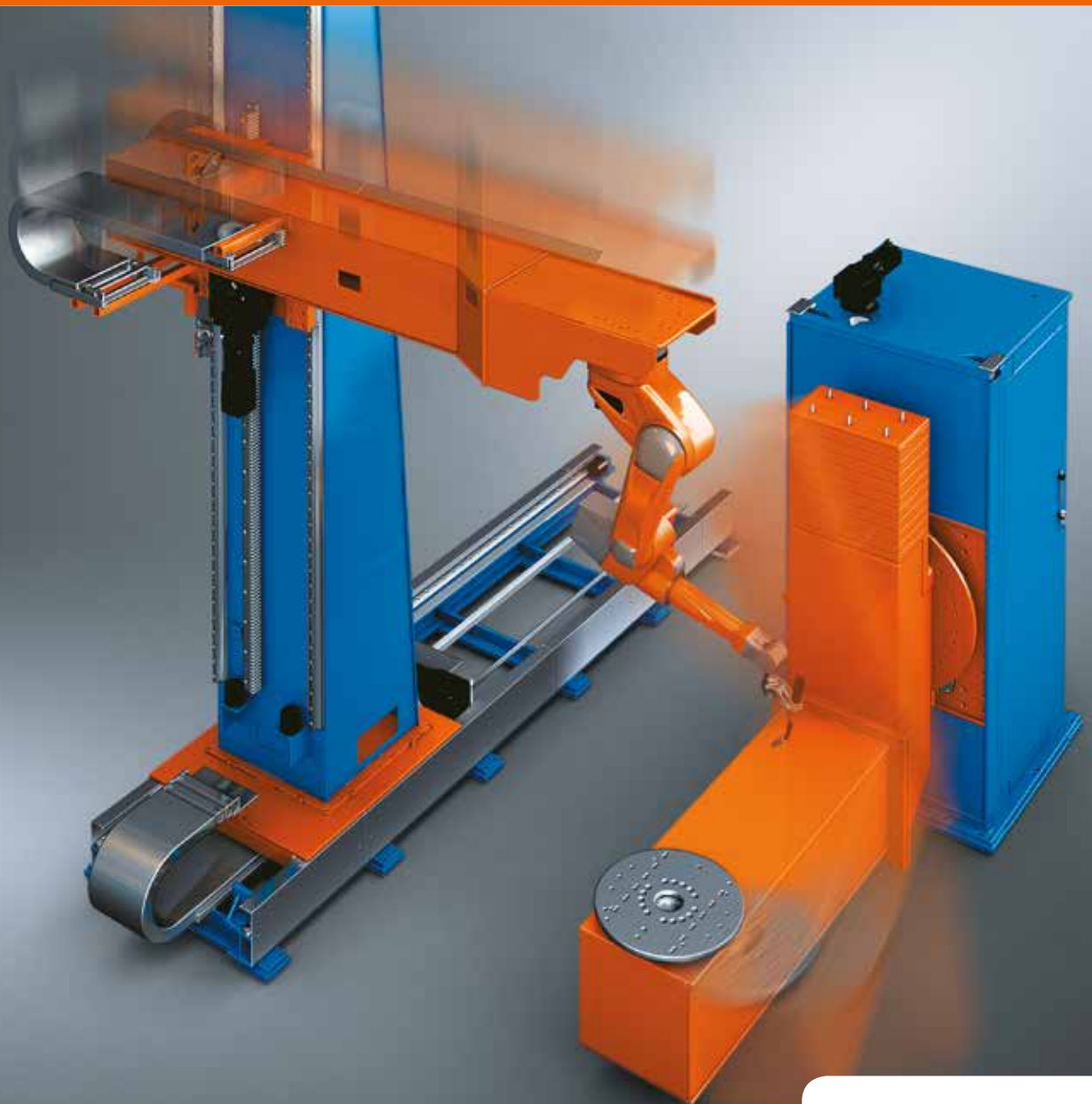


CLOOS

Weld your way.

