



OUR PERFORMANCE
makes THE DIFFERENCE

SMART
SYSTEMS.
FOR EFFICIENT
WORKING.

FLEXIBLE POSITIONING

DEMMELE Manipulators



ERGONOMIX
M 3000 –
THE NEW
GENERATION

www.demmeler.com

INNOVATION + PERFORMANCE

TECHNOLOGY FROM THE MARKET LEADER



3D CLAMPING SYSTEM

The modular system can no longer be replaced where processing, welding, assembly and measurement occurs. This fitting system is now an international industrial standard due to the tremendous application and combination possibilities.

MANIPULATORS

Welding and assembly in an optimal position. A good ergonomic workplace design allows more efficient and error-free workmanship, protecting staff against health hazards even during laborious tasks. The manipulators from DEMMELER offer preventive occupational safety and ensure a more efficient and safer working environment which, as a result, leads to improved quality in production. Whichever way you look at it, DEMMELER manipulators are indispensable.

CNC CLAMPING SYSTEM

As the inventor of the 3D Clamping System, we have revolutionised fixture construction in the areas of welding, assembly and straightening. We have received multiple awards as an innovation leader. With our global innovation "CNC Clamping System", the DEMMELER Clamping System for milling and turning centres, we now also support industrial machine manufacture. We place the utmost value on stiffness, damping properties as well as reproducibility and accuracy when developing and producing this system. The modularity allows you to clamp your work pieces (from lightweight to very heavy) very precisely and quickly. By paying particular attention to stiffness and damping properties, you also increase the quality of your work piece to be machined. With our system we guarantee a high machining performance with long service life at the same time.

ROTARY TABLES / TOOL ARENAS / AUTOMATION

DEMMELER's automation systems are used wherever extremely efficient and high quality products are manufactured. As a quality leader, we deliver our robot-based tool changing systems as well as our carousel, rotary and rotary shifting tables worldwide. We place great importance on individual support and comprehensive service. We guarantee top quality and extreme precision. All areas are oriented to and contribute to this purpose.

CONTRACT MANUFACTURING

Dimensions up to 20 m in length, piece weight up to 100 t and tolerances in the micrometre range – all of these are parameters that have accompanied us for years and characterise us as a supplier of well-known machine tool manufacturers. The main focus of work here is on the production of basic components, such as X, Y and Z axes, machine beds, machine frames, portals and clamping floor plates, which are used in our customers' ultra-modern CNC machines.



3D WELDING TABLES



CNC CLAMPING SYSTEM



ROTARY AND
TURNING TABLES



TOOL ARENAS



CONTRACT MANUFACTURING

Outstanding working environment with all the freedom you need

Ladies and gentlemen,
business partners and customers,

We are delighted to be able to present our up-to-date, newly developed range of handling devices to you in this catalogue.

As a family-run manufacturing company operating in the mechanical engineering field, we face new challenges every day in the worlds of welding, assembly and machining. At the same time, we are fully aware of our economic and social responsibilities in our dealings with our customers, partners and employees. We are absolutely committed to Germany as a centre of technology and we manufacture all our products at our headquarters in Heimertingen.

Alongside its many advantages, however, we are also aware of the challenges posed by our production location. High wage levels, a constantly ageing population, together with price and cost pressures, mean that continuous process optimization is essential. Of course, you, too, are also perfectly familiar with these issues. One reason for our great innovative strength and quality consciousness is that we use our products ourselves.

They form the basis for our business success. That is why we have developed our manipulators – just like all our other products – in the light of the following criteria:

- + Cut production costs
- + Improve quality
- + Enhance ergonomics
- + Improve safety at work

By using our products, you, too, can benefit from these four factors of success. Your customers and employees will tell you you have made the right decision!

I hope you enjoy reading and discovering our manipulator catalogue. If you have any questions or individual issues to discuss, our sales team will be delighted to advise you – wherever you are in the world! Because there is one thing we know for sure: "Our success depends on your success!"

J. Demmeler

Yours Johannes Demmeler
Managing Director Executive Partner



Our specialists in precise positioning

Work pieces to 40,000 kg lifting, turning, tilting



Ergonomix M

- Maximum work area with minimized footprint
- Low installation height
- Unique swivel range up to 180°
- Comfortable work
- High flexibility

