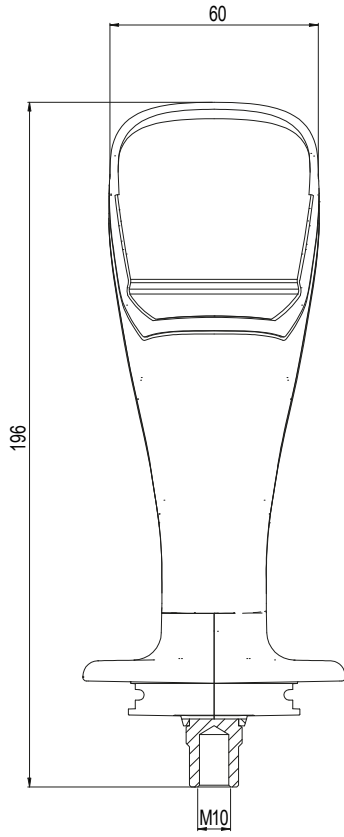


POSITIONS FOR ROLLER AND ROCKER CONTROL

Standard positions for rocker and proportional roller, vertical and horizontal mounted (G,H,I for both rockers and rollers. L and M for proportional roller)

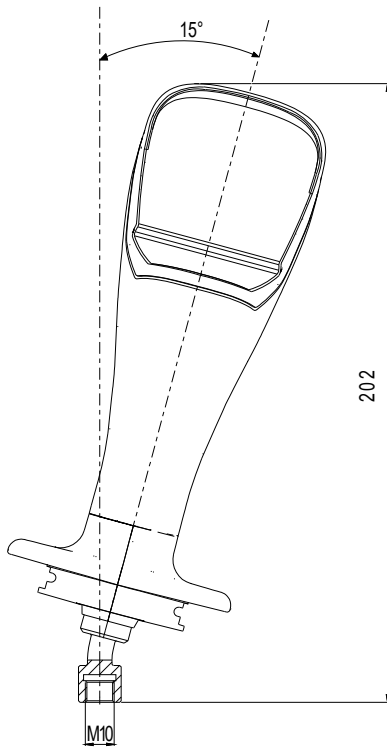


0 - STANDARD STRAIGHT



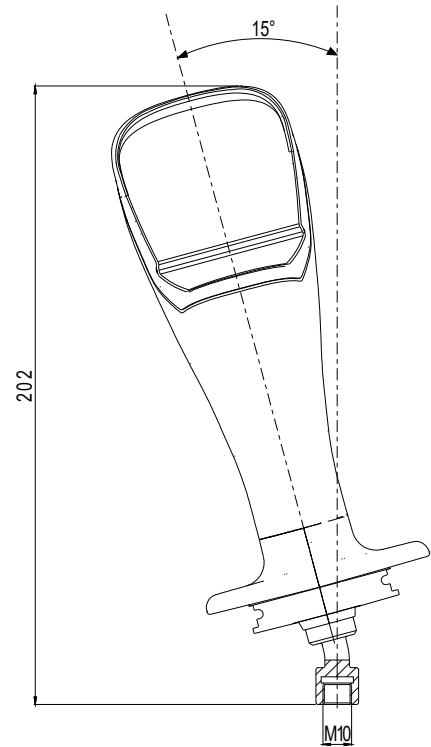
S2 - TILTED 15° RIGHT

LH Handle



S3 - TILTED 15° LEFT

RH Handle



EXM - MODEL CODING

EXM- [] - [] - [] - [] - [] - []

MODEL
EXM Excavator Multifunction

PUSH BUTTON SWITCH OPTION See page 15

- A** Plastic push button with micro-switches
- C** Push button with micro-switches
- E** Sealed push button with micro-switches

PUSH BUTTON/SWITCH OPTION Pos. 1÷4 See below
 (Insert ID letter for each button/switch chosen on the following list and in progressive sequence from 1 up to position 4)

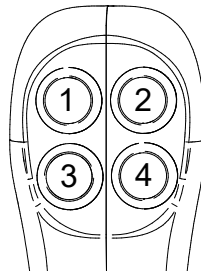
- X** No button switch
- B** Blue
- G** Green
- R** Red
- Y** Yellow
- W** White Only type C & E
- L** Signaling led
- K** Black Only type C
- A** Grey Only type C
- V** Purple Only type C
- O** Orange Only type C