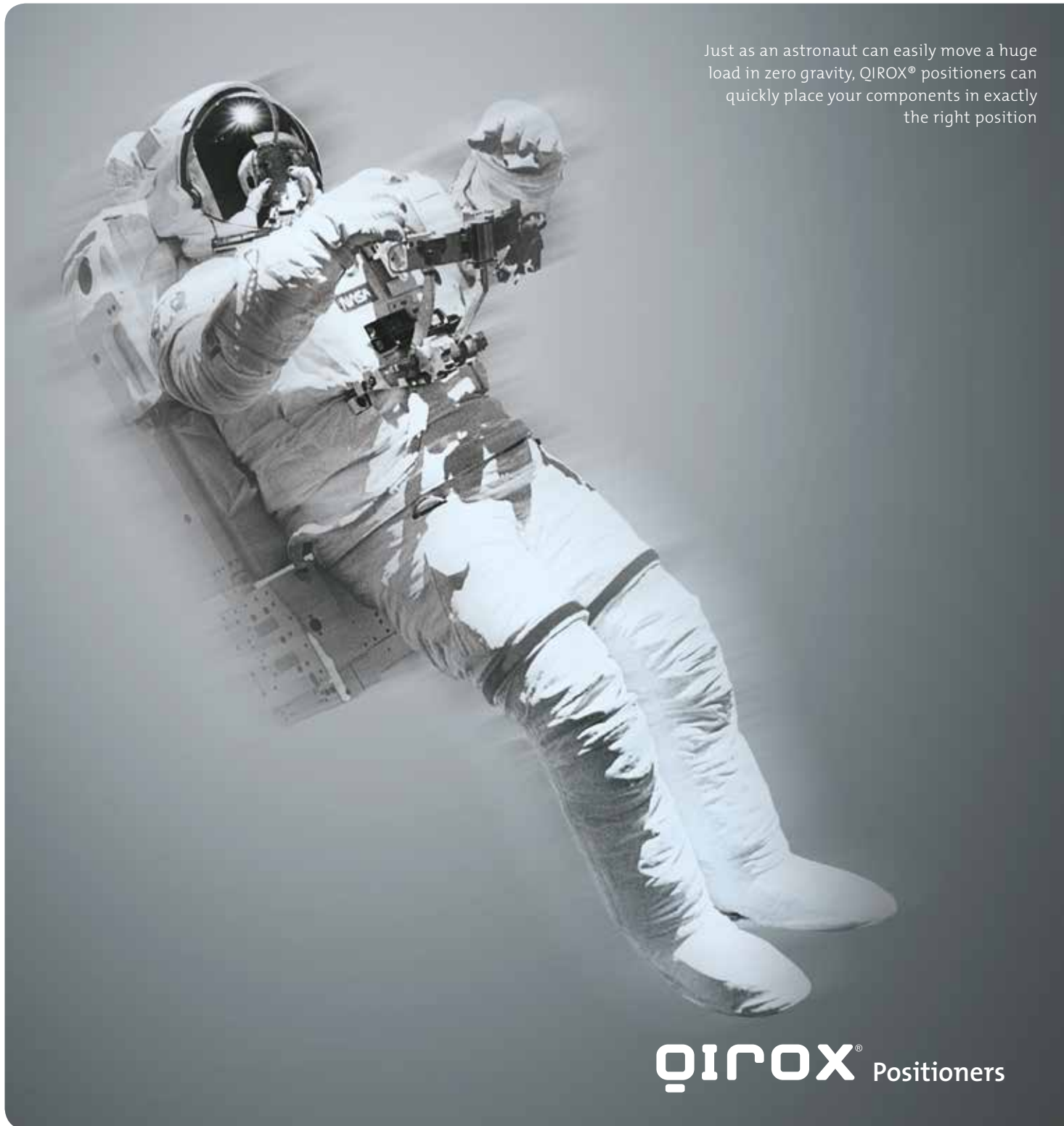
QIROX® Positioners

Solutions for every component



QIROX®

Weightlessness!



Just as an astronaut can easily move a huge load in zero gravity, QIROX® positioners can quickly place your components in exactly the right position

QIROX® Positioners

CLOOS: Your brand for innovative welding technology!

Providing added value for our customers! This is the motivational force behind our 700 employees.

We are constantly raising our bar by pushing ourselves to provide innovative welding processes and solutions that will contribute to the long-term commercial success of your company.

Our process competence is at the forefront in welding and cutting of various ferrous and non-ferrous metals. We offer our customers individual solutions which are optimized and adapted specifically to your product and production requirements.

CLOOS develops, manufactures and delivers innovative solutions to more than 40 countries worldwide. With our **QINEO®**, the new generation of welding machines for manual and automated applications, and **QIROX®**, the system for automated welding and cutting, our product range covers the entire spectrum of arc welding technology. Our product portfolio includes intelligent software, sensor and safety technology solutions – all of which are customised to meet your specific needs and requirements!

Leadership and competence equals process automation and welding at its best.

Whatever your needs are, we “Weld your way.”

CLOOS provides full service solutions – all from a single source!

Benefits of choosing CLOOS

- **Unique and customised process and product solutions:**
Delivering you more commercial success!
- **High level of industrial and engineering competence:**
We know what matters to you!
- **Professional advice and a high level of global service quality:**
From start to finish, we are with you all the way!
- **Superior quality and technological know-how:**
“Made in Germany” can be relied on.

We offer optimised solutions with maximum efficiency and a high degree of welding and cutting products that are customised to your application: And we have been doing this for over 90 years!

Cloos
Weld your way.



QIROX® The system solution for automated welding and cutting.