Lifting / turning / tilting
Tilting from 0° to 180°
Bearing load up to 8,000 kg

From page 10

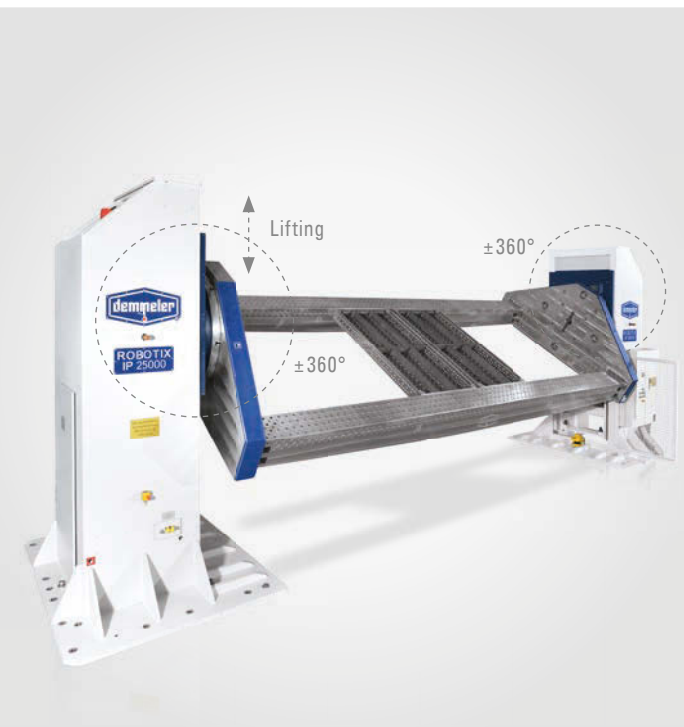


Robotix LP

- Enables positioning of work pieces with very high precision
- High repeat accuracy
- Two rotation axes and one lifting axis possible
- Suitable for integration in a robot cell

Lifting / Turning / Tilting Bearing load to 20,000 kg

From page 16

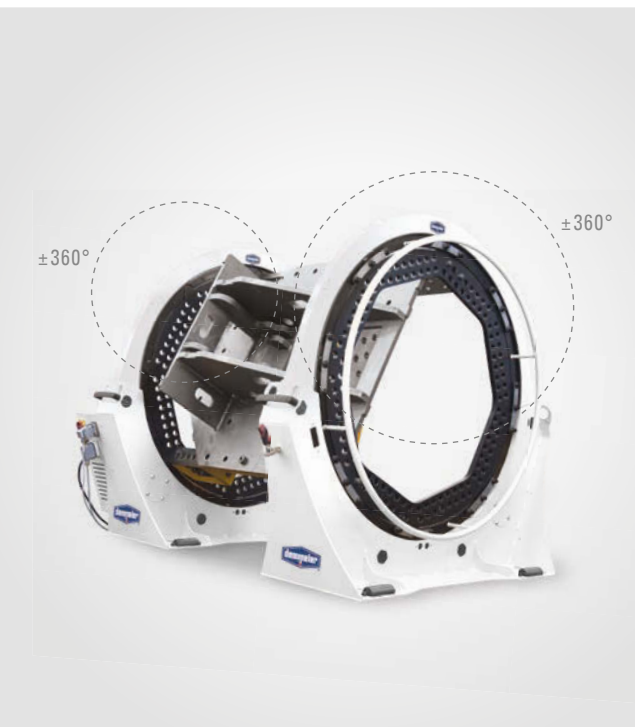


Robotix IP

- Flexible positioning of high-load work pieces
- Efficient manufacturing
- Comfortable work

Lifting / Turning / Tilting Bearing load to 40,000 kg

From page 20



Rotatorix R

- Flexible, form-fit fastening
- Manual or electric drive
- Optimized accessibility
- Simple loading

Turning
Bearing load 2,000 kg per reversible clamping device unit,
4,000 kg when using two units

Page 22/23

DEMMELE Manipulators

Excellent posture and
maximum productivity

Increase the quality level

- Working in the ideal position and at the ideal height
- Less welding distortion through optimised welding sequences
- Consistent quality with optional teaching function to save reproducible sequences

Protection of health and safety

- Avoidance of overloading and poor posture, which means less staff absenteeism
- Ergonomically-optimised work environment
- Employees with physical constraints can perform tasks that they could not perform without the manipulator (possibly investment aid possible by means of funding)
- Dangerous handling of work pieces with a crane is significantly reduced



Increased productivity

- Multiple, time-consuming rotating and turning of the work pieces, for example with a crane, is eliminated for a major reduction in non-productive time and a significant increase in productivity
- Higher melting deposition efficiency when welding as most seams can be performed in the optimal position (flat position)
- Higher work performance due to fatigue-free working position



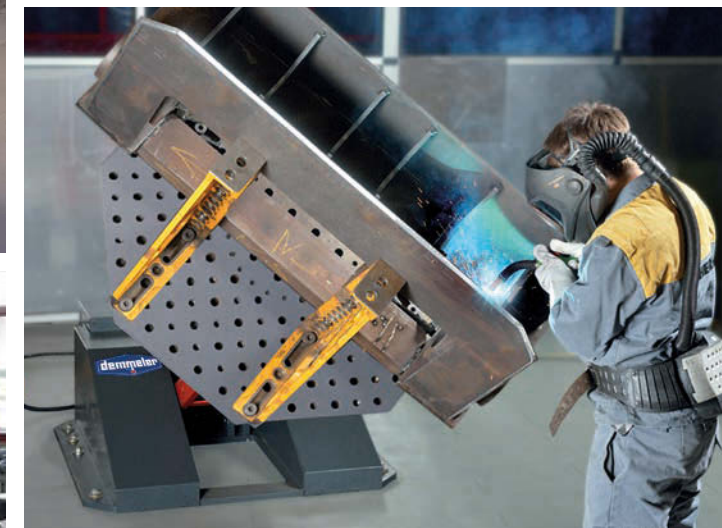
Unlimited opportunities

Manipulators in tough everyday working conditions



Welding and assembly – Simple, rapid work piece positioning

The size and bulkiness of work pieces often create difficulties during welding, because not all points can be seen well. However, an optimal overview is a prerequisite for clean and error-free work. Due to their dimensions, work pieces must be moved several times during the work process with a heavy device, usually with a crane. Reduce this safety risk with the manipulator from DEMMELER. The manipulator is a kind of lifting platform on which work pieces can be machined directly. You can extend the manipulator by the DEMMELER 3D Okto Table. This gives you a working surface that is precisely adapted to your work pieces. The fact that all locations are easily accessible simplifies welding, measuring and assembling.