ROCKER SWITCH OPTION
 * Omit if not required

TILTED OPTION See page 20
0 Standard straight M10x1.5
1 Tilted 15° forward
2 Tilted 15° right (LH Handle)
3 Tilted 15° left (RH Handle)

GAITER COLLAR
S With provision for square boot

WIRING TERMINATION
 - Standard
2 With connector (Manufacturer and model number to be specified on order)

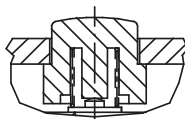


Buttons Position

Example: EXCAVATOR MULTIFUNCTION HANDLE, PUSH BUTTON C, POS.1 BLUE BUTTON, POS.4 GREEN BUTTON, STANDARD TERMINATION, SQUARE BOOT, STANDARD STRAIGHT: EXM-C-BXXG-S0

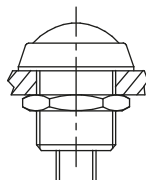
A - PLASTIC PUSH BUTTON

Rating currents: 5A@30VDC resistive load
Input voltage range: 30 VDC
Electrical life: 10⁴ cycles
Mechanical life: 2x10⁶ cycles



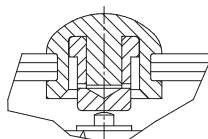
C - ISOLATED PUSH BUTTON

Rating currents: 5A@28VDC resistive load
Electrical life: 25,000 cycles
Mechanical life: 10⁶ cycles



E - SEALED SERVICEABLE PUSH BUTTON

Rating currents: 5A@30VDC resistive load
Input voltage range: 30 VDC
Electrical life: 10⁴ cycles
Mechanical life: 2x10⁶ cycles



S TYPE - WATERPROOF ROCKER SWITCH



Rating currents: 16A@28VDC resistive load
Mechanical life: 10⁵ cycles
Electrical life: 25x10³ cycles

VERTICAL MOUNTED



S1B: 3 positions momentary rocker
S2B: 3 positions latched rocker
S5B: 2 positions latched rocker
S3B: 3 positions latched and momentary rocker

HORIZONTAL MOUNTED



S1A: 3 positions momentary rocker
S2A: 3 positions latched rocker
S5A: 2 positions latched rocker
S3A: 3 positions latched and momentary rocker

HORIZONTAL WITH TYPE C



PROPORTIONAL ROLLER HYRP

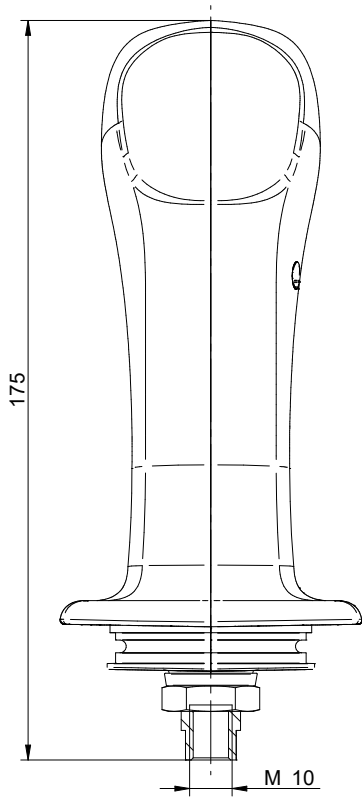
Supply voltage: 5VDC
Output signal: 0,4-4,5 VDC with 2,5V in neutral position
Mechanical life: 3x10⁶ cycles