QIROX® is the new CLOOS product brand comprising all solutions for automated welding and cutting. Due to its modular design, the QIROX® system allows scalable solutions which can perfectly match your production requirements. The QIROX® system includes the robot technology, positioners, safety technology, software, sensors and the interface to the process technology. It is completed by an extensive range of options and complementary services. As a result of this comprehensive service from just one supplier, our customers can gain considerable economic and quality benefits

Always in the perfect position

With its numerous sophisticated positioners, CLOOS is able to supply welding systems which bring both robot and workpiece to the optimum processing position whether for welding, thermal cutting or other applications. Thus extremely good welding results can be achieved whilst maintaining high weld seam quality – regardless of the complexity and size of the workpiece.

The most dynamic feature of the QIROX® System is the modular design of all components. Due to the sophisticated nature of the robot and workpiece positioners, customised systems can be designed for each production requirement.

Main advantages of the positioners:

Studied and robust design

- Very high system availability with long operating life
- Exact path accuracy and high repeatability

Fast moving and turning speeds

- Efficiency due to short cycle times
- Considerable process speeds

Modular design

- Quick realisation of a system which meets all requirements
- Extensions can easily be implemented at any time

Integration and synchronisation of the positioner and robot movements

- Reduction of programming time

Advantages of the robot positioner:

More flexibility due to increase of the robot working envelope

- Welding of high-volume workpieces

Versatile utilisation ratio due to additional movement devices

- Welding of complex workpieces

Alternating between several working stations

- No down-times due to workpiece change

Advantages of the workpiece positioner:

Turning, swivelling and tilting: always the optimum workpiece position

- Optimum weld seam quality

Positioners for loads from 2.5 to 300 kN

- Solutions for every workpiece size

Sophisticated combination of different movement devices

- Welding of complex contours without interruption
- Improved accessibility of nearly all workpiece weld seams



RP-GL

Overhead linear track

The overhead linear track system, mounted on posts, allows overhead mounting of robots. A carriage with servo motor moves the robot in a horizontal direction. The overhead linear track allows welding of long workpieces, can be used for multi-station systems and can be equipped with a second carriage with robot. This makes it possible to weld in pairs on one workpiece.



RP-HL

Horizontal stroke

The horizontal stroke is used on an overhead linear track or is mounted on a vertical stroke and increases the horizontal working range of the overhead mounted robot.



RP-VL

Vertical stroke for mounting on an overhead linear track

The vertical stroke is used on an overhead linear track, on a rotating C-frame or is mounted on a horizontal stroke. It increases the vertical working range of the overhead mounted robot and allows welding of high-volume workpieces.



| Type | Load [kN] | 5 | 10 | 20 | 35 |
|-----------|-----------------------|-------|-------|------|------|
| GL | Travel speed [m/sec] | | 1.99 | 1 | 0.66 |
| | Travelling length [m] | | 5-14 | 5-21 | 2-60 |
| HL | Travel speed [m/sec] | 1,2 | 0.7 | | |
| | Travelling length [m] | 1-2 | 0.7-3 | | |
| VL | Travel speed [m/sec] | 0.15 | | | |
| | Travelling length [m] | 0.7-2 | | | |

RP-FL

Floor-mounted linear track

The floor-mounted linear track allows robot mounting in an upright position on a base or in an overhead position on a C-frame. A carriage moves the robot in a horizontal direction. The floor-mounted linear track allows the welding of long workpieces, can be used for multi-station systems and can be equipped with a second carriage with robot. This makes it possible to weld in pairs on one workpiece.

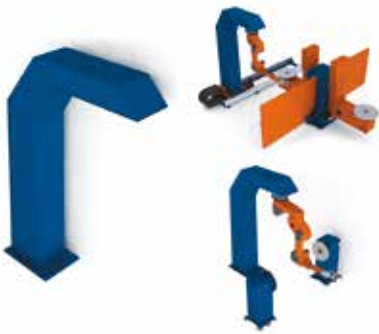


| Type | Load [kN] | 10 | 20 | 35 | 50 | 120 |
|------|-----------------------|------|------|------|------|------|
| FL | Travel speed [m/sec] | 1.2 | 0.7 | 0.66 | 0.66 | 0.66 |
| | Travelling length [m] | 2-20 | 2-21 | 2-20 | 2-28 | 2-20 |

RP-C

C-frame

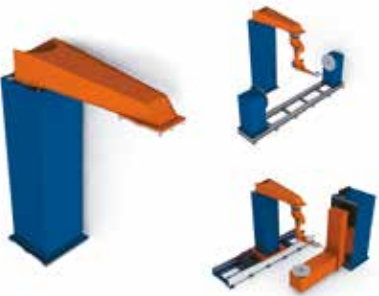
The C-shaped frame positions the robot overhead on a fixed extension arm. This robot position enables better workpiece accessibility and allows welding of larger workpieces. The C-frame is directly mounted on the floor or on a floor-mounted linear track.



