
INSTRUCTION MANUAL

3arm®

HEAD ANNEX

SERIES 0

SERIES 3

SERIES 4

TECNOSPIRO MACHINE TOOL, S.L.U.

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TECNOSPIRO
MACHINE TOOL SLU



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1. HEAD DETAILS S0 - S3 - S4

A - Vertical 40100105 0 kg	B - Vertical flat MV306904 0 kg	BA - Vertical flat + Bush MV306904 + M3Dxxx04 (Fixed) MV306904 + MV3PUxxx (Custom) 0 kg	C - Vertical V-block MV301804 1 kg	D - Articulated rotative MV3019A4 1.5 kg
E - Articulated flat rotative MV302304 1.5 kg	EA - Articulated flat rotative + Bush MV302304 + M3Dxxx04 (Fixed) MV302304 + MV3PUxxx (Custom) 1.5 kg	EB - Articulated flat rotative reinf. (Base with As) MV30P504 1.5 kg	EC - Articulated flat rotative reinf. (Base with As) + Bush MV30P504 + M3Dxxx04 (Fixed) MV30P504 + MV3PUxxx (Custom) 1.5 kg	ED - Auto articulated flat rotative M3204700 2.8 kg
EE - Auto articulated flat rotative + Bush M3204700 + M3Dxxx04 (Fixed) M3204700 + MV3PUxxx (Custom) 2.8 kg	F - Articulated rotative V-block MV302504 2.7 kg	GA - Multitur MV3171C4 + MV3EExxx (Timco) MV3171C4 + MV3EFxxx (Timsand) MV3171C4 + MV3CUxxx (Custom) 0.5 kg	HA - Multiturn reinf. MV31E8A4 + MV3DAxxx (Timco ref.) MV31E8A4 + MV3DBxxx (Timsand ref.) MV31E8A4 + MV3FUxxx (Custom) 1.4 kg	I - Flat electromagnet MV306904 + MV3AM180 (Ø180R) MV306904 + MV3RM200 (Ø200RR) MV306904 + MV3RM245 (Ø245RR) 0 kg

<p>J - Articulated rotative electromagnet 1.5 kg M3323600 + MV3AM180 (Ø180R) M3323600 + MV3RM200 (Ø200RR) M3323600 + MV3RM245 (Ø245RR)</p>	<p>K - Adjustable strap 2.5 kg M3146500</p>	<p>L - Adjustable manual ball joint with vertical adjustment 1.5 kg M3312200</p>	<p>LA - Adjustable auto ball joint with vertical adjustment 1.7 kg M3312300</p>	<p>LB - Adjustable manual ball joint horizontal 1 kg M3312600</p>
<p>LC - Adjustable auto ball joint horizontal 1 kg M3312700</p>	<p>LD - Adjustable manual ball joint vertical 1.2 kg M3312400</p>	<p>LE - Adjustable auto ball joint vertical 1.4 kg M3312800</p>	<p>LH - Reinforced manual ball joint vertical 1.4 kg M3312900</p>	<p>M - Pressure support 1.5 kg M3313700 + MV3NUxxx (Custom)</p>
<p>N - Multiposition with quick-change 0.6 kg MV31F5A4 + MV3MAxxx (Timco) MV31F5A4 + MV3PBxxx (Timsand) MV31F5A4 + MV3MUxxx (Custom)</p>	<p>P - Double articulated flat rotative 2 kg MV302404</p>	<p>PA - Double articulated flat rotative + Bush 2 kg MV302404 + M3Dxxx04 (Fixed) MV302404 + MV3PUxxx (Custom)</p>	<p>Q - Multiposition reinf. with quick-change 1.6 kg MV30D2A4 + MV3JAxxx (Timco ref.) MV30D2A4 + MV3JBxxx (Timsand ref.) MV30D2A4 + MV3JUxxx (Custom)</p>	<p>QA - Multiposition reinf. security with quick-change 2 kg M3147600 + MV3JAxxx (Timco ref.) M3147600 + MV3JBxxx (Timsand ref.) M3147600 + MV3JUxxx (Custom)</p>
<p>QB - Multiposition reinf. with manual brake 2.4 kg M3259000 + MV3JAxxx (Timco ref.) M3259000 + MV3JBxxx (Timsand ref.) M3259000 + MV3JUxxx (Custom)</p>	<p>R - Manual revolving + Bush (angle tools) 4.5 kg MV404404 + MVRxxx04 (Rotary) MV404404 + MV3RUxxx (Custom)</p>	<p>RA - Manual revolving + bush (inline tools) 3.5 kg MV404404 + MVBxxx04 (Tipping) MV404404 + MVRUxxx (Custom)</p>	<p>RAS - Auto revolving + bush (inline tools) 4.5 kg M41007A0 + MVBxxx04 (Tipping) M41007A0 + MV3RU (Custom)</p>	<p>RB - Manual revolving + Bush (pistol grip tools) 2 kg MV404404 + MV3RUxxx (Custom)</p>

<p>RBS – Auto revolving + Bush (pistol grip tools) M41007A0 + MV3RUxxx (Custom) 3 kg</p>	<p>RC – Manual revolving 4x90° + Bush M3150900 + MV3RUxxx (Custom) 2 kg</p>	<p>RS - Auto double revolving + Bush (angle tools) M4102000 + MVRxxx04 (Rotary) M4102000 + MV3RUxxx (Custom) 5.5 kg</p>	<p>SN – Giraffe multi-position 3.2 kg MV30P704 + MV3MAxxx (Timco) MV30P704 + MV3PBxxx (Timsand) MV30P704 + MV3MUxxx (Custom)</p>	<p>SQ -Giraffe multi-position reinf. 3.8 kg MV30P804 + MV3JAxxx (Timco ref.) MV30P804 + MV3JBxxx (Timsand ref.) MV30P804 + MV3JUxxx (Custom)</p>
<p>SQA -Giraffe multi-position reinf. security 4 kg M3161600 + MV3JAxxx (Timco ref.) M3161600 + MV3JBxxx (Timsand ref.) M3161600 + MV3JUxxx (Custom)</p>	<p>SR - Giraffe revolver + rotating flange 3.6 kg MV30P604 + MVRxxx04 (Rotary) MV30P604 + MV3RUxxx (Custom)</p>	<p>T - Multi-position with quick change 0.6 kg MV31F5A4 + MV3LAxxx (Timco) MV31F5A4 + MV3QBxxx (Timsand) MV31F5A4 + MV3LUxxx (Custom)</p>	<p>U - Multi-position reinf. with quick-change 1.6 kg MV30D2A4 + MV3KCxxx (Timco ref.) MV30D2A4 + MV3KBxxx (Timsand ref.) MV30D2A4 + MV3KUxxx (Custom)</p>	<p>UA -Multi-position reinf. security with quick-change 2 kg M3147600 + MV3KCxxx (Timco ref.) M3147600 + MV3KBxxx (Timsand ref.) M3147600 + MV3KUxxx (Custom)</p>
<p>W - Vertical extension 1.2 kg M3308900 + Extension 1000 M3308900 + Extension 500 M3308900 + Extension 250 M3308900 + MV3WUxxx (Custom)</p>	<p>WA - Auto vertical extension (high torque) 1.8 kg M3283000 + Extension 1000 M3283000 + Extension 500 M3283000 + Extension 250 M3283000 + MV3WUxxx (Custom)</p>	<p>WB - Auto vertical extension (low torque) 1.5 kg M3313900 + Extension 1000 M3313900 + Extension 500 M3313900 + Extension 250 M3313900 + MV3WUxxx (Custom)</p>	<p>Z - Fork 0.25 kg MV309304</p>	<p>ZA - Reinforced fork 0.7 kg M3125600</p>

2. TOOLS

2.1 SYMBOLS AND ICONS

Throughout this manual you will see various symbols indicating the most suitable tool for that type of head.

Their meanings are summarised below:

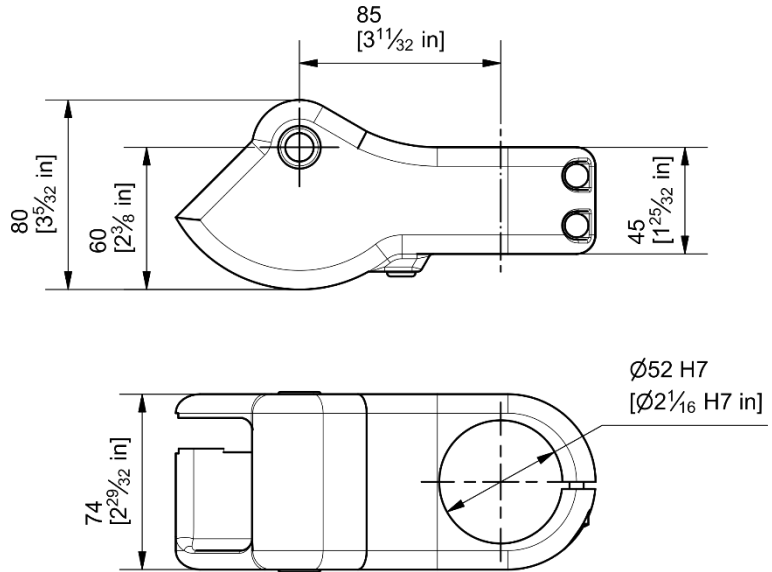
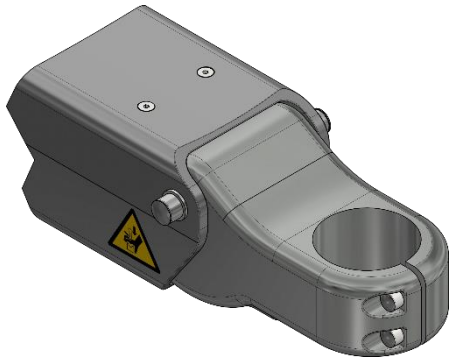
Nutrunner pistol		Sabre saw	
Straight impulse/impact		Scanner	
Impulse/impact pistol		Laser equipment	
Angle nutrunner		Pliers	
Straight nutrunner		Riveting gun	
Nutrunner with reaction bar		Spot welder	
Hydraulic torque wrenche		Stud welder	
Drill		Chipping hammer	
Magnetic drill		Blower	
Straight grinder		Polisher	
Angle grinder		Personalised	
Keyhole saw			

2.2 RECOMMENDED TOOLS FOR HEAD

3ARM - HEADMEMBERS	TORQUE & SCREWDRIVERS						MACHINING							OPTIC TOOLS		ASSEMBLY		Welding		OTHERS					
	Nutrunner Pistol	Straight impulse/ impact	Impulse/ impact pistol	Angle nutrunner	Straight nutrunner	Nutrunner with reaction rod	Hydraulic torque wrench	Drill	Magnetic drill	Straight grinder	Angle grinder	Keyhole saw	Sabre saw	Scanner	Laser equipment	Pliers	Rivet gun	Spot Welding	Stud Welding	Chipping hammer	Blower / Vacuum	Polisher	Custom		
A																									
B																									
BA																									
C																									
D																									
E																									
EA																									
EB																									
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RC																									
RS																									
SN																									
SQ																									
SQA																									
SR																									
T																									
U																									
UA																									
W																									
WA																									
WB																									
Z																									
ZA																									

3. HEADS

3.1 VERTICAL - A 40100105



Maximum load: Maximum arm load

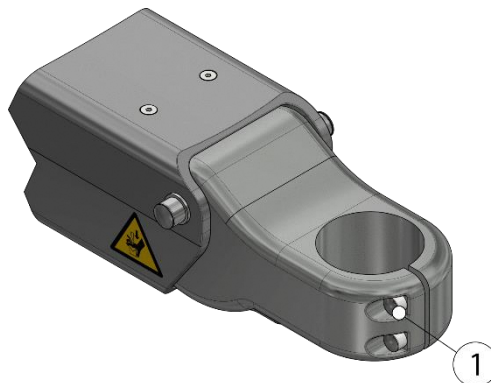
Maximum torque: 150Nm

Max. tool Ø: 52mm (Adaptable bushing)

MAXIMUM TORQUE (Nm)		
Arm	Vertical	Horizontal
S0	150	150
S3	150	150
S4	150	150

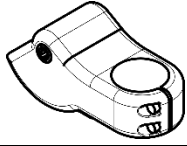
3.1.1 Installation and disassembly of the tool

1- Put the tool (or the adapter bushing) in the Ø52H7 and tighten the bolts (1) (Allen key 5mm)

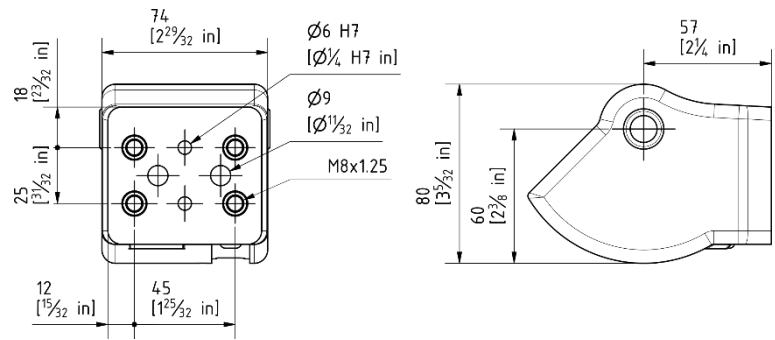


To disassemble the tool, remove the upper bolt (1) and thread in an M8bolt (use a plate in the slot to release the tool). Do not use excessive force, as it could damage the head.

3.1.2 Spare parts

40100105	VERTICAL HEADMEMBER	
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3.2 VERTICAL FLAT - B MV306904



Maximum load: Maximum arm load

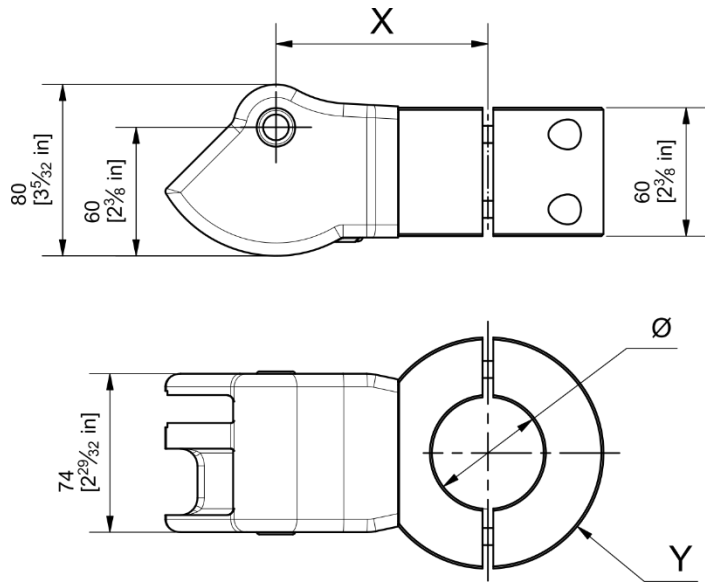
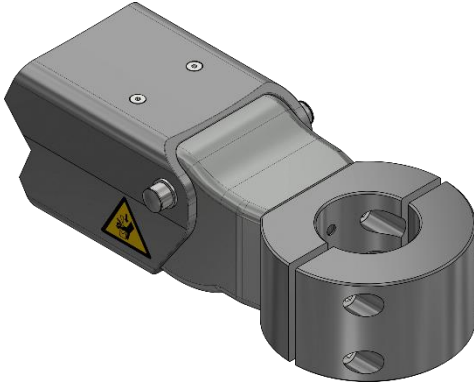
3.2.1 Spare parts

MV306904R	VERTICAL FLAT HEADMEMBER	
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3.3 VERTICAL FLAT - BA MV306904 + Bush



Fixed flange (M3Dxxx04)



Maximum load: Maximum arm load

Ø: Specific diameter on request.

Dimensions	Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)
Fixed flange	15 (19/32")	65 (2 9/16")	99 (3 57/64")	Ø108 (Ø2 1/4")
	65 (2 9/16")	80 (3 5/32")	108.5 (4 17/64")	Ø124 (Ø4 7/8")

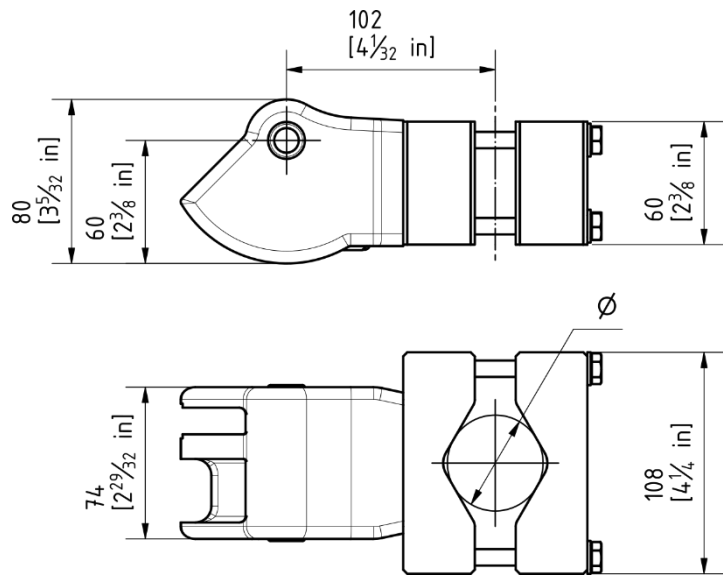
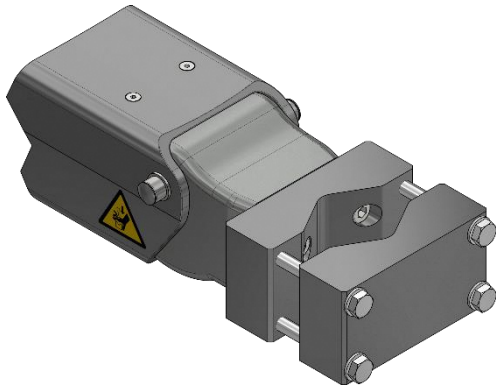
MAXIMUM TORQUE - Fixed flange (Nm)		
Arm	Vertical	Horizontal
S0	650	250
S3	650	250
S4	300	250

3.3.1 Spare parts

MV306904R	VERTICAL FLAT HEADMEMBER	
M3DXXX04 ¹	RING ADAPTOR	

¹ XXX corresponds to the inner Ø in mm

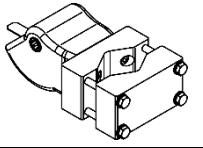
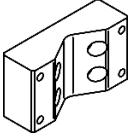
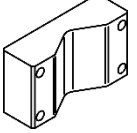
3.4 VERTICAL V-BLOCK - C MV301804



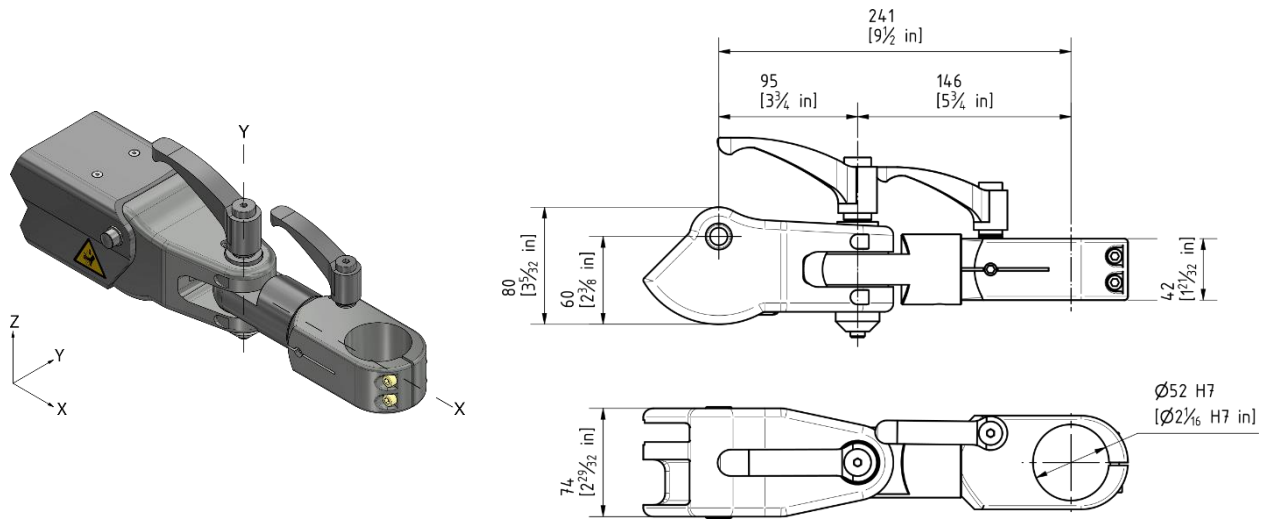
Maximum load: Maximum arm load
Not suitable for torque tools

Cylindrical or irregularly shaped tools
Ø_{min.}: 40 mm/ Ø_{max.}: 80 mm

3.4.1 Spare parts

MV301804R	VERTICAL HEADMEMBER - AJUSTABLE DIAMETER	
MV301603	CLAMPING VICES – REAR BASE	
MV301703	CLAMPING VICES – FRONT BASE	

3.5 ARTICULATED ROTATIVE - D MV3019A4



Maximum load: Maximum arm load
Maximum torque: 120Nm

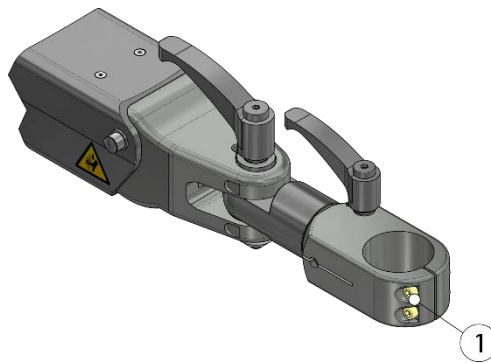
X: Rotates 360°. Manual locking in any position
Z: Rotates ±90°. Manual locking in any position

Max. tool diameter: 52mm (Adaptable bushing)

MAXIMUM TORQUE (Nm)			
Arm	Vertical	Horizontal	Angle
S0	120	120	120
S3	120	120	120
S4	120	120	120

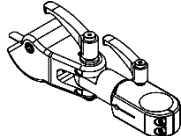
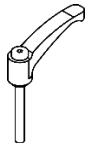
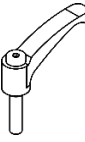
3.5.1 Installation and disassembly of the tool

1- Put the tool (or the adapter bushing) in the Ø52H7 and tighten the bolts (1) (Allen key 5mm)

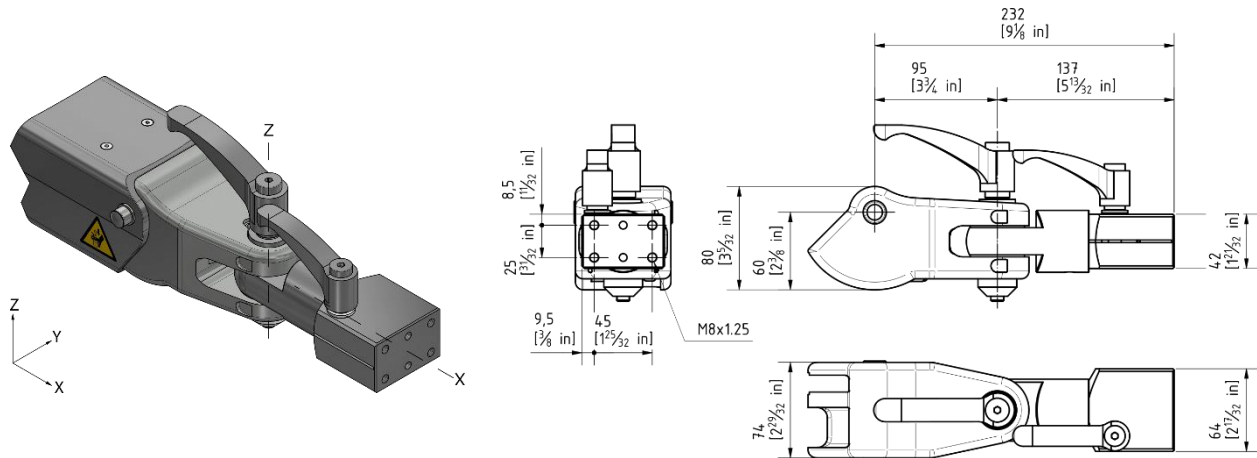
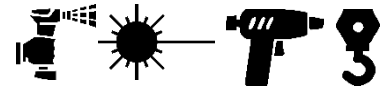


To disassemble the tool, remove the bolts (1) and thread them on the other side (use a plate in the slot to release the tool). Do not use excessive force, as it could damage the head.

3.5.2 Spare parts

MV3019A4	ORIENTABLE HEADMEMBER	
AC060576	HANDLE M10x80 [Z axis]	
AC060546	HANDLE M10x40 [X Axis]	

3.6 ARTICULATED FLAT ROTATIVE - E MV302304



X: Rotates 360°. Manual locking in any position
Z: Rotates ±90°. Manual locking in any position.

Maximum load: Maximum arm load

3.6.1 Spare parts

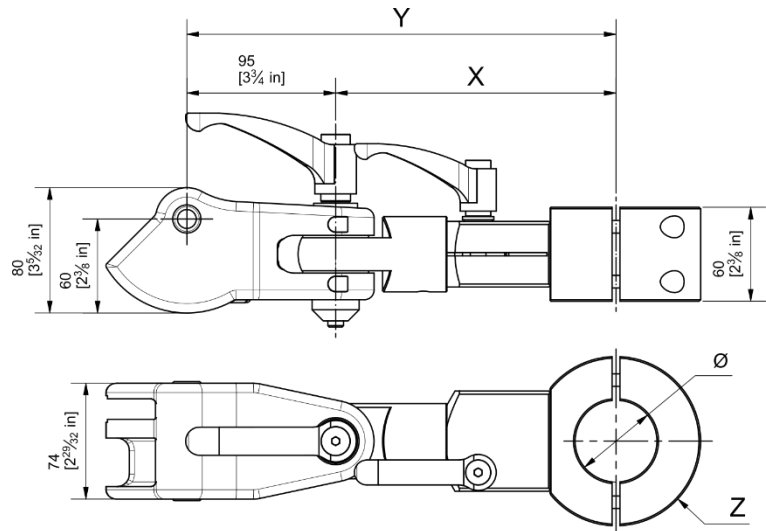
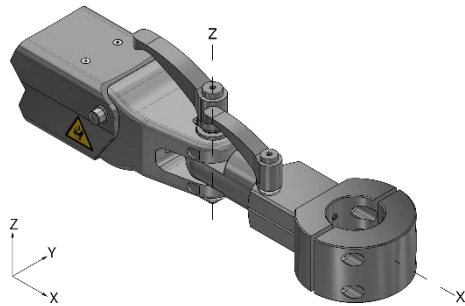
MV302304	ORIENTABLE FLAT HEADMEMBER	
M3DXXX04 ²	RING ADAPTOR	
AC060576	HANDLE M10x80 [Z axis]	
AC060546	HANDLE M10x40 [X Axis]	

² XXX corresponds to the inner Ø in mm

3.7 ARTICULATED FLAT ROTATIVE - EA MV302304 + Bush



Fixed flange (M3Dxxx04)



Dimensions	Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)
Fixed flange	15 (19/32")	65 (2 9/16")	179 (7 3/64")	274 (10 25/32")	Ø108 (Ø2 1/4")
	65 (2 9/16")	80 (3 5/32")	188.5 (7 27/64")	283.5 (11 5/32")	Ø124 (Ø4 7/8")

Maximum load: Maximum arm load

Maximum torque: 120Nm

X: Rotates 360°. Manual locking in any position

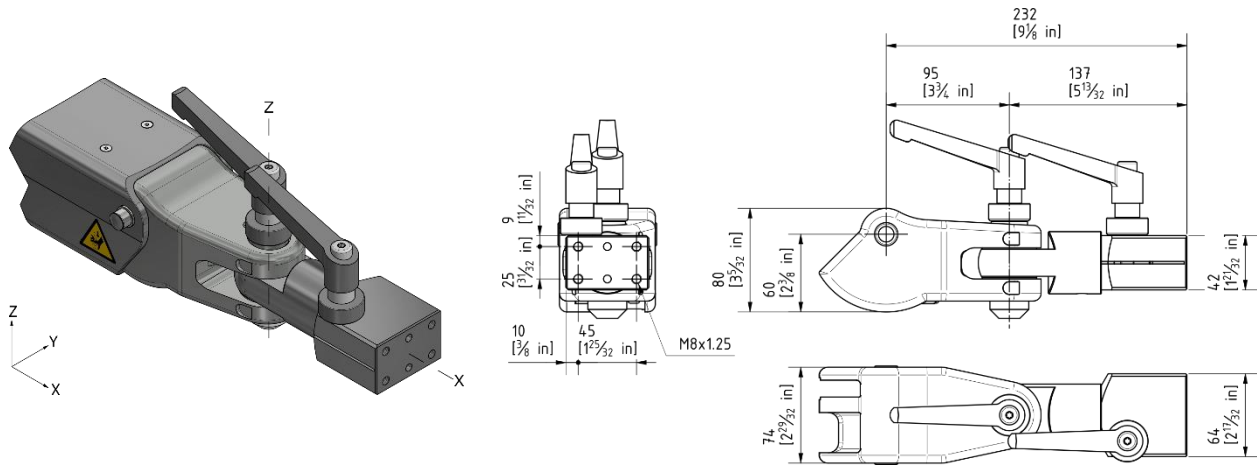
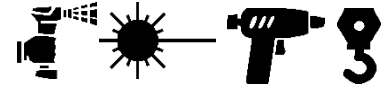
Z: Rotates ±90°. Manual locking in any position

Ø: Specific diameter on request.

MAXIMUM TORQUE (Nm)			
Arm	Vertical	Horizontal	Angle
S0	120	120	120
S3	120	120	120
S4	120	120	120

Spare parts [\[See Spare parts page 18\]](#).

3.8 ARTICULATED FLAT ROTATIVE REINFORCED - EB MV30P504



Maximum load: Maximum arm load
Maximum torque: 120Nm

X: Rotates 360°. Manual locking in any position
Z: Rotates ±90°. Manual locking in any position.

FLAT JOINTED EB - REINFORCED

- For applications where head locking is required
- Larger, reinforced levers available
- Suitable for torques up to 120 Nm
- Equipped with linings for base axle (Z)

3.8.1 Spare parts

CM163400	HANDLE M10	
CM163200	TORQUE AMPLIFIER RING	
M3DXXX04 ³	RING ADAPTOR	

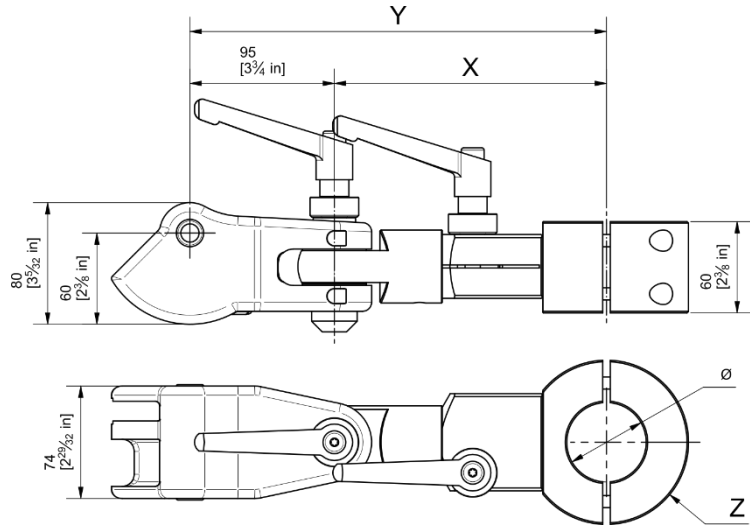
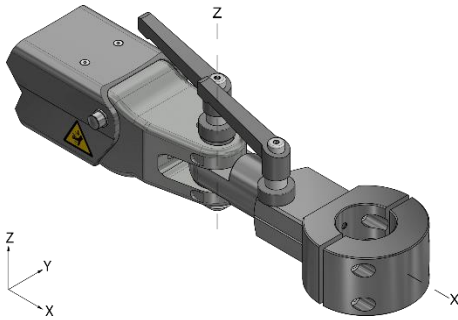
³ XXX corresponds to the inner Ø in mm

3.9 ARTICULATED FLAT ROTATIVE REINFORCED - EC

MV30P504 + Bush



Fixed flange (M3Dxxx04)



Dimensions	Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)
Fixed flange	15 (19/32")	65 (2 9/16")	179 (7 3/64")	274 (10 25/32")	Ø108 (Ø2 1/4")
	65 (2 9/16")	80 (3 5/32")	188.5 (7 27/64")	283.5 (11 5/32")	Ø124 (Ø4 7/8")

Maximum load: Maximum arm load

Maximum torque: 120Nm

X: Rotates 360°. Manual locking in any position

Z: Rotates ±90°. Manual locking in any position.

Ø: Specific diameter on request.

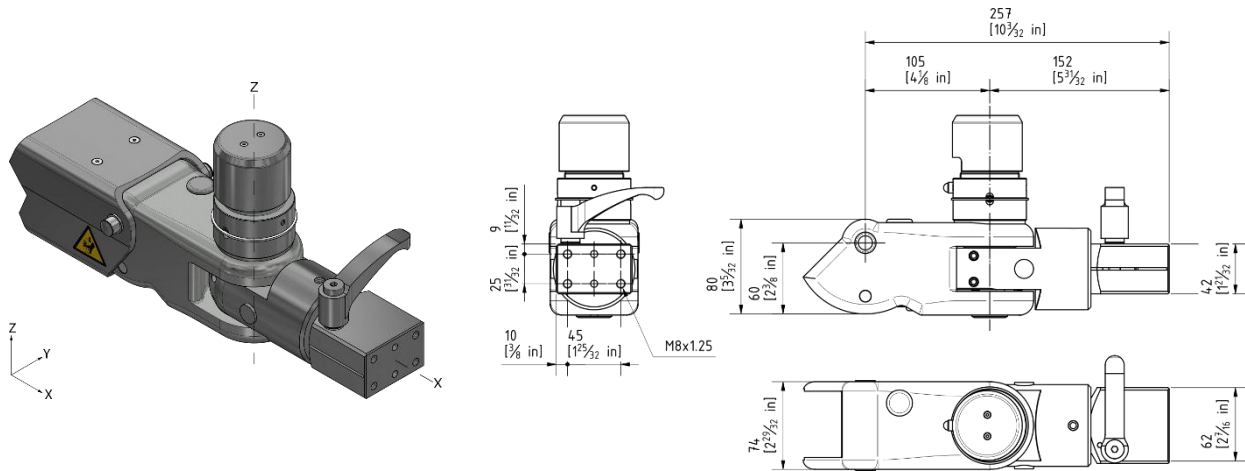
MAXIMUM TORQUE (Nm)			
Arm	Vertical	Horizontal	Angle
S0	120	120	120
S3	120	120	120
S4	120	120	120

ARTICULATED FLAT EC - REINFORCED

- For applications where head locking is required
- Larger, reinforced levers available
- Suitable for torques up to 120 Nm
- Equipped with linings for base axle (Z)

Spare parts [See Spare parts page 20].

3.10 AUTOMATIC ARTICULATED FLAT ROTATIVE - ED M3204700





Maximum load: Maximum arm load

X: Rotates 360°. Manual locking in any position.
Z: Rotates ±90°. Pneumatic locking in any position.

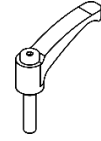
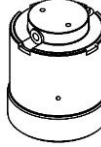

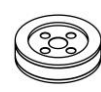
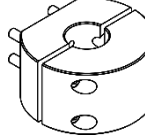
3.10.1 Operation

The pneumatic lock (Z Axis) is activated/deactivated with the other radial arm locks:

- If the arm is equipped with L22 locking, then via the radial locking selector switch  
- If the arm is equipped with the L92 locking device, then it is activated via the tool.

For more information, please refer to the arm manual.

3.10.3 Spare parts

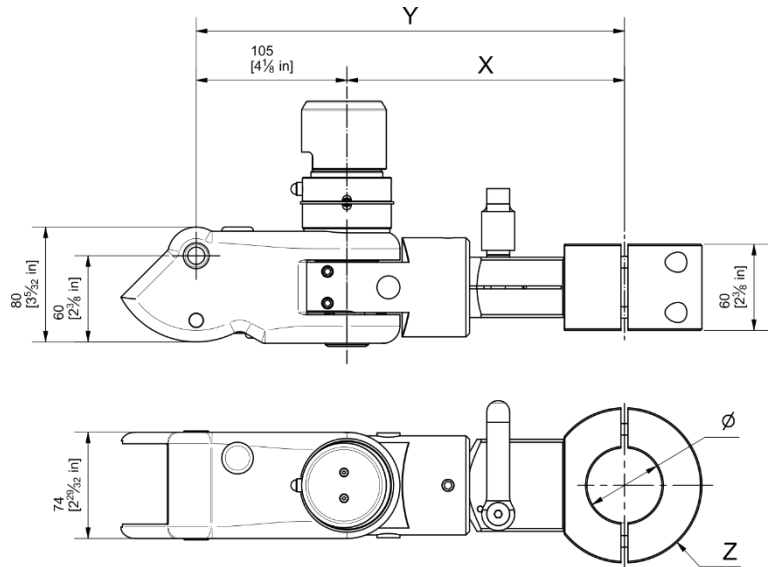
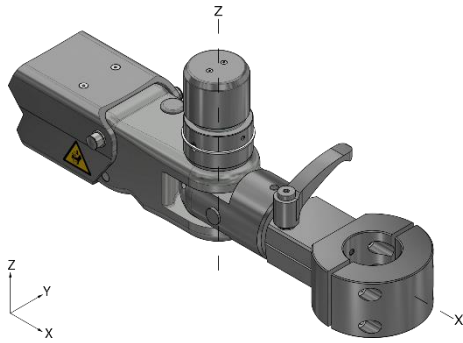
AC060546	HANDLE M10x40 [X Axis]	
MV405504	RADIAL ARM LOCKING CYLINDER	
MV405903	CLAO SLEEVE CYL 42	
MV4062A4	SPARE PARTS RADIAL LINING L22-L92 KIT	
M3DXXX04 ⁴	RING ADAPTOR	

⁴ XXX corresponds to the inner Ø in mm

3.11 AUTOMATIC ARTICULATED FLAT ROTATIVE - EE M3204700 + Bush



Fixed flange (M3Dxxx04)



Dimensions	Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)
Fixed flange	15 (19/32")	65 (2 9/16")	194 (7 41/64")	299 (11 49/64")	Ø108 (Ø2 1/4")
	65 (2 9/16")	80 (3 5/32")	203.5 (8 1/64")	308.5 (12 9/64")	Ø124 (Ø4 7/8")

Maximum load: Maximum arm load

Maximum torque: 100Nm

X: Rotates 360°. Manual locking in any position.

Z: Rotates ±90°. Pneumatic locking in any position.

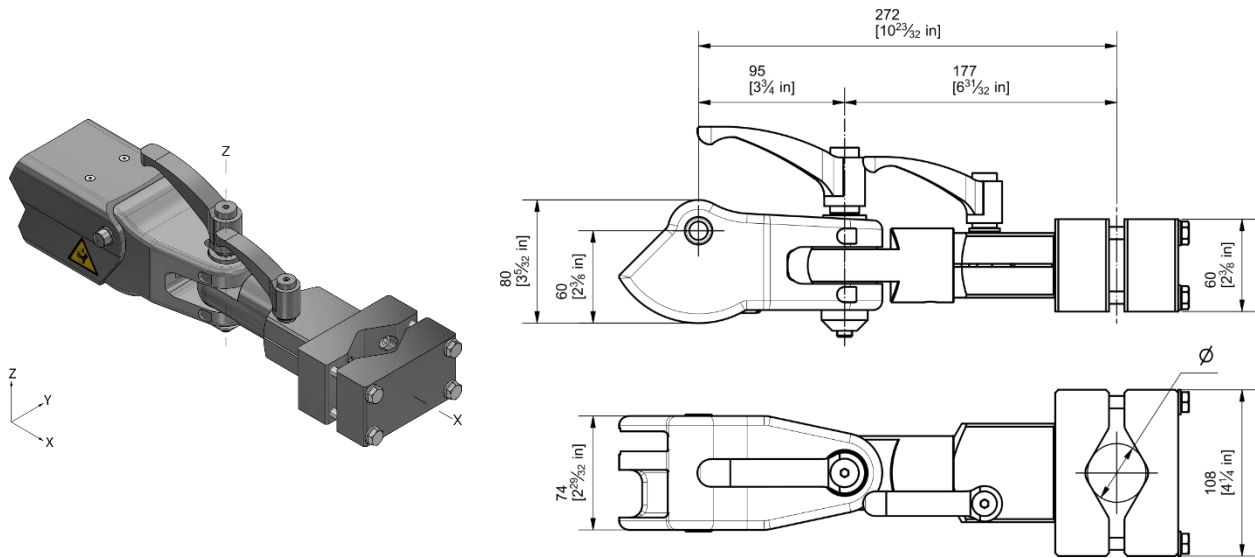
Ø: Specific diameter on request.