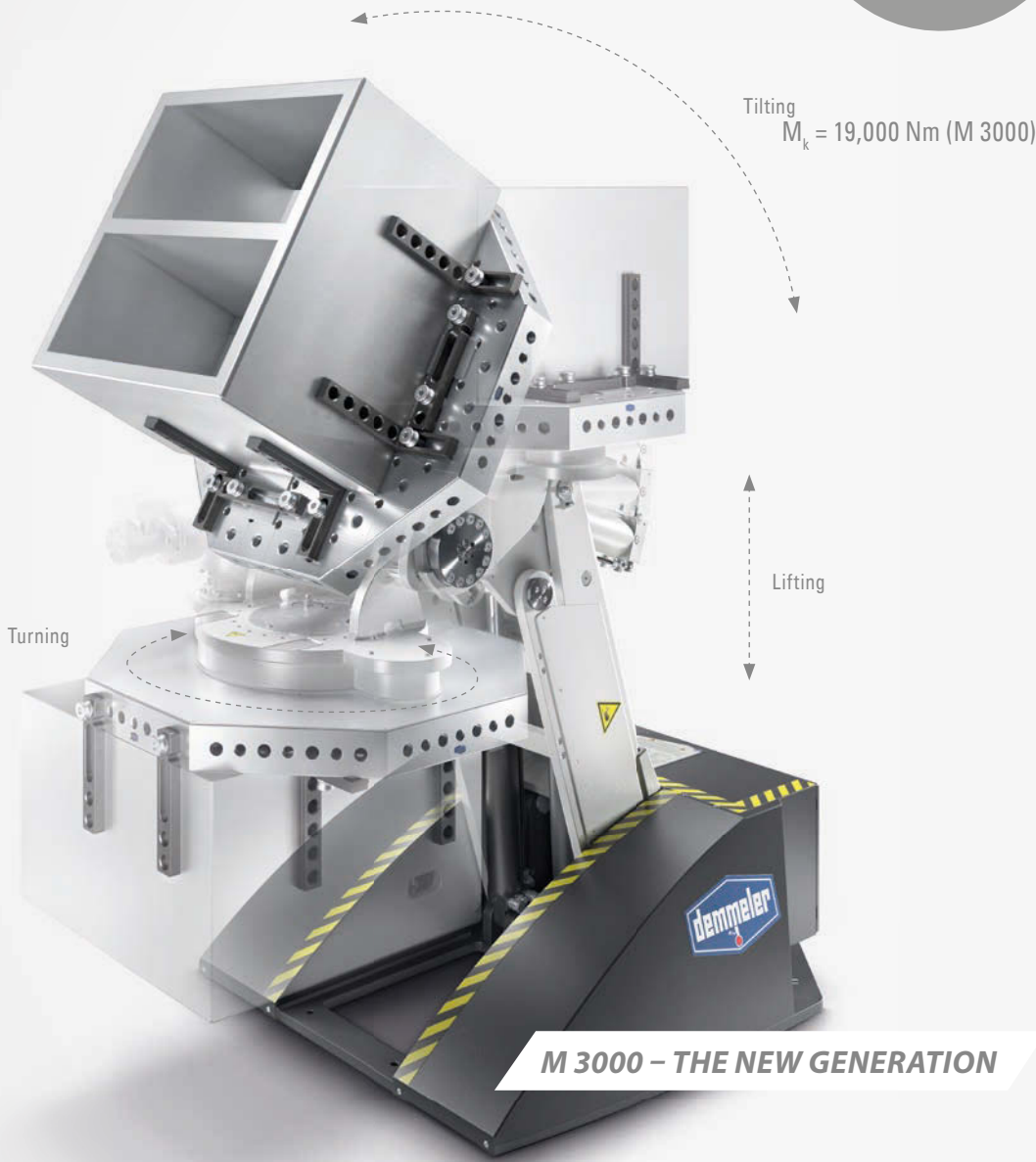
Since the tiltable manipulator can be adjusted in height and angle at the push of a button, you create an ergonomic working environment and avoid health problems for your employees with this handling device. The profitability and quality of your products are also increased significantly by using the manipulator. The manipulator allows for very precise work with an optimised welding sequence, which considerably reduces the welding distortion rate. In addition, simple and fast assembly is optimally possible with standard processes.

2 | 3 | 4 | 8 tons

Manipulator Ergonomix M

Outstanding flexibility during welding or assembly work thanks to swivel range of up to 180° as standard

Unique
moment
of tilt and
torque.