RP-CT

Rotating C-frame

The C-shaped frame with rotating extension arm positions the robot overhead. The rotating extension arm increases the working range of the robot thus enabling the welding of high-volume workpieces and/or allows alternation between two working stations. The rotating C-frame is directly mounted on the floor or on a floor-mounted linear track.



| Type | Load [kN] | 5 |
|-----------|--------------------------|-----------|
| C | Reach [m] | 0.75-2.44 |
| | Robot height [m] | 2.35-3.6 |
| CT | Reach [m] | 1.2-2.5 |
| | Robot height [m] | 3-3.56 |
| | Swivelling speed [°/sec] | 40 |



RP-C + VL

C-frame with vertical stroke

The C-shaped frame with mounted vertical stroke positions the robot overhead above the workpiece. The vertical stroke increases the robot working range in height thus allowing increased accessibility into larger workpieces.

The C-frame with vertical stroke is directly mounted on the floor or on a floor-mounted linear track.



RP-CT + VL

Rotating C-frame with vertical stroke

The C-shaped frame with rotating extension arm and mounted vertical stroke positions the robot overhead. The vertical stroke increases the robot working range in height thus allowing increased accessibility into high-volume workpieces. The rotating extension arm additionally increases the working range and/or serves for station change. The rotating C-frame with vertical stroke is directly mounted on the floor or on a floor-mounted linear track.

| Type | Load [kN] | 5 |
|--------------|--------------------------|-----------|
| C+VL | Reach [m] | 1.05-2.65 |
| | Robot height [m] | 3.4-4.8 |
| | Travelling length [m] | 0.7-1.5 |
| | Travel speed [m/sec] | 0.15 |
| CT+VL | Reach [m] | 1.8-2.5 |
| | Robot height [m] | 3.05-4.45 |
| | Travelling length [m] | 0.7-1.5 |
| | Travel speed [m/sec] | 0.15 |
| | Swivelling speed [°/sec] | 40 |

RP-VO

Vertical stroke for overhead robot mounting

Using the vertical stroke, a robot is mounted in the overhead position on an extension arm. Due to the vertical stroke the robot gets an additional degree of freedom for welding large workpieces. The vertical stroke is directly mounted on the floor or on a floor-mounted linear track.



RP-CL

Transversal track for overhead robot mounting

The transversal track increases the working range of the overhead mounted robot and is thus able to weld complex, high-volume workpieces. The lateral mounting of the transversal stroke enables an increased accessibility into the workpiece. The transversal track is mounted to a vertical stroke.



RP-VS

Vertical stroke for upright robot

The vertical stroke which is mounted on the floor or on a floor-mounted linear track increases the working range of an upright mounted robot in order to weld large, complex workpieces.



| Type | Load [kN] | 5 | 10 | 20 |
|-----------|-----------------------|---------|----------|---------|
| VO | Reach [m] | | 1.8-2.75 | HL/CL |
| | Robot height [m] | | 3.5-4.5 | HL/CL |
| | Travelling length [m] | | 1.5-2 | 1.5-3.5 |
| | Travel speed [m/sec] | | 0.2 | 0.15 |
| CL | Travel speed [m/sec] | 0.15 | | |
| | Travelling length [m] | 1-2 | | |
| VS | Travel speed [m/sec] | 0.15 | | |
| | Travelling length [m] | 1.5 | | |
| | Reach [m] | 0.8-1.1 | | |



Workpiece positioners



WP-TV

Workpiece positioner with vertical rotation

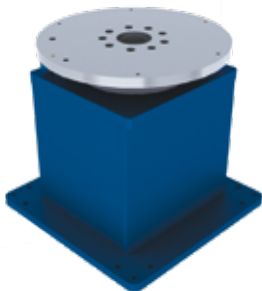
The workpiece positioner has a faceplate mounted at 90°. The workpiece which is fixed onto this faceplate can be rotated into the optimum processing position by a horizontal turning axis.



WP-TVV

Workpiece positioner with vertical rotation and vertical stroke

The workpiece positioner has a faceplate mounted at 90°. The workpiece which is fixed onto this faceplate can be rotated into the optimum processing position by a horizontal turning axis. The integrated vertical stroke facilitates the loading and unloading of the workpiece close to the floor and increases the free-turning radius of the workpiece positioner thus allowing the welding of larger workpieces.

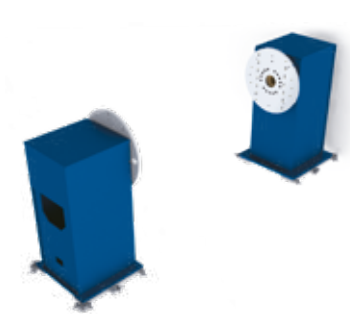


WP-TH

Workpiece positioner with horizontal rotation

The workpiece positioner has a horizontally mounted faceplate. Thus workpieces can be rotated into the optimum processing position by a vertical turning axis. This workpiece positioner is also used to construct a simple double-station robot system. The positioner changes station by a 180° rotation.