MAXIMUM TORQUE (Nm)			
Arm	Vertical	Horizontal	Angle
S0	100	100	100
S3	100	100	100
S4	100	100	100

For lock operation [\[See Operation page22\]](#).

Spare parts [\[See Spare parts page 24\]](#).

3.12 ARTICULATED ROTATIVE V-BLOCK - F MV302504



Not suitable for torque tools

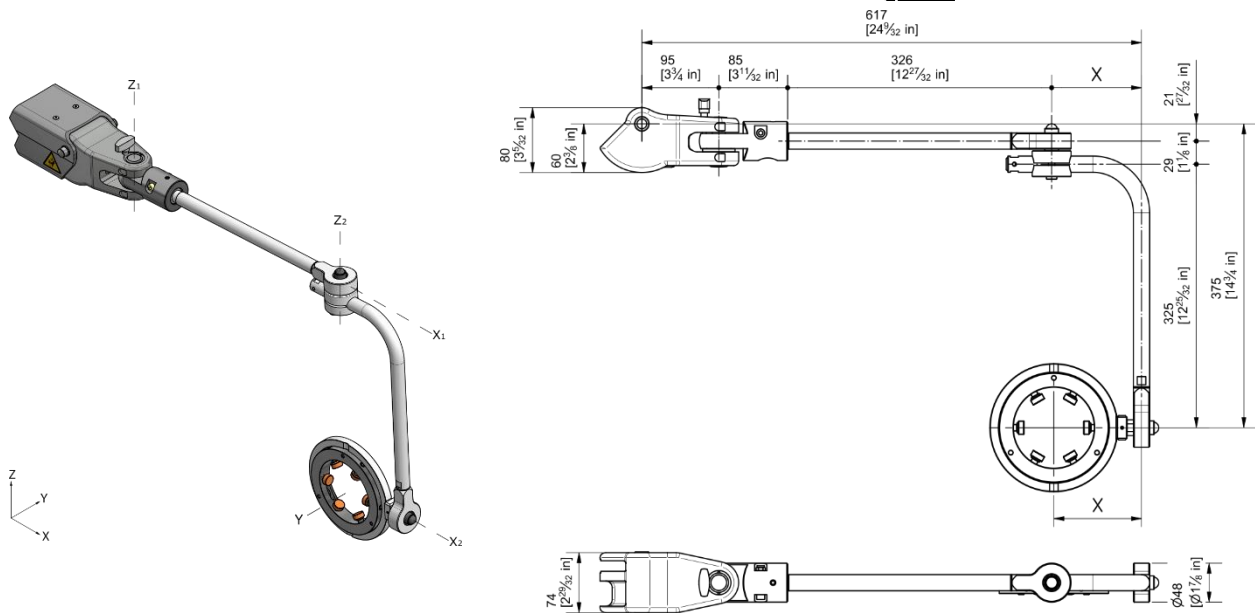
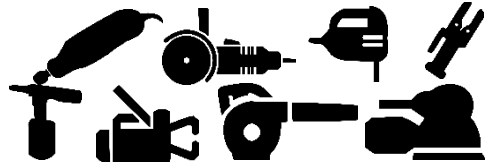
Cylindrical or irregularly shaped tools
 \varnothing_{\min} : 40 mm / \varnothing_{\max} : 80 mm

X: Rotates 360°. Manual locking in any position
 Z: Rotates $\pm 90^\circ$. Manual locking in any position

3.12.1 Spare parts

MV302504R	ORIENTABLE & ADJUSTABLE HEADMEMBER	
AC060576	HANDLE M10x80 [Axis Z]	
AC060546	HANDLE M10x40 [Axis X]	
MV301603	CLAMPING VICES – REAR BASE	
MV301703	CLAMPING VICES – FRONT BASE	

3.13 MULTITURN - GA MV3171C4 + Handlebar



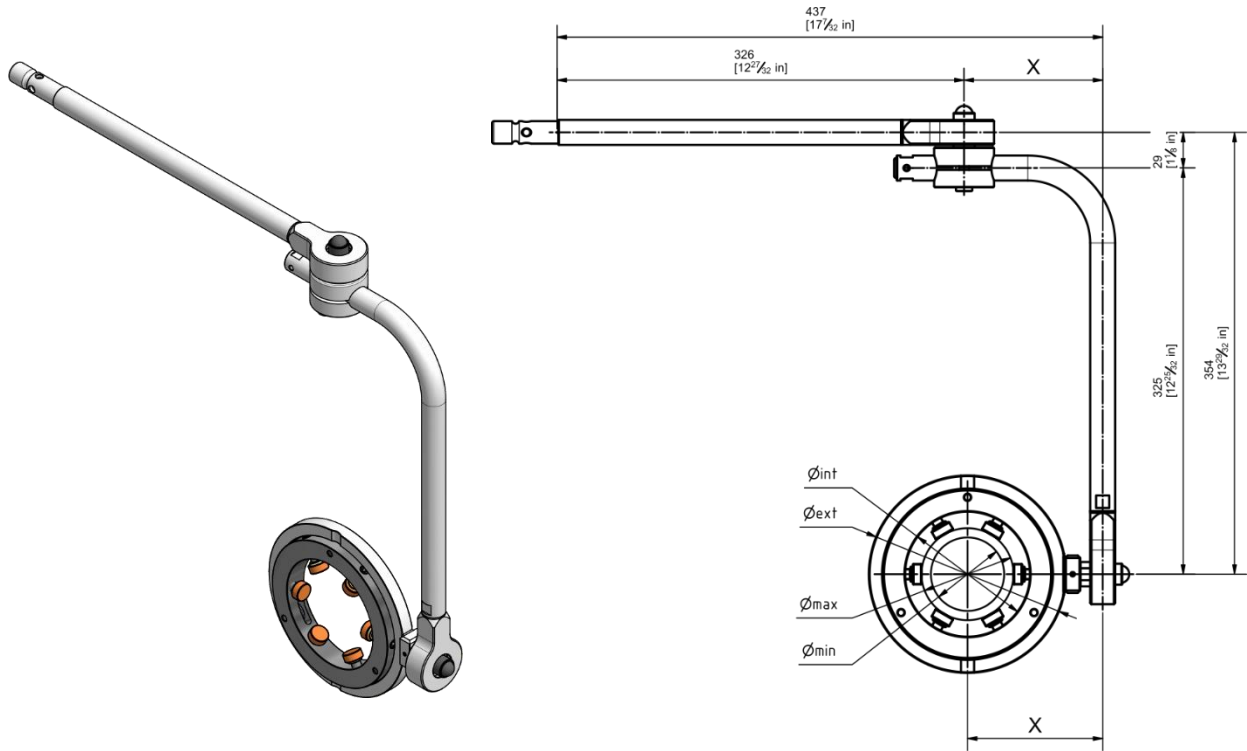
Maximum load: 10Kg/ 6kg⁵
Requires locks of (L50) or higher

- Z₁: Rotates ±90°. Non-lockable
- Z₂: Rotates 360°. Non-lockable
- X₁: Rotates 360°. Manual locking in 4 positions (4x90°)
- X₂: Rotate 360°. Non-lockable
- Y: Rotates 360°. Non-lockable

⁵ Consider 6kg max. load for applications with handlebar in conjunction with vibration tools (impact, impulse, etc.). For all other applications consider a maximum load of 10 kg.

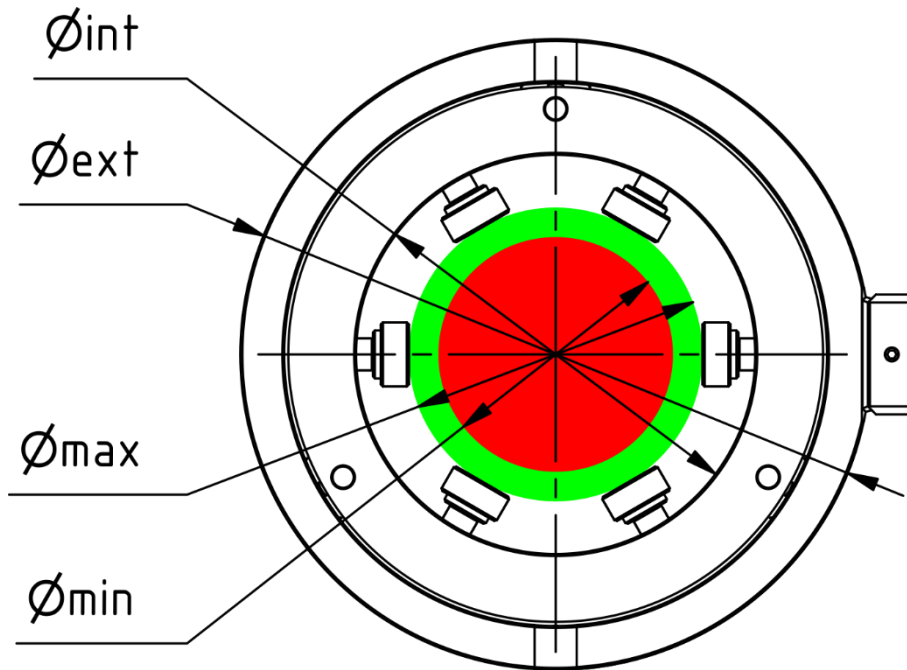
3.13.1 Handlebar Type A: TIMCO

Suitable for any type of tool.
 Ref: MV3EExxx (xxx = internal diameter in mm)



- The X coordinate shall be as close as possible to the Z₂ Axis of rotation to ensure good tool balancing. Xmin = 110mm

3.13.1.1 TIMCO Dimensions

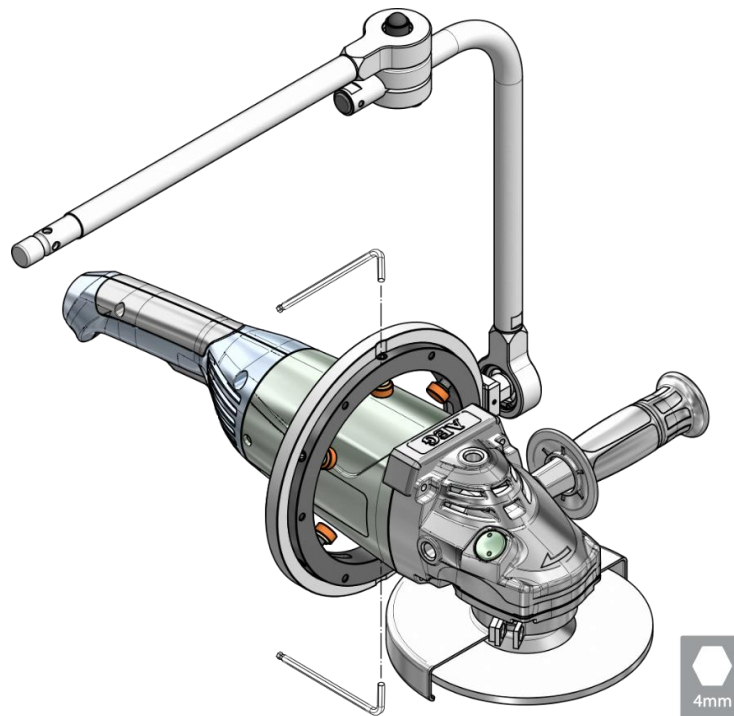


\varnothing_{int}		\varnothing_{ext}		$\varnothing_{min} - \varnothing_{max}$ tool	
mm	<i>Inches</i>	mm	<i>Inches</i>	mm	<i>Inches</i>
70	<i>2 3/4"</i>	128	<i>5 3/64"</i>	27-57	<i>1 1/16" - 2 1/4"</i>
80	<i>3 5/32"</i>	138	<i>5 7/16"</i>	35 - 67	<i>1 3/8" - 2 41/64"</i>
90	<i>3 35/64"</i>	148	<i>5 53/64"</i>	45 - 77	<i>1 49/64" - 3 1/32"</i>
100	<i>3 15/16"</i>	158	<i>6 7/32"</i>	55 - 87	<i>2 11/64" - 3 27/64"</i>
110	<i>4 21/64"</i>	168	<i>6 39/64"</i>	65 - 97	<i>2 9/16" - 3 13/16"</i>
120	<i>4 23/32"</i>	178	<i>7 1/64"</i>	75 - 107	<i>2 61/64" - 4 7/32"</i>
130	<i>5 1/8"</i>	188	<i>7 13/32"</i>	85 - 117	<i>3 11/32" - 4 39/64"</i>
140	<i>5 33/64"</i>	198	<i>7 51/64"</i>	95 - 127	<i>3 47/64" - 5"</i>
150	<i>5 29/32"</i>	208	<i>8 3/13"</i>	105 - 137	<i>4 9/64" - 5 25/64"</i>
160	<i>6 19/64"</i>	218	<i>8 37/64"</i>	115 - 147	<i>4 17/32" - 5 25/32"</i>
170	<i>6 11/16"</i>	228	<i>8 31/32"</i>	125 - 157	<i>4 59/64" - 6 3/16"</i>
180	<i>7 3/32"</i>	238	<i>9 3/8"</i>	135 - 167	<i>5 5/16" - 6 37/64"</i>

- The tool diameter must be in the green zone (between \varnothing_{min} and \varnothing_{max}).
- Maximum load 6 kg for applications with vibration tools (impact, impulse, etc.)
- Other dimensions on request

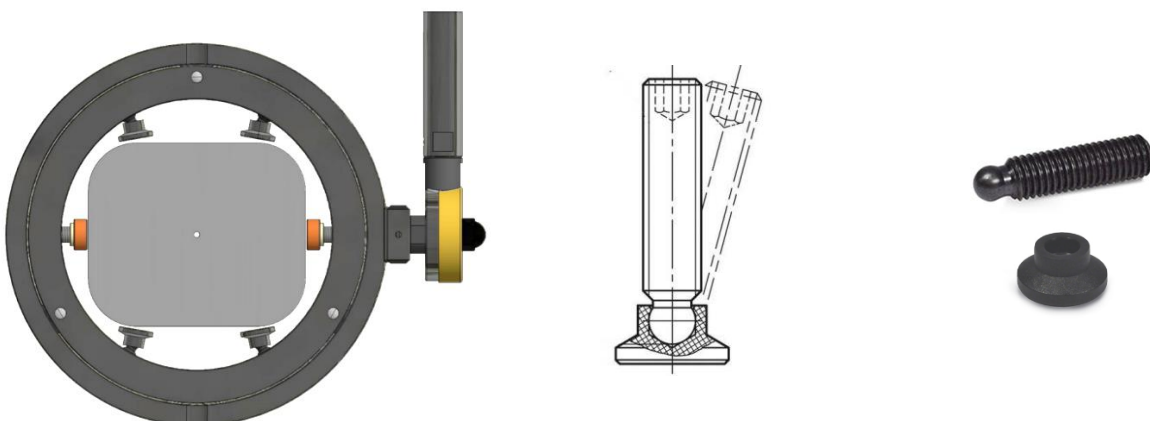
3.13.1.2 *Assembly of the tool*

- 1- Place the tool in the ball head so that the weight is evenly balanced on both sides.
- 2- Once you have the tool in place, you must match the notches on the outer ring with the head of the Allen bolt. The tool must be bolted in progressively by tightening opposite pairs of bolts (in the form of an "X").



In order to hold the tool in the correct way⁶, Tecnospiro recommends the use of headless Allen bolts with ball tip for push pads. This component allows the tool to be fixed from all sides, adapting the pads to the surface of the tool.



Clamping foot kit with headless bolts (M3297600)



⁶ Optionally, a tailor-made adapter can be manufactured to obtain an optimum fit.

3.13.1.3 Included accessories

In addition to type A gimbal (TIMCO), two types of end caps (nylon and rubber) and headless bolts (DIN-913 M8x25 and DIN-913 M8x20) are included. (By default, it is supplied assembled with Nylon cap and DIN-913 M8x20 headless bolt).

Nylon Cap MV31B803	Rubber Cap MV31F303
Material: Nylon Identifying colour: Translucent white Tightening level: High Level of Adaptation: Medium 	Material: Polyurethane Identifying colour: Red Tightening level: Medium Level of Adaptation: High 

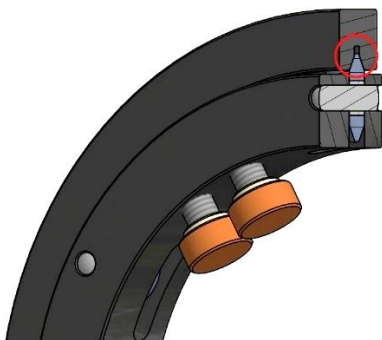
i Rubber caps (Polyurethane):

- They should be used for applications with vibration (impact tools), or with fragile tools (plastic housings).
- The rubber caps must be fitted in conjunction with the Nylon caps, so the clearance for the tool will be reduced.

3.13.1.4 Gimbals maintenance and cleaning

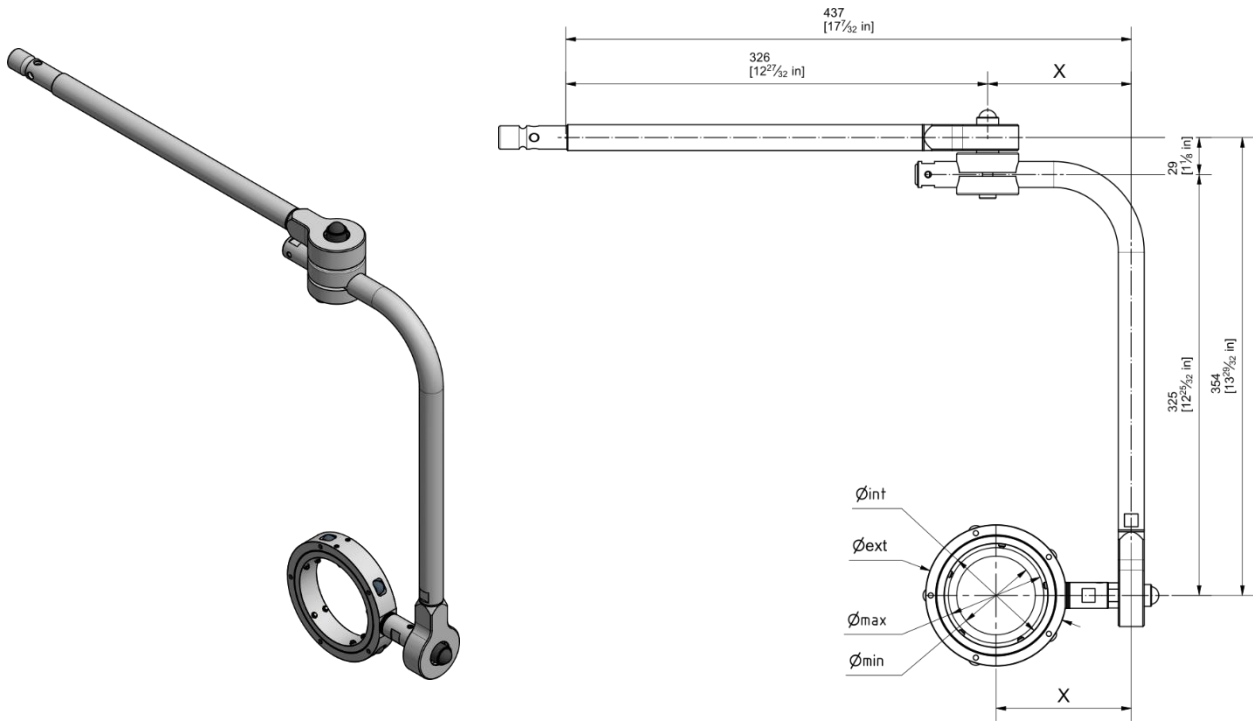
To keep the rotating gimbal clean, Tecnospiro recommends periodically blowing air into the gimbal while rotating the inner ring.

The way to blow air inside the gimbals it is important, in order to remove dust accumulated in the groove. Dust and abrasive material could accumulate inside the groove and wear the gimbal tracks. To clean the gimbal, blow air into the gimbal as shown in the picture. The inner ring should be rotated while blowing air.



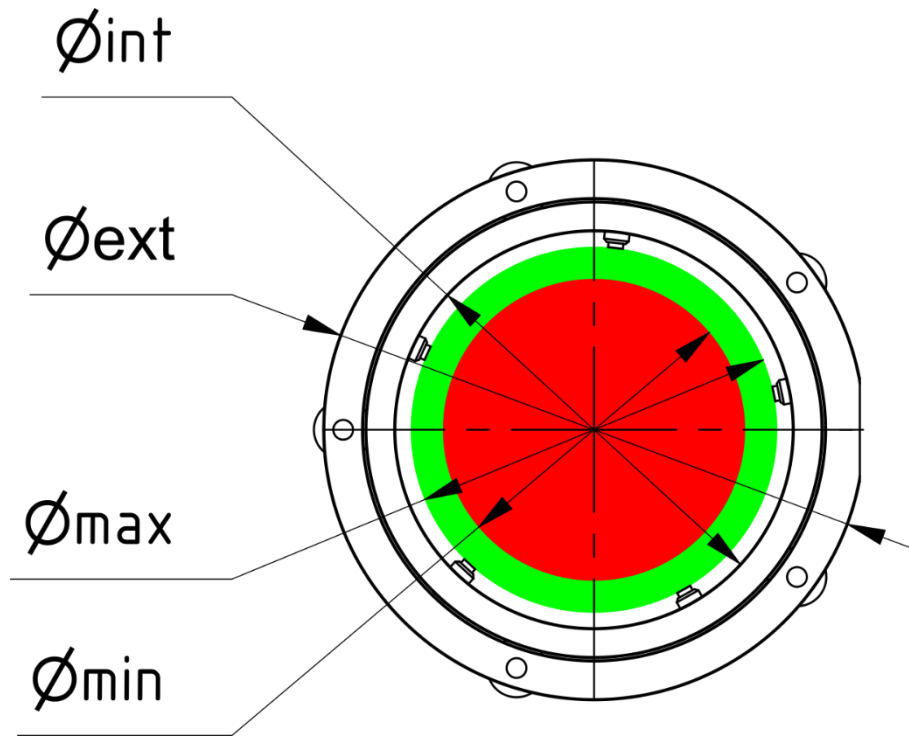
3.13.2 Handlebar Type B: TIMSAND

Suitable for tools with cylindrical clamping area.
 Ref: MV3EFxxx (xxx = internal diameter in mm)



- The X coordinate shall be as close as possible to the Z₂ Axis of rotation to ensure good tool balancing. X_{min} = 110mm

3.13.2.1 *Dimensions TIMSAND*



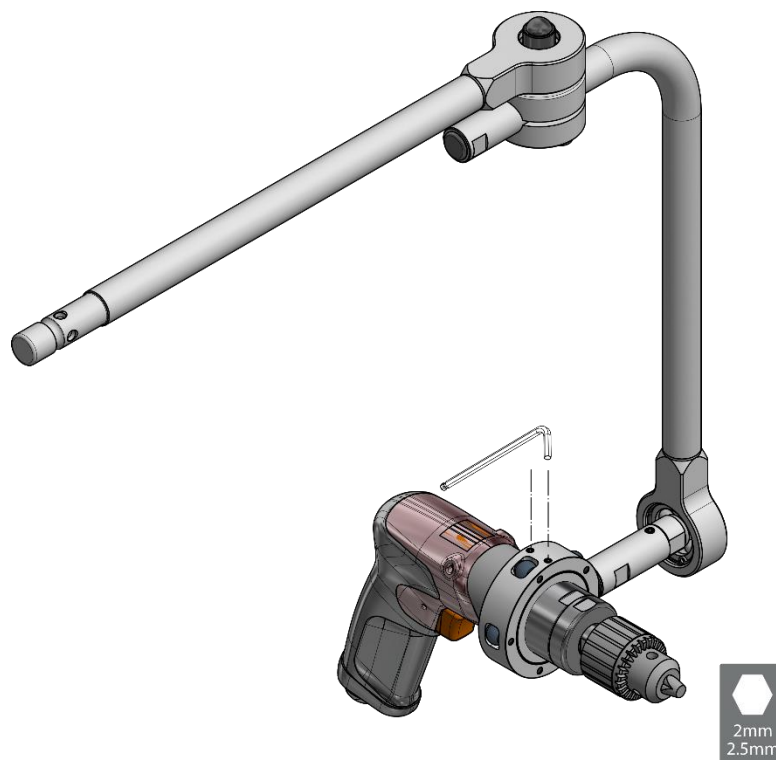
\varnothing_{int} .		\varnothing_{ext} .		$\varnothing_{min} - \varnothing_{max}$ tool	
mm	<i>Inches</i>	mm	<i>Inches</i>	mm	<i>Inches</i>
40	<i>1 37/64"</i>	69	<i>2 23/32"</i>	30 - 40	<i>1 3/16" - 1 37/64"</i>
50	<i>1 31/32"</i>	79	<i>3 7/64"</i>	40 - 50	<i>1 37/64" - 1 31/32"</i>
60	<i>2 23/64"</i>	89	<i>3 1/2"</i>	50 - 60	<i>1 31/32" - 2 23/64"</i>
70	<i>2 3/4"</i>	99	<i>3 57/64"</i>	60 - 70	<i>2 23/64" - 2 3/4"</i>
80	<i>3 5/32"</i>	109	<i>4 19/64"</i>	70 - 80	<i>2 3/4" - 3 5/32"</i>
90	<i>3 35/64"</i>	119	<i>4 11/16"</i>	80 - 90	<i>3 5/32" - 3 35/64"</i>
100	<i>3 15/16"</i>	129	<i>5 5/64"</i>	90 - 100	<i>3 35/64" - 3 15/16"</i>
110	<i>4 21/64"</i>	139	<i>5 15/32"</i>	100 - 110	<i>3 15/16" - 4 21/64"</i>
120	<i>4 23/32"</i>	149	<i>5 55/64"</i>	110 - 120	<i>4 21/64" - 4 23/32"</i>
130	<i>5 1/8"</i>	159	<i>6 17/64"</i>	120 - 130	<i>4 23/32" - 5 1/8"</i>

- The tool diameter must be in the green zone (between \varnothing_{min} and \varnothing_{max}).
- The use of a customised adapter bushing is recommended to ensure concentricity.
- Maximum load 6 kg for applications with vibration tools (impact, impulse, etc.)
- Other dimensions on request

3.13.2.2 *Assembly of the tool*

For the installation of the tool on gimbal type B follow the guidelines below.

- 1- Remove the headless bolts from the outer ring (2mm Allen key).
- 2- Insert the tool into the gimbal. Align the holes on the outer face of the outer ring with the headless bolts holding the tool. Tighten / loosen these headless bolts to achieve the correct grip on the tool (Allen key 2.5mm).
- 3- Repeat the previous step to ensure that the tool is properly adjusted along its perimeter. Secure the headless bolts with medium-strength Loctite to prevent loosening.



3.13.2.3 *Included accessories*

In addition to type B gimbal (TIMSAND), *nylon tipped headless bolts (M5x8)* and *metal headless bolts (DIN-913 M5x6)* are included.

By default it is supplied with the nylon tipped studs fitted.

Depending on the type of tool, the Nylon studs may be replaced by metal studs to achieve a tighter-fitting diameter of the gimbal in relation to the tool.

For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

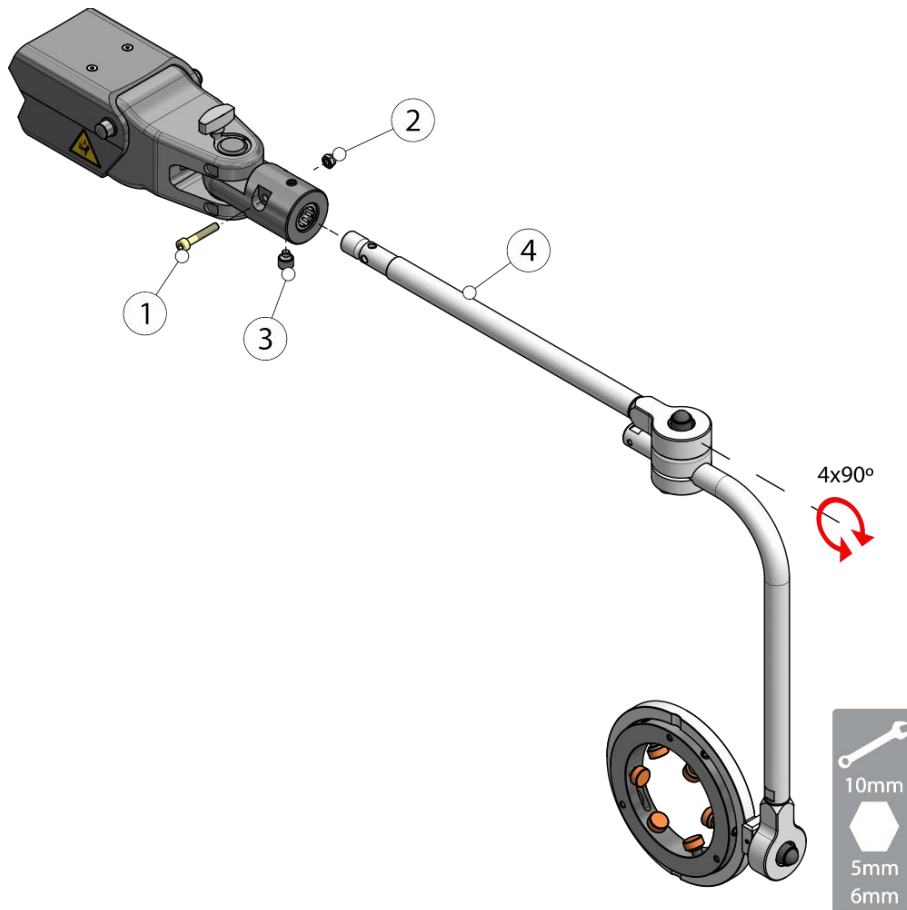
3.13.3 Handlebar installation and working positions

The head has 2 positions:

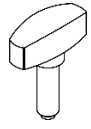
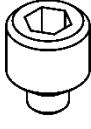
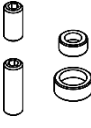
- 360° handlebar free rotation
- Handlebar locking in one of the four positions (4x90°).

Follow the guidelines below for the attachment and adjustment of the handlebar (either type A or B).

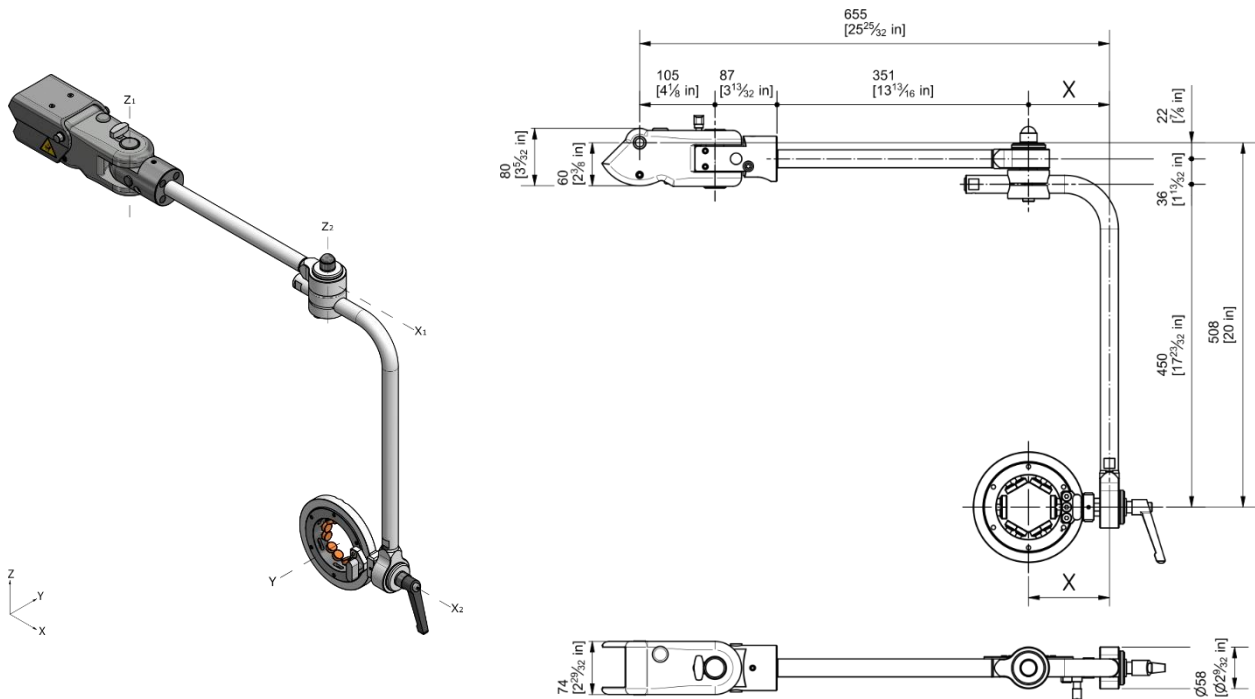
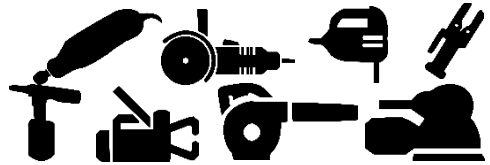
- 1- Remove the bolt (1) (Allen key 5mm) and the nut (2) (spanner 10mm).
- 2- Remove the headless bolt (3) (6mm Allen key).
- 3- Insert the handlebar (4) and fit the bolt (1) (Allen key 5mm) and the nut (2) (spanner 10mm) to fix the handlebar in place.
- 4- Tighten the threaded bolt (3) (6mm Allen key) to fix the handlebar in one of the 4 positions (4x90°). If not, the handlebar will be free on the X₁ axis (360°).



3.13.4 Spare parts

M3103300R	SECURING LEVER M8x24	
M3304100	POSITIONER	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

3.14 MULTITURN REINFORCED - HA MV31E8A4 + Handlebar



Maximum load: 32Kg | □^{3/4"}⁷
Requires locks of (L50) or higher

Z₁: Rotates ±90°. Non-lockable

Z₂: Rotates 360°. Non-lockable

X₁: Rotates 360°. Manual locking in 4 positions (4x90°)

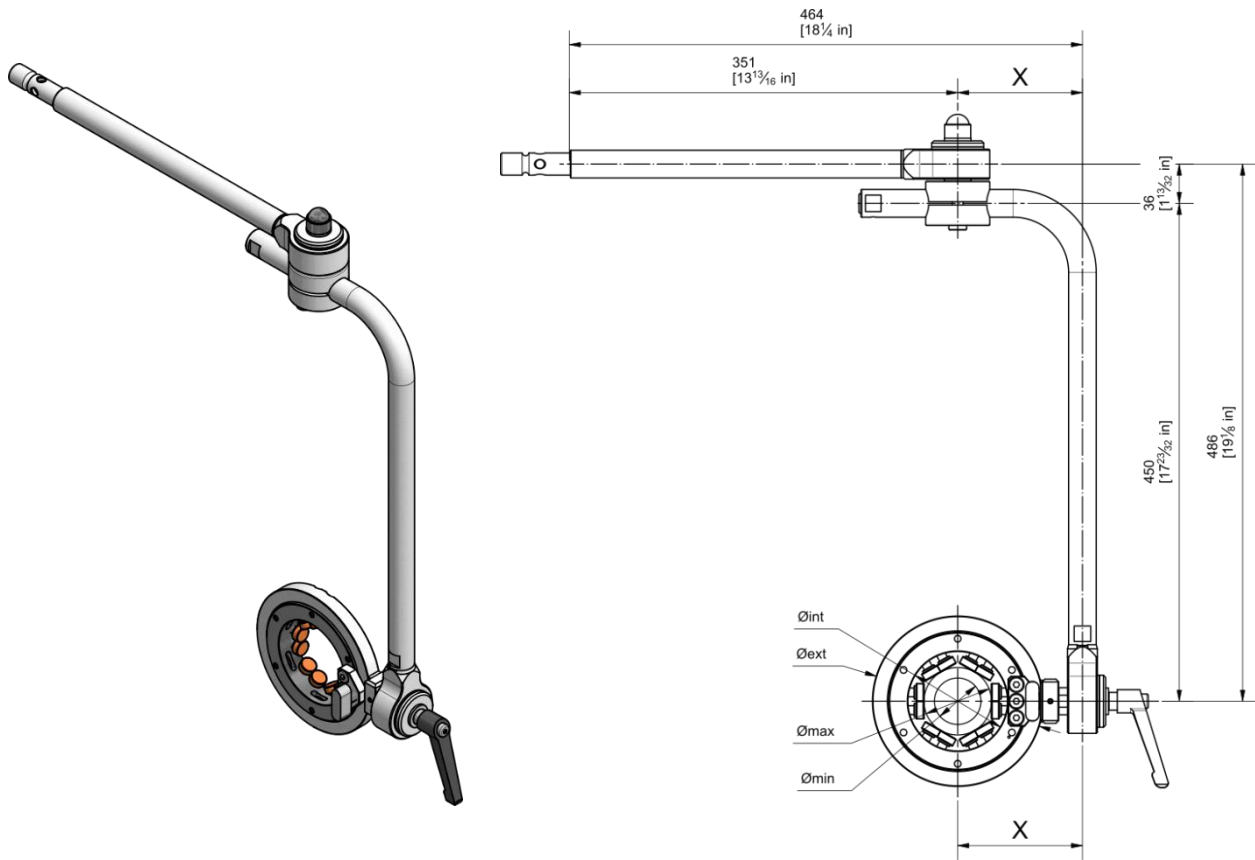
X₂: Rotate 360°. Manual locking in any position

Y: Rotates 360°. Adjustment of smoothness for rotation and position setting

⁷ Recommended tool square size for this head

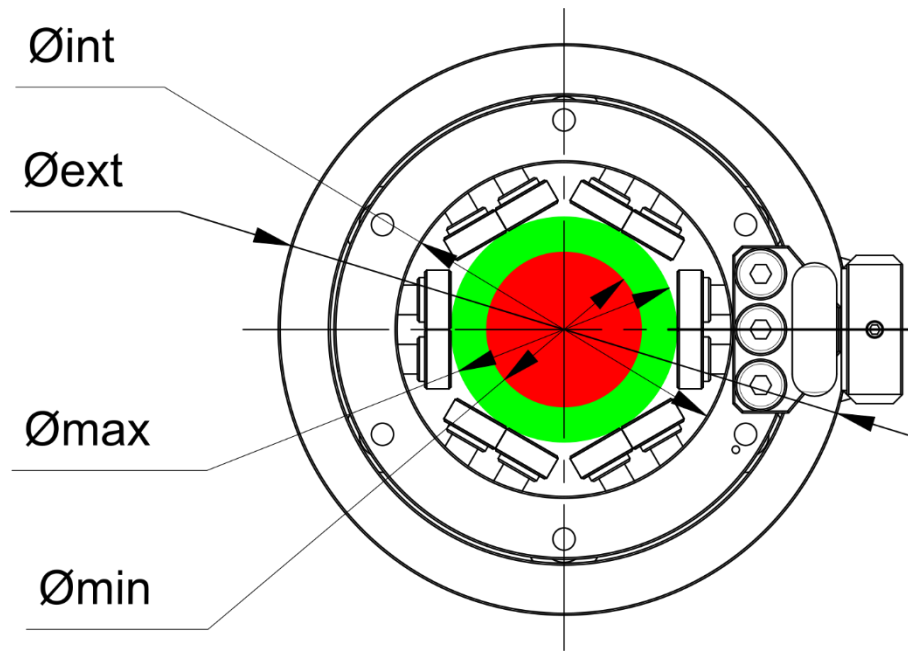
3.14.1 Handlebar Type A: REINFORCED TIMCO

Suitable for any type of tool.
 Ref: MV3DAxx (xxx = internal diameter in mm)



- The X coordinate shall be as close as possible to the Z₂ Axis of rotation to ensure good tool balancing. Xmin = 110mm

3.14.1.1 *Dimensions of TIMCO REINFORCED*



Øint		Øext		Ømin - Ømax tool	
mm	<i>Inches</i>	mm	<i>Inches</i>	mm	<i>Inches</i>
80	<i>3 5/32"</i>	144	<i>5 43/64"</i>	35 - 67	<i>1 3/8" - 2 41/64"</i>
90	<i>3 35/64"</i>	154	<i>6 1/16"</i>	45 - 73	<i>1 49/64" - 2 7/8"</i>
100	<i>3 15/16"</i>	164	<i>6 29/64"</i>	55 - 83	<i>2 11/64" - 3 17/64"</i>
110	<i>4 21/64"</i>	174	<i>6 27/32"</i>	65 - 93	<i>2 9/16" - 3 21/32"</i>
120	<i>4 23/32"</i>	184	<i>7 1/4"</i>	75 - 103	<i>2 61/64" - 4 1/16"</i>
130	<i>5 1/8"</i>	194	<i>7 41/64"</i>	85 - 113	<i>3 11/32" - 4 29/64"</i>
140	<i>5 33/64"</i>	204	<i>8 1/32"</i>	95 - 123	<i>3 47/64" - 4 27/32"</i>
150	<i>5 29/32"</i>	214	<i>8 27/64"</i>	105 - 133	<i>4 9/64" - 5 15/64"</i>
160	<i>6 19/64"</i>	224	<i>8 13/16"</i>	115 - 143	<i>4 17/32" - 5 5/8"</i>
170	<i>6 11/16"</i>	234	<i>9 7/32"</i>	125 - 153	<i>4 59/64" - 6 1/32"</i>
180	<i>7 3/32"</i>	244	<i>9 39/64"</i>	135 - 163	<i>5 5/16" - 6 27/64"</i>

- The tool diameter must be in the green zone (between Ømin and Ømax).
- Other dimensions on request

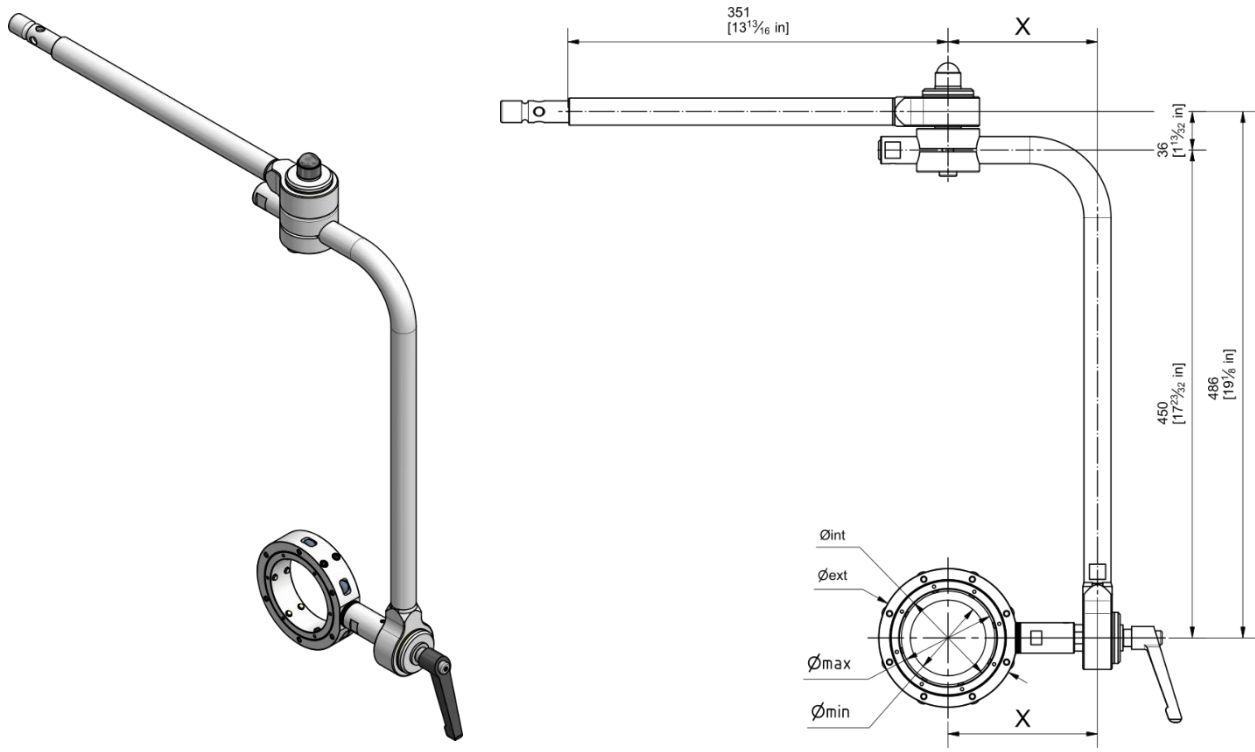
For fitting the tool [\[See Assembly of the tool page 30\]](#).