M 3000 – THE NEW GENERATION

Benefits

- Large work area
- Solid construction
- Low installation height
- Unique swivel range up to 180° as standard
- Comfortable working
- Greater flexibility
- Improved workplace safety
- Increased productivity



DEMMELEER Ergonomix M:
Winner of the German federal prize
for innovative performance in the trade



Limited space. Unlimited possibilities.

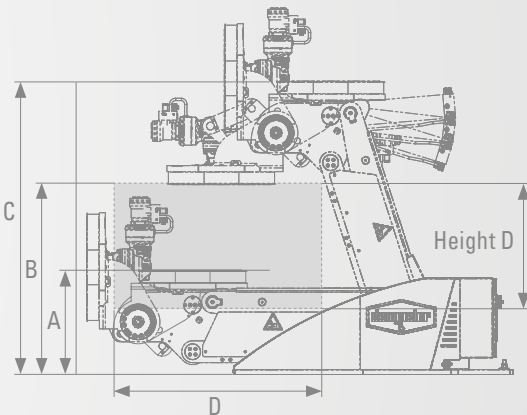
With the ingenious arrangement of the entire mechanism, the developers at DEMMELEER were able to create a working space of unrivalled size combined with a small footprint for the Ergonomix M manipulator. The handling device consistently brings the highest payloads into the ideal position.

A special characteristic of the DEMMELEER Ergonomix M product family is the large **swivel range of up to 180°**. This has the crucial advantage with many work pieces of being able to process them fully in one clamping cycle without turning them over. The excellent price-performance ratio of the DEMMELEER products is the key feature.

Exact positioning

The movement axes bring your work piece to the desired position at the touch of a button, no matter how often the process step is repeated. To make things even easier, the manipulators can be optionally equipped with the optional teaching controller. You move to the various positions manually and save them. Then the manipulator repeats the programme as many times as you want. You thus improve your productivity and quality.

- At the same time, you eliminate repeated, time-consuming turning and rotating of the work piece, for example using a crane. This greatly reduces non-productive times and leads to significant increases in productivity.
- Higher melting deposition efficiency when welding as most seams can be performed in the optimal position (flat position).
- Simple, fast assembly in the optimum position using standard processes.



Ergonomix M basic model

| Description | | THE NEW GENERATION | | | | |
|--|-------|--------------------|----------------|---------------|---------------|---------------|
| | | M 2000 / V1250 | M 2000 / V2500 | M 3000 | M 4000 | M 8000 |
| Bearing load (w/o worktop) | [kg] | 2000 | 2000 | 3000 | 4000 | 8000 |
| D=max. Interference area at 180° (w/o worktop) At height | [mm] | 1000 | 1000 | 1000 | 1500 | 2000 |
| | [mm] | 650 | 650 | 650 | 520 | 600 |
| Max. rotation speed | [RPM] | 2 | 2 | 2 | 2 | 1.5 |
| Min. rotation speed | [RPM] | 0.75 | 0.2 | 0.2 | 0.2 | 0.2 |
| Torque | [Nm] | 1250 | 2500 | 3500 | 5000 | 10000 |
| Tilt angle | [°] | 180 | 180 | 180 | 180 | 180 |
| Moment of tilt | [Nm] | 8000 | 8000 | 19000 | 32000 | 64000 |
| A=min. Height (w/o worktop) | [mm] | 490 | 490 | 525 | 750 | 895 |
| B=max. Height at 180° swivel angle | [mm] | 970 | 970 | 960 | 983 | 1142 |
| C=max. Height at 90° swivel angle | [mm] | 1480 | 1480 | 1480 | 1680 | 1940 |
| Pendant control panel | | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10-speed control | | ✓ | ✓ | ✓ | ✓ | ✓ |
| All axes adjustable via servo-hydraulic system | | – | – | ✓ | – | – |
| Motors / rotary axis | | 1 | 2 | 1 | 2 | 2 |
| Item no. | | M02-02000-006 | M02-02000-007 | M03-03000-000 | M04-04000-000 | M08-08000-000 |

Specifications without worktop. Other equipment details on request.

Equipment for the Ergonomix M

Work without compromise right from the very start

To allow you to enjoy maximum benefit from the many capabilities and advantages of your Ergonomix M, we have a range of accessory equipment for you to use. Thanks to these solutions, you will save valuable time and be able to work more comfortably and with less effort.

1 Operation with pendant control panel

- Potentiometer – enabling reproducible speed settings
- Axis activation at the touch of a button
- Cable length 5 m