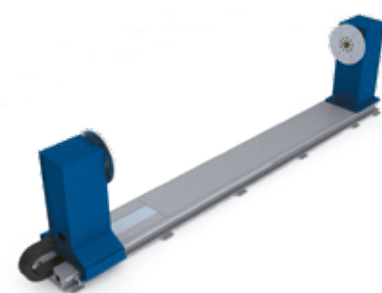
| Type | Load [kN] | see below | | | | | | | |
|----------------------|--------------------------|-----------|----------|----------|---------|-----------|-----------|-----------|-------|
| TV | Load [kN] | 2.5 | 5 | 10 | 20 | 30 | 50 | 100 | 150 |
| | Turning speed [°/sec] | 165 | 120 | 75 | 75 | 30 | 8.5 | 8.5 | 6.6 |
| | Torque [Nm] | 250 | 800 | 1600 | 4000 | 5500 | 10000 | 18000 | 30000 |
| | Moment of inertia [kgm²] | 30 | 140 | 1200 | 2000 | 3000 | 8000 | 18000 | 40000 |
| | Centre height [m] | 0.7-0.9 | 0.55-1.5 | 0.7-1.4 | 1.2-1.4 | 1.2-1.5 | 1.05-1.15 | 1.05 | 0.98 |
| TVV | Load [kN] | | 10 | 20 | 50 | 75 | 100 | 150 | |
| | Turning speed [°/sec] | | 75 | 75 | 8.5 | 8.5 | 8.5 | 6.6 | |
| | Torque [Nm] | | 1600 | 4000 | 10000 | 10000 | 18000 | 30000 | |
| | Moment of inertia [kgm²] | | 1200 | 2000 | 8000 | 8000 | 18000 | 40000 | |
| | Centre height [m] | | 0.6-1.6 | 0.9-2.15 | 1-2.5 | 1-2.5 | 1-2.5 | 1.25-2.75 | |
| | Vertical stroke [m] | | 1 | 1.25 | 1.5 | 1.5 | 1.5 | 1.5 | |
| Stroke speed [m/min] | | 2 | 2 | 2 | 2 | 2 | 2 | | |
| TH | Load [kN] | 5 | 10 | 20 | 30 | 35 | 60 | 100 | 200 |
| | Turning speed [°/sec] | 165 | 120 | 90 | 80 | 50 | 40 | 55 | 20 |
| | Moment of inertia [kgm²] | 30 | 140 | 1200 | 2000 | 8000 | 13000 | 18000 | 40000 |
| | Height [m] | 0.4 | 0.5-0.9 | 0.4-1.3 | 0.4 | 0.45-0.85 | 0.4 | 0.45 | 0.58 |



WP-TC

Workpiece positioner with vertical rotation with counter bearing

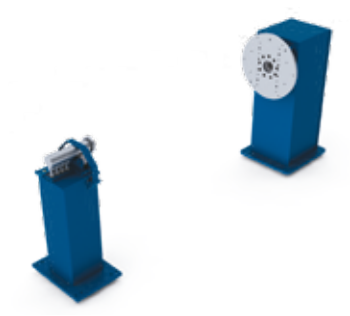
The workpiece positioner with counter bearing has two faceplate mounted at 90°. The workpiece fixture is mounted between the two faceplates. Thus, heavy or long workpieces can be perfectly positioned and welded. The two components of the workpiece positioner are mounted on the shop floor. As an option, the workpiece positioner can be mounted on a common base frame (WP-TC-F).



WP-TC-M / WP-TC-E

Workpiece positioner with vertical rotation with movable counter bearing

The workpiece positioner with movable counter bearing has two faceplate mounted at 90°. The workpiece fixture is mounted between the two faceplates. The two components of the workpiece positioner are mounted on a common base frame. The counter bearing can be moved on the base frame manually (WP-TC-M) or by a motor (WP-TC-E). Thus, the distance between the two faceplates can be adjusted according to the workpiece size.



WP-TR

Workpiece positioner with vertical rotation with roller support

The workpiece positioner has a faceplate mounted at 90° with counter bearing with supporting rollers. The workpiece fixture is mounted on the faceplate and supported by the counter bearing by means of the supporting rollers. The two elements are secured by bolting to the floor.