Included accessories [\[See Included accessories page 31\]](#).

For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

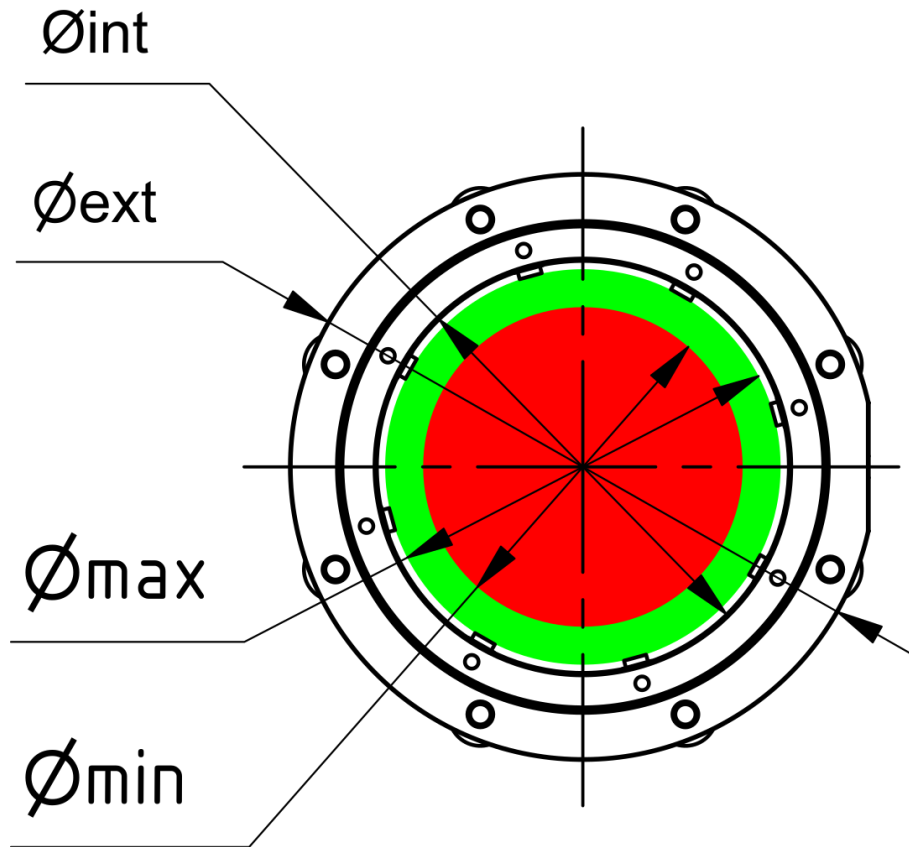
3.14.2 Handlebar Type B: TIMSAND REINFORCED

*Suitable for tools with cylindrical clamping area.
Ref: MV3DBxxx (xxx = internal diameter in mm)*



- The X coordinate shall be as close as possible to the Z₂ Axis of rotation to ensure good tool balancing. Xmin = 110mm

3.14.2.1 *Dimensions TIMSAND reinforced*



Øint		Øext		Ømin - Ømax tool	
mm	<i>Inches</i>	mm	<i>Inches</i>	mm	<i>Inches</i>
60	<i>2 23/64"</i>	98	<i>3 55/64"</i>	50 - 60	<i>1 31/32" - 2 23/64"</i>
70	<i>2 3/4"</i>	108	<i>4 1/4"</i>	60 - 70	<i>2 23/64" - 2 3/4"</i>
80	<i>3 5/32"</i>	118	<i>4 41/64"</i>	70 - 80	<i>2 3/4" - 3 5/32"</i>
90	<i>3 35/64"</i>	128	<i>5 3/64"</i>	80 - 90	<i>3 5/32" - 3 35/64"</i>
100	<i>3 15/16"</i>	138	<i>5 7/16"</i>	90 - 100	<i>3 35/64" - 3 15/16"</i>
110	<i>4 21/64"</i>	148	<i>5 53/64"</i>	100 - 110	<i>3 15/16" - 4 21/64"</i>
120	<i>4 23/32"</i>	158	<i>6 7/32"</i>	110 - 120	<i>4 21/64" - 4 23/32"</i>
130	<i>5 1/8"</i>	168	<i>6 39/64"</i>	120 - 130	<i>4 23/32" - 5 1/8"</i>
140	<i>5 33/64"</i>	178	<i>7 1/64"</i>	130 - 140	<i>5 1/8" - 5 33/64"</i>
150	<i>5 29/32"</i>	188	<i>7 13/32"</i>	140 - 150	<i>5 33/64" - 5 29/32"</i>

- The tool diameter must be in the green zone (between Ømin and Ømax).
- The use of a customised adapter bushing is recommended to ensure concentricity.
- Other dimensions on request

3.14.2.2 Included accessories

In addition to type B gimbal (TIMSAND), *nylon tipped headless bolts (M8x8)* and *metal headless bolts (DIN-913 M8x8)* are included.

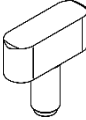
By default it is supplied with the nylon tipped studs fitted.

Depending on the type of tool, the Nylon studs may be replaced by metal studs to achieve a tighter-fitting diameter of the gimbal in relation to the tool.

For fitting the tool [\[See Assembly of the tool page 34\]](#).

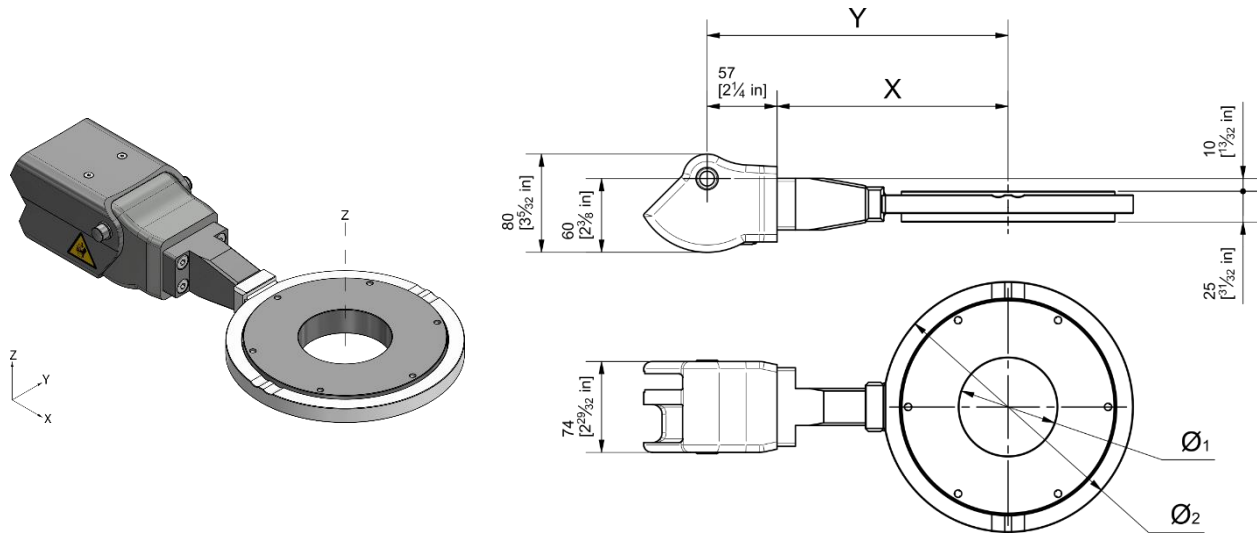
For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

3.14.1 Spare parts

M3103300R	SECURING LEVER M8x24 STAINLESS STEEL	
M3304100	POSITIONER	
CM166500	ZAMAK HANDLE M12	
M3103200R	TIMCO STAINLESS STEEL BRAKE RETOUCH	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

3.15 FLAT ELECTROMAGNET - I

MV306904 + MV3AM180 / MV3RM200 / MV3RM245



Maximum load: Maximum arm load*

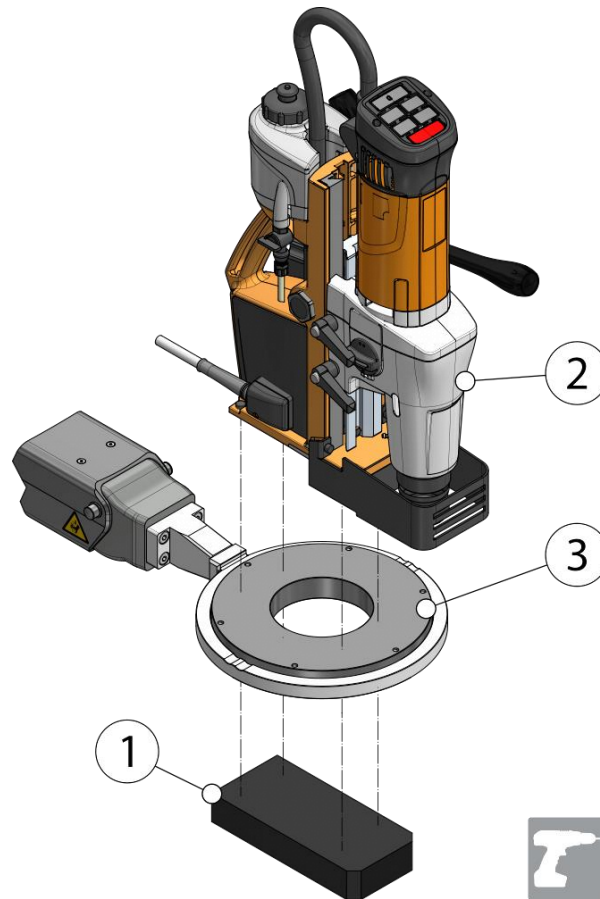
Z: Rotates 360°. Non-lockable

Dimensions				*Maximum load
X (mm)	Y (mm)	Ø ₁ (mm)	Ø ₂ (mm)	
172 (6 49/64")	229 (9 1/64")	Ø70 (Ø2 3/4")	Ø178 (Ø7 1/64")	12 Kg (26.5 lbs)
188 (7 13/32")	245 (9 41/64")	Ø80 (Ø3 5/32")	Ø204 (Ø8 1/32")	Arm maximum
208 (8 3/16")	265 (10 7/16")	Ø100 (Ø3 15/16")	Ø244 (Ø9 39/64")	Arm maximum

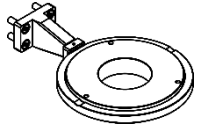
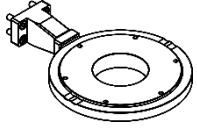
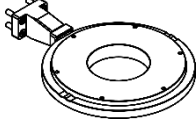
3.15.1 Assembly of the tool

To fit a drilling tool with a magnetic base you must:

- Separate the magnetic base (1) from the rest of the tool (2).
- Drill holes in the gimbal head (3) to allow the passage of the bolts fitting the two parts of the tool (1 and 2).
- Join the two parts of the tool, leaving the gimbal (3) between them.

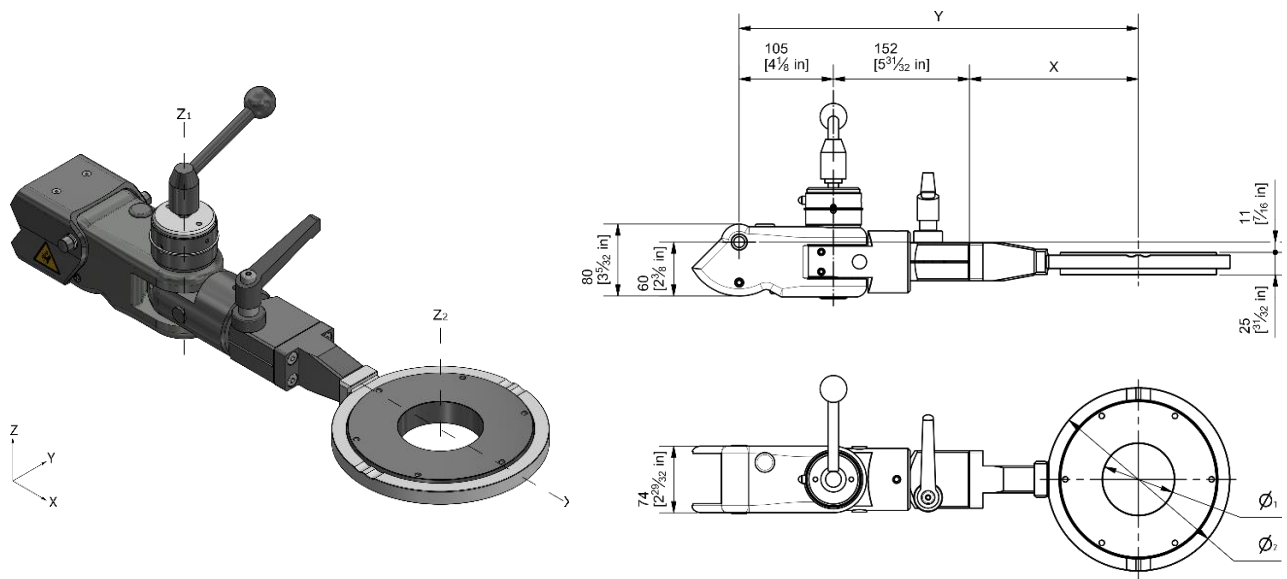


3.15.2 Spare parts

MV3AM180	ORIENTABLE PLATE Ø 180 Maximum load: 12 kg	
MV3RM200	ORIENTABLE PLATE Ø 200 Maximum load: maximum arm load	
MV3RM245	ORIENTABLE PLATE Ø 245 Maximum load: maximum arm load	

3.16 ROTATIVE ELECTROMAGNET - J

M3323600 + MV3AM180 / MV3RM200 / MV3RM245



Maximum load: Maximum arm load*

Z₁: Rotates ±90°. Manual locking in any position

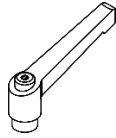
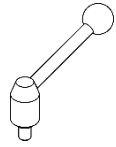
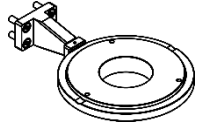
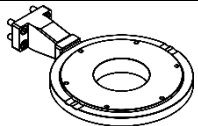
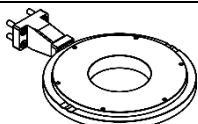
Z₂: Rotates 360°. Non-lockable

X: Rotates 360°. Manual locking in any position

Dimensions				*Maximum load
X (mm)	Y (mm)	Ø ₁ (mm)	Ø ₂ (mm)	
172 (6 49/64")	429 (16 57/64")	Ø70 (Ø2 3/4")	Ø178 (Ø7 1/64")	12 Kg (26.5 lbs)
188 (7 13/32")	445 (17 33/64")	Ø80 (Ø3 5/32")	Ø204 (Ø8 1/32")	Arm maximum
208 (8 3/16")	465 (18 5/16")	Ø100 (Ø3 15/16")	Ø244 (Ø9 39/64")	Arm maximum

For fitting the tool [See Assembly of the tool page 34].

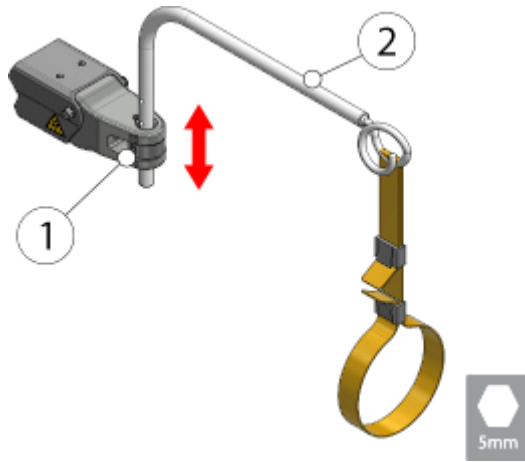
3.16.1 Spare parts

CM163400	HANDLE M10	
M3323700	ADJUSTABLE HANDLE ASSY	
MV3AM180	ORIENTABLE PLATE Ø 180 Maximum load: 12 kg	
MV3RM200	ORIENTABLE PLATE Ø 200 Maximum load: maximum arm load	
MV3RM245	ORIENTABLE PLATE Ø 245 Maximum load: maximum arm load	

3.17.1 Height adjustment

The rod has 4 points for working height adjustment, spaced 35mm (1 3/8") apart. To adjust height:

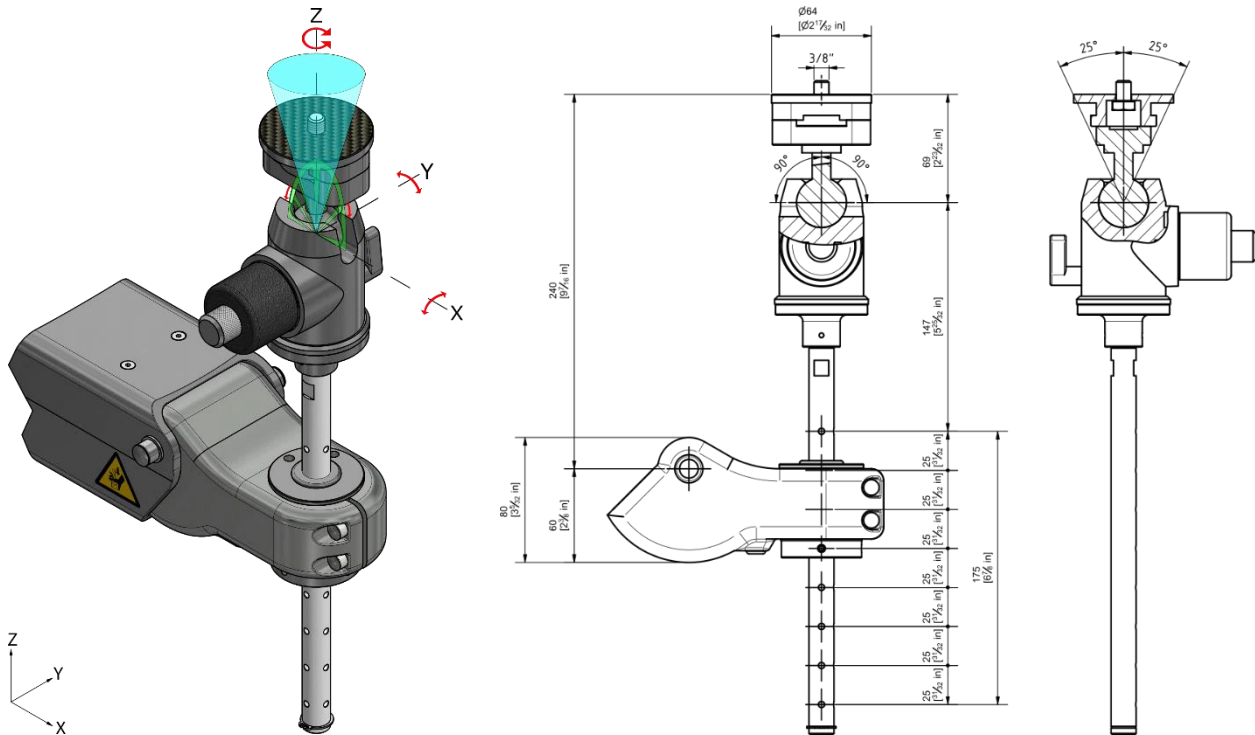
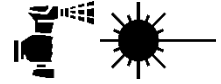
- 1- Remove the bolt (1) (5mm Allen key).
- 2- Move the rod (2) to the desired point and tighten the bolt (1) (Allen key 5mm).



3.17.2 Spare parts

M3146400	FASTENING STRAP	
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3.18 ADJUSTABLE MANUAL BALL JOINT WITH VERTICAL ADJUSTMENT - L
M3312200

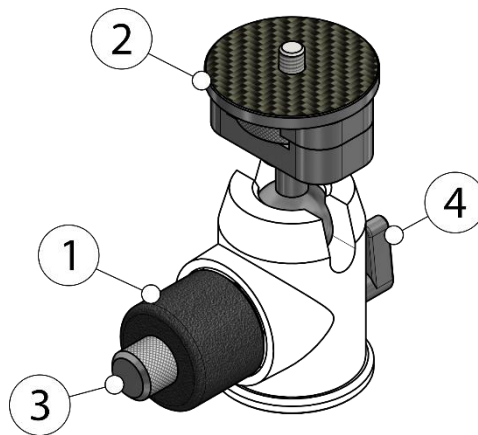


Maximum load: 16 Kg
Manual locking

Z: Rotates 360°. Manual locking in any position.
XZ plane: ±90°. Manual locking in any position.
YZ plane: ±25°. Manual locking in any position.
Adjustable stroke up to 175mm in Z Axis.

3.18.1 Operation

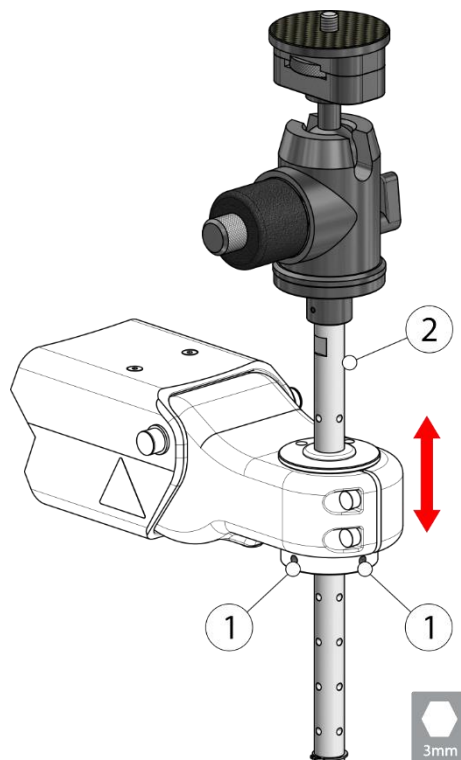
Turning the knob (1) will lock the movement of the bracket (2).
Turning the knob (3) will regulate the friction on the base (2) to adapt the smoothness of motion.
Turning the lever (4) will lock the rotation of the whole assembly.



3.18.2 Height adjustment

To adapt the vertical run for the assembly:

- 1- Loosen the headless bolts (1) (3mm Allen key).
- 2- Move the rod (2) to the desired position and re-tighten the bolts (1).

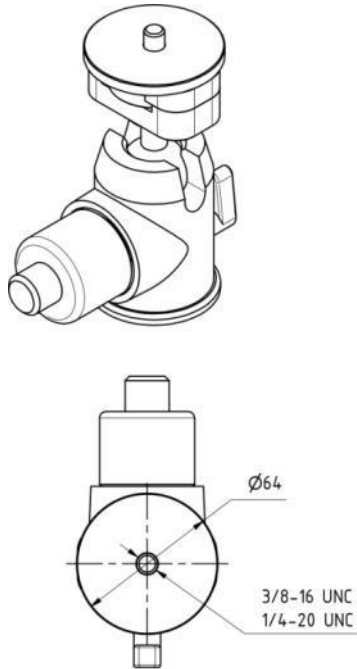


3.18.3 Grip ends

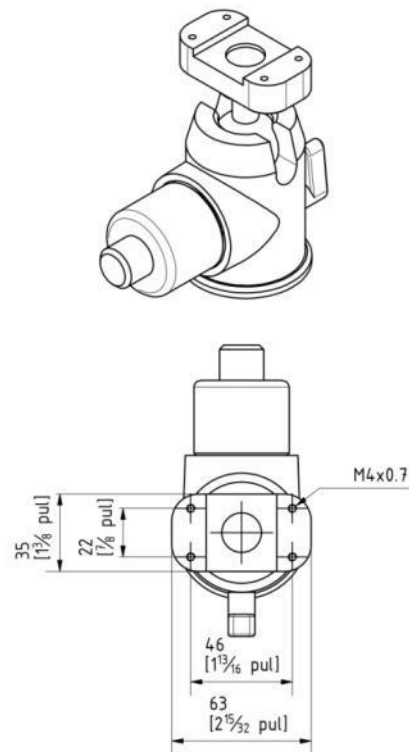
All variants of the "Manfrotto" L-head offer two terminations for the attachment of the tool

- End with four anchor points (direct clamping)
- Termination with a single anchor point (clamped with plate)

CLAMPING WITH PLATE



DIRECT CLAMPING

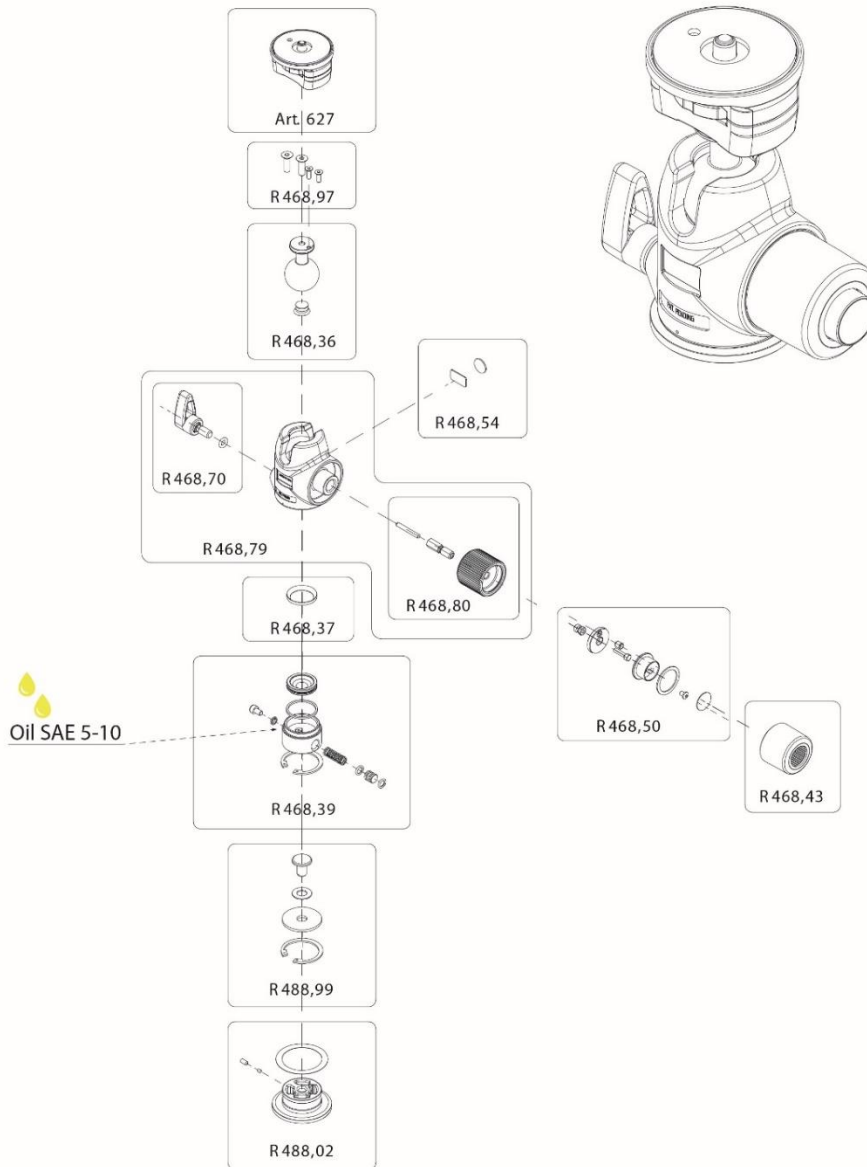


- At the same time, the clamp termination offers two thread sizes. $3/8-16 \text{ UNC}$ and $1/4-20 \text{ UNC}$.
- By default, the "Manfrotto" L-head is supplied with a clamping plate, but by removing the mat and the bolts that hold it in place, the direct clamping termination is obtained.


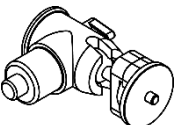
3.18.4 Addition of oil

SAE 5-10 hydraulic oil should be used in cases where the system still does not function properly (does not lock) after the friction and rod adjustment has been carried out.

3.18.5 Manfrotto nord 468MG exploded view



3.18.6 Spare parts

MV30C904	HEADMEMBER VERTICAL Maximum load: 18 Kg	
AC006196	HYDROSTATIC BALL JOINT	

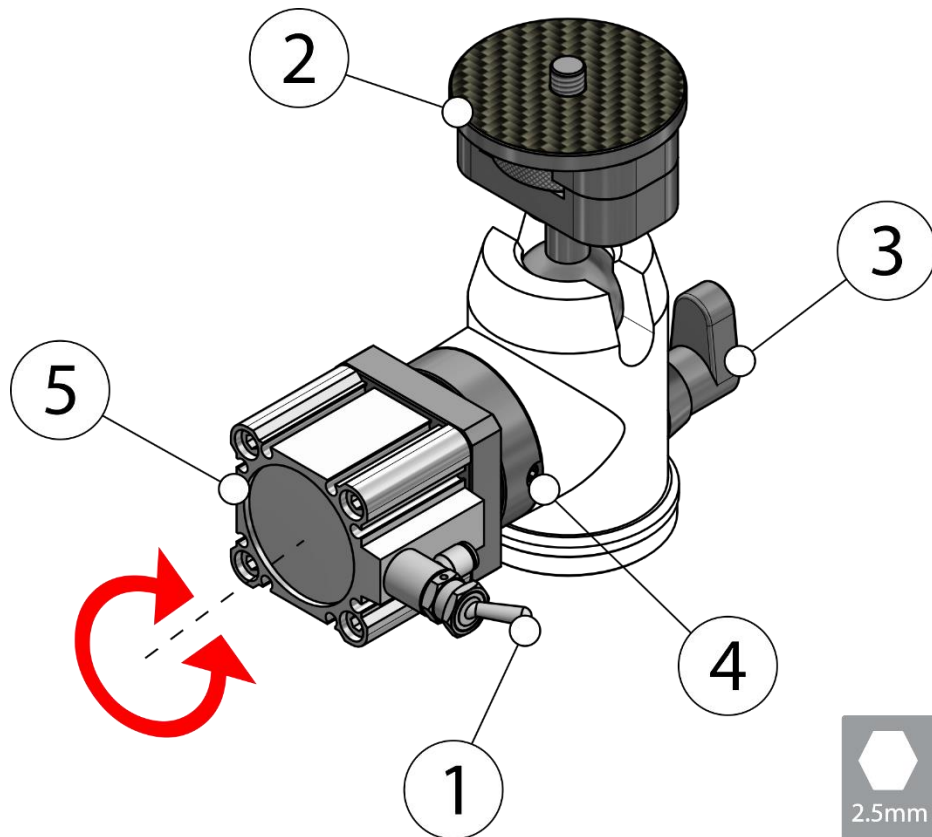
3.19.1 Operation

Activating the selector (1) will block the movement of the bracket (2).

Turning the lever (3) will lock the rotation of the whole assembly.

To adjust the friction, the smoothness of movement of the bracket (2). Loosen the two headless bolts (4) (2.5mm Allen key) and turn the cylinder assembly (5):

- Turn clockwise for a smoother movement.
- Turn anticlockwise to increase friction.



MAINTENANCE

- ✓ Friction adjustment must be carried out every 1000 operating cycles.

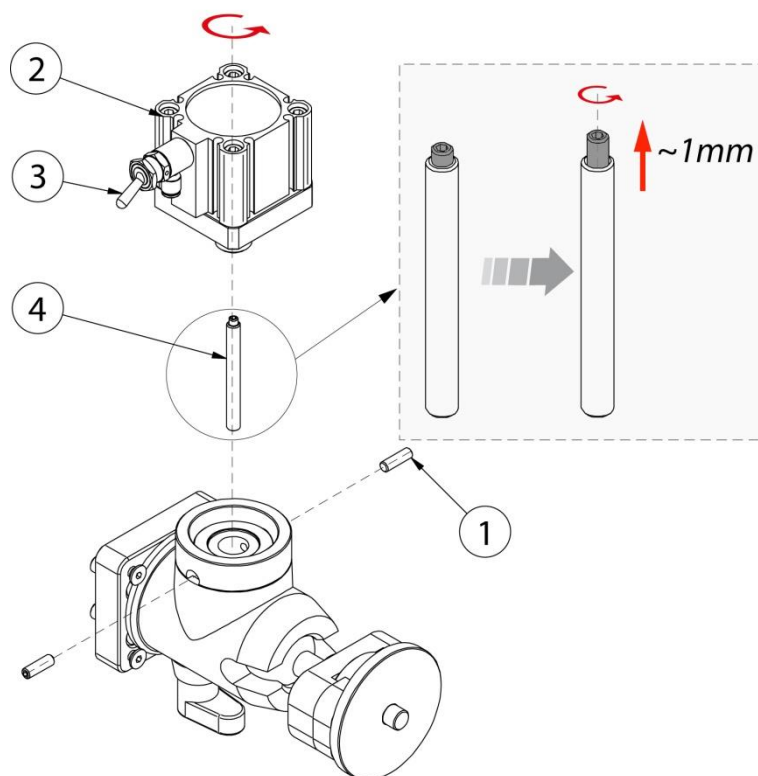
3.19.2 Connection

- The head requires a compressed air supply at 6 bar.
- The pipe must be suitable for work with compressed air and have an external diameter of $\varnothing_{\text{ext}} = 4\text{mm}$

3.19.3 Cylinder stroke adjustment

To adjust the cylinder run (2) to achieve effective locking, follow the steps below:

- 1- The switch (3) must remain off, so that the termination remains free.
- 2- Loosen the headless bolts (1) (2.5mm Allen key).
- 3- Remove the cylinder (2) by turning it anticlockwise.
- 4- The rod (4) will be freed. Loosen the headless bolt at the end of the rod to gain length (approx. 1 mm) (2 mm Allen key).
- 5- Put the rod (4) in position and proceed in reverse order to make the assembly operational.

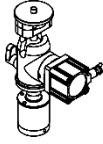
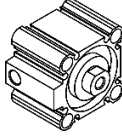



MAINTENANCE

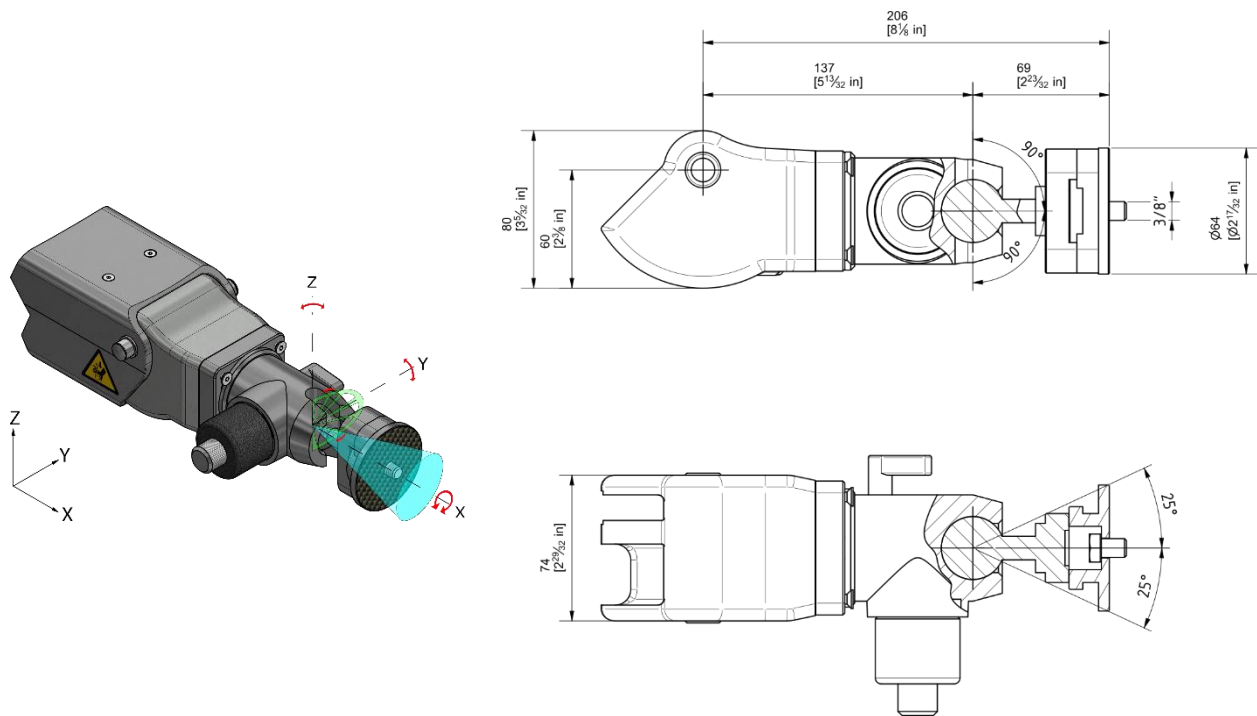
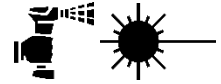
- ✓ The rod length must be increased by approx. 1 mm every 5000 operating cycles.

- ✓ For height adjustment [[See Height adjustment page 50](#)].
- ✓ Different gripping termination [[See Grip ends page 51](#)].
- ✓ Addition of oil [[See Addition of oil page 52](#)].
- ✓ Exploded view [[See Manfrotto nord 468MG exploded view page 52](#)].