2 Controller in the control cabinet

- Master switch
- Compact construction
- Housing integrated in the manipulator

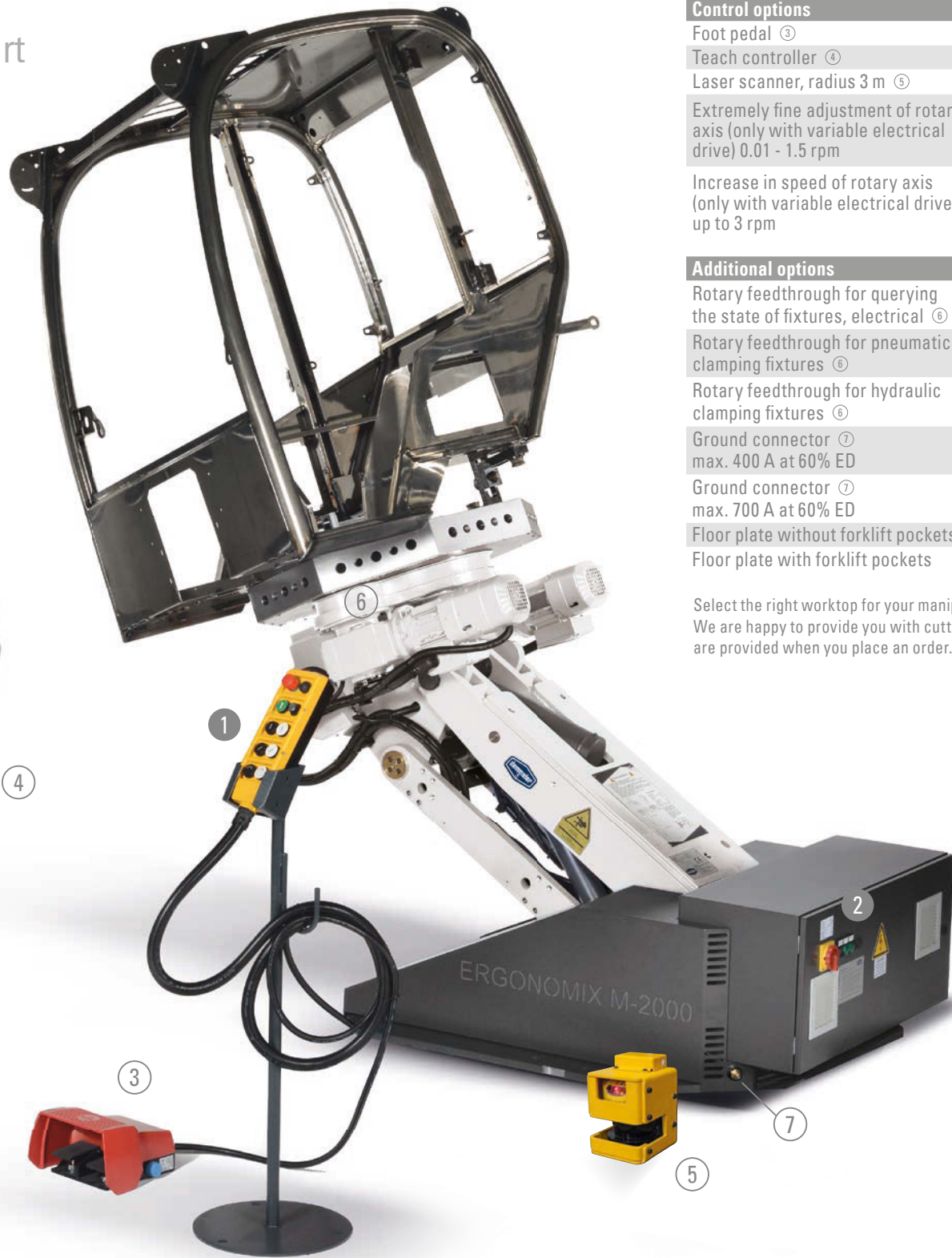
3 Operation with foot pedal

- Foot switch to control the rotation axis of the manipulator by pressing the pedal for left / right rotation
- Foot switch with emergency stop function. Pressing the pedal down all the way stops movement of the rotation axis immediately (panic function)
- The enabling button does not have to be pressed while controlling the rotation axis with the foot switch

4 Teach controller

- Up to 100 programmes with 50 positions each
- Operation via touchscreen
- Start movement by pressing the enabling button
- Offline programming possible
- Editing programmes in a text editor possible
- Data transfer per USB interface
- 10" display

You can move to the positions manually with the buttons and save specific positions in the work piece programme using the teach controller by pressing buttons. This results in a consistent movement sequence from one position to the next. Several different work piece programmes can be stored and called up as needed.



Optimum extension capabilities

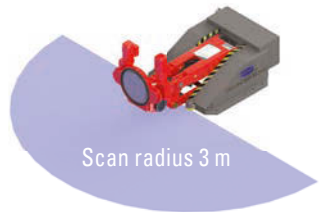
| Control options | M 2000 / V1250 | M 2000 / V2500 | M 3000 | M 4000 | M 8000 |
|---|----------------|----------------|---------------|---------------|---------------|
| Foot pedal ③ | Z00-01002-021 | Z00-01002-021 | Z00-03000-000 | Z00-01002-021 | Z00-01002-021 |
| Teach controller ④ | Z00-01001-008 | Z00-01001-008 | Z00-03000-003 | Z00-01001-011 | Z00-01001-012 |
| Laser scanner, radius 3 m ⑤ | Z00-01010-001 | Z00-01010-001 | Z00-03000-006 | Z00-01010-001 | Z00-01010-001 |
| Extremely fine adjustment of rotary axis (only with variable electrical drive) 0.01 - 1.5 rpm | – | Z00-01002-022 | – | Z00-01002-022 | Z00-01002-022 |