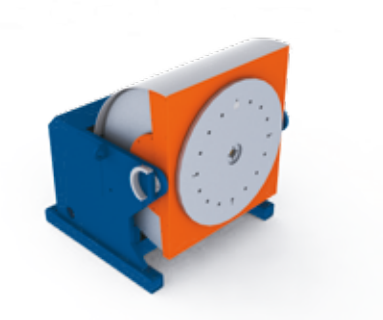
| Type | Load [kN] | 5 | 10 | 20 | 40 | 60 | 100 | 200 | 300 |
|-------------|---------------------------------------|---------|-----------|---------|---------|---------|-----------|-------|-------|
| TC | Turning speed [°/sec] | 165 | 120 | 75 | 75 | 30 | 8.5 | 8.5 | 6.6 |
| | Torque [Nm] | 250 | 800 | 1600 | 4000 | 5500 | 10000 | 18000 | 30000 |
| | Moment of inertia [kgm ²] | 30 | 140 | 1200 | 2000 | 3000 | 8000 | 18000 | 40000 |
| | Centre height [m] | 0.7-0.9 | 0.55-1.5 | 0.7-1.4 | 1.2-1.4 | 1.2-1.5 | 1.05-1.15 | 1.05 | 0.98 |
| TC-F | Clamping length [m] | 1.5-4 | 1.5-5 | 3.5-4 | 4 | 4 | | | |
| | Free-turning radius [m] | 0.75 | 0.85-1.05 | 1 | 1.2 | 1.2 | | | |
| TC-M | Clamping length [m] | 0.8-3 | 2-5 | 4-8 | 2-6 | 2-6 | 3.5-9.2 | | |
| | Free-turning radius [m] | 0.8 | 1.15 | 0.75-1 | 1.2 | 1.2 | 1.2-2.3 | | |
| | Travelling length [m] | 0.8-3 | 2-5 | 2-6 | 2-4 | 2-4 | 1.5-6 | | |
| TC-E | Clamping length [m] | | | 3.5-8 | 2-6 | 2-6 | 5 | 11 | |
| | Free-turning radius [m] | | | 0.75-1 | 1.2 | 1.2 | 1.2 | 1.2 | |
| | Travelling length [m] | | | 2-6 | 2-3 | 2-4 | 5 | 4 | |
| | Travel speed [m/sec] | | | 0.2 | 0.6 | 0.6 | 0.2 | 0.2 | |
| TR | Stroke [m] | 0.15 | 0.2 | 0.25 | | | | | |
| | Turning speed [°/sec] | | 120 | 75 | 75 | 30 | 8.5 | | 6.6 |
| | Torque [Nm] | | 800 | 1600 | 4000 | 5500 | 10000 | | 30000 |
| | Moment of inertia [kgm ²] | | 140 | 1200 | 2000 | 3000 | 8000 | | 40000 |
| TR-F | Centre height [m] | | 1 | 1 | 1.2 | 1.2 | 1.1 | | 1.2 |
| | Clamping length [m] | | 2-5 | 2-5 | 2-10 | 2-10 | | | |
| | Free-turning radius [m] | | 1 | 1 | 1.3 | 1.3 | | | |
| TR-M | Clamping length [m] | | | 6 | | | | | |
| | Free-turning radius [m] | | | 0.9 | | | | | |
| | Travelling length [m] | | | 6 | | | | | |

Workpiece positioners

WP-TT

Workpiece positioner with turning and tilting movement

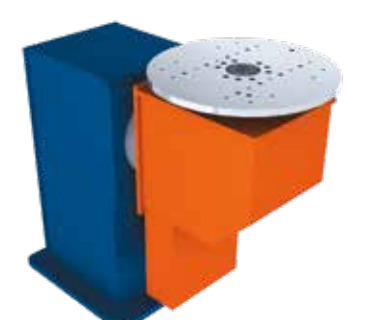
The workpiece positioner has a turning axis with faceplate mounted at 90° which is mounted near to a tilting axis shifted by 90°. The tilting axis moves the rotating faceplate from a vertical to a horizontal position. Thus the positioner is designed for medium-weight compact workpieces. Flat and large-surface workpieces can be loaded easily.



WP-TSH

Workpiece positioner with swivelling and horizontal rotation

The workpiece positioner has a turning axis with horizontally positioned faceplate and another swivelling axis which swivels the faceplate in both directions by 90°. Thus the faceplate is moved from a horizontal to a vertical position. The workpiece positioner is designed to position perfectly light to medium-weight, but flat, large-surface workpieces for welding.



| Type | Load [kN] | 1 | 2,5 | 5 | 10 | 20 |
|------------|---------------------------------------|-----|-----|------|------|------|
| TT | Turning speed [°/sec] | | | 40 | 20 | 20 |
| | Torque [Nm] | | | 800 | 1600 | 1600 |
| | Moment of inertia [kgm ²] | | | 600 | 1600 | 1800 |
| | Centre height [m] | | | 0.75 | 0.9 | 0.9 |
| TSH | Turning speed [°/sec] | 165 | 165 | 120 | | |
| | Torque [Nm] | 250 | 250 | 800 | | |
| | Moment of inertia [kgm ²] | 30 | 30 | 140 | | |
| | Height [m] | 1 | 1 | 1.1 | | |