3.19.4 Spare parts

MV30D104	HEADMEMBER VERTICAL PNEUMATIC Maximum load: 18 Kg	
NH075006	CYLINDER	
NH027616	FITTING WITH SELECTOR	

3.20 ADJUSTABLE MANUAL BALL JOINT HORIZONTAL - LB M3312600



Maximum torque: 25Nm
Manual locking

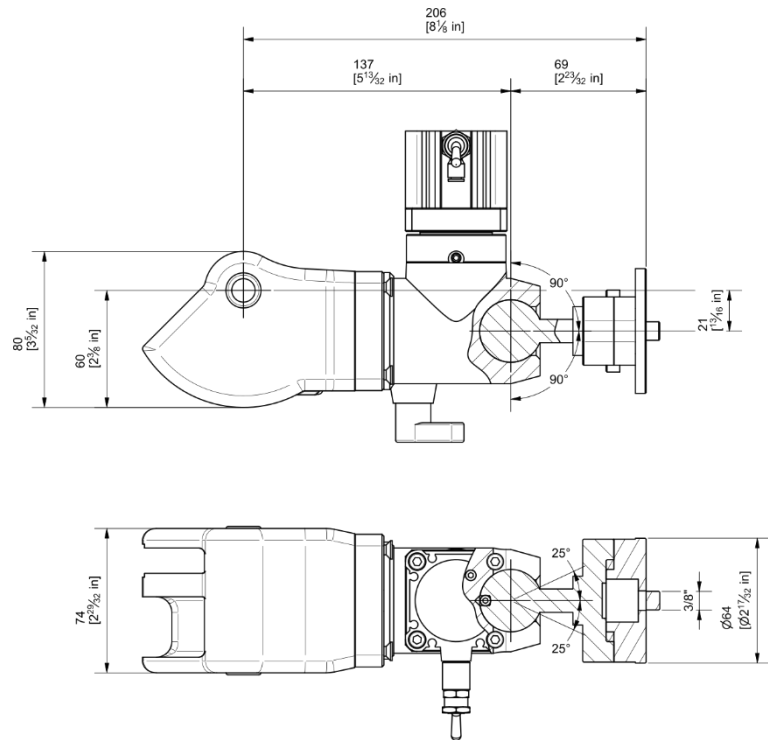
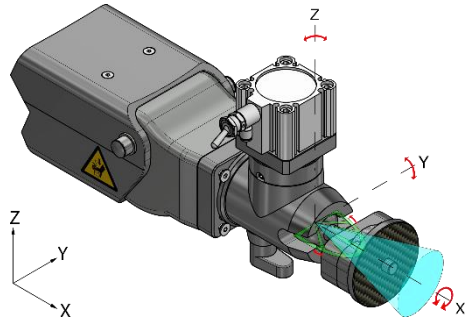
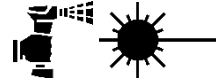
X: Rotates 360°. Manual locking in any position.
XZ plane: ±90°. Manual locking in any position.
XY plane: ±25°. Manual locking in any position.

For operation [\[See Operation page 50\]](#).
Different gripping termination [\[See Grip ends page 51\]](#).
Addition of oil [\[See Addition of oil page 52\]](#).
Exploded view [\[See Manfrotto nord 468MG exploded view page 52\]](#).
Spare parts [\[See Spare parts page 52\]](#).

3.20.1 Spare parts

M3103700	HORIZONTAL HEADMEMBER Maximum load: 18 Kg	
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3.21 ADJUSTABLE AUTOMATIC BALL JOINT HORIZONTAL - LC M3312700



Maximum Torque: 25Nm

Pneumatic locking

X: Rotates 360°. Pneumatic locking in any position.

XY plane: ±90°. Pneumatic locking in any position.

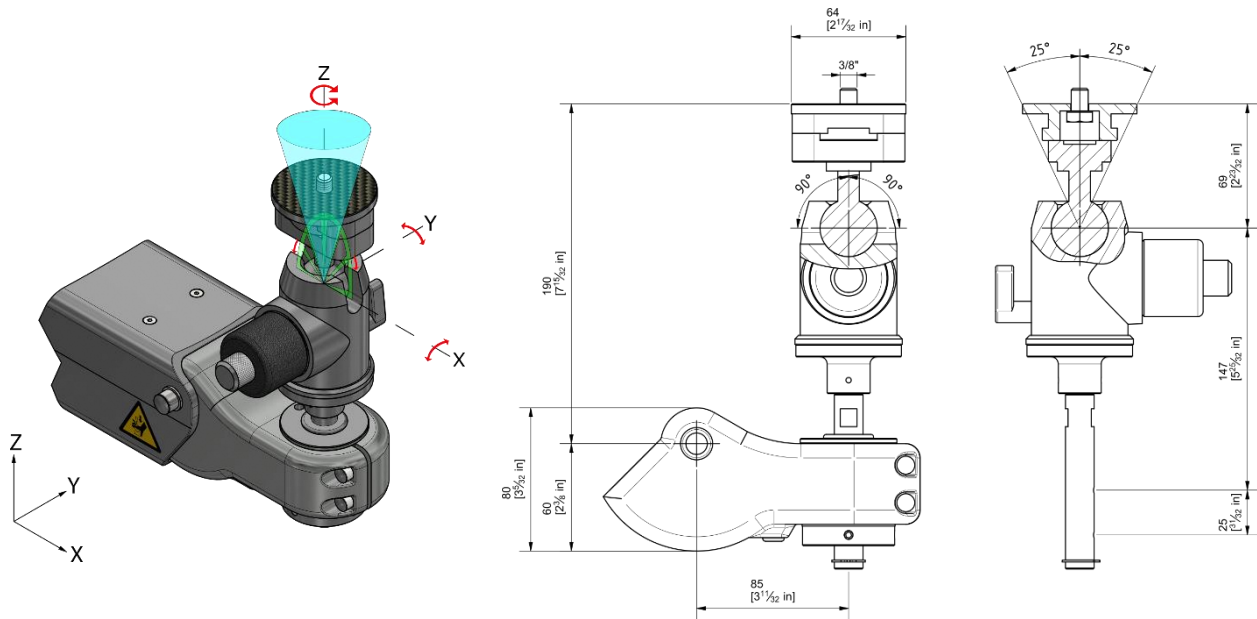
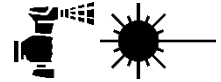
XZ plane: ±25°. Pneumatic locking in any position.

For operation [\[See Operation page 54\]](#).
 For cylinder adjustment [\[See Cylinder stroke adjustment page 55\]](#).
 Different gripping termination [\[See Grip ends page 51\]](#).
 Addition of oil [\[See Addition of oil page 52\]](#).
 Exploded view [\[See Manfrotto nord 468MG exploded view page 52\]](#).
 Spare parts [\[See Spare parts page 56\]](#).

3.21.1 Spare parts

MV30D004	HEADMEMBER HORIZONTAL PNEUMATIC Maximum load: 18 Kg	
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3.22 ADJUSTABLE MANUAL BALL JOINT VERTICAL - LD
M3312400

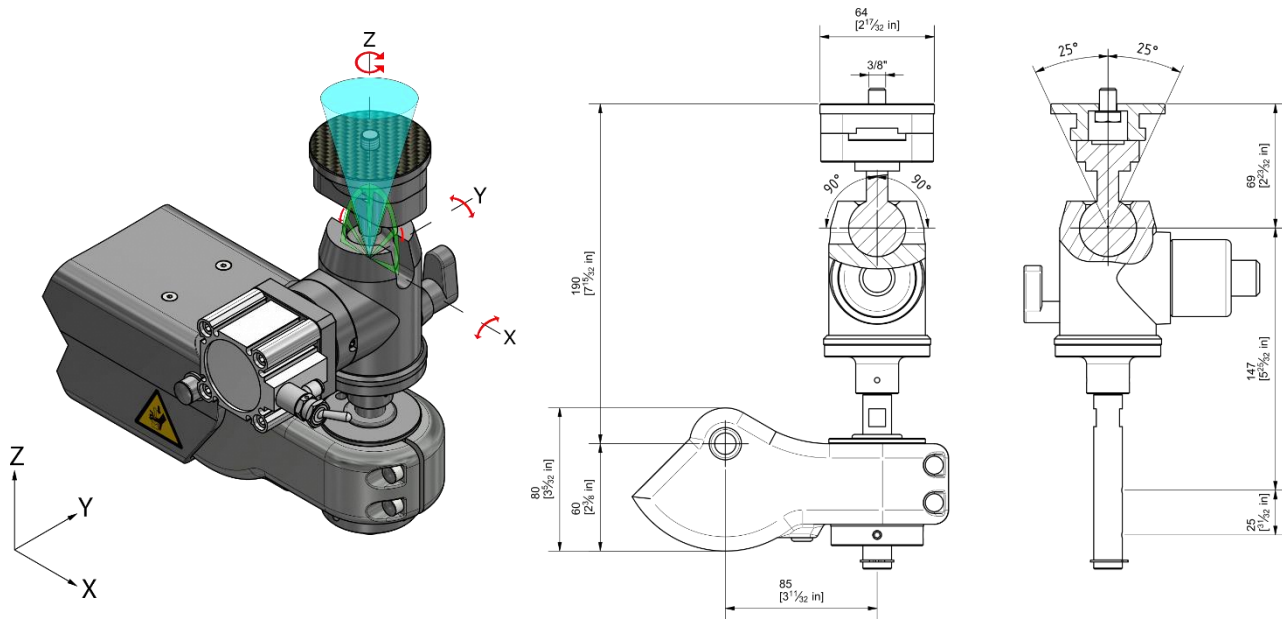
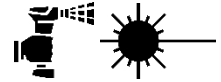


Maximum load: 16 Kg
Manual locking

Z: Rotates 360°. Manual locking in any position.
XZ plane: $\pm 90^\circ$. Manual locking in any position.
YZ plane: $\pm 25^\circ$. Manual locking in any position.

For operation [\[See Operation page 50\]](#).
 For height adjustment [\[See Height adjustment page 50\]](#).
 Different gripping termination [\[See Grip ends page 51\]](#).
 Addition of oil [\[See Addition of oil page 52\]](#).
 Exploded view [\[See Manfrotto nord 468MG exploded view page 52\]](#).
 Spare parts [\[See Spare parts page 52\]](#).

3.23 ADJUSTABLE AUTOMATIC BALL JOINT VERTICAL - LE M3312800

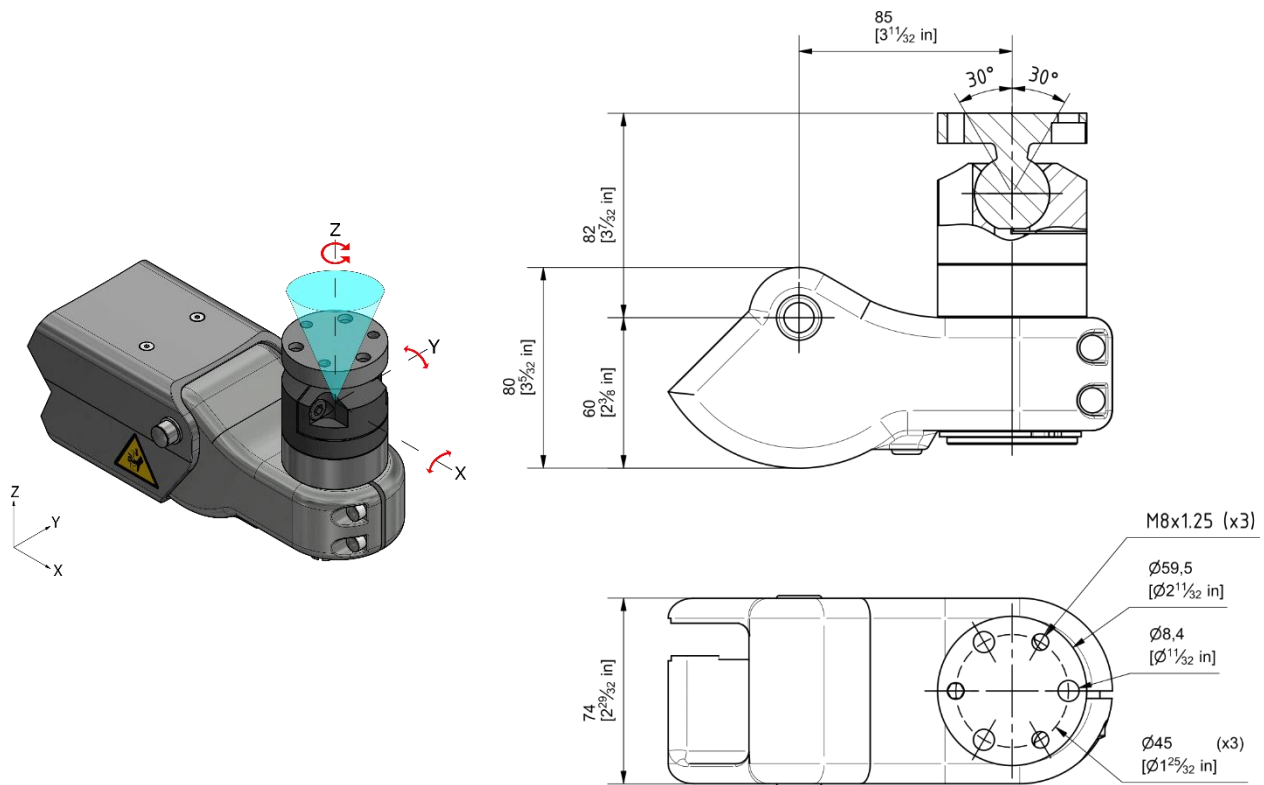
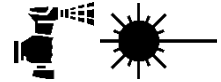


Maximum load: 16Kg
Pneumatic locking

Z: Rotates 360°. Pneumatic locking in any position.
XZ plane: ±90°. Pneumatic locking in any position.
YZ plane: ±25°. Pneumatic locking in any position.

For operation [\[See Operation page 54\]](#).
 For cylinder adjustment [\[See Cylinder stroke adjustment page 55\]](#).
 For height adjustment [\[See Height adjustment page 50\]](#).
 Different gripping termination [\[See Grip ends page 51\]](#).
 Addition of oil [\[See Addition of oil page 52\]](#).
 Exploded view [\[See Manfrotto nord 468MG exploded view page 52\]](#).
 Spare parts [\[See Spare parts page 56\]](#).

3.24 REINFORCED MANUAL BALL JOINT VERTICAL - LH M3312900

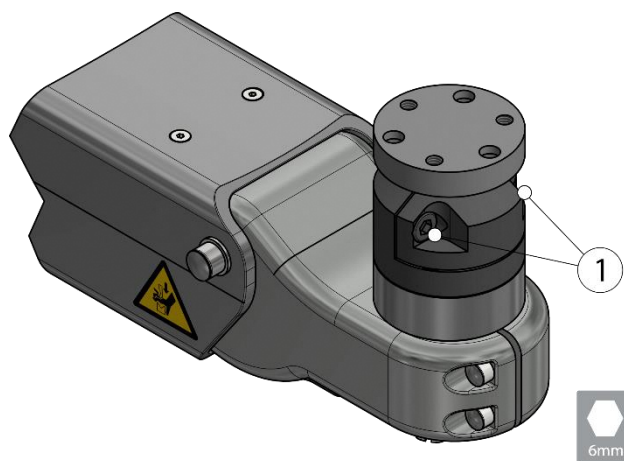


Maximum load: Maximum arm load
Maximum Torque: 55Nm

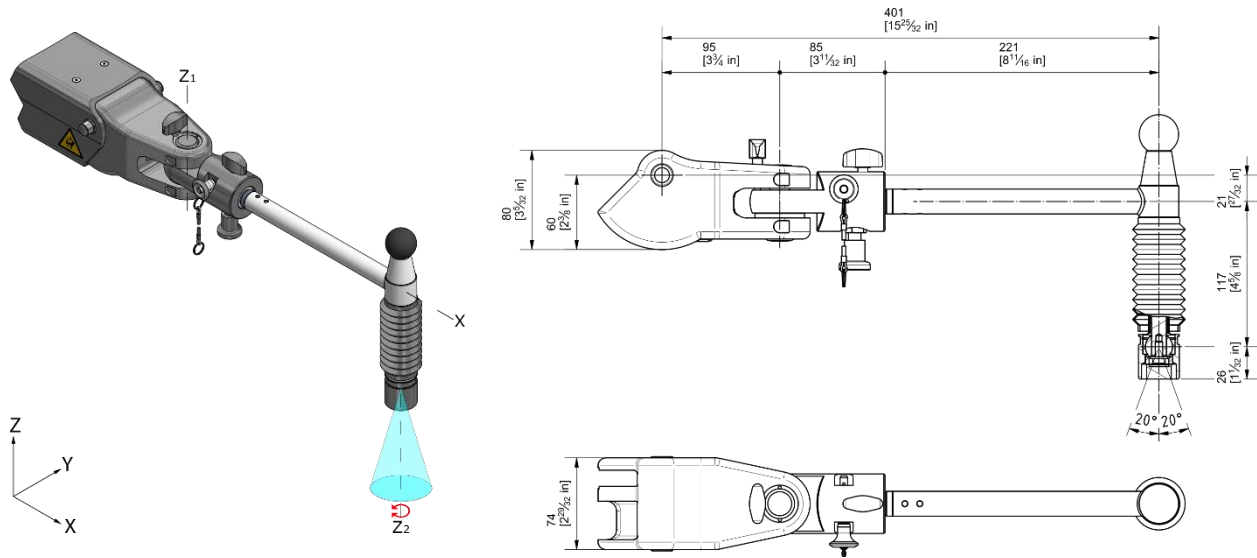
Z: Tilting ball $\pm 30^\circ \times 360^\circ$. Manual locking in any position.
XZ plane: $\pm 30^\circ$. Manual locking in any position.
YZ plane: $\pm 30^\circ$. Manual locking in any position.

3.24.1 Operation

Tightening/loosening the bolts (1) (6mm Allen key) will regulate the friction on the base to adapt the smoothness of movement.



3.25 PRESSURE SUPPORT - M M3313700



Maximum load: 12Kg

Requires locking of the swinging arm⁸

Z₁: Rotates ±90°. Non-lockable

Z₂: Rotates 360°. Non-lockable. Tilting ball ± 20°

X: Rotates 360°. Manual locking in 4 positions (4x90°)

⁸ Manual locking (Lx1) or pneumatic locking (Lx2).

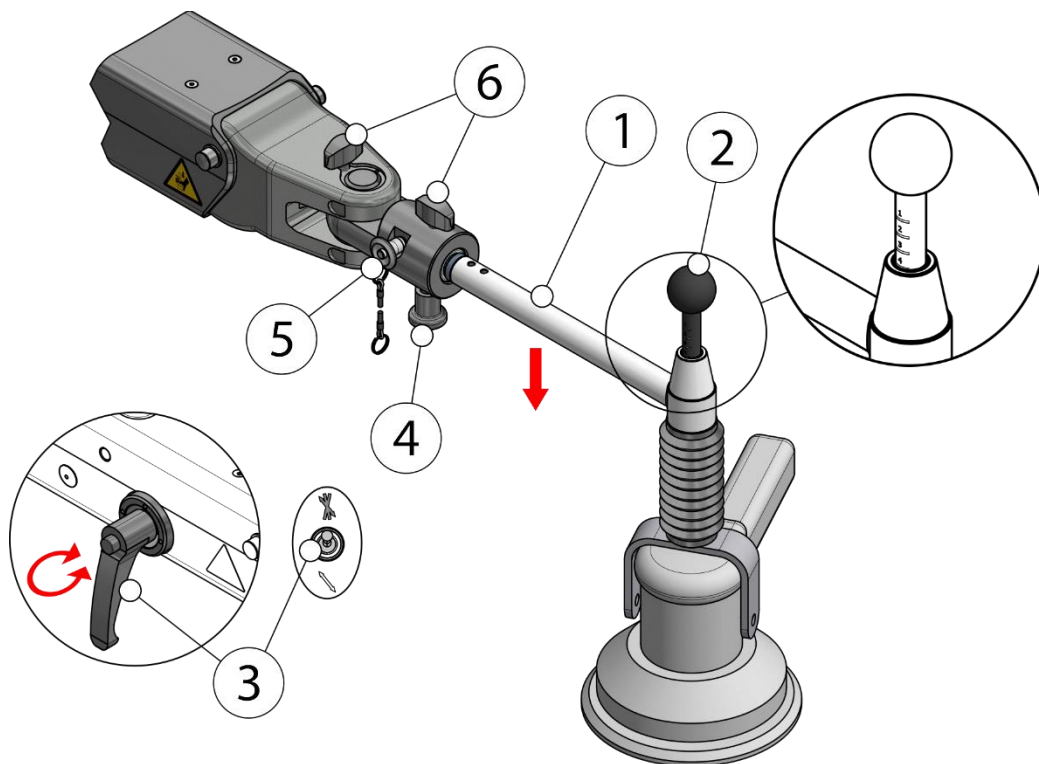
3.25.1 Operation

This head allows pressure to be applied to a surface (e.g. a surface to be polished). At the same time, thanks to the ball head (Z₂ movement), it can be adapted to the work surface ($\pm 20^\circ$).

The tool is gripped by means of a coupling plate which must be designed for each case (Consult your 3arm® dealer).

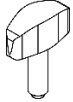

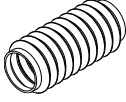
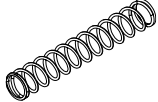
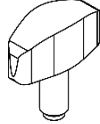
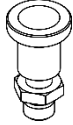

To use, once the tool is installed, follow the guidelines below:

- 1- Position the tool in working position (e.g. on a surface to be polished).
- 2- Apply pressure to the rod (1) of the head in the direction shown. As pressure is applied, the rod (2) will rise, with each mark is equivalent to approximately 0.8Kg.
- 3- Turn the lever or activate the selector (3) to lock the swinging movement of the arm. This will maintain pressure on the work surface at all times.

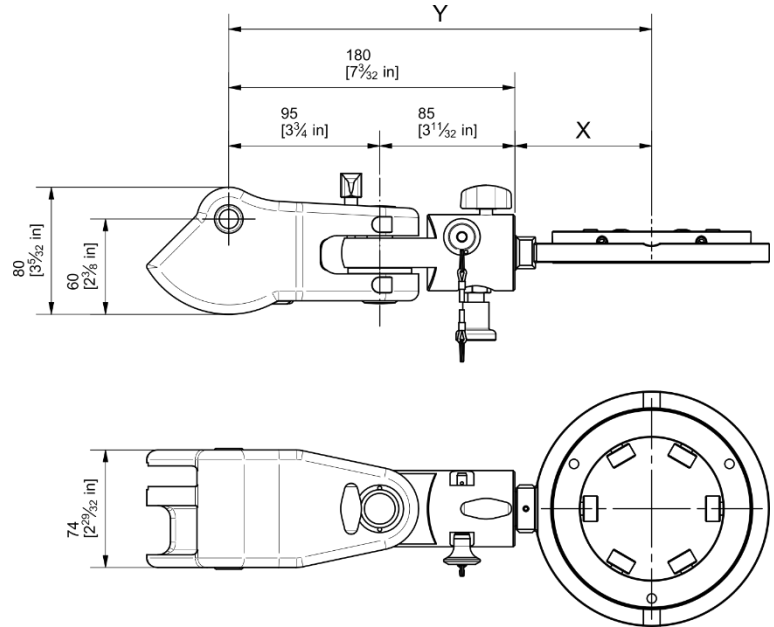
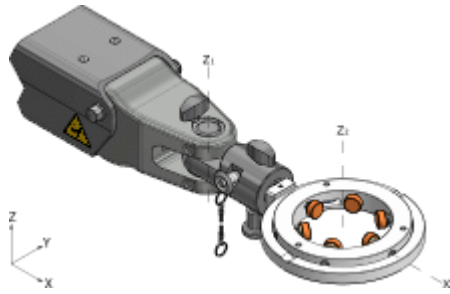


The positioner (4) releases/locks the X movement (360°, 4x90°)
 To remove the rod, release the positioner (4) and remove the pin (5).
 The friction can be adjusted using the adjustment knobs (6).

3.25.2 Spare parts

MV31J603R	SECURING HANDLE M8x24 [Axis Z ₁]	
MV31T603	SPRING PRESSURE CAP	
AC006596	RUBBER BELLOWS	
MV31T703	BALL JOINT PRESSURE SUPPORT SPRING	
AC004046	SECURING LEVER M8X18.5 [Axis X]	
CM125100	POSITIONER	
MV31K703R	POSITIONER Ø6x30	

3.26 MULTIPOSITION WITH QUICK-CHANGE - N MV31F5A4 + Handlebar



Maximum load: 10Kg/ 6kg⁹ | □¹⁰ 1/2"

Z₁: Rotates ±90°. Non-lockable

Z₂: Rotates 360°. Non-lockable

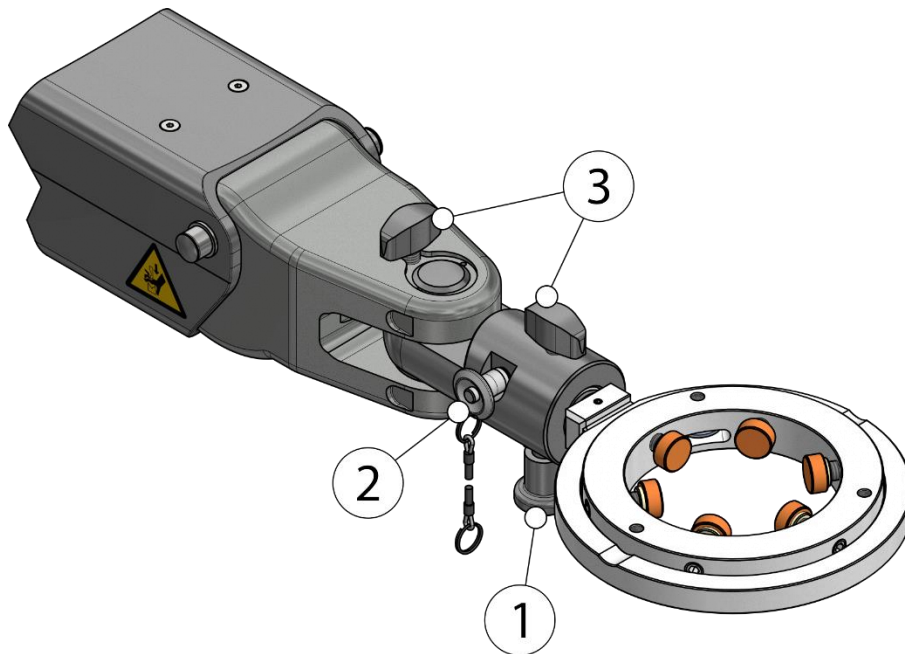
X: Rotates 360°. Manual locking in 4 positions (4x90°)

⁹ Consider 6kg max. load for applications with Handlebar type A (TIMCO) when used with vibration tools (impact, impulse, etc.). For all other applications or for applications with B Handlebar type B (TIMSAND), consider 10 kg maximum load.

¹⁰ Recommended tool square size for this head.

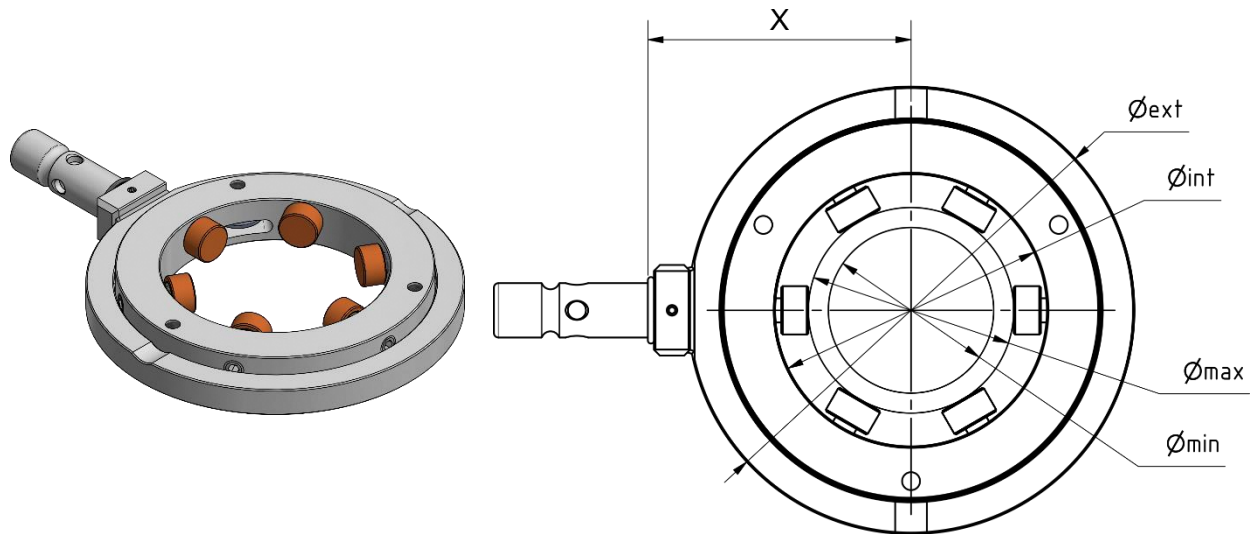
3.26.1 Movements and locking

The positioner (1) releases/locks the X movement (360°, 4x90°)
To remove the rod, release the positioner (1) and remove the pin (2).
The friction can be adjusted using the adjustment knobs (3).



3.26.2 Type A gimbals: TIMCO

Suitable for any type of tool.
 Ref: MV3MAxxx (xxx = internal diameter in mm)

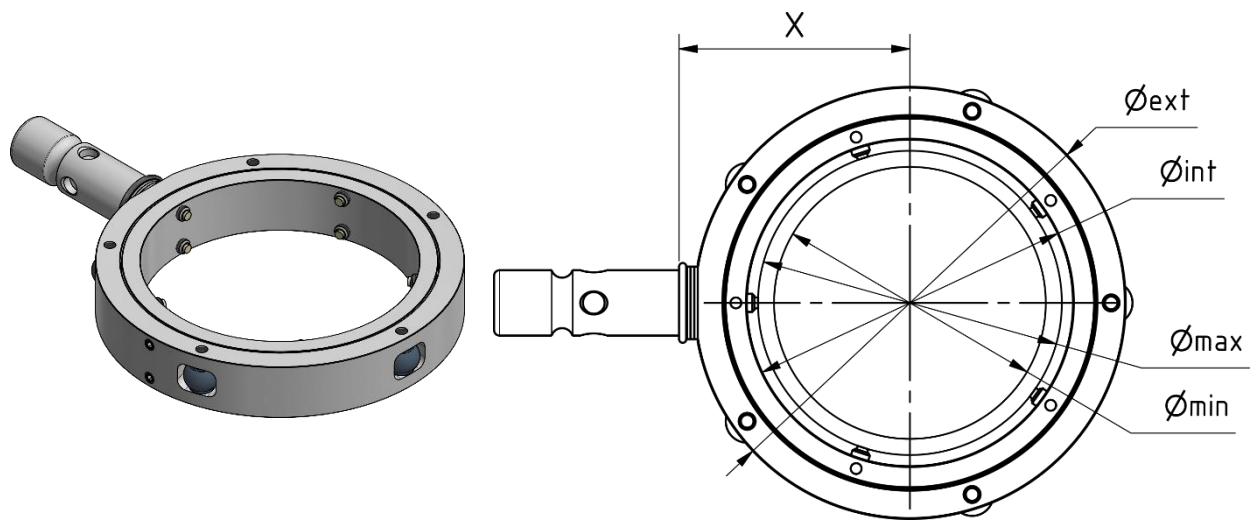


- Dimension X is approximately the external radius plus 12mm ($X = \frac{\varnothing_{ext}}{2} + 12$)
- Maximum load 6 kg for applications with vibration tools (impact, impulse, etc.)
- Other dimensions on request

- ✓ TIMCO dimensions [See TIMCO Dimensions page 29].
- ✓ For fitting the tool [See Assembly of the tool page 30].
- ✓ Included accessories [See Included accessories page 31].
- ✓ For maintenance and cleaning [See Gimbals maintenance and cleaning page 31].

3.26.3 Type B gimbals: TIMSAND

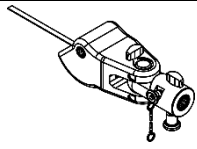

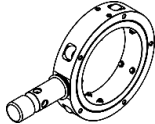
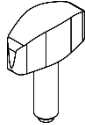
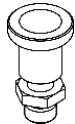
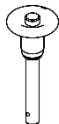
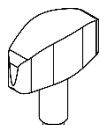
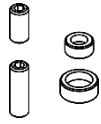
Suitable for tools with cylindrical clamping area.
 Ref: MV3PBxxx (xxx = internal diameter in mm)



- Dimension X is approximately the external radius plus 3mm ($X = \frac{\varnothing_{ext}}{2} + 3$)
- Maximum load 6 kg for applications with vibration tools (impact, impulse, etc.)
- Other dimensions on request

- ✓ TIMSAND dimensions [See Dimensions TIMSAND page 33].
- ✓ For fitting the tool [See Assembly of the tool page 34].
- ✓ Included accessories [See Included accessories page 34].
- ✓ For maintenance and cleaning [See Gimbals maintenance and cleaning page 31].

3.26.4 Spare parts

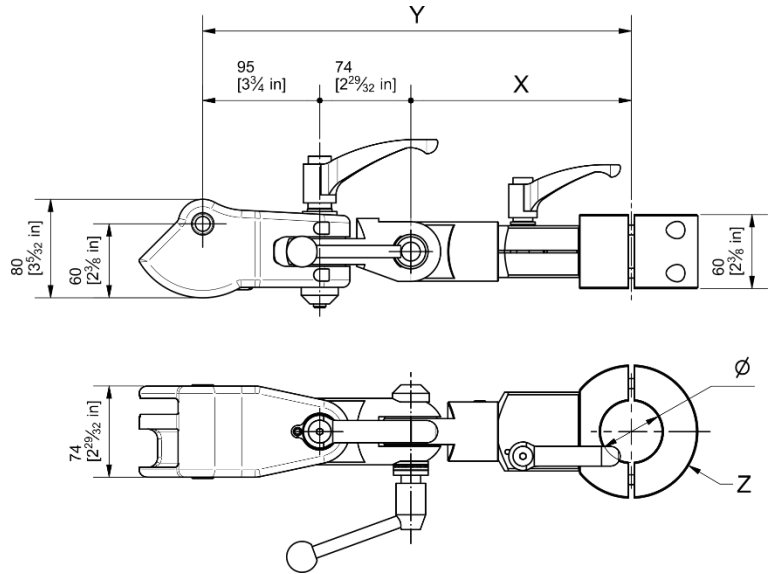
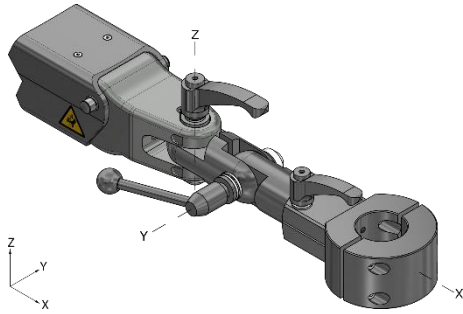
MV31F5A4R	HEADMEMBER Maximum load = 12 kg	
MV3MAXXX ¹¹	GIMBAL TIMCO Maximum load = 12 Kg	
MV3PBXXX	GIMBAL TMSAND Maximum load = 12 Kg	
MV31J603R	SECURING LEVER M8x24 [Axis Z ₁]	
AC004046	POSITIONER GN 607.1-6-A-ST	
CM125100	POSITIONER	
MV31K703R	SECURING LEVER M8x18.5	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

¹¹ XXX corresponde al \varnothing_{int} en mm

3.28 DOUBLE ARTICULATED FLAT ROTATIVE - PA MV302404 + Bush



Fixed flange (M3Dxxx04)



Maximum load: Maximum arm load
Maximum torque: 120Nm

X: Rotates 360°. Manual locking in any position

Y: Rotates ±90°. Manual locking in any position

Z: Rotates ±90°. Manual locking in any position

Ø: Specific diameter on request.

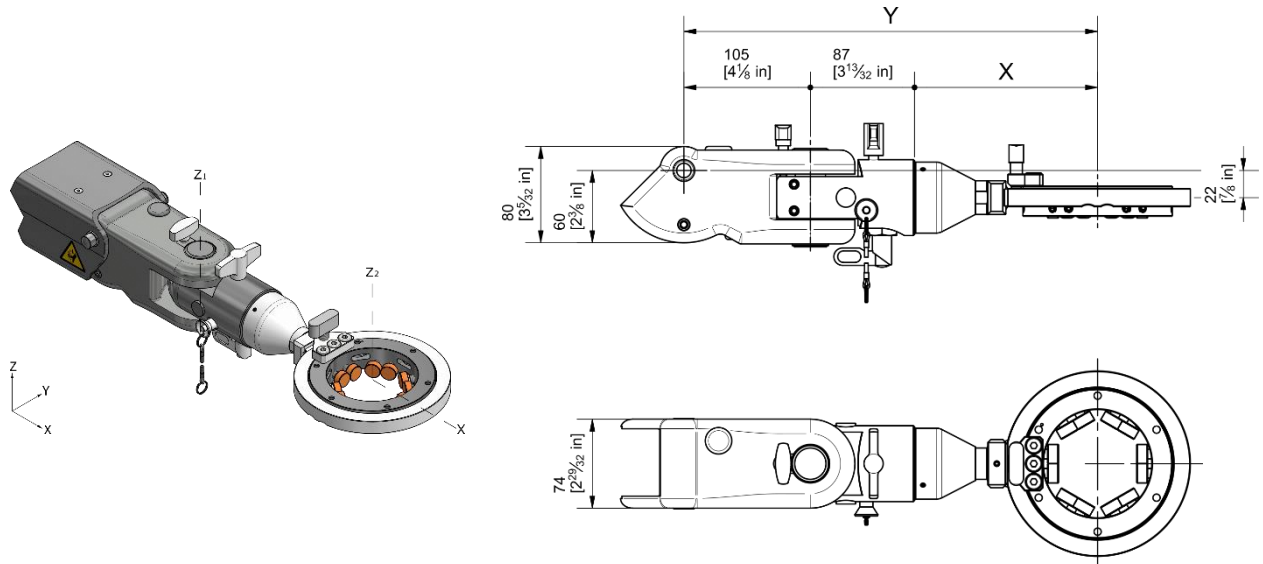
Dimensions	Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)
Fixed flange	15 (19/32")	65 (2 9/16")	179 (7 3/64")	348 (13 45/64")	Ø108 (Ø2 1/4")
	65 (2 9/16")	80 (3 5/32")	188.5 (7 27/64")	357.5 (14 5/64")	Ø124 (Ø4 7/8")

MAXIMUM TORQUE (Nm)			
Arm	Vertical	Horizontal	Angle
S0	100	100	100
S3	100	100	100
S4	100	100	100

Spare parts [See Spare parts page 70].

3.29 MULTIPOSITION REINFORCED WITH QUICK-CHANGE - Q

MV30D2A4 + Handlebar



Maximum load: 30Kg | □^{3/4}"¹²

Z₁: Rotates ±90°

Z₂: Rotates 360°. Adjustment of smoothness for rotation and position setting

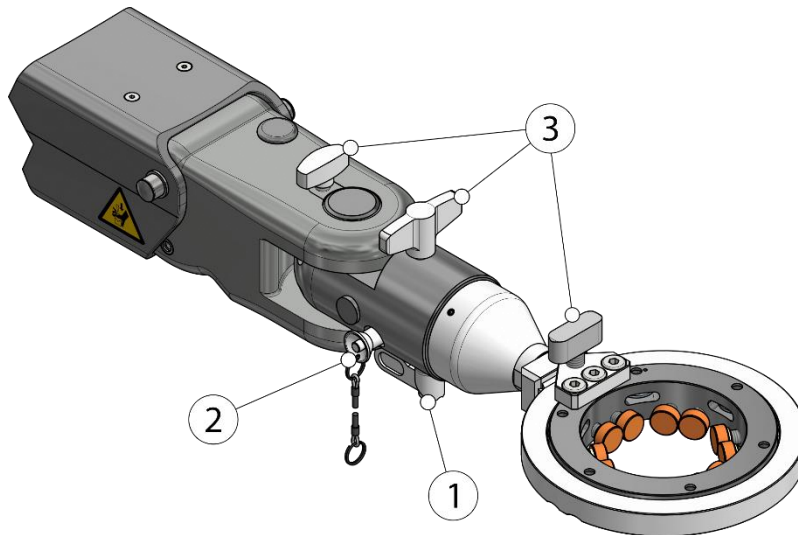
X: Rotates 360° or 4x90°¹³

¹² Recommended tool square size for this head

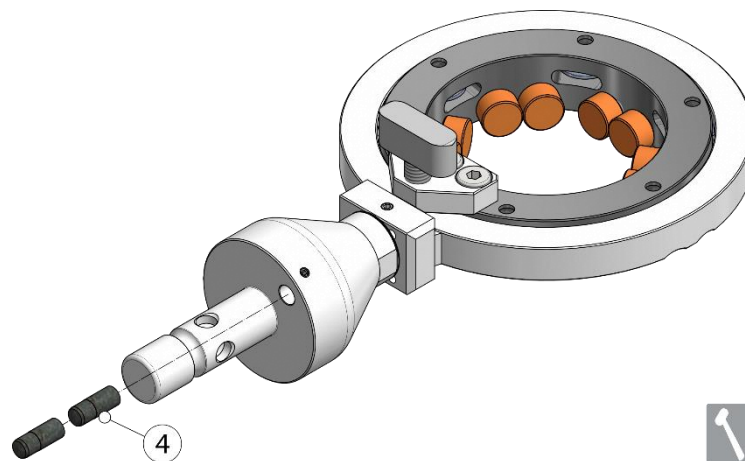
¹³In the case of vertical/horizontal work, pins will be fitted which will only allow the 4 positions at 90°. In case of work at any 360° angle, the pins will not be fitted; the positioner does not allow vertical/horizontal work.