| | | | | | |
|--|---|---------------|---|---------------|---------------|
| Increase in speed of rotary axis (only with variable electrical drive) up to 3 rpm | – | Z00-01002-031 | – | Z00-01002-031 | Z00-01002-031 |
|--|---|---------------|---|---------------|---------------|

| Additional options | M 2000 / V1250 | M 2000 / V2500 | M 3000 | M 4000 | M 8000 |
|---|----------------|----------------|---------------|---------------|---------------|
| Rotary feedthrough for querying the state of fixtures, electrical ⑥ | Z00-01004-005 | Z00-01004-005 | Z00-03000-007 | Z00-01004-005 | Z00-01004-005 |
| Rotary feedthrough for pneumatic clamping fixtures ⑥ | Z00-01004-008 | Z00-01004-008 | Z00-03000-008 | Z00-01004-008 | Z00-01004-008 |
| Rotary feedthrough for hydraulic clamping fixtures ⑥ | Z00-01004-009 | Z00-01004-009 | Z00-03000-009 | Z00-01004-009 | Z00-01004-009 |
| Ground connector ⑦ max. 400 A at 60% ED | Z00-01000-002 | Z00-01000-002 | Z00-03000-002 | Z00-01000-008 | Z00-01000-003 |
| Ground connector ⑦ max. 700 A at 60% ED | Z00-01000-009 | Z00-01000-009 | Z00-01000-012 | Z00-01000-013 | Z00-01000-014 |
| Floor plate without forklift pockets | 00068212 | 00068212 | Z00-03000-004 | 00097630 | – |
| Floor plate with forklift pockets | 00091670 | 00091670 | Z00-03000-005 | 00106030 | – |

Select the right worktop for your manipulator from our extensive selection. See also p. 14-15. It is not included in the scope of delivery. We are happy to provide you with cutting data / connection data for customer clamping elements. All load data for the installation location are provided when you place an order.

● Series equipment ○ Special equipment



5 Laser scanner

- Personnel and component protection
- Scan radius 3 m (other ranges on request)
- Clearing after area infraction by key-operated switch integrated in the control cabinet door
- Safety zone status display in control cabinet door

6 Rotary feedthroughs

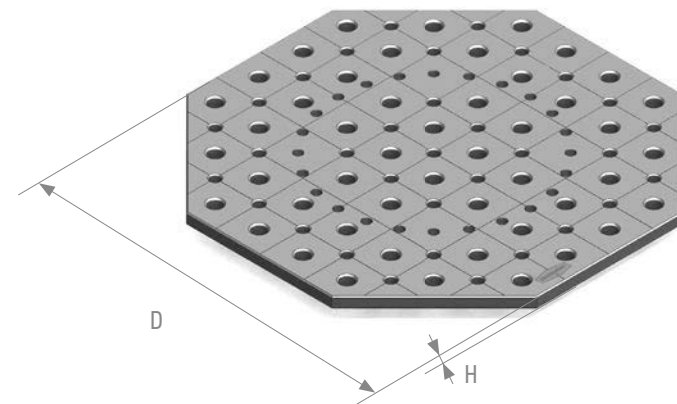
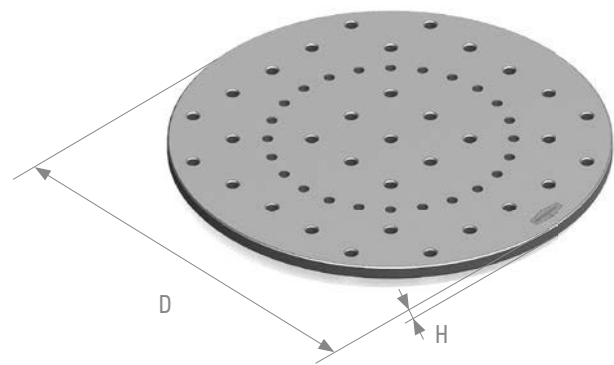
- Rotary feedthrough for querying the state of fixtures, electrical, 10 signals, teaching controller or controller in premises required
- Rotary feedthrough for pneumatic clamping equipment on worktop, pneumatic, 1-channel
- Rotary feedthrough for hydraulic clamping equipment on worktop, hydraulic, 1-channel

7 Ground connector

Ground connector for feeding the welding ground from the table to the interface next to the control cabinet, including sliding contact and quick coupling. Dinse connection 400 A at 60 % ED, optional 700 A at 60 % ED.

Optional clamping solutions

Worktops and 3D Worktables



Worktops with Thread M24

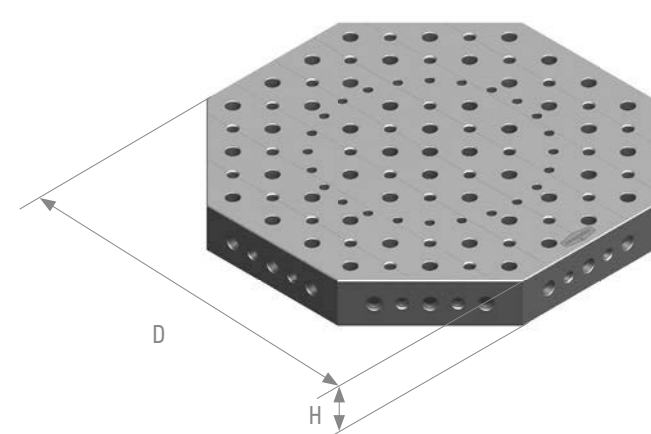
- Worktop with Thread M24
- Includes protective plate on the underside as collision protection

| Type | D* | H* | Weight in kg | Grid | Item no. |
|-------|--------|----|--------------|---------|----------|
| M2000 | ø 800 | 25 | 110 | 100x100 | 00059396 |
| M3000 | ø 1000 | 25 | 210 | 100x100 | 00117028 |
| M4000 | ø 1000 | 30 | 210 | 100x100 | 00071838 |
| M8000 | ø 1500 | 45 | 700 | 100x100 | 00064406 |