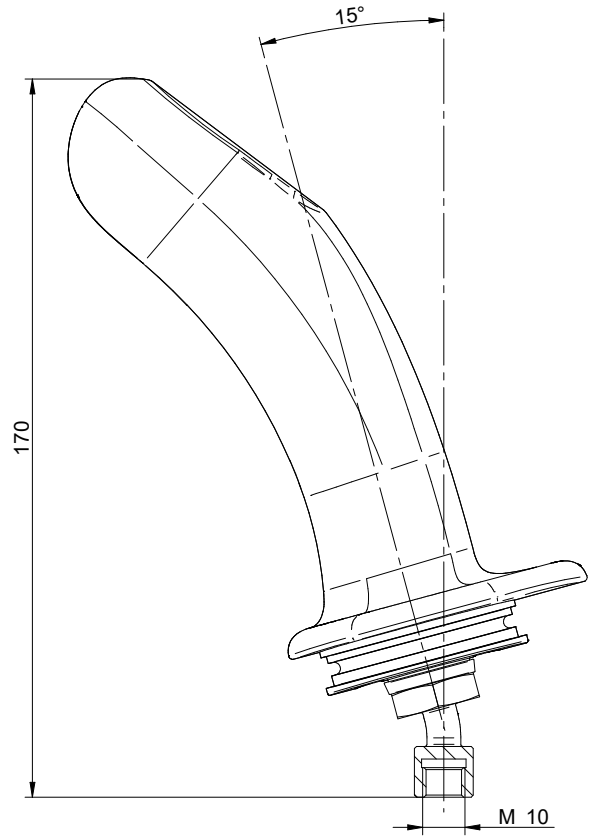
VERTICAL MOUNTED



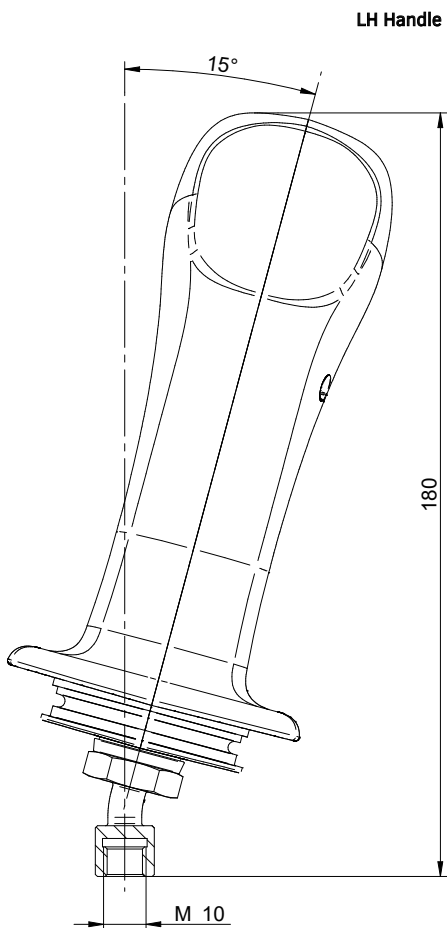
0 - STANDARD STRAIGHT



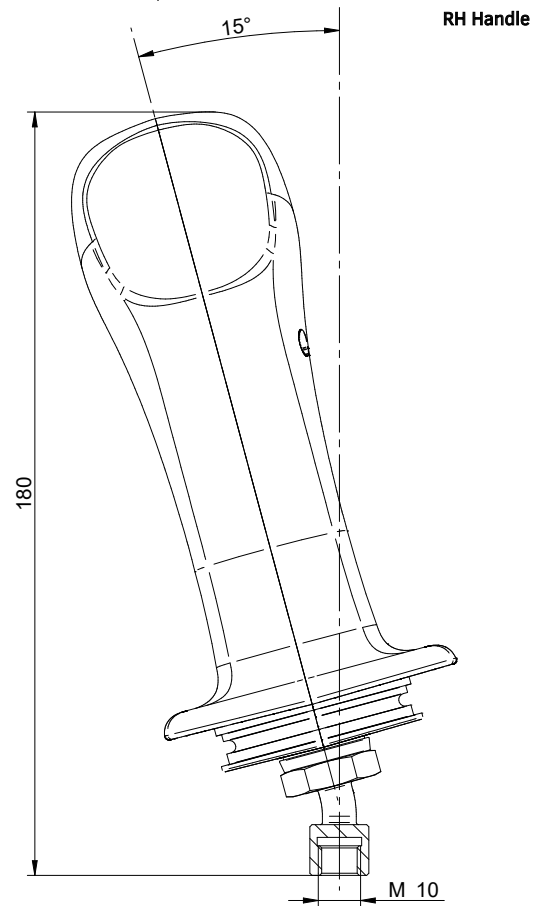
1 - TILTED 15° FORWARD



2 - TILTED 15° RIGHT



3 - TILTED 15° LEFT



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