3.29.1 Operation

The positioner (1) releases/locks the X movement (360°, 4x90°)
To remove the rod, release the positioner (1) and remove the positioner (2).
The friction can be adjusted using the adjustment knobs (3).



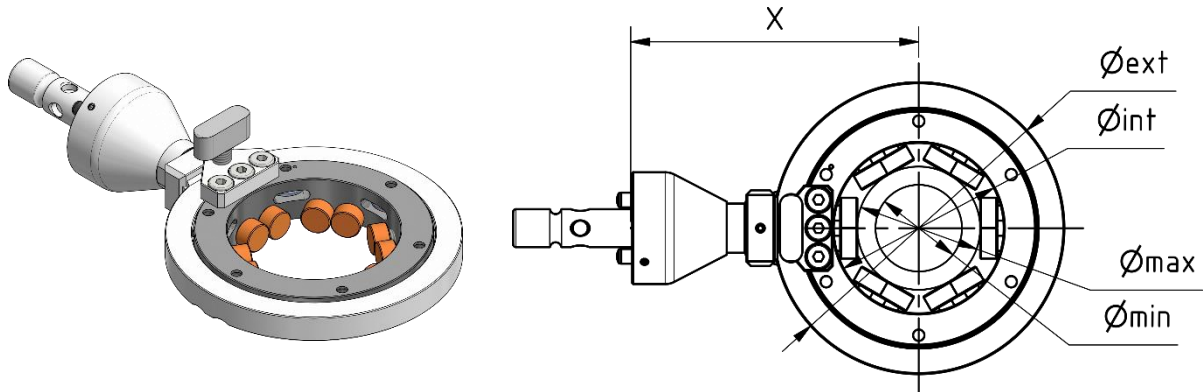
Due to the robustness of the positioner (1), vertical/horizontal work is not permitted.
In cases where you have to work only vertically/horizontally, the pins (4) supplied must be inserted into the holes in the handlebar (the machined end of the pin remains outside the handlebar).



To turn the handlebar with the pins fitted, leave the positioner (1) free, remove the positioner (2) and pull the handlebar back a little so that it can be turned.

3.29.2 Gimbal Type A: REINFORCED TIMCO

Suitable for any type of tool.
 Ref: MV3JAxxx (xxx = internal diameter in mm)

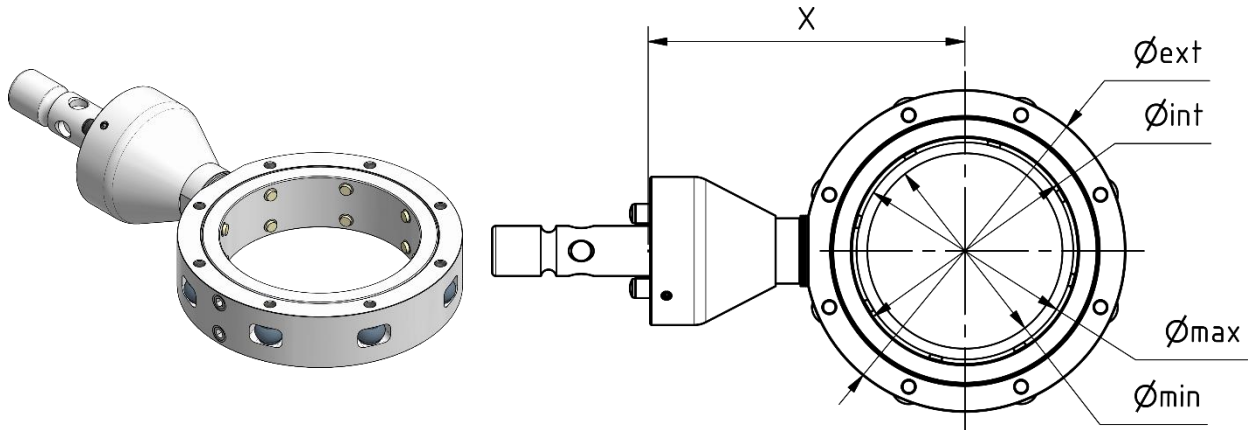


- Dimension X is approximately the external radius plus 76mm ($X = \frac{\varnothing_{ext}}{2} + 76$)
- Maximum load 6 kg for applications with vibration tools (impact, impulse, etc.)
- Other dimensions on request

- ✓ TIMCO dimensions [See Dimensions of TIMCO page 39].
- ✓ For fitting the tool [See Assembly of the tool page 30].
- ✓ Included accessories [See Included accessories page 31].
- ✓ For maintenance and cleaning [See Gimbals maintenance and cleaning page 31].

3.29.3 Gimbal Type B: TIMSAND REINFORCED

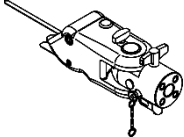
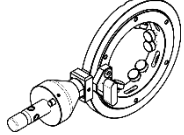
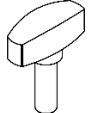
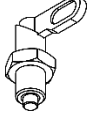
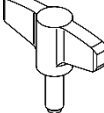

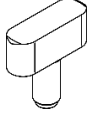
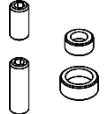
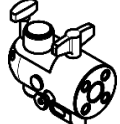
Suitable for any type of tool.
 Ref: MV3JBxxx (xxx = internal diameter in mm)



- Dimension X is approximately the external radius plus 62mm ($X = \frac{\varnothing_{ext}}{2} + 62$)
- Other dimensions on request

- ✓ TIMSAND dimensions [See Dimensions TIMSAND reinforced page 41].
- ✓ For fitting the tool [See Assembly of the tool page 34].
- ✓ Included accessories [See Included accessories page 34].
- ✓ For maintenance and cleaning [See Gimbals maintenance and cleaning page 31].

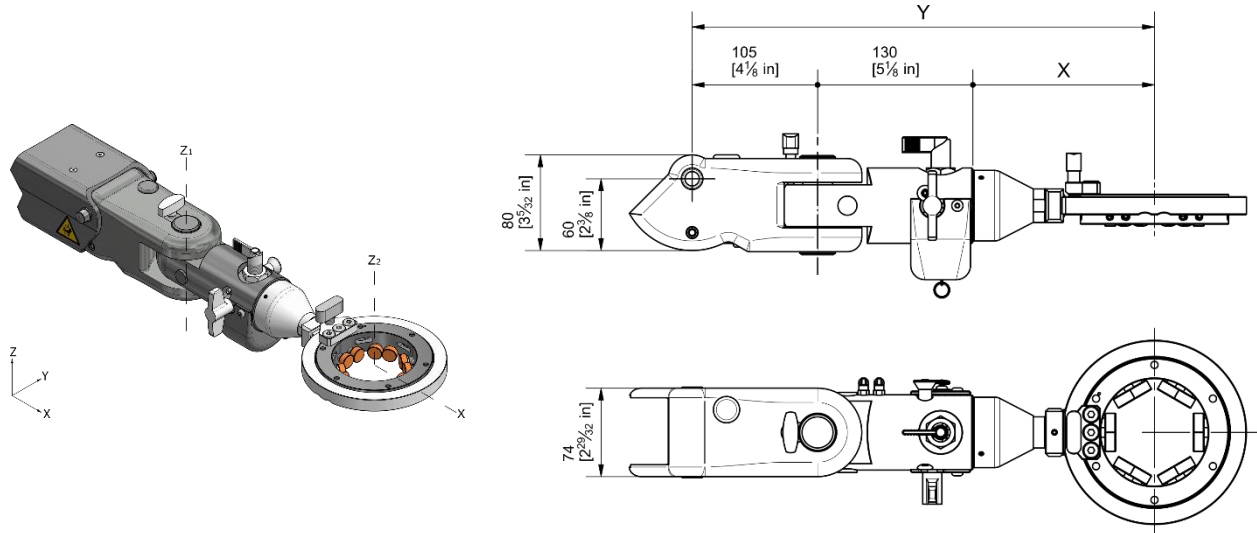
3.29.4 Spare parts

MV30D2A4R	HEADMEMBER Maximum load 30 Kg	
MV3JAXXX ¹⁴	GIMBAL TIMCO Maximum load = 30 Kg	
M3103300R	SECURING LEVER M8x24 STAINLESS STEEL [Axis Z ₁]	
W5206400	POSITIONER M16x1.5	
M3103400R	LEVER M8 STAINLESS STEEL [Axis X]	
CM125000	POSITIONER Ø6x40	
M3103200R	TIMCO STAINLESS STEEL BRAKE RETOUCH [Axis Z ₂]	
MV331104	REPLACEMENT STUDS AND CAPS KIT	
M3171600R	HEAD TILTING BASE Maximum load 30 kg	

¹⁴ XXX corresponds to inner Ø in mm

3.30 MULTIPOSITION REINFORCED SECURITY WITH QUICK-CHANGE - QA

M3147600 + Handlebar



Requires Locks on the swinging arm (Lx2)

Maximum load: 30Kg | □^{3/4}"¹⁵

Z₁: Rotates ±90°. Non-lockable

Z₂: Rotates 360°. Adjustment of smoothness for rotation and position setting

X: Rotates 360° or 4x90°¹⁶

¹⁵ Recommended tool square size for this head

¹⁶In the case of vertical/horizontal work, pins will be fitted which will only allow the 4 positions at 90°. In case of work at any 360° angle, the pins will not be fitted; the positioner does not allow vertical/horizontal work.

3.30.1 Movements and locking

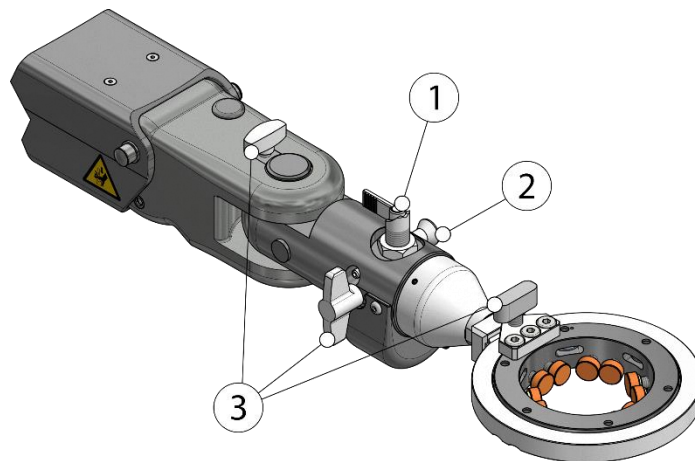
The head is fitted with a safety system that locks the tilting arm when the tool is removed, thus preventing an accident.

The positioner (1) releases/locks the X movement (360°, 4x90°)

To remove the rod, release the positioner (1) and remove the positioner (2). When the handlebar is pulled out, the swinging arm will be locked to prevent a sudden upward movement.

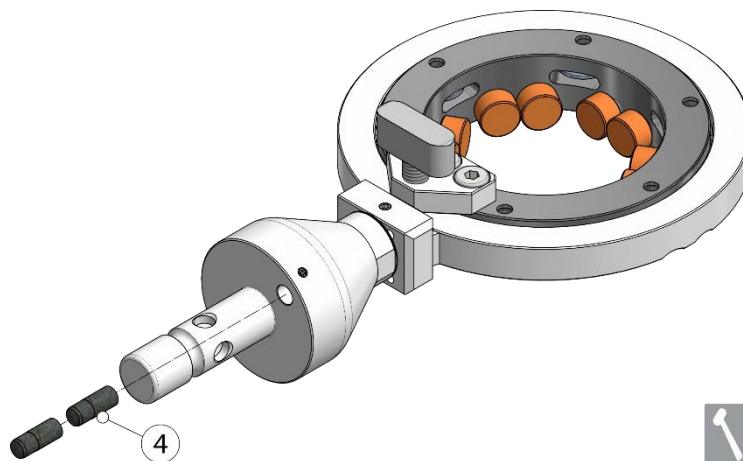
When the handlebar is inserted, the pneumatic arm lock will be deactivated.

The friction can be adjusted using the adjustment knobs (3).



Due to the robustness of the positioner (1), vertical/horizontal work is not permitted.

In cases where you have to work only vertically/horizontally, the pins (4) supplied must be inserted into the holes in the handlebar (the machined end of the pin remains outside the handlebar).

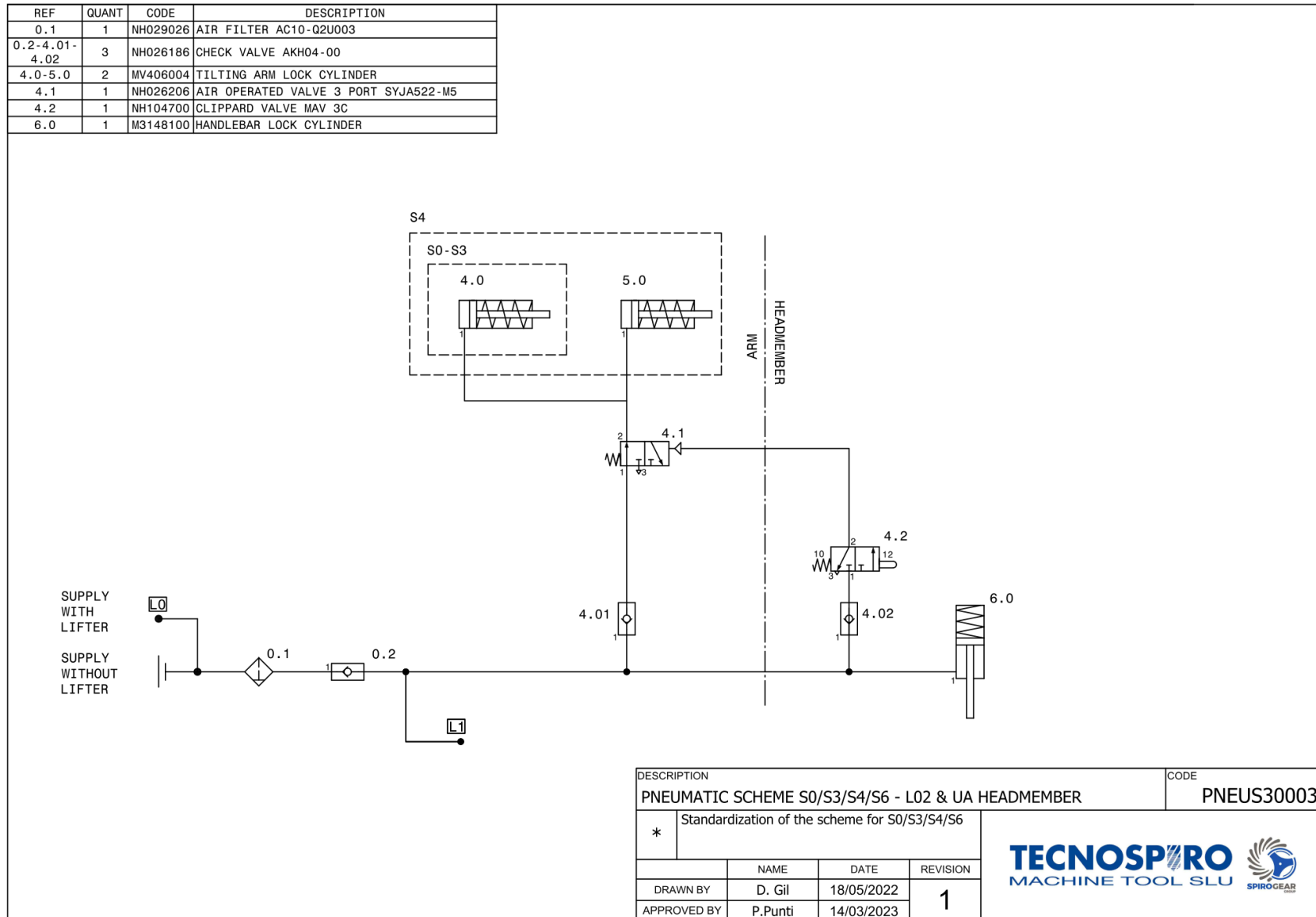


To turn the handlebar with the pins fitted, leave the positioner (1) free, remove the positioner (2) and pull the handlebar back a little so that it can be turned.

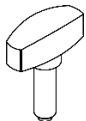
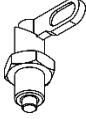
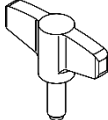
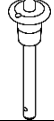
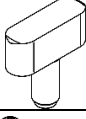
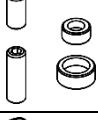
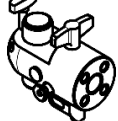
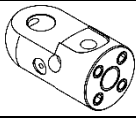
Gimbal type A: TIMCO [See Gimbal Type A: REINFORCED TIMCO page 74].

Gimbal type B: TIMSAND [See Gimbal Type B: TIMSAND REINFORCED page 75].

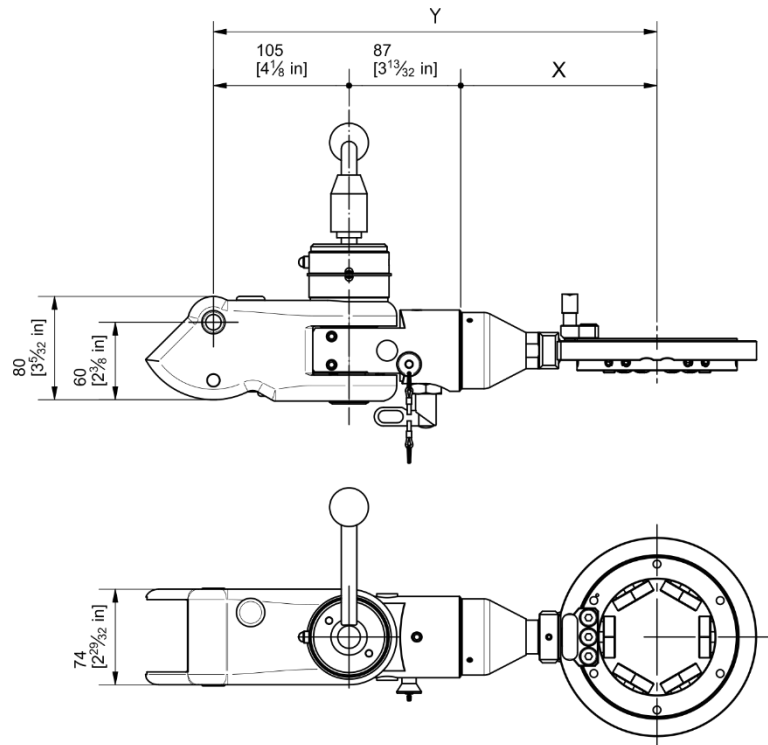
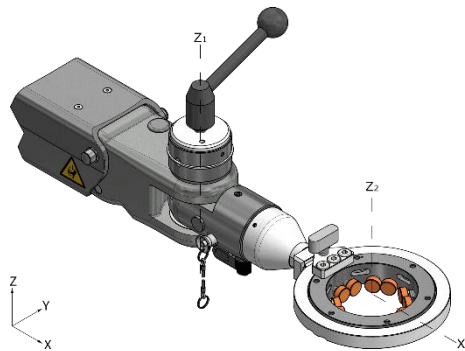
3.30.2 Pneumatic diagram



3.30.1 Spare parts

M3103300R	SECURING LEVER M8x24 STAINLESS STEEL [Axis Z ₁]	
W5206400	POSITIONER M16x1.5	
M3103400R	LEVER M8 STAINLESS STEEL [Axis X]	
CM125000	POSITIONER Ø6x40	
M3103200R	TIMCO STAINLESS STEEL BRAKE RETOUCH [Axis Z ₂]	
MV331104	REPLACEMENT STUDS AND CAPS KIT	
M3171600R	HEAD TILTING BASE Maximum load 30 kg	
M3279000	TILTING BASE REINFORCED WITH BUSHES	

3.31 MULTIPOSITION REINFORCED WITH MANUAL BRAKE - QB M3259000 + Handlebar



Maximum load: 30Kg | □^{3/4}"¹⁷

Z₁: Rotates ±90°. Manual locking in any position

Z₂: Rotates 360°. Adjustment of smoothness for rotation and position setting

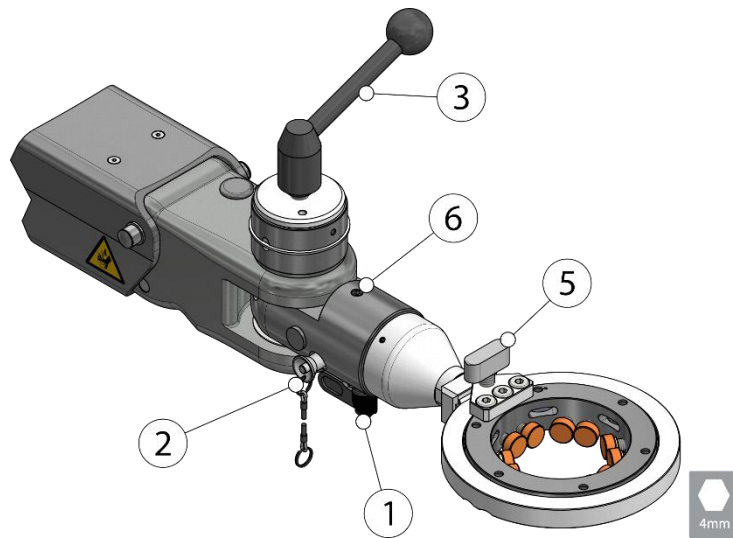
X: Rotates 360° or 4x90°¹⁸

¹⁷ Recommended tool square size for this head

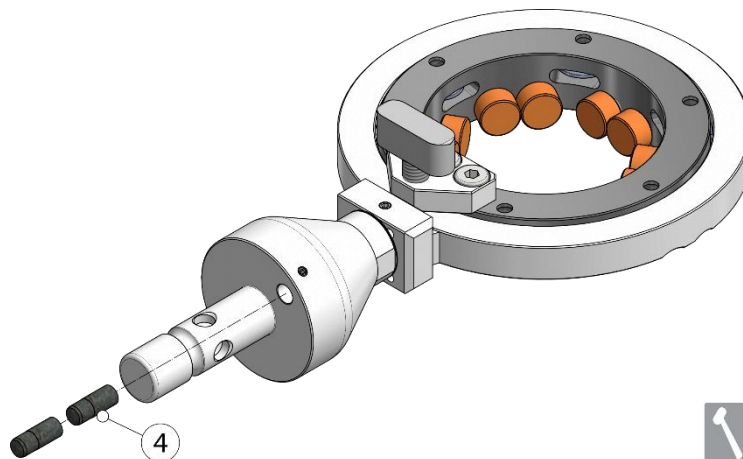
¹⁸In the case of vertical/horizontal work, pins will be fitted which will only allow the 4 positions at 90°. In case of work at any 360° angle, the pins will not be fitted; the positioner does not allow vertical/horizontal work.

3.31.1 Operation

The positioner (1) releases/locks the X movement (360°, 4x90°)
 To remove the rod, release the positioner (1) and remove the positioner (2).
 The handle (3) is used to block movement on the Z₁ axis.
 Friction is adjusted using the adjustment knob (5).
 Use headless bolt (6) (4mm Allen key) to adjust friction on the X Axis.



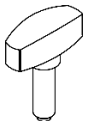
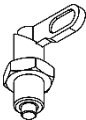
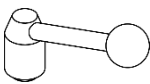

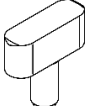
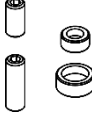
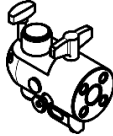
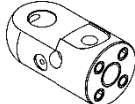
Due to the robustness of the positioner (1), vertical/horizontal work is not permitted.
 In cases where you have to work only vertically/horizontally, the pins (4) supplied must be inserted into the holes in the handlebar (the machined end of the pin remains outside the handlebar).



To turn the handlebar with the pins fitted, leave the positioner (1) free, remove the positioner (2) and pull the handlebar back a little so that it can be turned.

Gimbal type A: TIMCO [See Gimbal Type A: REINFORCED TIMCO page 74].
 Gimbal type B: TIMSAND [See Gimbal Type B: TIMSAND REINFORCED page 75].

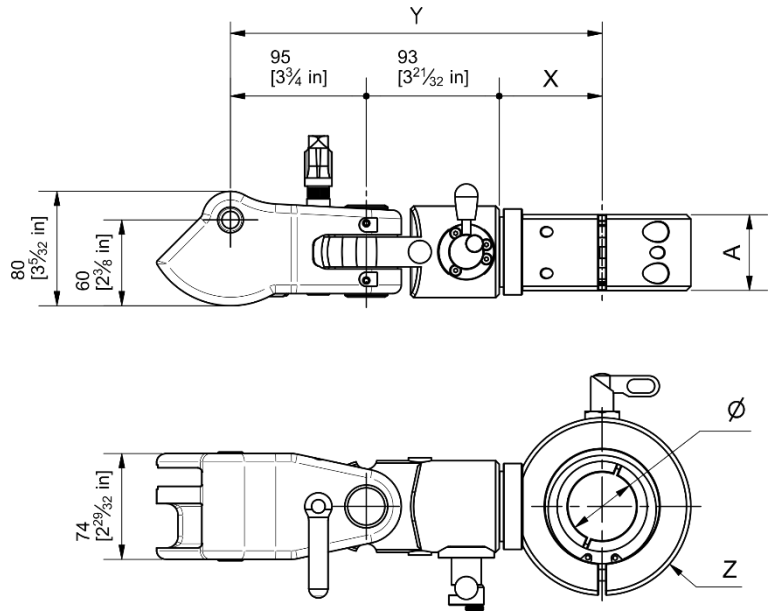
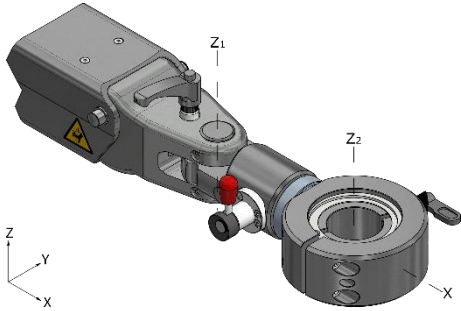
3.31.2 Spare parts

M3103300R	SECURING LEVER M8x24 STAINLESS STEEL [Axis Z ₁]	
W5206400	POSITIONER M16x1.5	
CM151500	HANDLE M12	
CM125000	POSITIONER Ø6x40	
M3103200R	TIMCO STAINLESS STEEL BRAKE RETOUCH [Axis Z ₂]	
MV331104	REPLACEMENT STUDS AND CAPS KIT	
M3171600R	HEAD TILTING BASE Maximum load 30 kg	
M3279000	TILTING BASE REINFORCED WITH BUSHES	

3.32 MANUAL REVOLVING - R MV404404 + Bush



Rotary flange (MVRxxx04)



Requires L92 Locks¹⁹
Suitable for angled tools

- X: Rotates 360°. Manual locking in 64 positions (64x5.6°)
- Z₁: Rotates 180°. Manual locking in 5 positions (5x45°)
- Z₂: Rotates 360°. Manual locking in 8 positions (8x45°)

Dimensions					
Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)	A (mm)
31 (1 7/32")	55 (2 11/64")	72 (2 53/64")	260 (10 15/64")	Ø124 (Ø4 7/8")	53 (2 3/32")
53 (2 3/32")	70 (2 3/4")	76 (2 63/64")	264 (10 25/64")	Ø134 (Ø5 9/32")	63 (2 31/64")
69 (2 23/32")	80 (3 5/32")	81.5 (3 13/64")	269.5 (10 39/64")	Ø144 (Ø5 43/64")	65 (2 9/16")

MAXIMUM TORQUE - Rotating flange (Nm)			
Arm	Vertical	Horizontal	Angle
S0	300	250	200
S3	300	250	200
S4	300	250	200

3.32.1 Installation of the tool

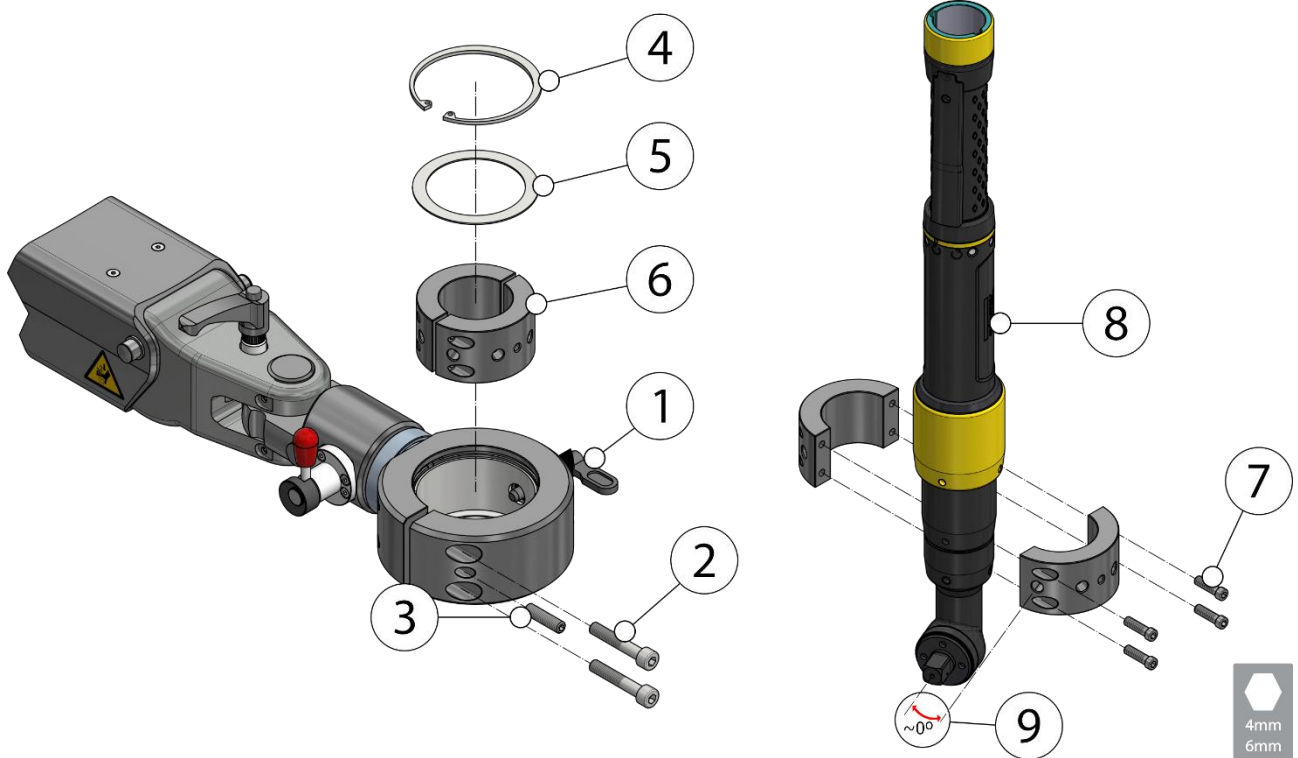
¹⁹ S0: The use of pneumatic locks (L92 / L92 + compensator) is highly recommended
 S3: The use of pneumatic locks (L92 / L92 + compensator) is highly recommended
 S4: Mandatory use of pneumatic locks (L92 / L92 + compensator)

To attach the tool to the head, follow the steps below:

1. Unlock the positioner (1).
2. Remove the bolts (2) (6mm Allen key) and loosen the headless bolt (3) (4mm Allen key).
3. Remove the snap ring (4) and the axial disc (5).
4. Remove the inner ring (6) and open the two halves by removing the bolts (7) (4mm Allen key).
5. Attach the two halves of the inner ring (6) to the tool (8) at the clamping area. Tighten the fastening bolts (7) (4mm Allen key).

In the case of angled tools, the exit shaft of the tool must be aligned with one of the eight holes provided for locking (9).

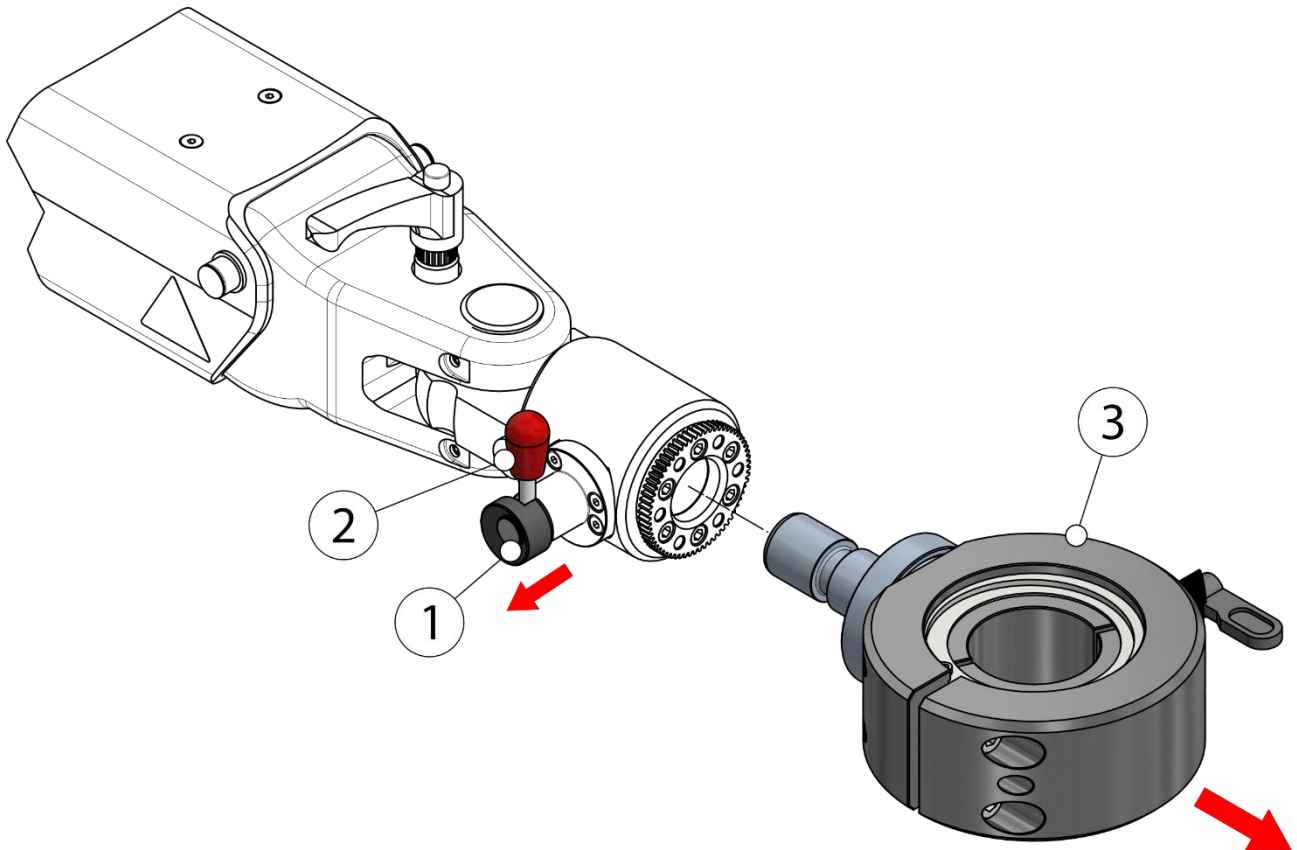
6. Position the tool assembly and the inner ring in its housing. Tightening the headless bolt (3) (4mm Allen key) may help if the inner ring with the tool does not fit into the housing (loosen the bolt once the tool has been inserted).
7. Fit the axial disc (5) and the snap ring (4).
8. Tighten the bolts (2) (6mm Allen key) until the tool turns smoothly. Tighten the headless bolt (3) (4mm Allen key) to reinforce the assembly.



3.32.2 Cflange change

To change the moving part, follow the instructions below:

1. Unscrew the small wheel (1).
2. Pull the lever (2) outwards and hold it in that position.
3. Remove the flange (3) and release the lever (2).
4. Proceed in reverse order for coupling.

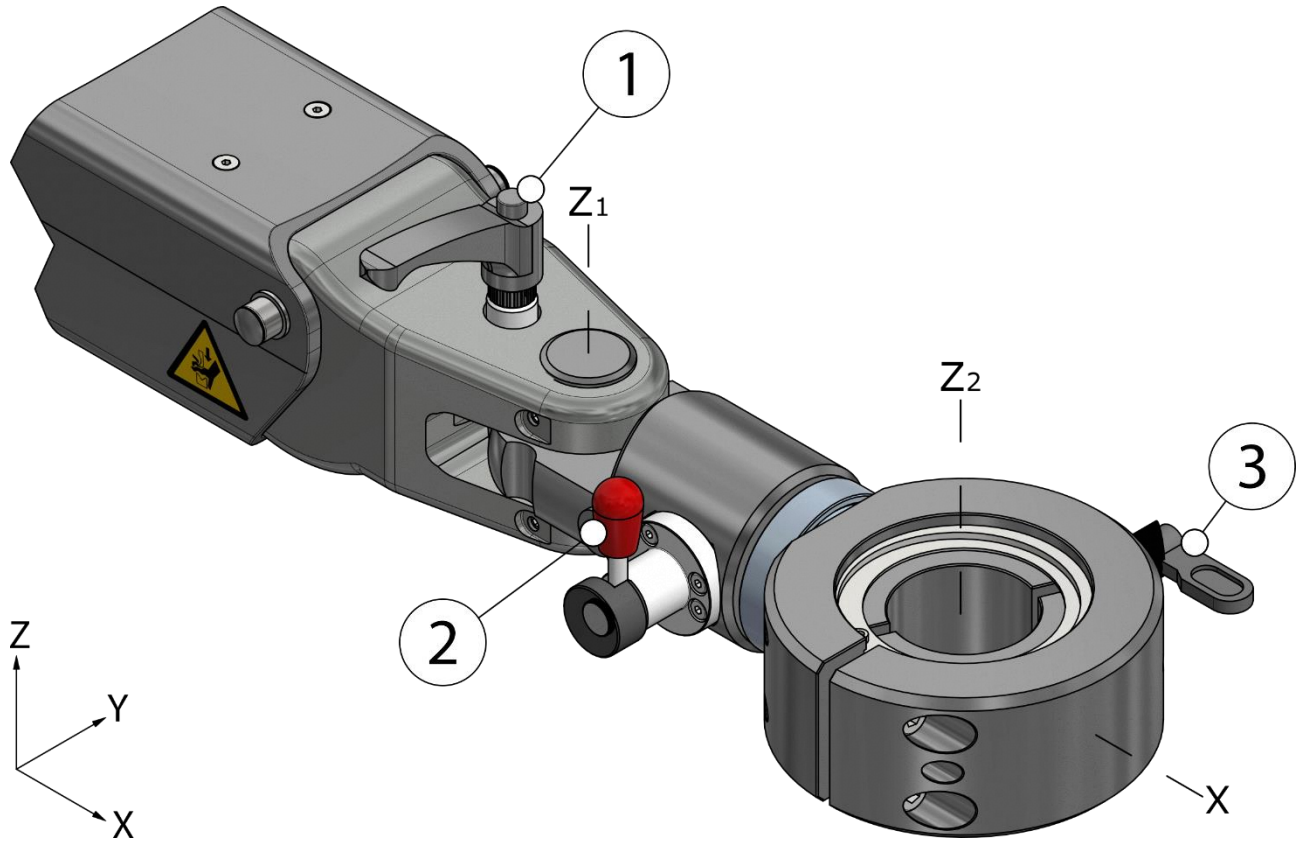


3.32.3 Movements and locking

The handle (1) releases/locks the Z_1 movement (180° , $5 \times 45^\circ$).

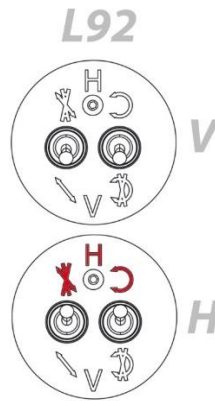
The knob (2) releases/locks the X movement (360° , $64 \times 5.6^\circ$).

The positioner (3) releases/locks the Z_2 movement (360° , $8 \times 45^\circ$).