Clamping and Adapter Plates

- Clamping and Adapter Plate with D28 system bores in 100 x 100 mm grid and M24 thread in diagonal grid
- Includes cover plate on the underside as collision protection

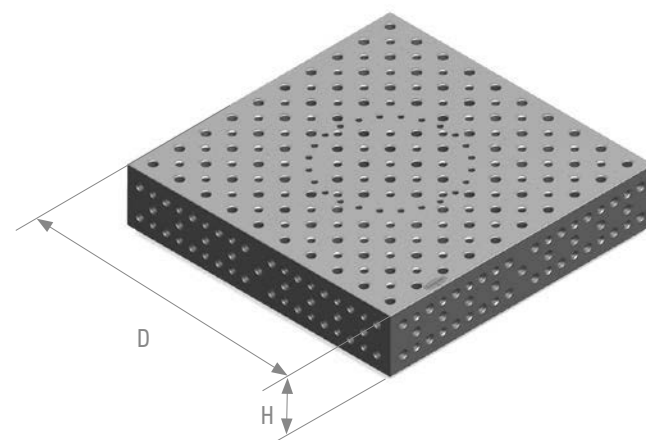
| Type | D* | H* | Weight in kg | Grid | Item no. |
|-------|---------|----|--------------|---------|---------------|
| M2000 | AF 800 | 25 | 120 | 100x100 | D28-02001-221 |
| M3000 | AF 1000 | 25 | 270 | 100x100 | D28-02001-471 |
| M4000 | AF 1000 | 30 | 270 | 100x100 | D28-02001-255 |
| M8000 | AF 1500 | 45 | 620 | 100x100 | D28-02001-251 |



3D Worktable Okto

- 3D Worktable Okto with D28 system bores in 100 x 100 mm grid and M24 thread in diagonal grid
- Includes cover plate on the underside as collision protection

| Type | D* | H* | Weight in kg | Grid | Item no. |
|-------|---------|-----|--------------|---------|---------------|
| M2000 | AF 800 | 100 | 155 | 100x100 | D28-01013-032 |
| M3000 | AF 1000 | 100 | 380 | 100x100 | D28-01038-064 |
| M4000 | AF 1000 | 100 | 380 | 100x100 | D28-01038-028 |
| M8000 | AF 1500 | 200 | 770 | 100x100 | D28-12009-003 |



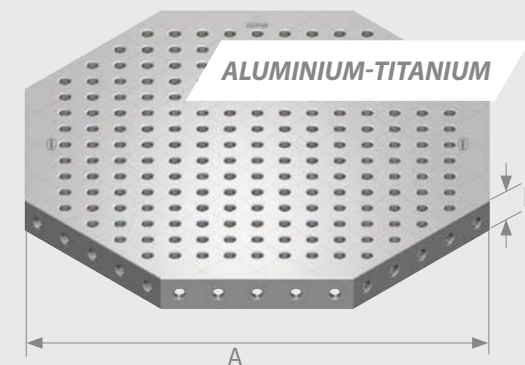
3D Work and Welding Table

- 3D Worktable with D28 system bores in 100 x 100 mm grid and M24 thread in diagonal grid
- Includes cover plate on the underside as collision protection

| Type | D* | H* | Weight in kg | Grid | Item no. |
|-------|-----------|-----|--------------|---------|---------------|
| M2000 | 1000x1000 | 200 | 355 | 100x100 | D28-01001-132 |
| M3000 | 1200x1200 | 200 | 540 | 100x100 | D28-01056-064 |
| M4000 | 1200x1200 | 200 | 540 | 100x100 | D28-01056-053 |
| M8000 | 1500x1500 | 200 | 675 | 100x100 | D28-01031-071 |



Recommended for automation solutions,
robotics applications and use on manipulators



3D Okto 100 Worktable

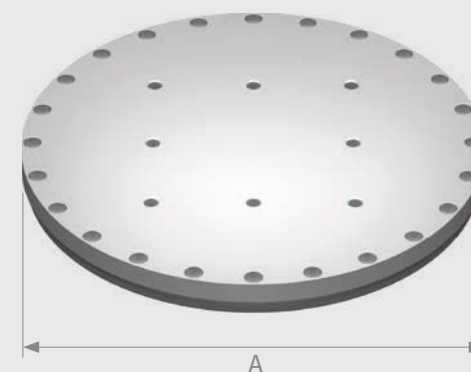
- Preferred use with manipulators in robot cells
- Numerous clamping possibilities on all nine clamping surfaces
- In the D22 bore grid 100x100
- Diagonal boring in M16 version
- High-strength aluminium-titanium alloy for ~ 60 % weight reduction and ~ 10 % higher bending strength
- Together with Adapter Plate, with special connection drilling pattern, adapted to the face plate of your manipulator (please include manipulator type and drawing of the face plate with enquiry)

| A* | B* | Description | Item no. |
|---------|-----|-------------------------|----------------|
| AF 600 | 100 | Diagonal grid 100 x 100 | PL22-11008-001 |
| AF 800 | 100 | Diagonal grid 100 x 100 | PL22-01013-001 |
| AF 1000 | 100 | Diagonal grid 100 x 100 | PL22-01038-001 |