WP-TS

Workpiece positioner with turning and swivelling movement

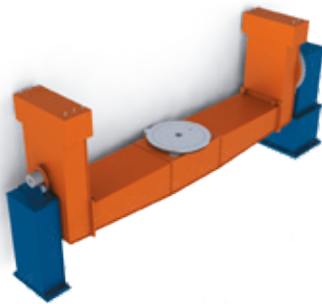
The workpiece positioner has a horizontal swivelling axis with an L-shaped extension arm. The extension arm contains a vertical turning axis with horizontal faceplate to which the workpiece is mounted. The workpiece positioner is designed to position medium-weight to heavy complex workpieces perfectly for welding.



WP-TSF

Workpiece positioner with turning and swivelling movement and fixed counter bearing

The workpiece positioner has a horizontal swivelling axis with a U-shaped extension arm which is supported by a counter bearing. In the middle of the U-shaped extension arm there is a horizontal faceplate which is moved by means of a vertical turning axis. This positioner takes up large-volume, complex workpieces and positions them perfectly for welding.

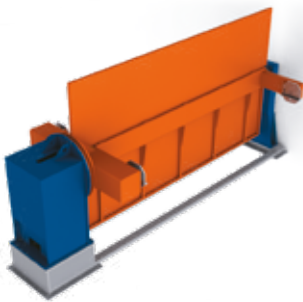


| Type | Load [kN] | 2,5 | 5 | 10 | 15 | 25 | 30 | 50 | 100 |
|------------|---------------------------------------|------|---------|------|-----------|-------|-------|---------|-------|
| TS | Turning speed [°/sec] | 165 | 120 | 75 | 75 | 30 | 30 | 8.4 | 8.5 |
| | Torque [Nm] | 250 | 800 | 1600 | 4000 | 4000 | 5500 | 10000 | 18000 |
| | Moment of inertia [kgm ²] | 30 | 140 | 1200 | 2000 | 2000 | 3000 | 8000 | 18000 |
| | Height [m] | 0.95 | 0.8-0.9 | 0.8 | 0.9 | 0.9 | 1.06 | 1.3 | 1.3 |
| | Free-turning radius [m] | 0.5 | 0.7-0.8 | 1 | 1.25-1.75 | 1.3-2 | 1.5-2 | 1.75-3 | 2.5 |
| TSF | Turning speed [°/sec] | 120 | | | | | | 8.5 | |
| | Torque [Nm] | 800 | | | | | | 10000 | |
| | Moment of inertia [kgm ²] | 140 | | | | | | 8000 | |
| | Height [m] | 1.2 | | | | | | 1.65 | |
| | Free-turning radius [m] | 1.5 | | | | | | 2.7-3.2 | |

Two-station positioners

The two-station workpiece positioners are designed to achieve the simultaneous working of both system operator and robot. The station changeover is made via vertical or horizontal rotation - either after loading and unloading by the operator or after welding by the robot. The two-station positioners are designed for small to medium-sized, light to medium-weight workpieces and ensure a high throughput of the robot system.

WP-DV-TC



Two-station positioner with rotating head and tailstock

The two-station positioner changes station by vertical rotation. Each station is equipped with a horizontal turning axis and counter bearing. The two-station positioner requires little space and is designed to take up light to medium-weight, long workpieces. The vertical turning movement for station changeover has a limited collision radius. Systems with this double-station positioner require minimum floor space.

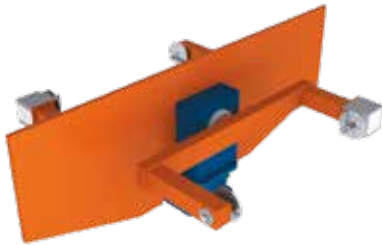
WP-DH-TC



Two-station positioner with horizontal indexing station changeover

The two-station positioner changes station by horizontal rotation. Each station is equipped with a horizontal turning axis and counter bearing. The two-station positioner is designed to take up light to medium-weight, long workpieces.