3.32.4 Operation

Depending on the working position, Vertical (V), Horizontal (H) or Angle (A) the selectors must be positioned as defined in the picture.



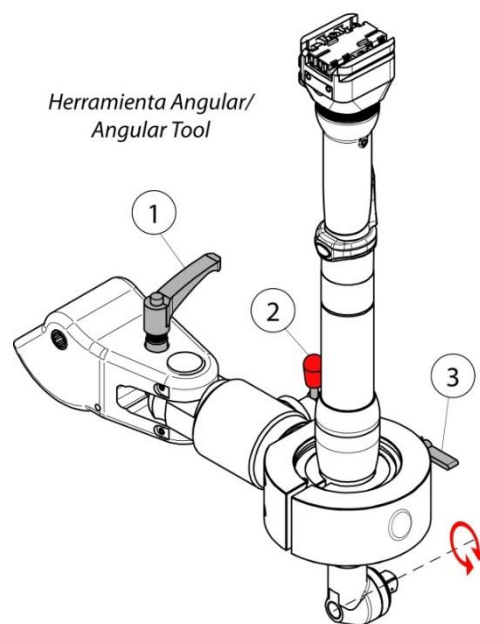
In case of pneumatic locking L92 + compensator, maintain the factory setting (all locked).

When working at A (angle), the selectors shall be set to V (vertical) if a more vertical than horizontal position prevails, and H (horizontal) otherwise.

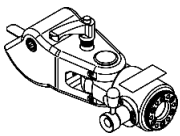
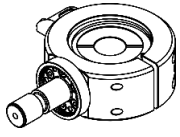
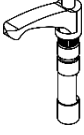
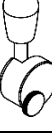
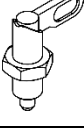
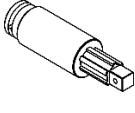
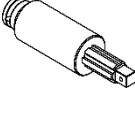
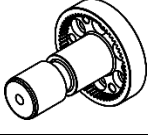
For more information, please refer to your 3Arm manual.

The head locks on handle (1), knob (2) and positioner (3) must be locked according to working position, as in the following table.

Working position (Tool axis) →	V	H	A
Angular Tool	1	2	1, 2



3.32.5 Spare parts

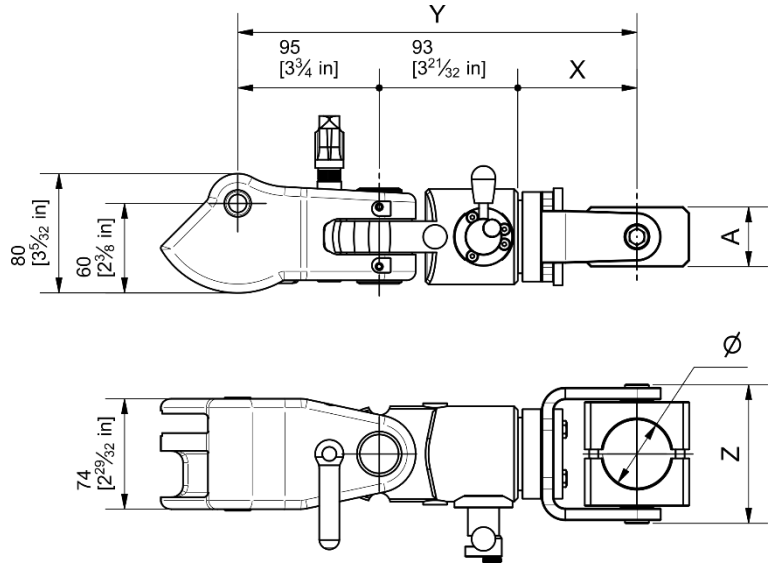
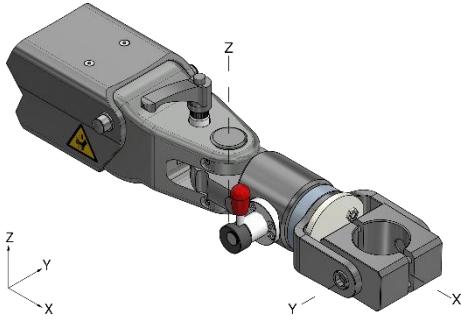
MV404404R	HEADMEMBER	
MVRXXX04 ²⁰	TOOL SUPPORT ASSEMBLY "CAREV" = TOOL CHANGING	
CB004704	SECURING HANDLE ASSEMBLY [Axis Z ₁]	
MV331205	REPLACEMENT ECCENTRIC GRIP ASSEMBLY KIT	
CM123000	POSITIONER M16x1.5	
MV328104	FLOATING SPINDLE T2140801/00 3/4" (Stroke: 45 mm/ 1.77" – Torque max.: 300Nm – □: 3/4" – Weigh: 1.5Kg / 0.7lbs)	
MV328204	FLOATING SPINDLE T2141212/00 1/2" (Stroke: 40 mm/ 1.57" – Torque max.: 150 Nm – □: 1/2" – Weigh: 0.9 Kg / 0.4lbs)	
MV326905R	AXIS FLANGE	

²⁰ XXX corresponds to the inner Ø in mm

3.33 MANUAL REVOLVING - RA MV404404 + Bush



Swinging flange (MVBxxx04)



Requires L92 Locks²¹
Suitable for Straight Tools

X: Rotates 360°. Manual locking in 64 positions (64x5.6°)

Z: Rotates 180°. Manual locking 5 positions (5x45°)

Y: Rotate X° (depending on the tool)

Dimensions					
Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)	A (mm)
30 (1 3/16")	49 (2 59/64")	80 (3 5/32")	268 (10 35/64")	93 (3 21/32")	40 (1 37/64")
49 (1 59/64")	59 (2 21/64")	85 (3 11/32")	273 (10 3/4")	103 (4 1/16")	45 (1 49/64")
59 (2 21/64")	69 (2 23/32")	90 (3 35/64")	278 (10 15/16")	113 (4 29/64")	50 (1 31/32")

MAXIMUM TORQUE - Ball flange (Nm)			
Arm	Vertical	Horizontal	Angle
S0	300	250	200
S3	300	250	200
S4	300	250	200

²¹ S0: The use of pneumatic locks (L92 / L92 + compensator) is highly recommended.

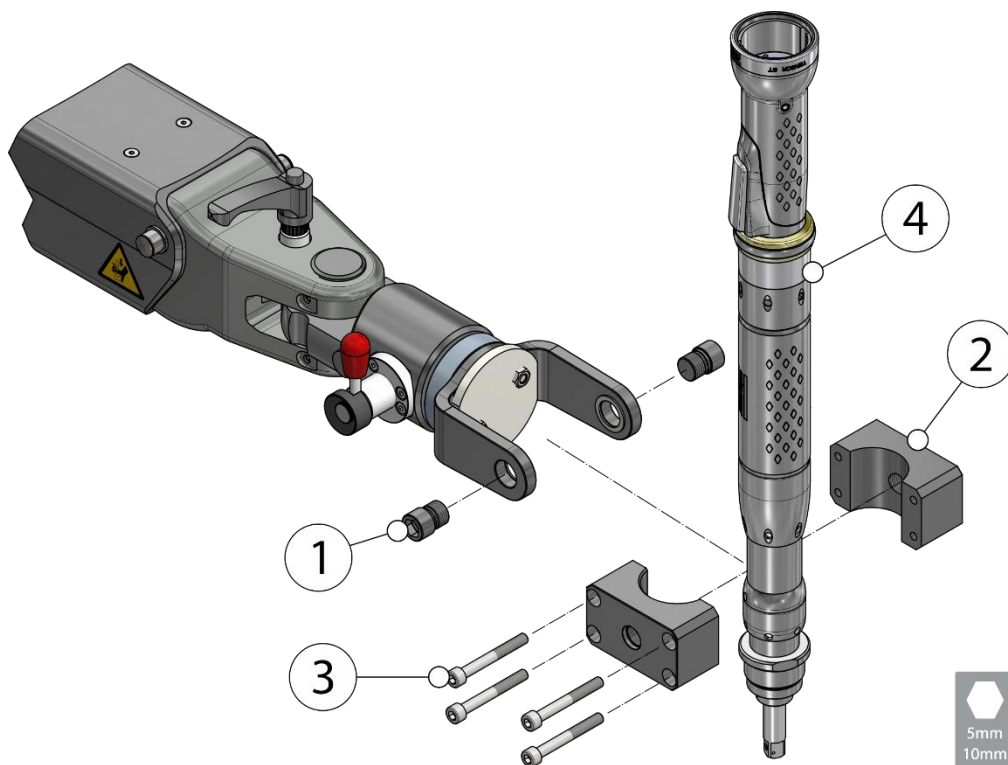
S3: The use of pneumatic locks (L92 / L92 + compensator) is highly recommended.

S4: The use of pneumatic locks (L92 / L92 + compensator) is mandatory.

3.33.1 Installation of the tool

To attach the tool to the head, follow the steps below:

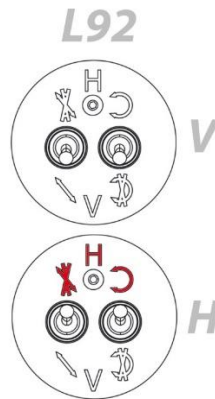
1. Remove the bolts (1) (10mm Allen key).
2. Remove the flange (2) from the rest of the head.
3. Loosen the bolts (3) (5mm Allen key) that join the two parts of the flange (2).
4. Attach the two flange halves (2) to the tool (4) at the clamping area. Tighten the fastening bolts (3) (5mm Allen key).
5. Install the tool (4) by tightening the bolts (1) (10mm Allen key).



For flange replacement [\[See Cflange change page 86\]](#).
To view movements [\[See Movements and locking page 87\]](#).

3.33.2 Operation

Depending on the working position, Vertical (V), Horizontal (H) or Angle (A) the selectors must be positioned as defined in the picture.



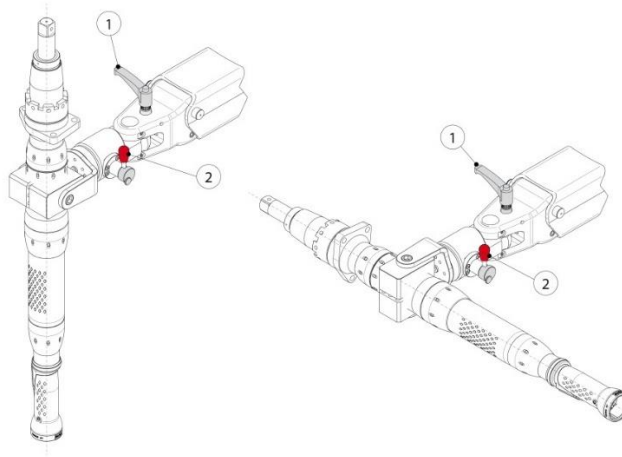
In case of pneumatic locking L92 + compensator, maintain the factory setting (all locked).

When working at A (angle), the selectors shall be set to V (vertical) if a more vertical than horizontal position prevails, and H (horizontal) otherwise.

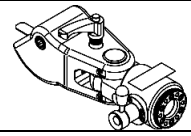
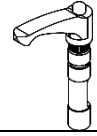
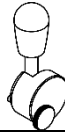
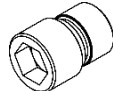
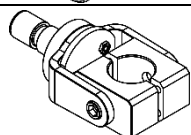
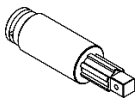
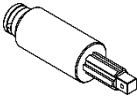
For more information, please refer to your 3Arm manual.

The head locks on Handle (1) and Handlebar (2) must be locked according to the working position, as in the following table.

Working position (Straight Tool)	V	H	A
Mandatory	1		
Optional	2	2	1 and/or 2



3.33.3 Spare parts

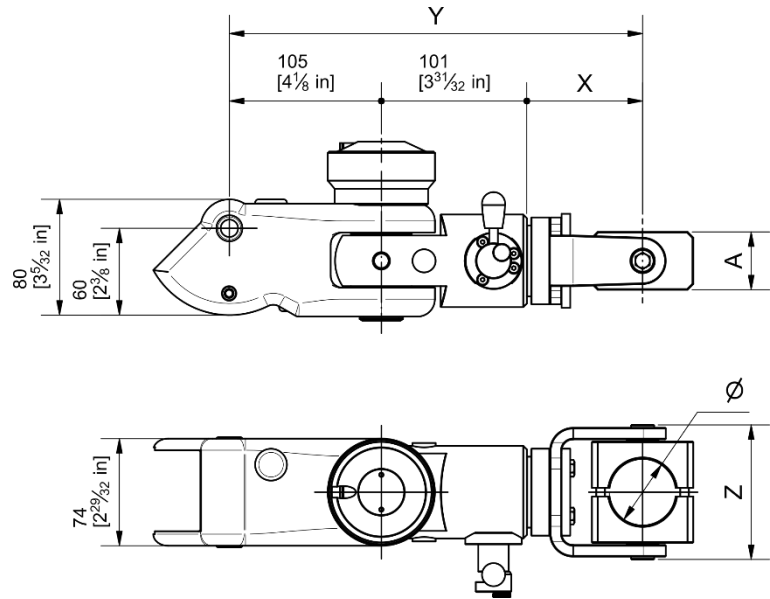
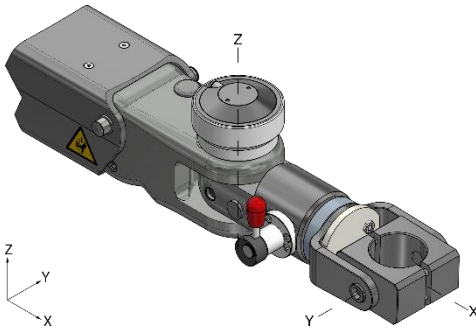
MV404404R	HEADMEMBER	
CB004704	SECURING HANDLE ASSEMBLY [Axis Z ₁]	
MV331205	REPLACEMENT ECCENTRIC GRIP ASSEMBLY KIT	
MV32A003	SCREW SWING REVOLVER	
MVBXXX04 ²²	TOOL SUPPORT	
MV328104	FLOATING SPINDLE T2140801/00 3/4" (Stroke: 45 mm/ 1.77" – Torque max.: 300Nm – □: 3/4" – Weigh: 1.5Kg / 0.7lbs)	
MV328204	FLOATING SPINDLE T2141212/00 1/2" (Stroke: 40 mm/ 1.57" – Torque max.: 150 Nm – □: 1/2" – Weigh: 0.9 Kg / 0.4lbs)	

²² XXX corresponds to the inner Ø in mm

3.34 AUTOMATIC REVOLVING - RAS M41007A0 + Bush



Swinging flange (MVBxxx04)



Requires L92 Locks
Suitable for Straight Tools

X: Rotates 360°. Manual locking in 64 positions (64x5.6°)
Z: Rotates 180°. 32-position pneumatic locking (32x5.6°)
Y: Rotate X° (depending on the tool)



Dimensions					
Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)	A (mm)
30 (1 3/16")	49 (2 59/64")	80 (3 5/32")	286 (11 17/64")	93 (3 21/32")	40 (1 37/64")
49 (1 59/64")	59 (2 21/64")	85 (3 11/32")	291 (11 29/64")	103 (4 1/16")	45 (1 49/64")
59 (2 21/64")	69 (2 23/32")	90 (3 35/64")	296 (11 21/32")	113 (4 29/64")	50 (1 31/32")

MAXIMUM TORQUE - Ball flange (Nm)			
Arm	Vertical	Horizontal	Angle
S0	300	250	250
S3	300	250	250
S4	300	250	250

To install the tool [\[See Installation of the tool page 91\]](#).
For flange replacement [\[See Cflange change page 86\]](#).
To view movements [\[See Movements and locking page 87\]](#).

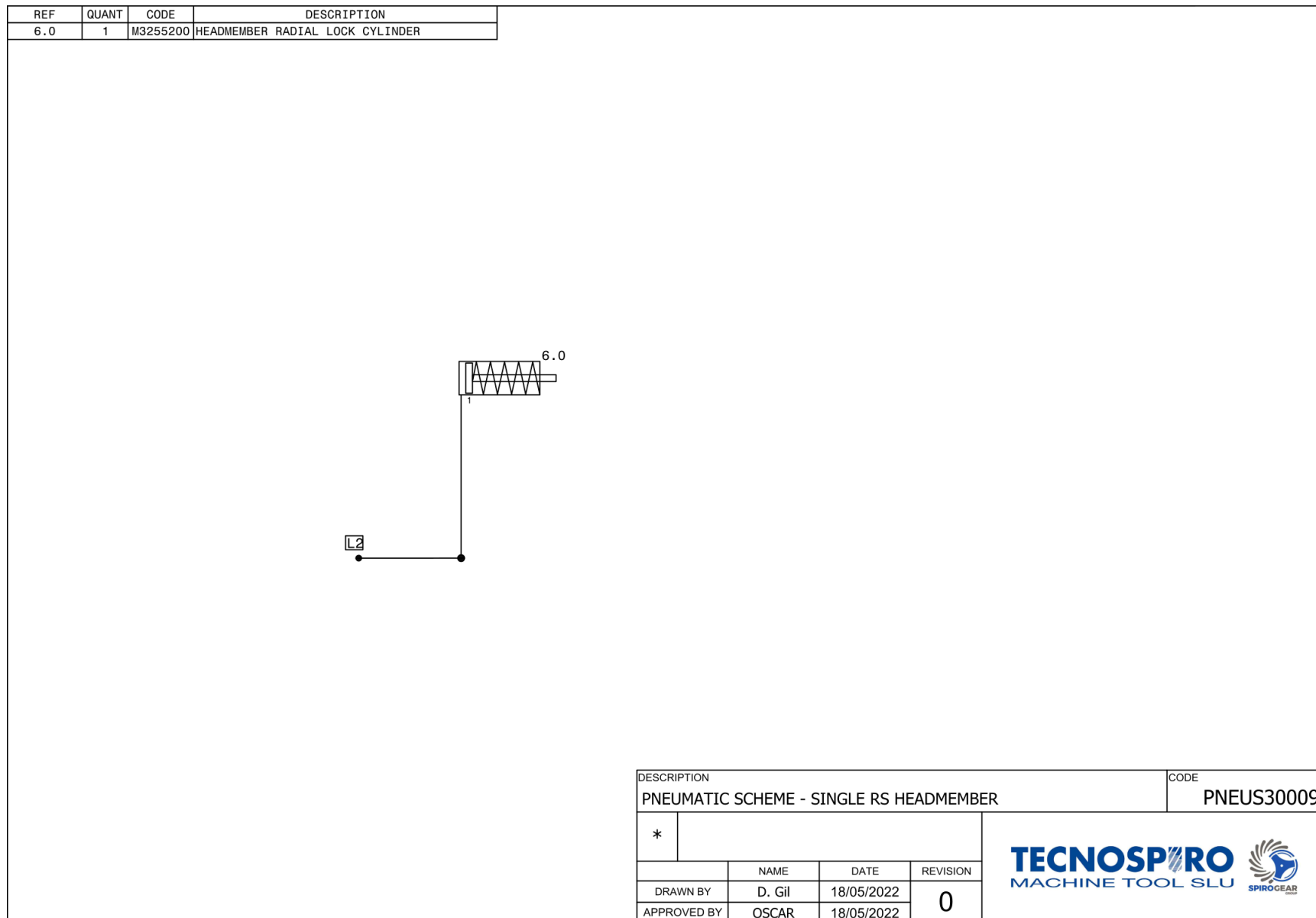
3.34.1 Operation

The pneumatic lock (Z Axis) is activated/deactivated with the other radial arm locks:

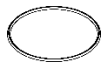

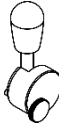
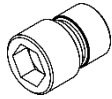
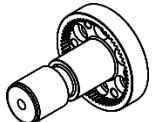
- If the arm is equipped with L22 locking, then via the radial locking selector switch  
- If the arm is equipped with the L92 locking device, then it is activated via the tool.

For more information, please refer to the arm manual.

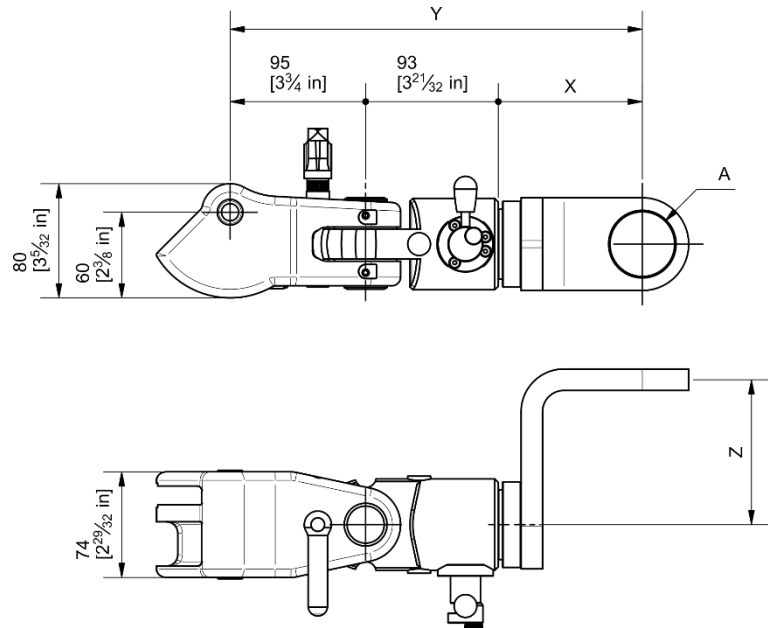
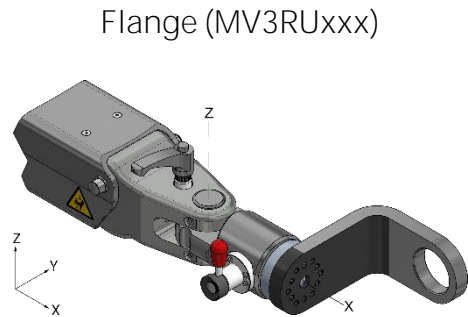
3.34.2 Pneumatic diagram



3.34.3 Spare parts

NH106300	O-RING 60x2	
M31400A0	REVOLVER PISTON	
MV331205	ECCENTRIC GRIP ASSEMBLY REPLACEMENT KIT	
MV328104	FLOATING SPINDLE T2140801/00 3/4" (Stroke: 45 mm/ 1.77" – Torque max.: 300Nm – □: 3/4" – Weigh: 1.5Kg / 0.7lbs)	
MV328204	FLOATING SPINDLE T2141212/00 1/2" (Stroke: 40 mm/ 1.57" – Torque max.: 150 Nm – □: 1/2" – Weigh: 0.9 Kg / 0.4lbs)	
MV32A003	SCREW SWING REVOLVER	
MV326905R	AXIS FLANGE	

3.35 MANUAL REVOLVING - RB MV404404 + Bush



Requires L92 Locks²³
Suitable for pistol type tools

X: Rotates 360°. Manual locking in 64 positions (64x5.6°)
Z: Rotates 180°. Manual locking 5 positions (5x45°)

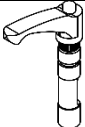
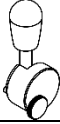
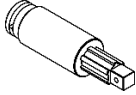
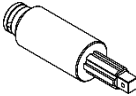
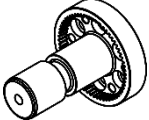
The X, Y, Z dimensions will depend directly on the chosen tool. Dimension A shall correspond to the scoring on the tool.

MAXIMUM TORQUE - Flange (Nm)			
Arm	Vertical	Horizontal	Angle
S0	300	250	200
S3	300	250	200
S4	300	250	200

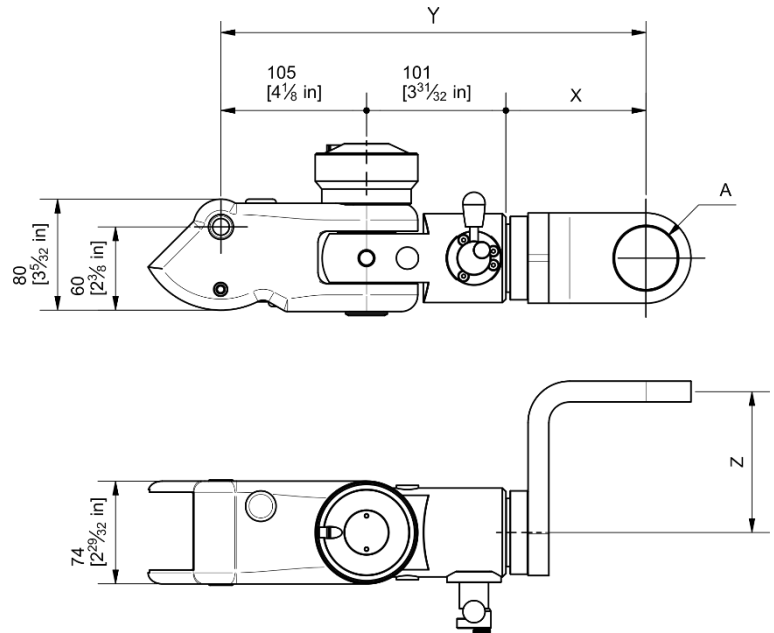
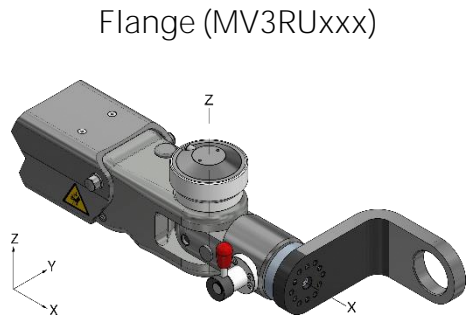
For flange replacement [\[See Cflange change page 86\]](#).
To view movements [\[See Movements and locking page 87\]](#).
To see operation [\[See Operation page 92\]](#).

²³ S0: The use of pneumatic locks (L92 / L92 + compensator) is highly recommended.
S3: The use of pneumatic locks (L92 / L92 + compensator) is highly recommended.
S4: The use of pneumatic locks (L92 / L92 + compensator) is mandatory.

3.35.1 Spare parts

CB004704	SECURING HANDLE ASSEMBLY [Axis Z ₁]	
MV331205	ECCENTRIC GRIP ASSEMBLY REPLACEMENT KIT	
MV328104	FLOATING SPINDLE T2140801/00 3/4" (Stroke: 45 mm/ 1.77" – Torque max.: 300Nm – □: 3/4" – Weigh: 1.5Kg / 0.7lbs)	
MV328204	FLOATING SPINDLE T2141212/00 1/2" (Stroke: 40 mm/ 1.57" – Torque max.: 150 Nm – □: 1/2" – Weigh: 0.9 Kg / 0.4lbs)	
MV326905R	AXIS FLAGNE	

3.36 AUTOMATIC REVOLVING - RBS M41007A0 + Bush



Requires L92 Locks
Suitable for pistol type tools



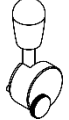
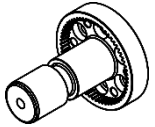
X: Rotates 360°. Manual locking in 64 positions (64x5.6°)
Z: Rotates 180°. Pneumatic locking in 32 positions (32x5.6°)

The X, Y, Z dimensions will depend directly on the chosen tool. Dimension A shall correspond to the scoring on the tool.

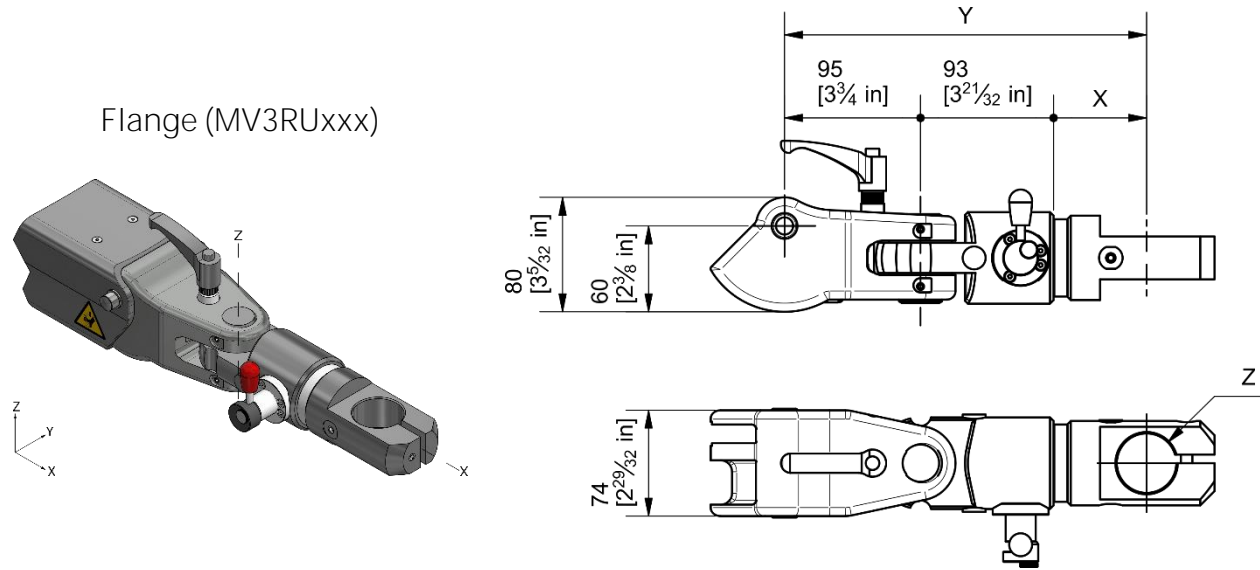
MAXIMUM TORQUE - Ball flange (Nm)			
Arm	Vertical	Horizontal	Angle
S0	300	250	250
S3	300	250	250
S4	300	250	250

For flange replacement [\[See Cflange change page 86\]](#).
 To view movements [\[See Movements and locking page 87\]](#).
 To see operation [\[See Operation page 95\]](#).
 To see the pneumatic diagram [\[See Pneumatic diagram page 96\]](#).

3.36.1 Spare parts

NH106300	O-RING 60x2	
M31400A0	REVOLVER PISTON	
MV331205	ECCENTRIC GRIP ASSEMBLY REPLACEMENT KIT	
MV328104	FLOATING SPINDLE T2140801/00 3/4" (Stroke: 45 mm/ 1.77" – Torque max.: 300Nm – □: 3/4" – Weigh: 1.5Kg / 0.7lbs)	
MV328204	FLOATING SPINDLE T2141212/00 1/2" (Stroke: 40 mm/ 1.57" – Torque max.: 150 Nm – □: 1/2" – Weigh: 0.9 Kg / 0.4lbs)	
MV326905R	AXIS FLANGE	

3.37 MANUAL REVOLVING 4x90° - RC M3150900 + Bush



Valid only for Series 3

X: Rotates 360°. Manual locking in 4 positions (4x90°)

Z: Rotates 180°. Manual locking in 5 positions (5x45°)

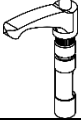
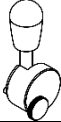
The X, Y, Z dimensions will depend directly on the chosen tool.

For flange replacement [\[See Cflange change page 86\]](#).

To view movements [\[See Movements and locking page 87\]](#).

To see operation [\[See Operation page 92\]](#).

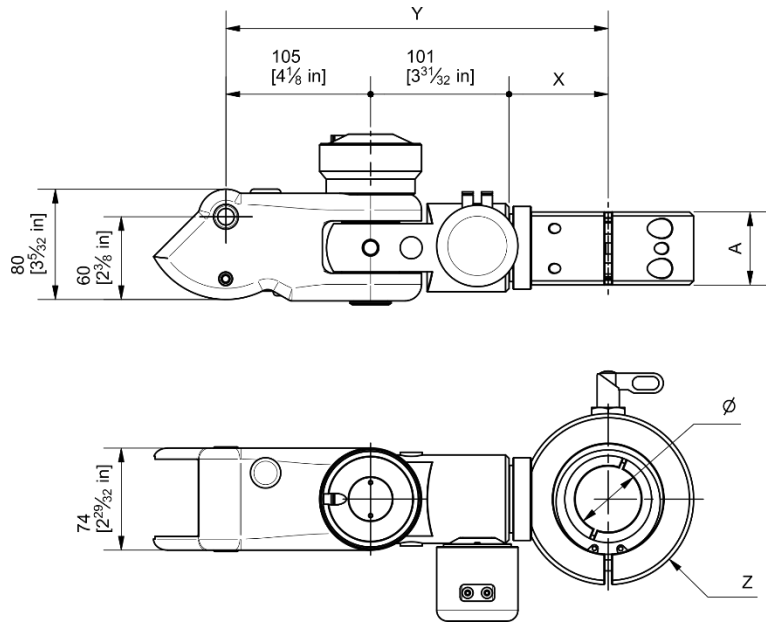
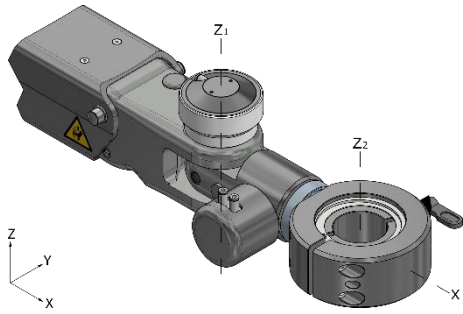
3.37.1 Spare parts

CB004704	SECURING HANDLE ASSEMBLY [Axis Z₁]	
MV331205	ECCENTRIC GRIP ASSEMBLY REPLACEMENT KIT	

3.38 AUTOMATIC DOUBLE REVOLVING - RS M4102000 + Bush



Rotary flange (MVRxxx04)



Requires L92 Locks
Suitable for angled tools

- X: Rotates 360°. Pneumatic locking in 64 positions (64x5.6°)
- Z₁: Rotates 180°. Pneumatic locking in 32 positions (32x5.6°)
- Z₂: Rotates 360°. Manual locking in 8 positions (8x45°)

Dimensions					
Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)	A (mm)
31 (1 7/32")	55 (2 11/64")	72 (2 53/64")	278 (10 15/16")	Ø124 (Ø4 7/8")	53 (2 3/32")
53 (2 3/32")	70 (2 3/4")	76 (2 63/64")	282 (11 7/64")	Ø134 (Ø5 9/32")	63 (2 31/64")
69 (2 23/32")	80 (3 5/32")	81.5 (3 13/64")	287.5 (11 5/16")	Ø144 (Ø5 43/64")	65 (2 9/16")

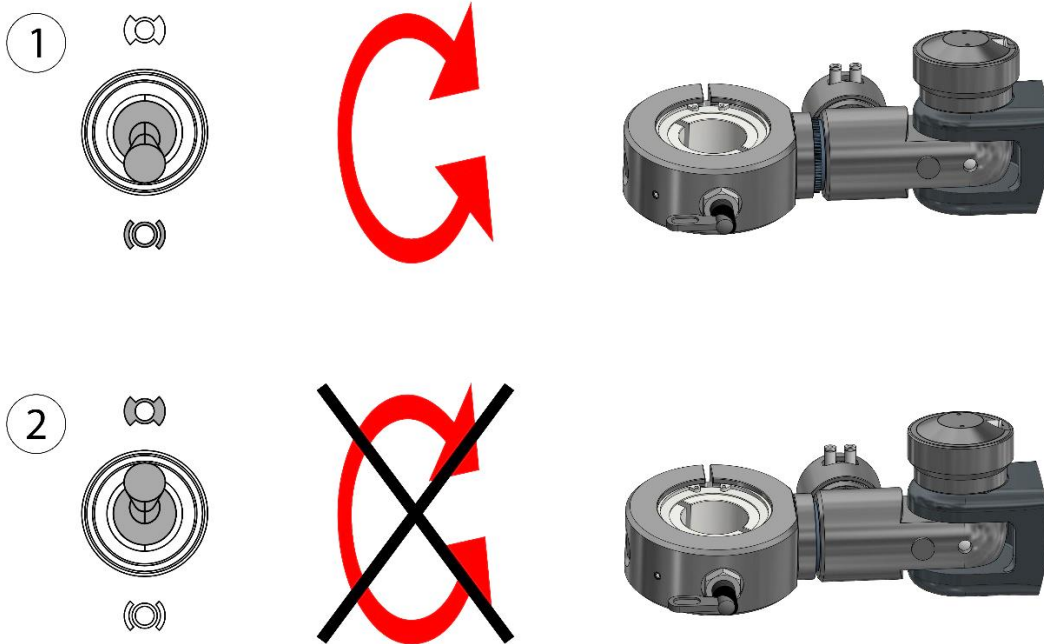
MAXIMUM TORQUE - Rotating flange (Nm)			
Arm	Vertical	Horizontal	Angle
S0	300	250	250
S3	300	250	250
S4	300	250	250

3.38.1 OPERATIONAL

The RS head incorporates two automatic locks on the head rotation (Z₁ Axis and X Axis). Through the mandatory use of a pneumatic locking system L92, when you operate your tool, the whole arm including the head will be locked instantly.

However, the X Axis locking has an additional selector with which you can release or lock the tool:

- Position (1): Tool free²⁴.
- Position (2): Tool locked.

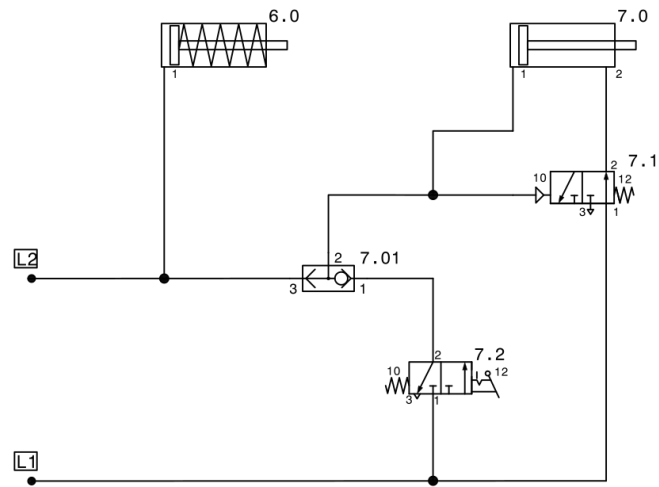


To install the tool [\[See Installation of the tool page 84\]](#).
For flange replacement [\[See Cflange change page 86\]](#).

²⁴ When the tool is activated, the locking device is also activated.



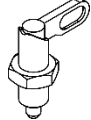
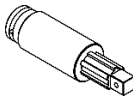
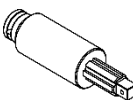
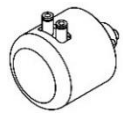
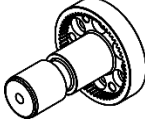
3.38.2 Pneumatic diagram

REF	QUANT	CODE	DESCRIPTION
6.0	1	M3255200	HEADMEMBER RADIAL LOCK CYLINDER
7.0	1	NH114500	RADIAL LOCK CYLINDER CRB2BS30-180SZ
7.01	1	NH026196	FUNCTION "0" VALVE VR1210F-04
7.1	1	NH026206	AIR OPERATED VALVE 3 PORT SYJA522-M5
7.2	1	NH121136	MICRO VALVE VM1000-4NU-08

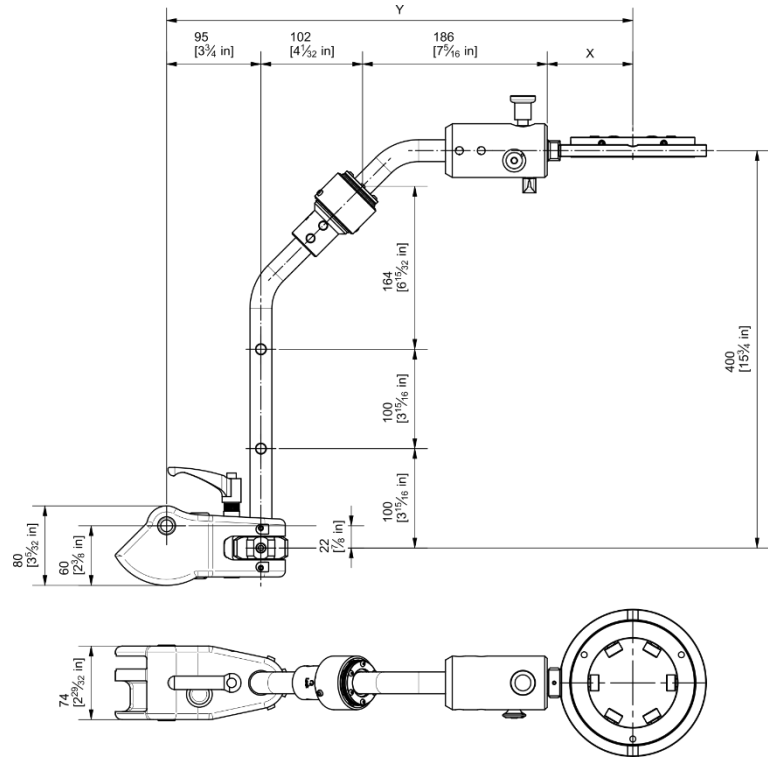
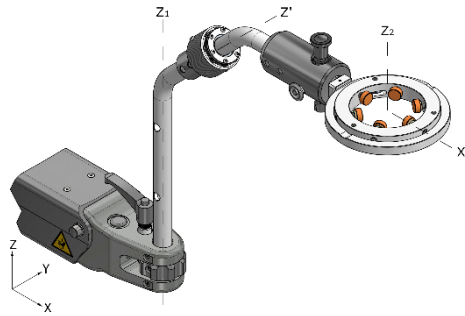


DESCRIPTION				CODE
PNEUMATIC SCHEME - DUAL RS HEADMEMBER				PNEUS30010
*				
	NAME	DATE	REVISION	
DRAWN BY	D. Gil	18/05/2022	0	
APPROVED BY	OSCAR	18/05/2022		

3.38.3 Spare parts

NH106300	O-RING 60x2	
M31400A0	REVOLVER PISTON	
CM123000	POSITIONER M16x1.5	
MV328104	FLOATING SPINDLE T2140801/00 3/4" (Stroke: 45 mm/ 1.77" – Torque max.: 300Nm –□: 3/4" – Weigh: 1.5Kg / 0.7lbs)	
MV328204	FLOATING SPINDLE T2141212/00 1/2" (Stroke: 40 mm/ 1.57" – Torque max.: 150 Nm –□: 1/2" – Weigh: 0.9 Kg / 0.4lbs)	
M3196200R	ECCENTRIC RS LOCK ASSEMBLY	
MV326905R	AXIS FLANGE	

3.39 GIRAFFE MULTIPOSITION - SN MV30P704 + Handlebar



Maximum load: 10 Kg/ 6kg²⁵ | □½" ²⁶

Z₁: Rotates 360°. Manual locking in 8 positions (8x45°)

Z': Rotates 360°. Manual locking in 8 positions (8x45°)

Z₂: Rotates 360°. Non-lockable

X: Rotates 360°. Manual locking in 4 positions (4x90°)

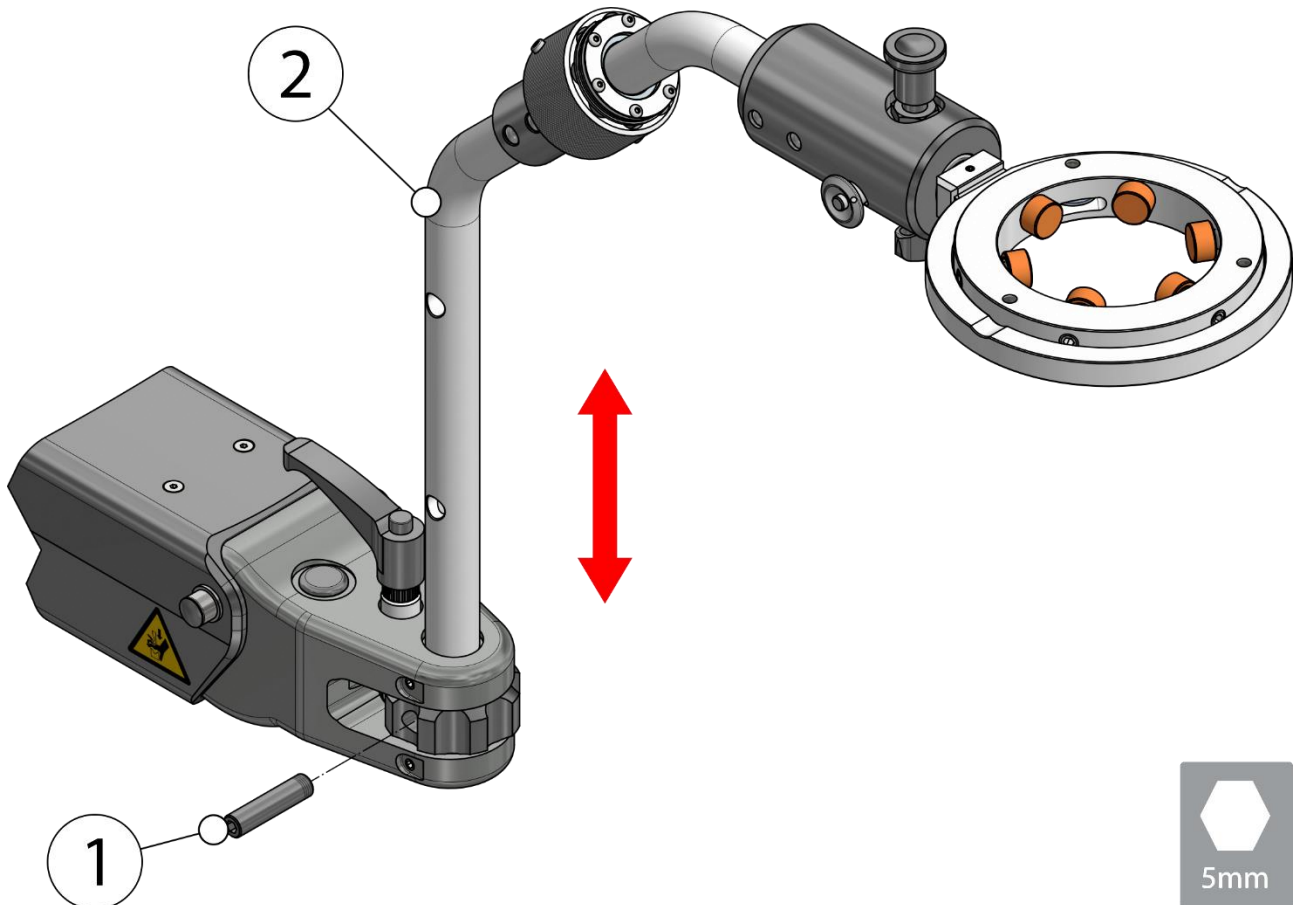
²⁵ Consider 6kg max. load for applications with Handlebar type A (TIMCO) when used with vibration tools (impact, impulse, etc.). For all other applications or for applications with B Handlebar type B (TIMSAND), consider 10 kg maximum load.

²⁶ Recommended tool square size for this head

3.39.1 Height adjustment

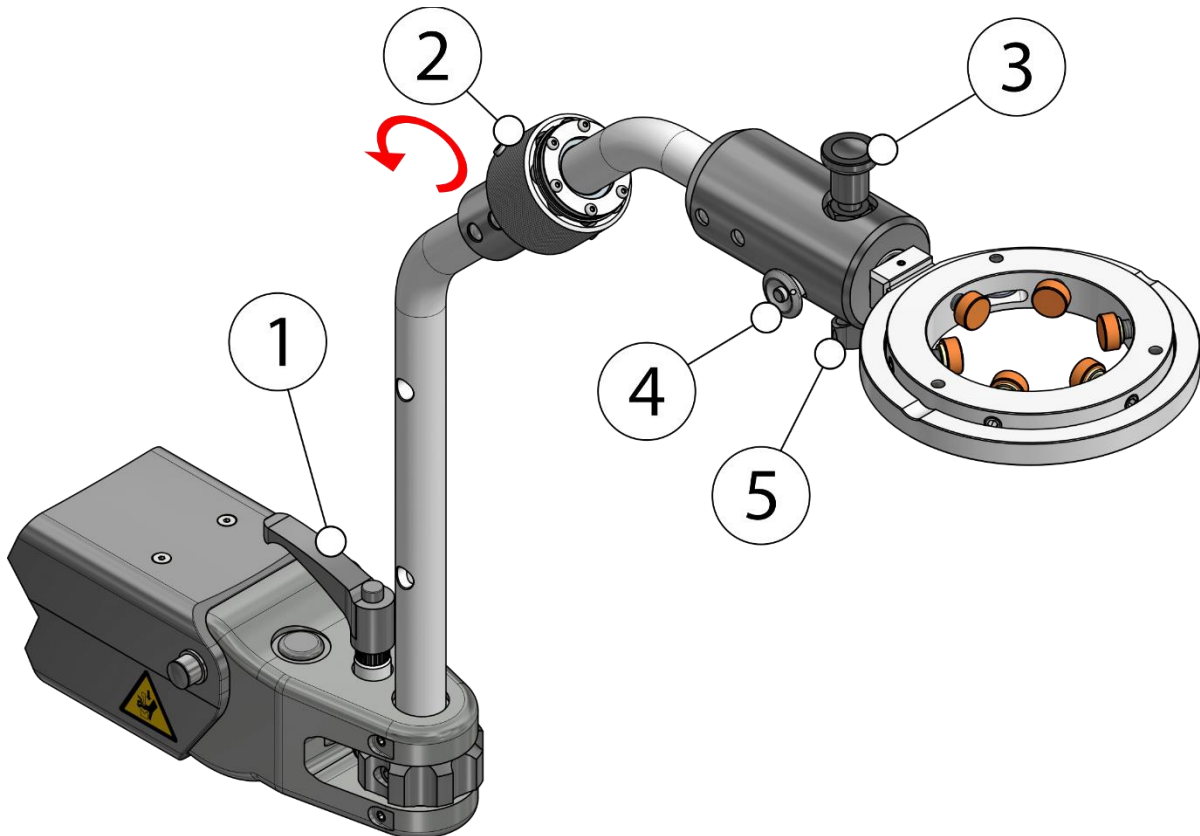
The height of the rod can be adjusted (3 positions 100mm apart) to suit the working conditions, to do that:

- 1- Remove the pin (1) (5 mm Allen key).
- 2- Move the rod (2) vertically until the holes in the rod are aligned with the housing of the pin (1).
- 3- Re-insert the pin (1) (5mm Allen key) in its original position.



3.39.2 Movements and locking


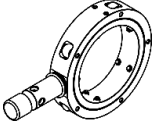
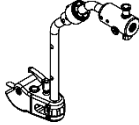
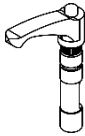
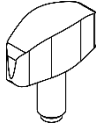
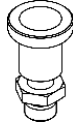
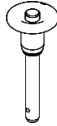
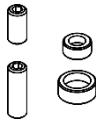
Hand (1) releases/locks the Z₁ movement (360°, 8x45°).
 Rotate the chuck (2) to release/lock the Z' movement (360°, 8x45°).
 The positioner (3) releases/locks the X movement (360°, 4x90°).
 To remove the rod, release the positioner (3) and pull out the pin (4).
 Using the adjustment knob (5) the X-friction can be adjusted.



TIMCO type handlebar [\[See Type A gimbals: TIMCO page 67\]](#).
 ✓ TIMCO dimensions [\[See TIMCO Dimensions page 29\]](#).
 ✓ For fitting the tool [\[See Assembly of the tool page 30\]](#).
 ✓ Included accessories [\[See Included accessories page 31\]](#).
 ✓ For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

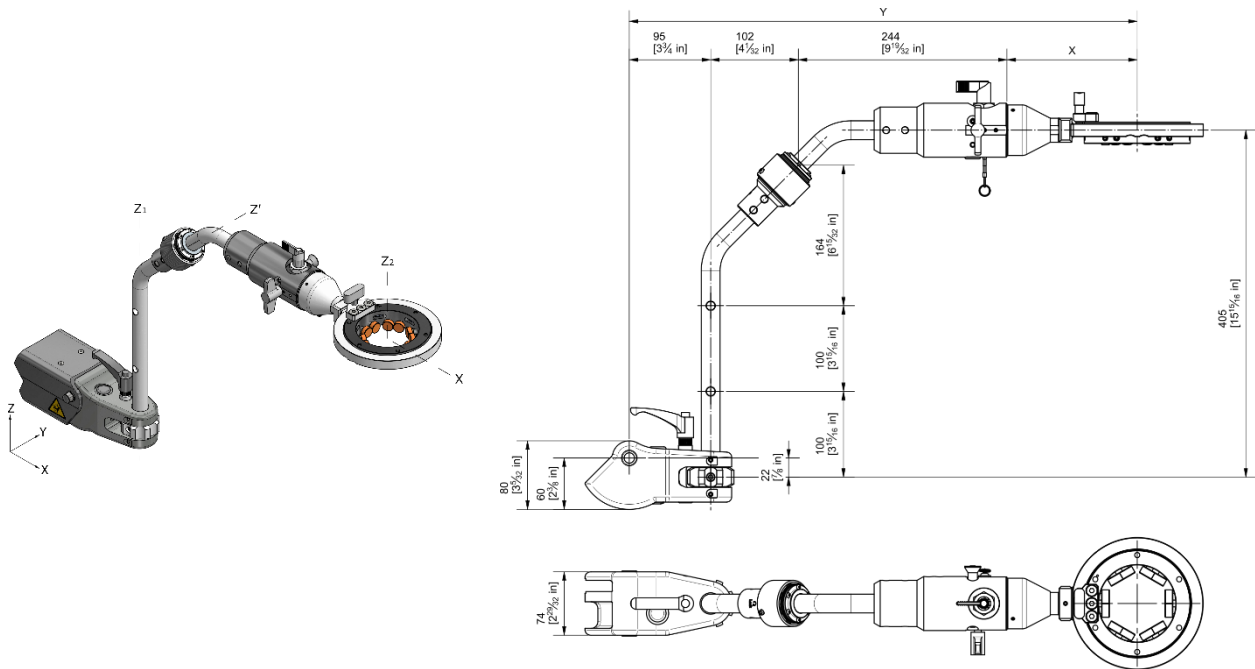
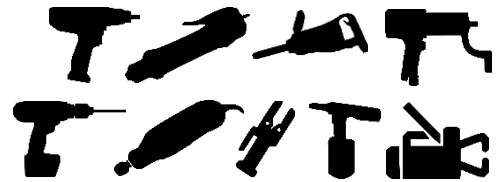
TIMSAND Type Handlebar [\[See Type B gimbals: TIMSAND page 68\]](#).
 ✓ TIMSAND dimensions [\[See Dimensions TIMSAND page 33\]](#).
 ✓ For fitting the tool [\[See Assembly of the tool page 34\]](#).
 ✓ Included accessories [\[See Included accessories page 34\]](#).
 ✓ For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

3.39.3 Spare parts

MV3MAXXX ²⁷	GIMBAL TIMCO Maximum load = 12 Kg	
MV3PBXXX	GIMBAL TIMSAND Maximum load = 12 Kg	
MV30P704R	GIRAFFE MULTIPOSITION HEADMEMBER Maximum load 12 Kg	
CB004704	SECURING HANDLE ASSEMBLY [Axis Z ₁]	
MV31K703R	SECURING LEVER M8x18.5	
AC004046	POSITIONER GN 607.1-6-A-ST	
CM125100	POSITIONER Ø6x30	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

²⁷ XXX corresponds to the inner Ø in mm

3.40 GIRAFFE MULTIPOSITION REINFORCED - SQ MV30P804 + Handlebar



Maximum load: 30 Kg | □^{3/4}"²⁸

Z₁: Rotates 360°. Manual locking in 8 positions (8x45°)

Z': Rotates 360°. Manual locking in 8 positions (8x45°)

Z₂: Rotates 360°. Adjustment of smoothness for rotation and position setting

X: Rotates 360°. Manual locking in 4 positions (4x90°)

For height adjustment [\[See Height adjustment page 108\]](#).

To view movements [\[See Movements and locking page 109\]](#).

TIMCO type Handlebar [\[See Gimbal Type A: REINFORCED TIMCO page 74\]](#).

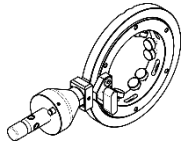
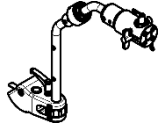
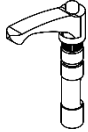
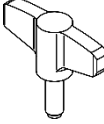
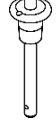
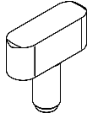
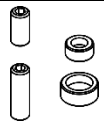
- ✓ TIMCO dimensions [\[See Dimensions of TIMCO page 39\]](#).
- ✓ For fitting the tool [\[See Assembly of the tool page 30\]](#).
- ✓ Included accessories [\[See Included accessories page 31\]](#).
- ✓ For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

TIMSAND Type Handlebar [\[See Gimbal Type B: TIMSAND REINFORCED page 75\]](#).

- ✓ TIMSAND dimensions [\[See Dimensions TIMSAND reinforced page 41\]](#).
- ✓ For fitting the tool [\[See Assembly of the tool page 34\]](#).
- ✓ Included accessories [\[See Included accessories page 34\]](#).
- ✓ For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

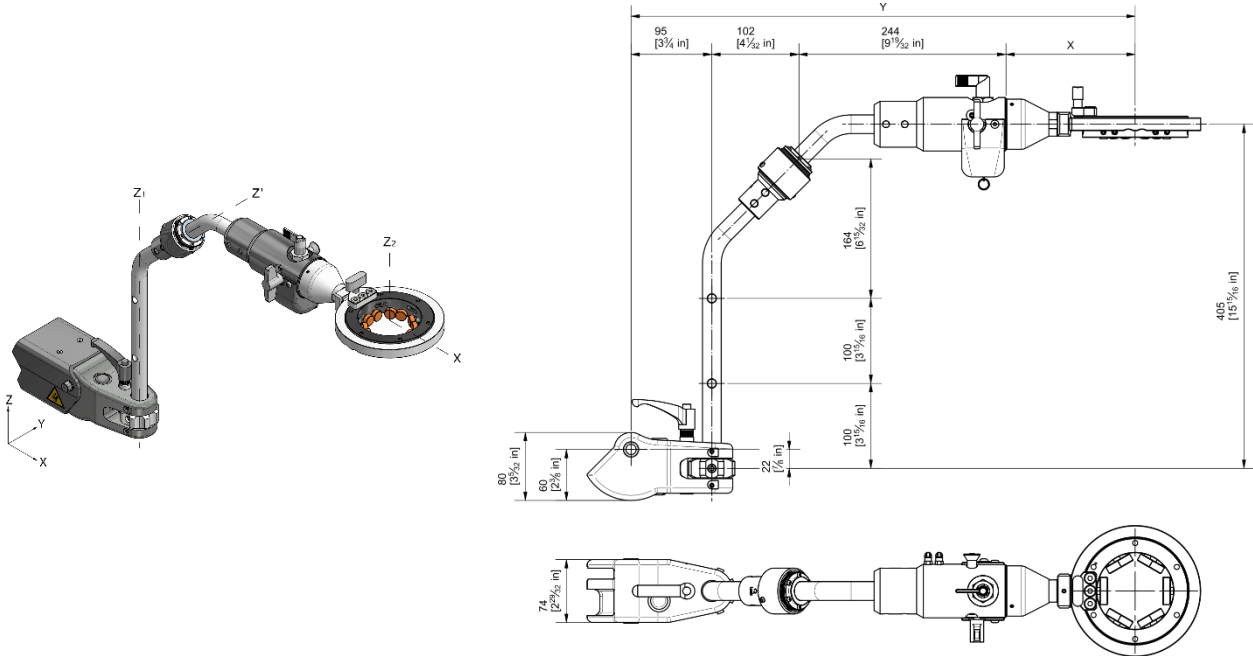
²⁸ Recommended tool square size for this head

3.40.1 Spare parts

MV3JAXXX ²⁹	GIMBAL TIMCO Maximum load = 30 kg	
MV30P804R	GIRAFFE MULTIPOSITION HEADMEMBER Maximum load 30 kg	
CB004704	SECURING HANDLE ASSEMBLY [Axis Z ₁]	
M3103400R	LEVER M8 [Axis X]	
CM125000	POSITIONER Ø6x40	
M3103200R	TIMCO STAINLESS STEEL LEVER RETOUCH [Axis Y]	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

²⁹ XXX corresponds to the inner Ø in mm

3.41 GIRAFFE MULTIPOSITION REINFORCED SECURITY - SQA M3161600 + Handlebars



Requires Locks on the swinging arm (Lx2)³⁰
Maximum load: 30 Kg | □^{3/4}"³¹

- Z₁: Rotates 360°. Manual locking in 8 positions (8x45°)
- Z': Rotates ±180°. Manual locking in 8 positions (8x45°)
- Z₂: Rotates 360°. Adjustment of smoothness for rotation and position setting
- X: Rotates 360°. Manual locking in 4 positions (4x90°)

³⁰ The head is fitted with a safety system that locks the swinging arm when the tool is withdrawn, thus preventing an accident.

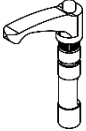
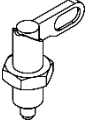
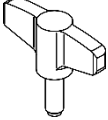
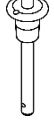
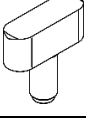
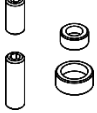
³¹ Recommended tool square size for this head.

For height adjustment [\[See Height adjustment page 108\]](#).
 To view movements [\[See Movements and locking page 109\]](#).
 Pneumatic diagram [\[See Pneumatic diagram page 79\]](#).

TIMCO type Handlebar [\[See Gimbal Type A: REINFORCED TIMCO page 74\]](#).
 ✓ TIMCO dimensions [\[See Dimensions of TIMCO page 39\]](#).
 ✓ For fitting the tool [\[See Assembly of the tool page 30\]](#).
 ✓ Included accessories [\[See Included accessories page 31\]](#).
 ✓ For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

TIMSAND Type Handlebar [\[See Gimbal Type B: TIMSAND REINFORCED page 75\]](#).
 ✓ TIMSAND dimensions [\[See Dimensions TIMSAND reinforced page 41\]](#).
 ✓ For fitting the tool [\[See Assembly of the tool page 34\]](#).
 ✓ Included accessories [\[See Included accessories page 34\]](#).
 ✓ For maintenance and cleaning [\[See Gimbals maintenance and cleaning page 31\]](#).

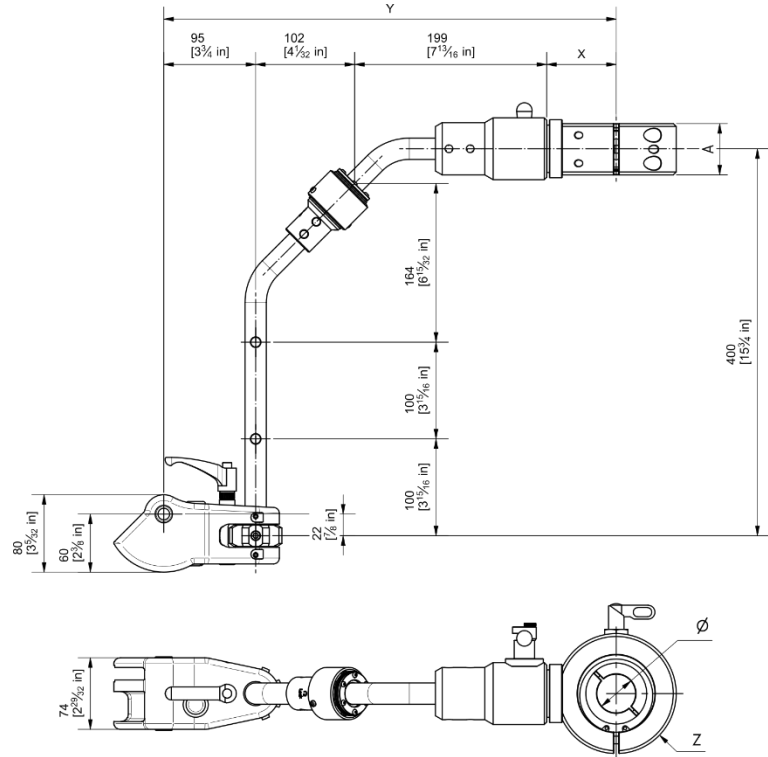
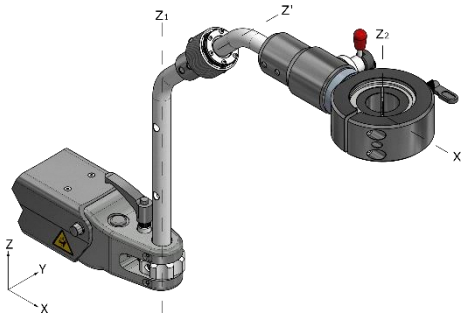
3.41.1 Spare parts

CB004704	SECURING HANDLE ASSEMBLY [Axis Z1]	
CM150300	POSITIONER M16x1.5	
M3103400R	LEVER M8 [Axis X]	
CM125000	POSITIONER Ø6x40	
M3103200R	TIMCO STAINLESS STEEL LEVER RETOUCH [Axis Y]	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

3.42 GIRAFFE REVOLVING - SR MV30P604 + Bush



Rotary flange (MVRxxx04)



Requires L92 Locks³²

Suitable for angled tools

Maximum load: 30 Kg | □^{3/4}"³³

Z₁: Rotates 360°. Manual locking in 8 positions (8x45°)

Z₁': Rotates 360°. Manual locking in 8 positions (8x45°)

Z₂: Rotates 360°. Manual locking in 8 positions (8x45°)

X: Rotates 360°. Manual locking in 64 positions (64x5.6°)

Dimensions					
Ømin (mm)	Ømax (mm)	X (mm)	Y (mm)	Z (mm)	A (mm)
31 (1 7/32")	55 (2 11/64")	72 (2 53/64")	468 (18 27/64")	Ø124 (Ø4 7/8")	53 (2 3/32")
53 (2 3/32")	70 (2 3/4")	76 (2 63/64")	472 (18 37/64")	Ø134 (Ø5 9/32")	63 (2 31/64")
69 (2 23/32")	80 (3 5/32")	81.5 (3 13/64")	477.5 (18 51/64")	Ø144 (Ø5 43/64")	65 (2 9/16")

MAXIMUM TORQUE - Rotating flange (Nm)			
Arm	Vertical	Horizontal	Angle
S0	300	250	200
S3	300	250	200
S4	300	250	200

³² S0: The use of pneumatic locks (L92 / L92 + compensator) is highly recommended

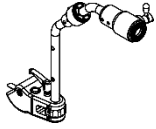
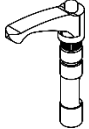

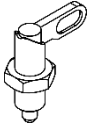
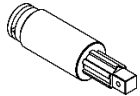
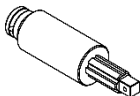
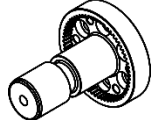
S3: The use of pneumatic locks (L92 / L92 + compensator) is highly recommended

S4: Mandatory use of pneumatic locks (L92 / L92 + compensator)

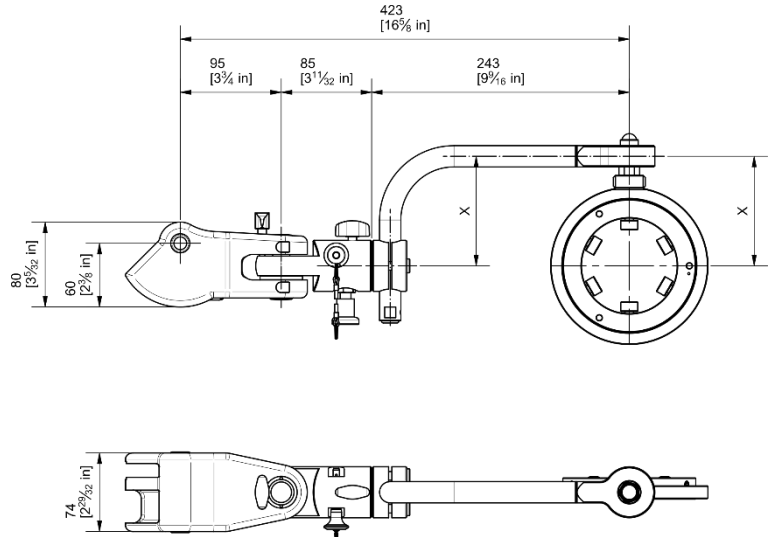
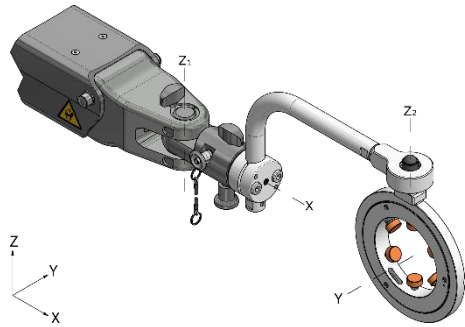
³³ Recommended tool square size for this head

For height adjustment [\[See Height adjustment page 108\]](#).
 To view movements [\[See Movements and locking page 109\]](#).
 To install the tool [\[See Installation of the tool page 84\]](#).
 For flange replacement [\[See Cflange change page 86\]](#).
 To see the flange movements [\[See Movements and locking page 87\]](#).
 To see operation [\[See Operation page 88\]](#).

3.42.1 Spare parts

MV30P604R	GIRAFFE REVOLVER HEADMEMBER	
CB004704	SECURING HANDLE ASSEMBLY [Axis Z₁]	
MV331205	ECCENTRIC GRIP ASSEMBLY REPLACEMENT KIT	
CM123000	POSITIONER M16x1.5	
MV328104	FLOATING SPINDLE T2140801/00 3/4" (Stroke: 45 mm/ 1.77" – Torque max.: 300Nm – □: 3/4" – Weigh: 1.5Kg / 0.7lbs)	
MV328204	FLOATING SPINDLE T2141212/00 1/2" (Stroke: 40 mm/ 1.57" – Torque max.: 150 Nm – □: 1/2" – Weigh: 0.9 Kg / 0.4lbs)	
MV326905R	AXIS FLANGE	

3.43 MULTIPOSITION WITH QUICK-CHANGE - T MV31F5A4 + Handlebar



Maximum load: 10Kg/ 6kg³⁴ | □ 1/2"³⁵
Requires Locks (L50)

- Z₁: Rotates ±90°. Non-lockable
- Z₂: Rotates 360°. Non-lockable
- X: Rotates 360°. Manual locking in 4 positions (4x90°)
- Y: Rotates 360°. Non-lockable

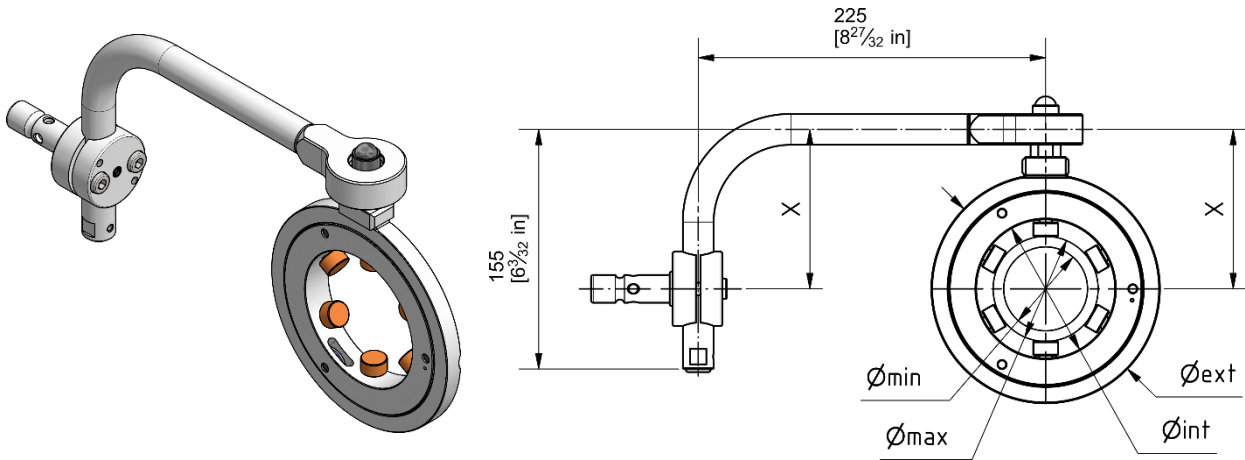
To view movements [\[See Movements and locking page66\]](#).

³⁴ Consider 6kg max. load for applications with Handlebar type A (TIMCO) when used with vibration tools (impact, impulse, etc.). For all other applications or for applications with B Handlebar type B (TIMSAND), consider 10 kg maximum load.

³⁵ Recommended tool square size for this head.

3.43.1 Type A gimbals: TIMCO

Suitable for any type of tool.
 Ref: MV3LAxxx (xxx = internal diameter in mm)

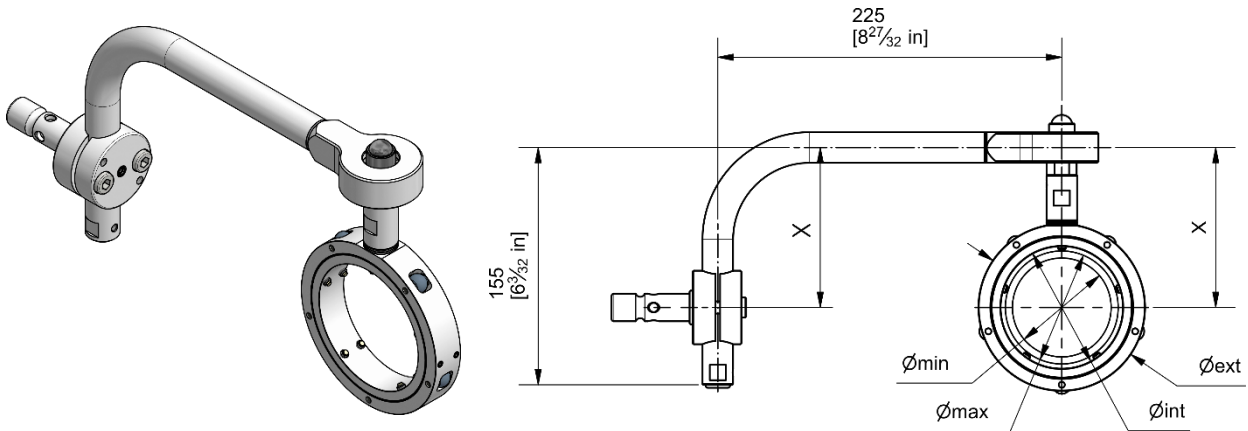


- The X dimension shall be as close as possible to the X axis of rotation to ensure good balancing of the tool.
- Maximum load 6 kg for applications with vibration tools (impact, impulse, etc.).
- Other dimensions on request.

- ✓ TIMCO dimensions [See TIMCO Dimensions page 29].
- ✓ For fitting the tool [See Assembly of the tool page 30].
- ✓ Included accessories [See Included accessories page 31].
- ✓ For maintenance and cleaning [See Gimbals maintenance and cleaning page 31].

3.43.2 Type B gimbals: TIMSAND

Suitable for tools with cylindrical clamping area.
 Ref: MV3QBxxx (xxx = internal diameter in mm)



- The X dimension shall be as close as possible to the X axis of rotation to ensure good balancing of the tool.
- Maximum load 6 kg for applications with vibration tools (impact, impulse, etc.).
- Other dimensions on request.

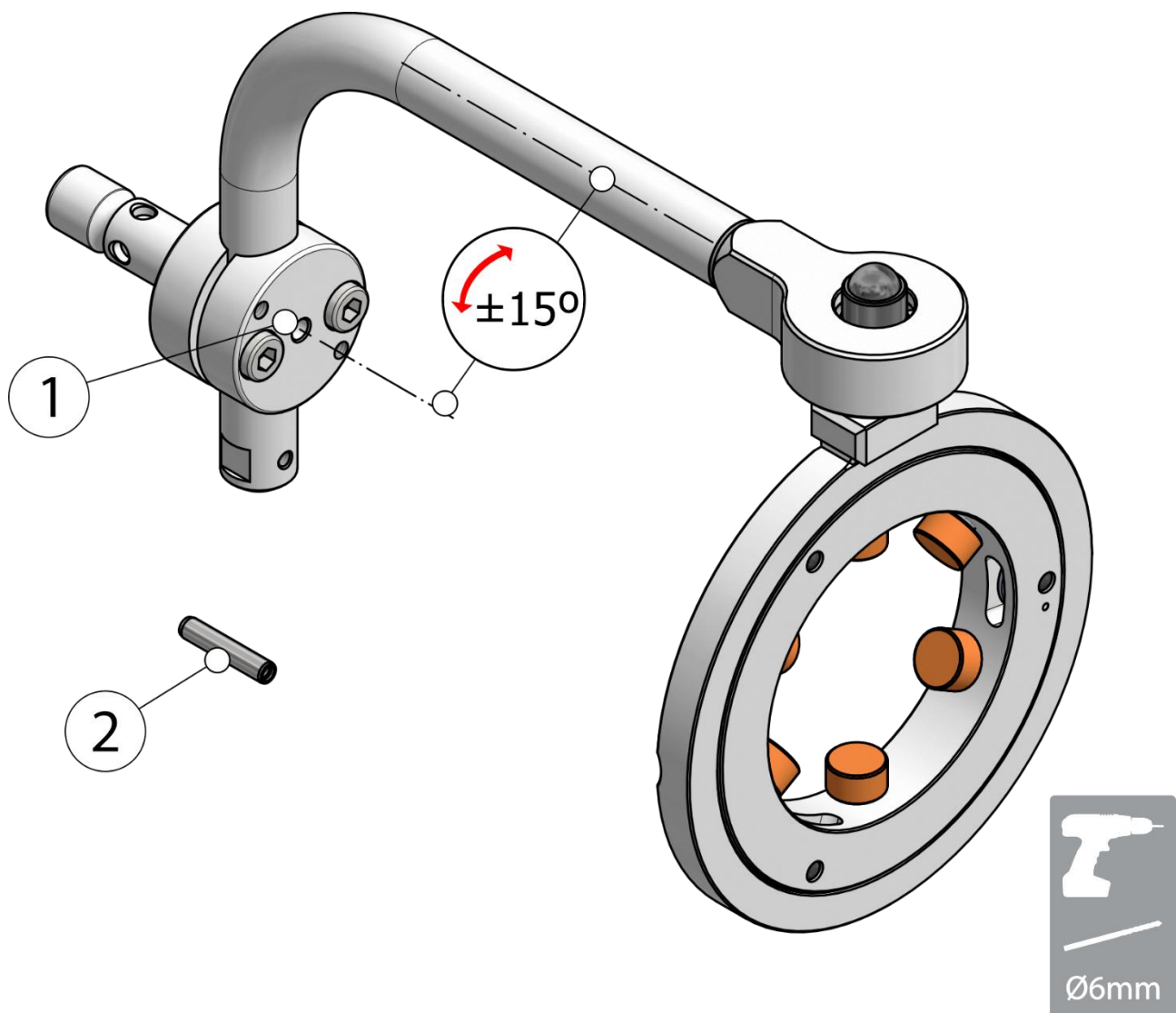
- ✓ TIMSAND dimensions [See Dimensions TIMSAND page 33].
- ✓ For fitting the tool [See Assembly of the tool page 34].
- ✓ Included accessories [See Included accessories page 34].
- ✓ For maintenance and cleaning [See Gimbals maintenance and cleaning page 31].

3.43.3 Handlebar adjustment and reinforcement

Once the handlebar adjustment has been completed, it can be secured by using a DIN 7979 Ø6x30³⁶ pin to reinforce the retaining cylinder. To adjust height:

Ensure that the angle between the retaining cylinder and the rod does not exceed $\pm 15^\circ$.

- 1- Drill the handlebar using the existing hole in the retaining cylinder (1) as a guide (Drill bit $\text{Ø}6\text{mm}$)³⁷. The hole should be approximately 30mm deep³⁸ (drill through the entire rod).
- 2- Insert the pin (2) into the drilled hole.