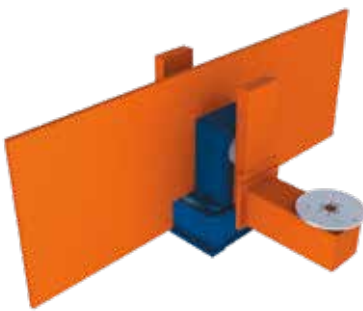
| Type | Load [kN] | 2,5 | 5 | 7,5 | 10 | 20 | 60 |
|--------------|---------------------------------------|----------|----------|-----------|---------|------|------|
| DV-TC | Turning speed [°/sec] | 165 | 165 | | 120 | 75 | 30 |
| | Torque [Nm] | 250 | 250 | | 800 | 1600 | 4000 |
| | Moment of inertia [kgm ²] | 30 | 30 | | 140 | 1200 | 2000 |
| | Centre height [m] | 1 | 1.1 | | 1.2 | 1.3 | 1.45 |
| | Clamping length [m] | 1-2 | 1.25-3 | | 2-6 | 2-5 | 8.6 |
| | Free-turning radius [m] | 0.4 | 0.5 | | 0.75 | 0.75 | 0.55 |
| DH-TC | Turning speed [°/sec] | 165 | 120 | 120 | 120 | | |
| | Torque [Nm] | 250 | 800 | 800 | 800 | | |
| | Moment of inertia [kgm ²] | 30 | 140 | 140 | 140 | | |
| | Centre height [m] | 0.85 | 0.9 | 0.9 | 0.95 | | |
| | Clamping length [m] | 1.5-2 | 1.5-3 | 1.25-2.25 | 2.5-3.5 | | |
| | Free-turning radius [m] | 0.5-0.7 | 0.7-0.8 | 0.7-0.8 | 0.6-1 | | |
| -M | Clamping length [m] | 1.65-1.9 | 1.25-2.5 | | | | |
| | Free-turning radius [m] | 0.5 | 0.7-0.8 | | | | |
| | Travelling length [m] | 1.65-1.9 | 1.25-2.5 | | | | |
| -S | Stroke [m] | 0.15 | 150 | | | | |



WP-DH-TSC

Two-station positioner with horizontal station changeover and two workpiece positioners with turning and swivelling movement with counter bearing

The two-station positioner changes station by horizontal rotation. Each station is equipped with a horizontal swivelling axis. An extension arm with integrated turning axis and counter bearing is mounted on this axis. The workpiece can be turned and swivelled so that light to medium-weight, long and complex workpieces can be welded.



WP-DH-TS

Two-station positioner with horizontal station changeover and two workpiece positioners with vertical turning and swivelling movement

The two-station positioner changes station by horizontal rotation. Each station is equipped with a horizontal swivelling axis. An L-shaped extension arm is mounted on this axis. The extension arm contains a turning axis with horizontal faceplate. The positioner can take up light to medium-weight complex workpieces and positions them perfectly for welding.

| Type | Load [kN] | 1 | 2,5 | 5 | 10 |
|---------------|---------------------------------------|------|------|----------|---------|
| DH-TSC | Turning speed [°/sec] | | | 165 | 120 |
| | Torque [Nm] | | | 250 | 800 |
| | Moment of inertia [kgm ²] | | | 30 | 140 |
| | Centre height [m] | | | 1.1 | 0.9 |
| | Clamping length [m] | | | 1.25-2 | 1.8-2.5 |
| | Free-turning radius [m] | | | 0.5-0.75 | 0.6-0.8 |
| DH-TS | Turning speed [°/sec] | 165 | 165 | 120 | 75 |
| | Torque [Nm] | 250 | 250 | 800 | 1600 |
| | Moment of inertia [kgm ²] | 30 | 30 | 140 | 1200 |
| | Height [m] | 0.85 | 0.75 | 0.9 | 1.05 |
| | Free-turning radius [m] | 0.3 | 0.5 | 0.7-0.8 | 0.7-1 |

Robot and Workpiece positioners

| | | | |
|--|---|--|---|
| <p>RP-GL Page 6</p>  | <p>RP-HL Page 6</p>  | <p>RP-VL Page 6</p>  | <p>RP-FL Page 7</p>  |
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Legend:

- RP = Robot Positioner
- C = C-frame
- CT = Rotating C-frame
- FL = Floor mounted linear track
- GL = Overhead linear track
- HL = Horizontal stroke
- VL = Vertical stroke for mounting on an overhead linear track
- VO = Vertical stroke for overhead mounting of a robot
- VS = Vertical stroke for upright robot

- WP = Workpiece positioner
- DH = Two-station positioner with horizontal station changeover
- DV = Two-station positioner with vertical station changeover
- TC = Workpiece positioner with vertical rotation with counter bearing
- TH = Workpiece positioner with horizontal rotation
- TR = Workpiece positioner with vertical rotation with roller support
- TS = Workpiece Positioner with turning and swivelling movement
- TSC = Workpiece Positioner with turning and swivelling movement with counter bearing
- TSF = Workpiece Positioner with turning and swivelling movement with fixed counter bearing
- TSH = Workpiece Positioner with swivelling and horizontal rotation
- TT = Workpiece Positioner with turning and tilting movement
- TV = Workpiece positioner with vertical rotation
- TVV = Workpiece positioner with vertical rotation and vertical stroke

Service

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There are more than 40 sales and service centres in our worldwide CLOOS organisation, which are at your disposal for sales and service. In addition, our experienced service team in Haiger can be called at any time for any problems. In this way we can ensure effective help on site if breakdowns occur.



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