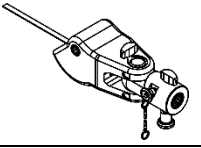
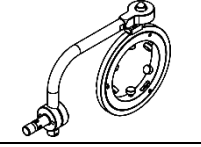
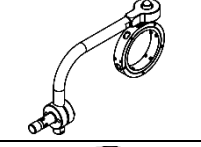
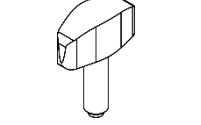
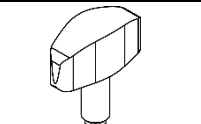
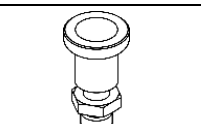
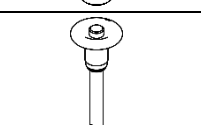
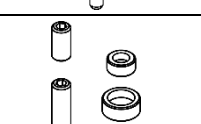


³⁶ In the head bars U and UA, the pin shall be a DIN 7979 $\text{Ø}8 \times 36$

³⁷ On the U and UA head bars, the drill bit shall be $\text{Ø}8$

³⁸ On the U and UA head bars, the depth shall be approximately 35mm

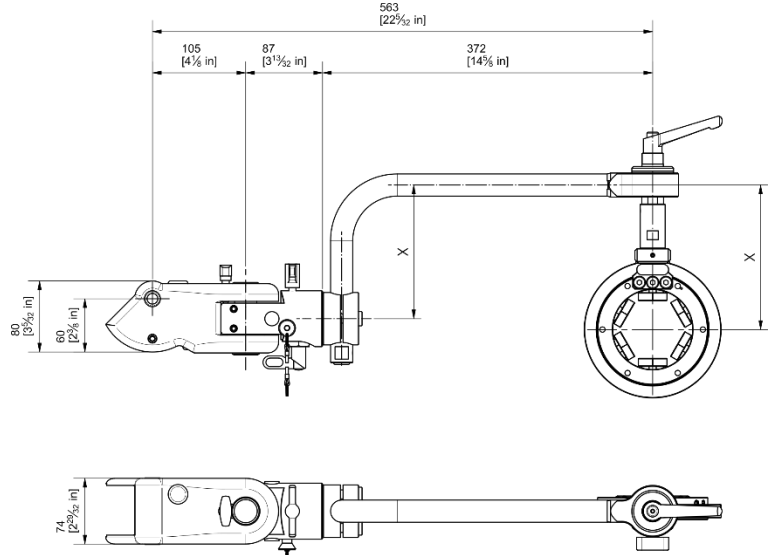
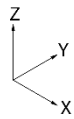
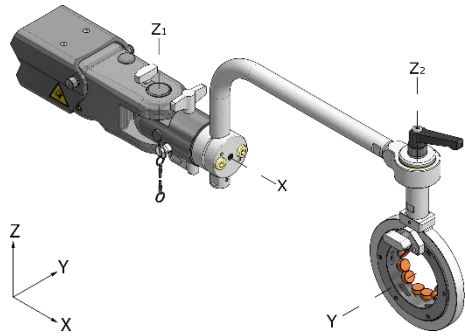
3.43.4 Spare parts

MV31F5A4R	HEADMEMBER Maximum load = 12 kg	
MV3LAXXX ³⁹	GIMBAL TIMCO Maximum load = 12 Kg	
MV3QBXXX	GIMBAL TIMSAND Maximum load = 12 Kg	
MV31J603R	SECURING LEVER M8x24 [Axis Z ₁]	
MV31K703R	SECURING LEVER M8x18.5	
AC004046	POSITIONER GN 607.1-6-A-ST	
CM125100	POSITIONER Ø6x30	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

³⁹ XXX corresponde al Ø en mm

3.44 MULTIPOSICION REINFORCED WITH QUICK-CHANGE - U

MV30D2A4 + Handlebar



Max. load 30 Kg | □ 3/4" ⁴⁰

Requires Locks (L50)

Z₁: Rotates ±90°. Non-lockable

Z₂: Rotates 360°. Manual locking in any position

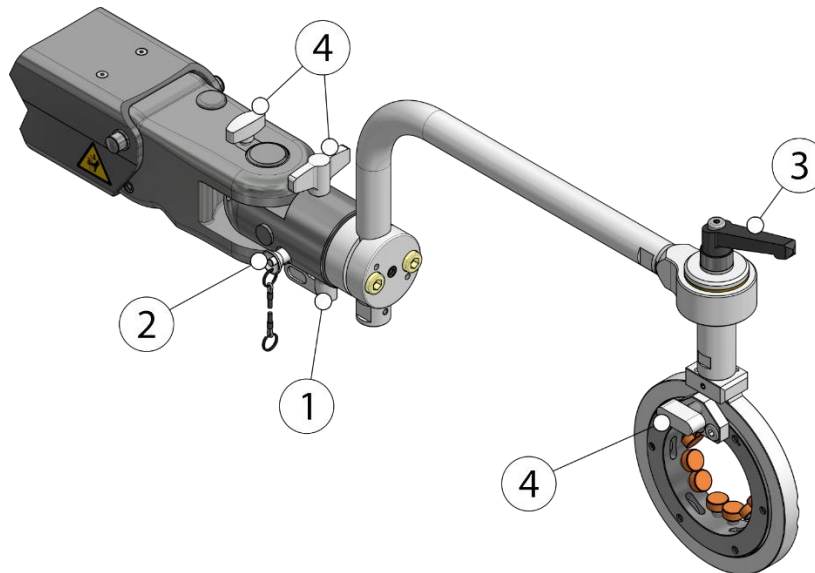
X: Rotates 360°. Manual locking in 4 positions (4x90°)

Y: Rotates 360°. Adjustment of smoothness for rotation and position setting

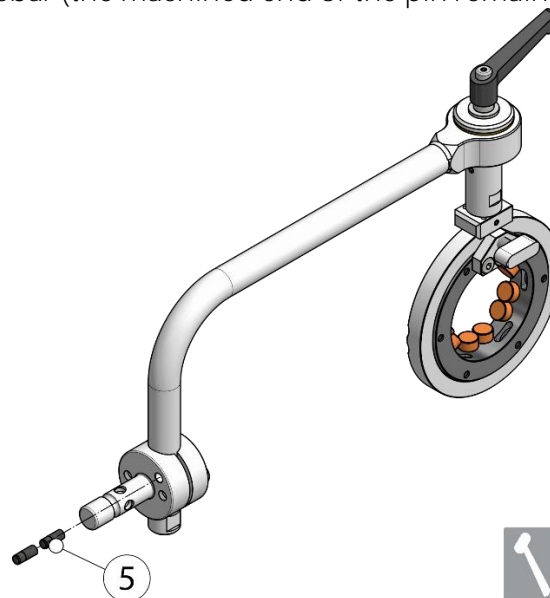
⁴⁰ Recommended tool square size for this head.

3.44.1 Movements and locking

The positioner (1) releases/locks the X movement (360°, 4x90°).
 To remove the rod, release the positioner (1) and remove the pin (2).
 Handlebar (3) releases/locks the movement in Z₂
 The friction can be adjusted using the adjustment knobs (4).



Due to the robustness of the positioner (1), vertical/horizontal work is not permitted.
 In cases where you have to work only vertically/horizontally, the pins (5) supplied must be inserted into the holes in the handlebar (the machined end of the pin remains outside the handlebar).

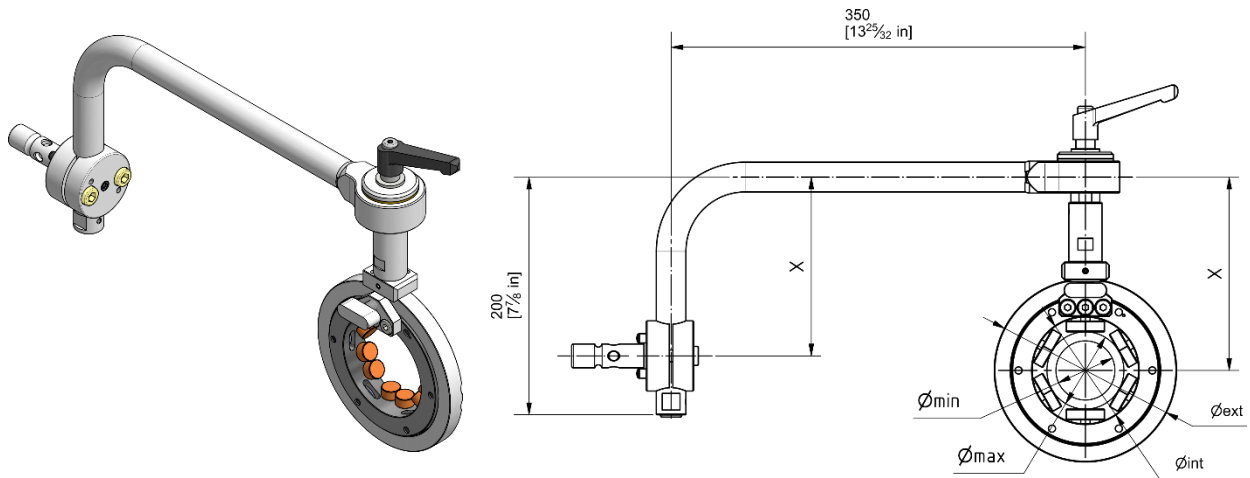


To turn the handlebar with the pins fitted, leave the positioner (1) free, remove the positioner (2) and pull the handlebar back a little so that it can be turned.

To reinforce the rod [\[See Handlebar adjustment and reinforcement page 120\]](#).

3.44.2 Handlebar Type A: REINFORCED TIMCO

Suitable for any type of tool.
 Ref: MV3KCxxx (xxx = internal diameter in mm)

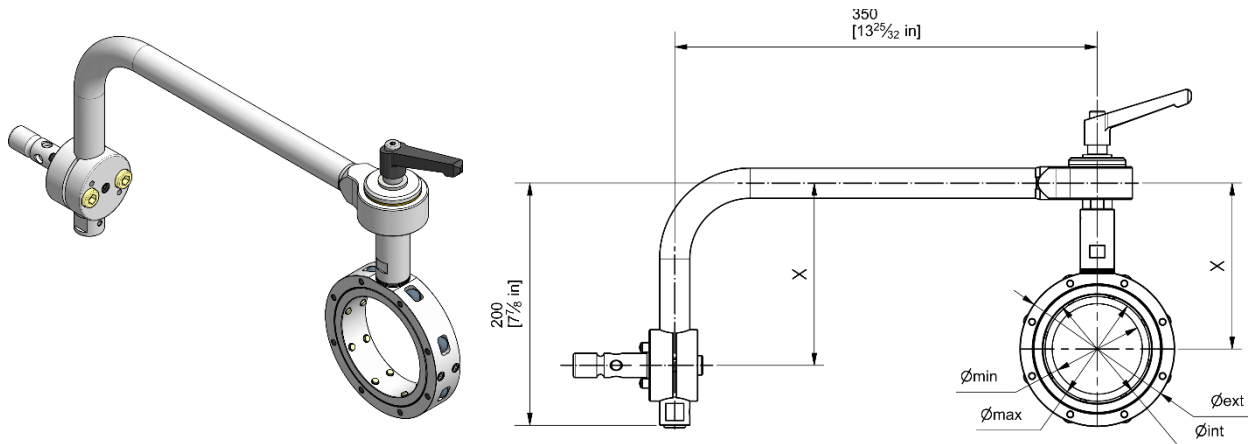


- The X dimension shall be as close as possible to the X axis of rotation to ensure good balancing of the tool.
- Other dimensions on request

- ✓ TIMCO dimensions [See Dimensions of TIMCO page 39].
- ✓ For fitting the tool [See Assembly of the tool page 30].
- ✓ Included accessories [See Included accessories page 31].
- ✓ For maintenance and cleaning [See Gimbals maintenance and cleaning page 31].

3.44.3 Handlebar Type B: TIMSAND REINFORCED

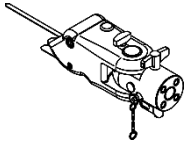
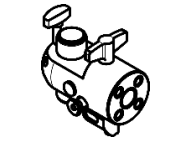
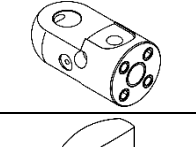
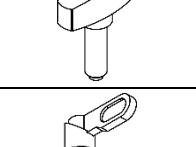
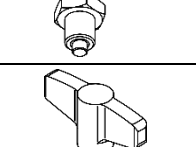
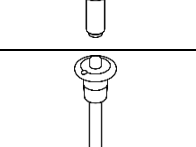
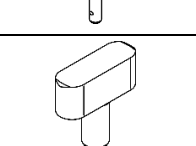
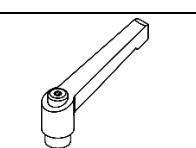
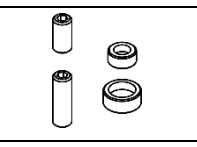

Suitable for any type of tool.
 Ref: MV3KBxxx (xxx = internal diameter in mm)



- The X dimension shall be as close as possible to the X axis of rotation to ensure good balancing of the tool.
- Other dimensions on request.

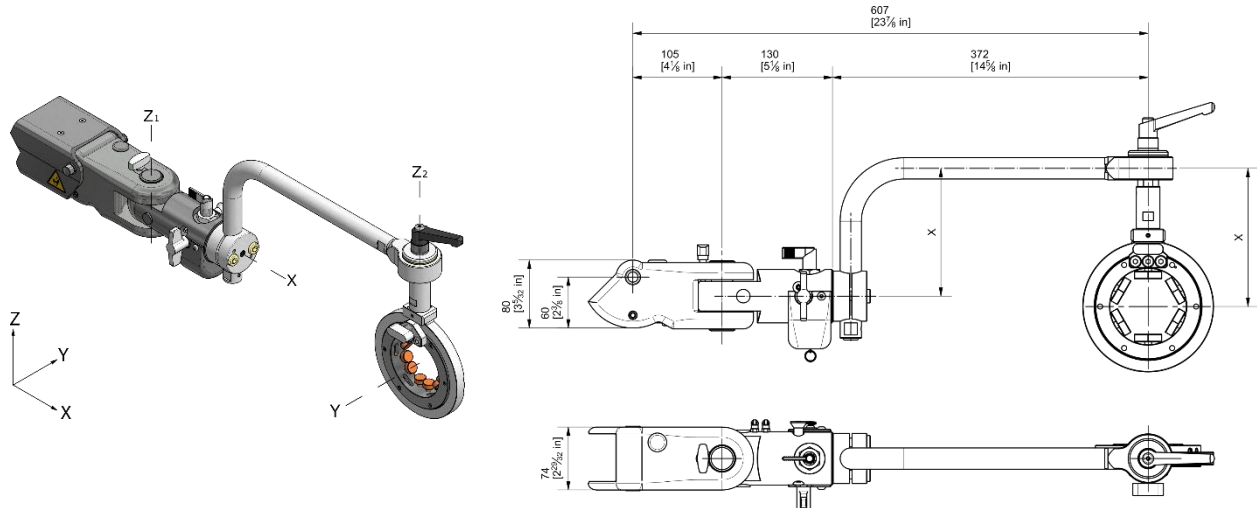
- ✓ TIMSAND dimensions [See Dimensions TIMSAND reinforced page 41].
- ✓ For fitting the tool [See Assembly of the tool page 34].
- ✓ Included accessories [See Included accessories page 34].
- ✓ For maintenance and cleaning [See Gimbals maintenance and cleaning page 31].

3.44.4 Spare parts

MV30D2A4R	HEADMEMBER Maximum load 30 Kg	
M3171600R	HEAD TILTING BASE Maximum load 30 kg	
M3279000	TILTING BASE REINFORCED WITH BUSHES	
M3103300R	SECURING LEVER M8x24 STAINLESS STEEL [Axis Z ₁]	
W5206400	POSITIONER M16x1.5	
M3103400R	LEVER M8 STAINLESS STEEL [Axis X]	
CM125000	POSITIONER Ø6x40	
M3103200R	TIMCO STAINLESS STEEL BRAKE RETOUCH [Axis Y]	
CM166500	LEVER M12 [Axis Z ₂]	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

3.45 MULTIPOSITION REINFORCED SECURITY WITH QUICK-CHANGE - UA

M3147600 + Handlebar



Requires Locks on the swinging arm (Lx2)

Maximum load: 30Kg | □^{3/4"}⁴¹

Z₁: Rotates ±90°. Non-lockable

Z₂: Rotates 360°. Manual locking in any position

X: Rotates 360°. Manual locking in 4 positions (4x90°)

Y: Rotates 360°. Adjustment of smoothness for rotation and position setting

The head is fitted with a safety system that locks the swinging arm when the tool is removed, thus preventing an accident.

To view movements [\[See Movements and locking page 123\]](#).

To see the pneumatic diagram [\[See Pneumatic diagram page 79\]](#).

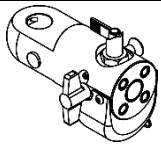
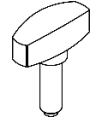
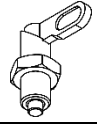
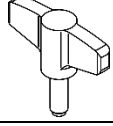
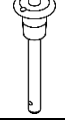
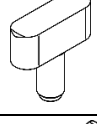
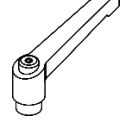
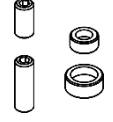
To reinforce the rod [\[See Handlebar adjustment and reinforcement page 120\]](#).

Gimbal type A: TIMCO [\[See Handlebar Type A: REINFORCED TIMCO page 124\]](#).

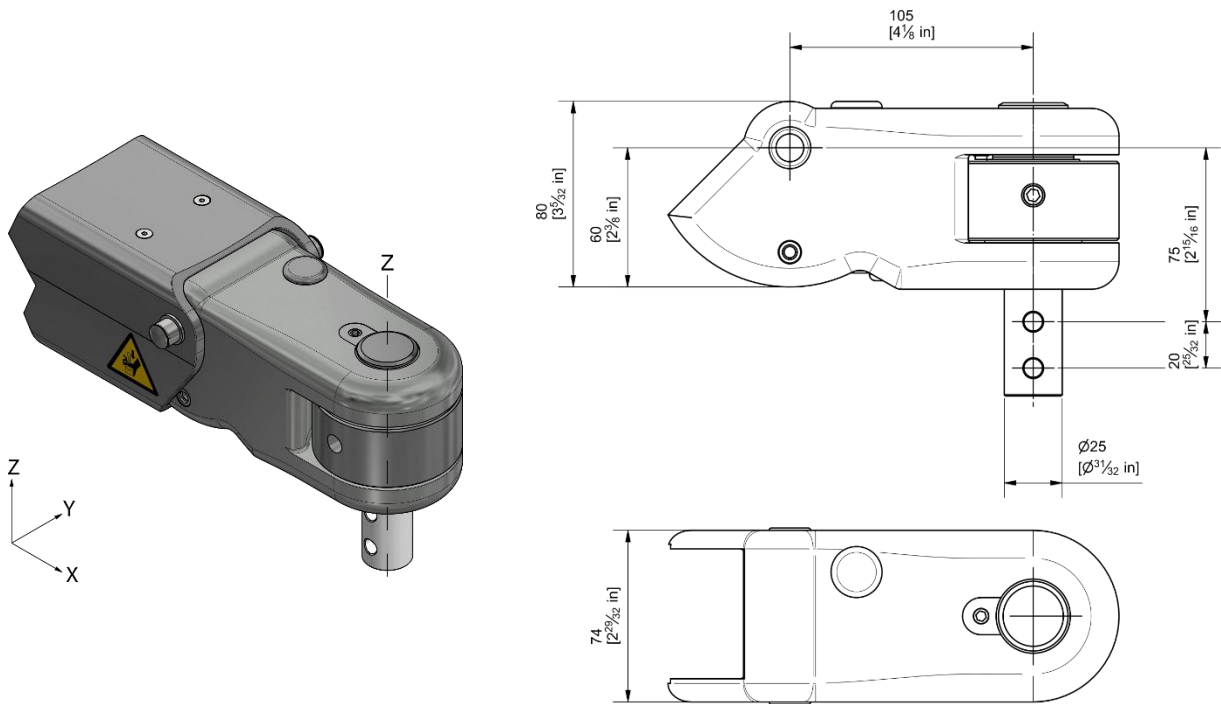
Gimbal type B: TIMSAND [\[See Handlebar Type B: TIMSAND REINFORCED page 125\]](#).

⁴¹ Recommended tool square size for this head.

3.45.1 Spare parts

M3272700	HEAD TILTING BASE	
M3103300R	SECURING LEVER M8x24 STAINLESS STEEL [Axis Z ₁]	
W5206400	POSITIONER M16x1.5	
M3103400R	LEVER SUBSET M8 STAINLESS STEEL [Axis X]	
CM125000	POSITIONER Ø6x40	
M3103200R	TIMCO STAINLESS STEEL BRAKE RETOUCH [Axis Y]	
CM166500	LEVER M12 [Axis Z ₂]	
MV331104	REPLACEMENT STUDS AND CAPS KIT	

3.46 VERTICAL EXTENSION - W M3308900 + Extension

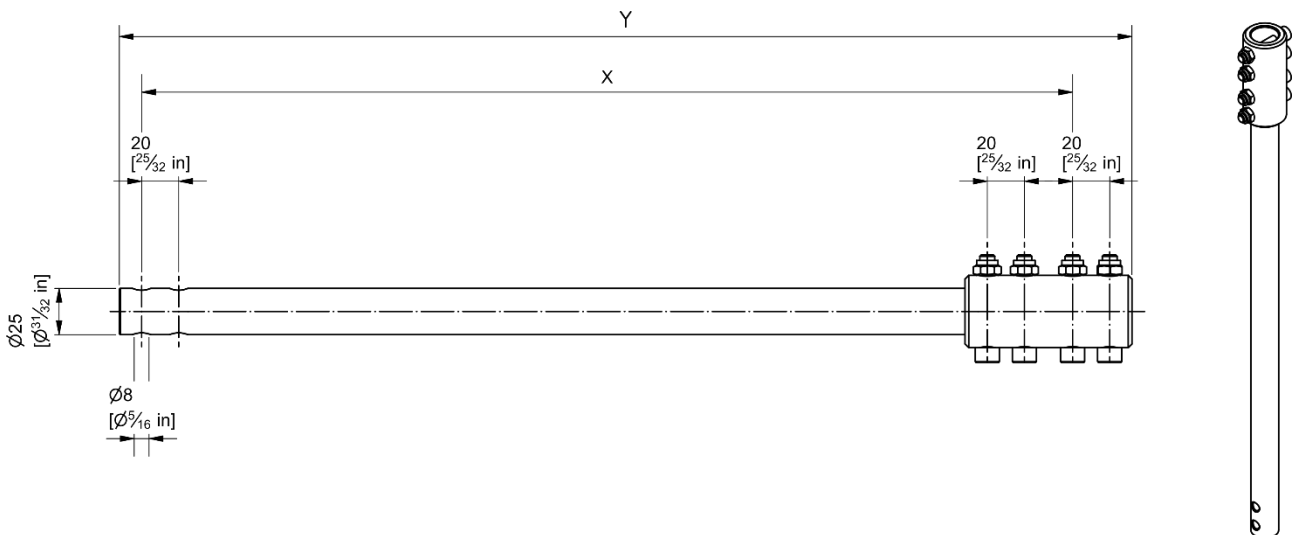


Maximum load: Maximum arm load

Z: Rotates 360°. Non-lockable.

3.46.1 Extensions

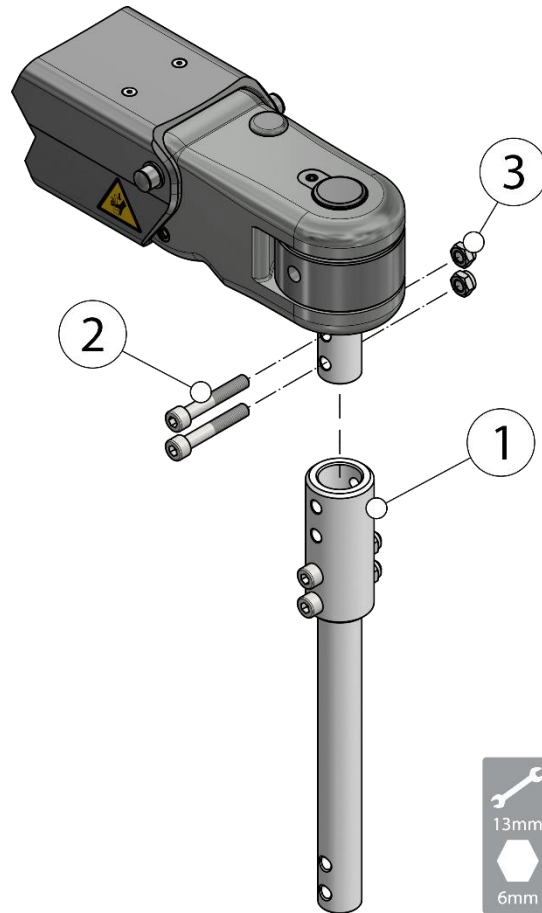
There are 3 extensions to lengthen the vertical axis:



Dimensions	X (mm)	Y (mm)
Extension 250	252 (9 59/64")	296 (11 21/32")
Extension 500	502 (19 49/64")	546 (21 1/2")
Extension 1000	1002 (39 29/64")	1046 (41 3/16")

3.46.2 Installation

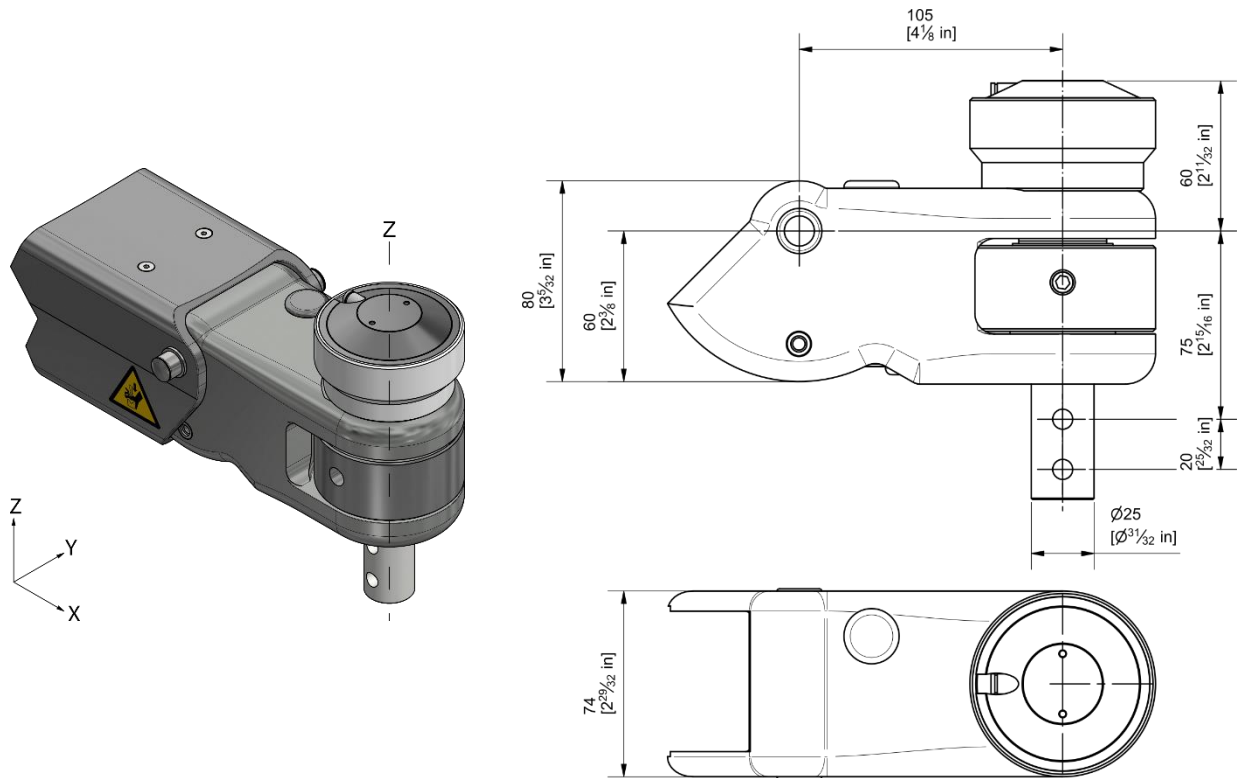
- 1- Insert the extension (1) into the head by matching the holes.
- 2- Fit and tighten the bolts (2) (6mm Allen key) and nuts (3) (13mm spanner).



Multiple extensions may be used to cover longer distances.

On request, the tilting base of any of the other heads can be installed with its corresponding handlebar or flange.

3.47 AUTOMATIC VERTICAL EXTENSION - WA M3283000 + Extension





Maximum load: Maximum arm load
Maximum torque: 300Nm

Z: Rotates 360°. Pneumatic locking in 64 positions (5.6°)

Extensions [\[See Extensions page 123\]](#).
To install the extension [\[See Installation page 130\]](#).

3.47.1 Operation

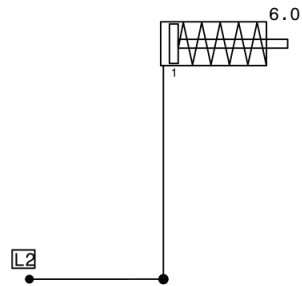
The pneumatic lock (Z Axis) is activated/deactivated with the other radial arm locks:

- If the arm is equipped with L22 locking, then via the radial locking selector switch  
- If the arm is equipped with the L92 locking device, then it is activated via the tool.

For more information, please refer to the arm manual.

3.47.2 Pneumatic diagram

REF	QUANT	CODE	DESCRIPTION
6.0	1	M3255200	HEADMEMBER RADIAL LOCK CYLINDER



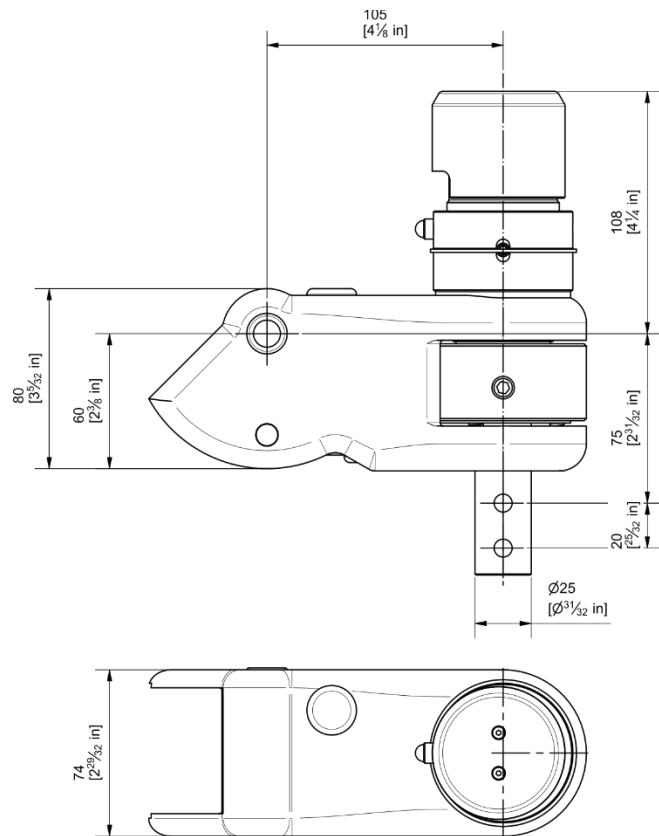
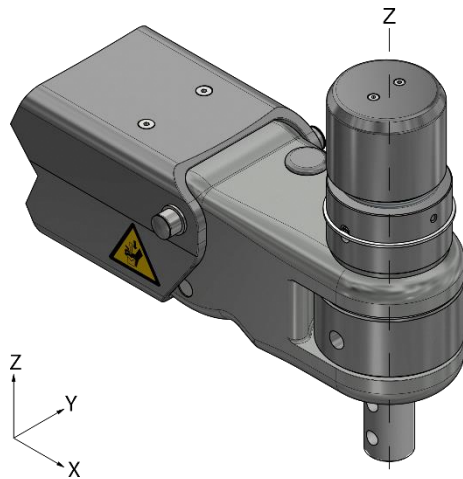
DESCRIPTION			CODE
PNEUMATIC SCHEME - SINGLE RS HEADMEMBER			PNEUS30009
*			
	NAME	DATE	REVISION
DRAWN BY	D. Gil	18/05/2022	0
APPROVED BY	OSCAR	18/05/2022	



3.47.3 Spare parts

NH106300	O-RING 60x2	
M31400A0	REVOLVER PISTON	

3.48 AUTOMATIC VERTICAL EXTENSION - WB M3313900 + Extension

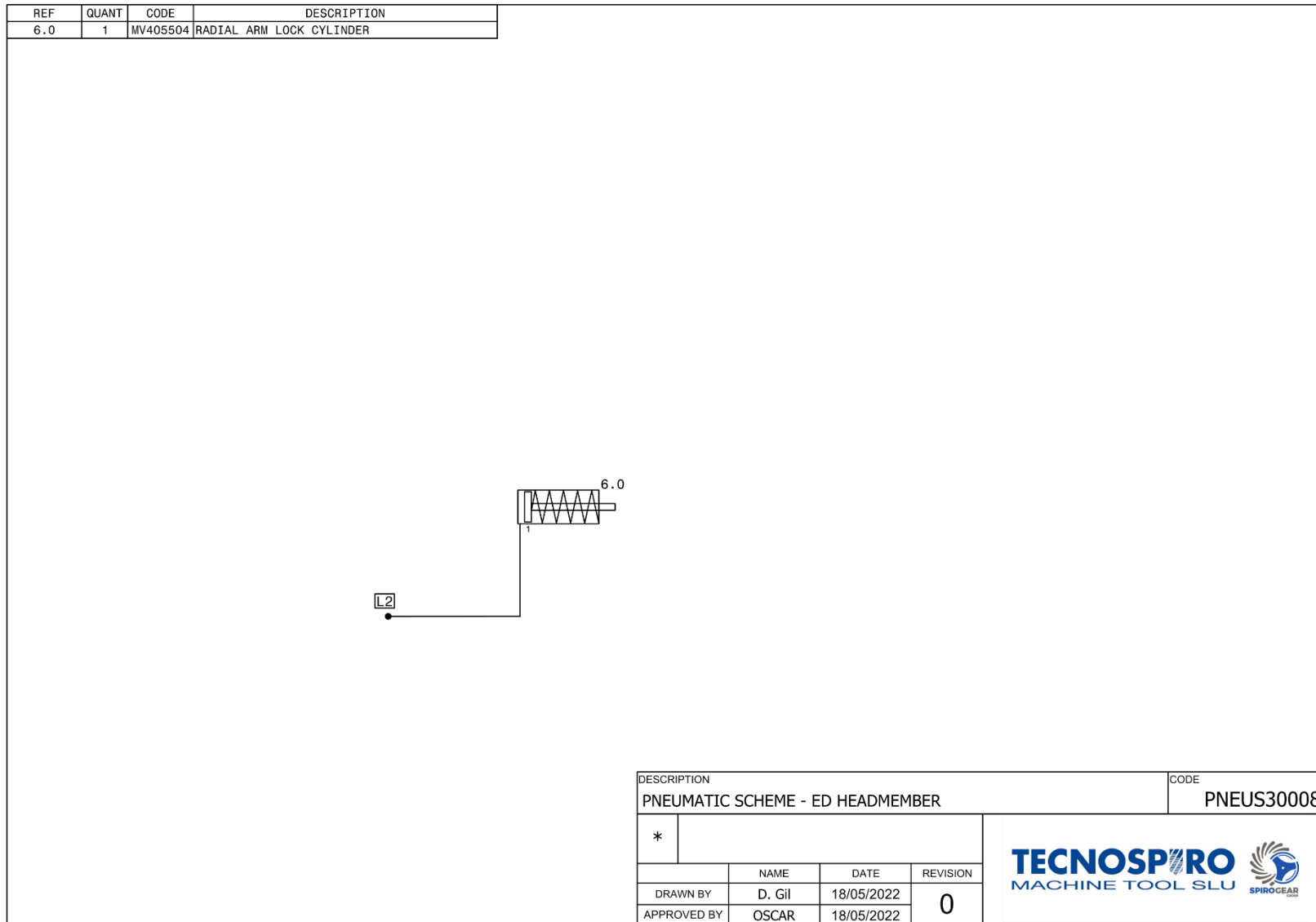


Maximum load: Maximum arm load
Maximum torque: 100Nm

Z: Rotates 360°. Pneumatic locking in any position.

Extensions [\[See Extensions page 123\]](#).
To install the extension [\[See Installation page 130\]](#).
To see operation [\[See Operation page 131\]](#).

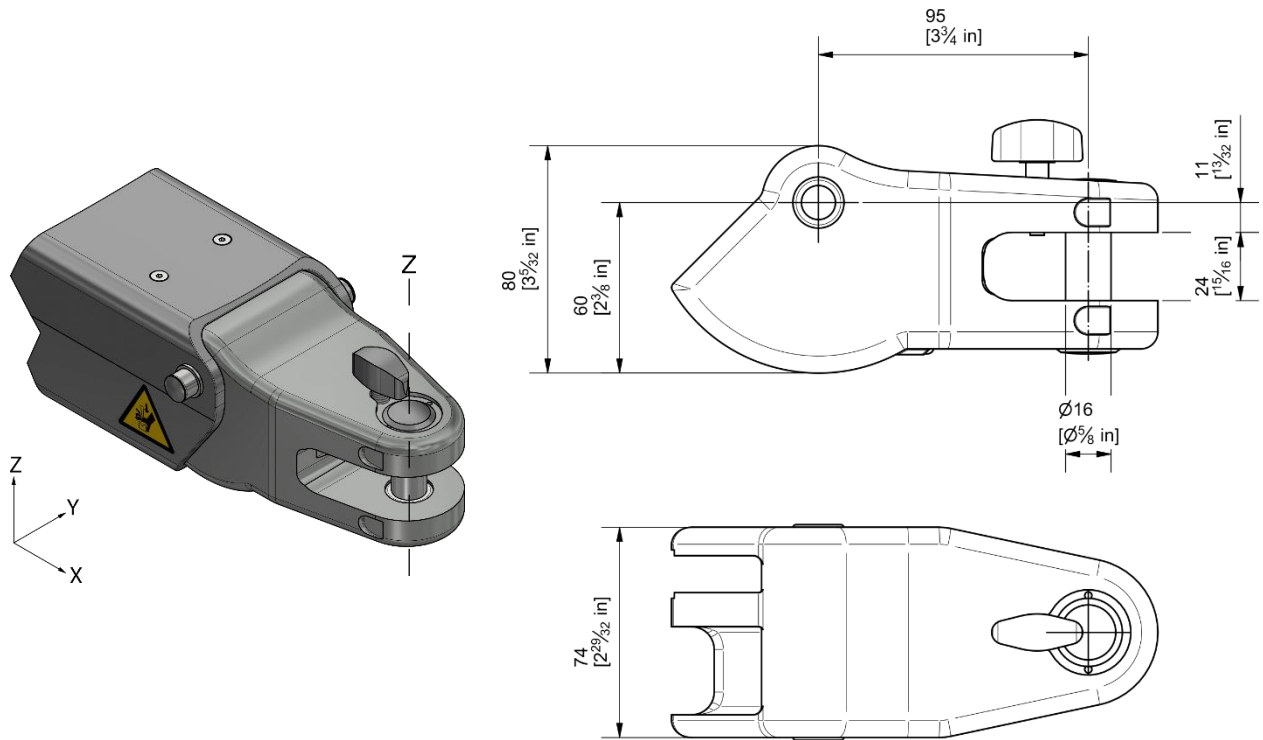
3.48.1 Pneumatic diagram



3.48.2 Spare parts

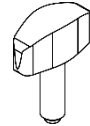
MV405504	RADIAL ARM LOCKING CYLINDER	
MV405903	CYLINDER COVER 42	
MV4062A4	RADIAL PAD L22-L92 SPARE KIT	

3.49 FORK - Z MV309304

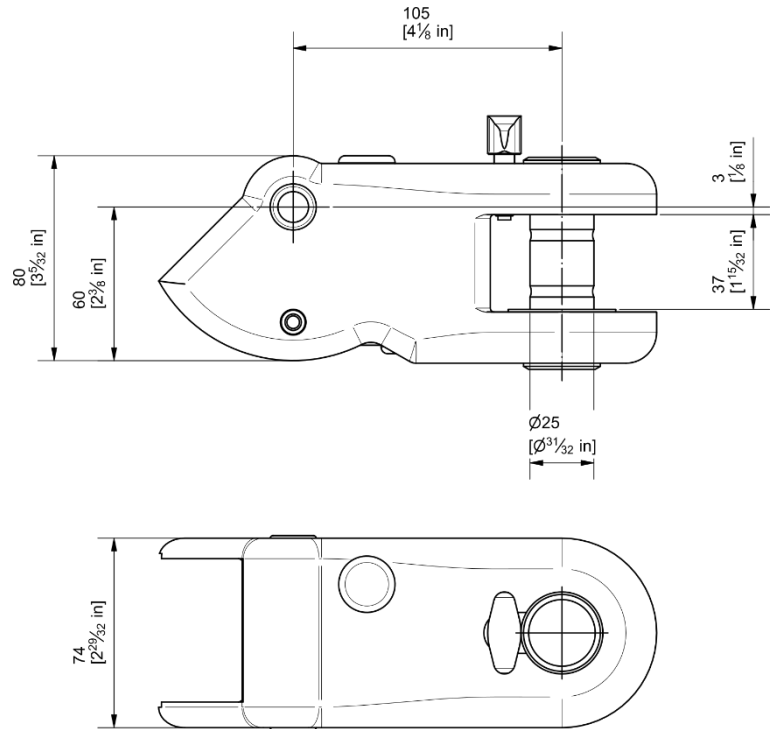
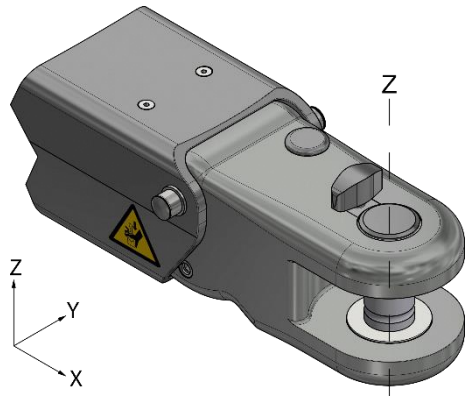


Maximum load: 12Kg

3.49.1 Spare parts

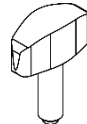
MV31J603R	FIXING LEVER M8x24	
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3.50 REINFORCED FORK - ZA
M3125600



Maximum load: Maximum arm load

3.50.1 Spare parts

MV31J603R	FIXING LEVER M8x24	
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