Adapter Plate

- Interface element for adaptation of Okto 100 D22 3D Worktable to welding robot or manipulator
- Interface hole pattern produced in accordance with customer's wishes
- Including mounting screws

| A* | Description | Item no. |
|---------|---------------------------------|----------|
| AF 600 | Adapter Plate for table AF 600 | 00116157 |
| AF 800 | Adapter Plate for table AF 800 | 00116159 |
| AF 1000 | Adapter Plate for table AF 1000 | 00116160 |

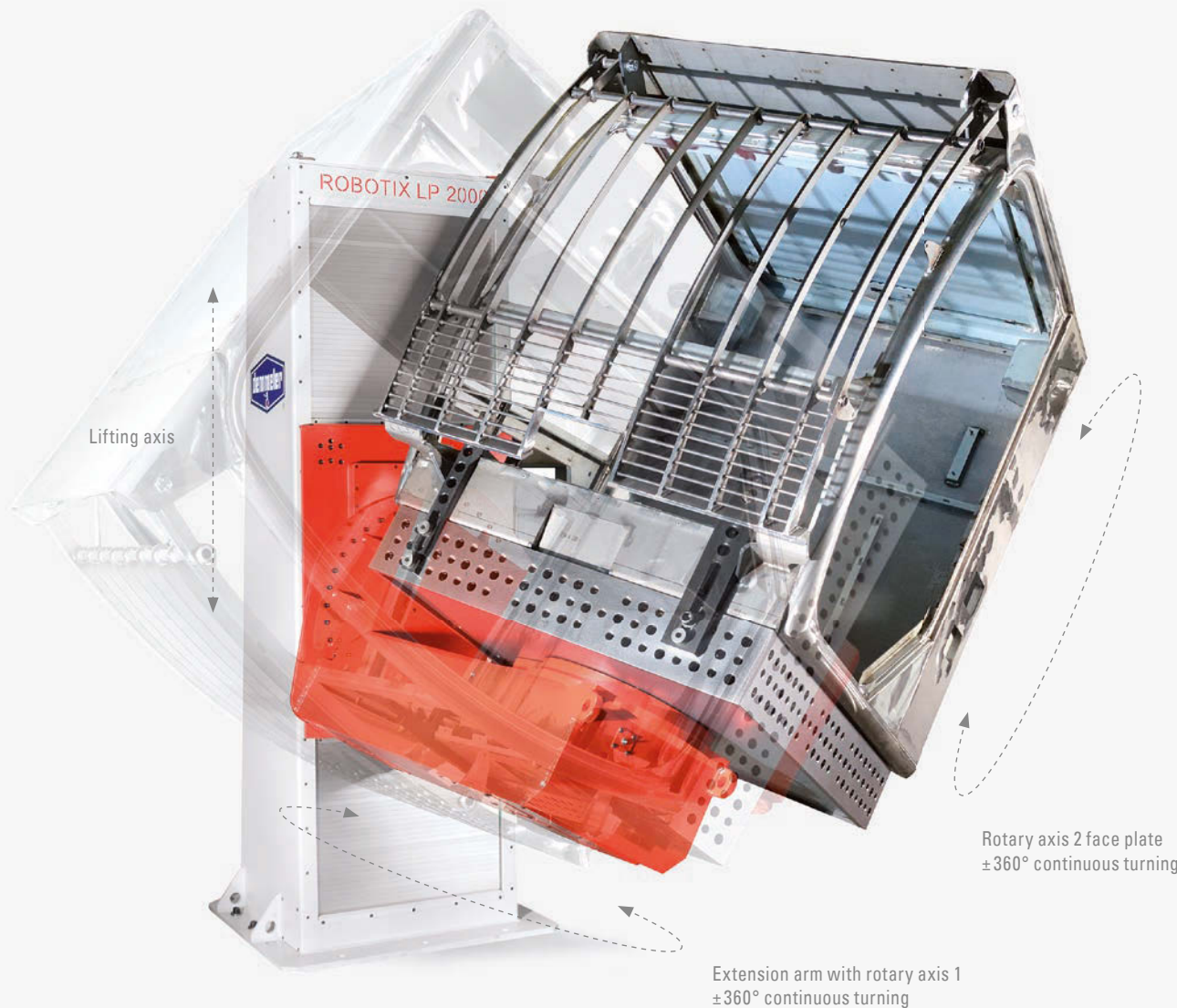


*Specifications in mm

1.5 | 3 | 6 | 10 | 20 tons

Manipulators Robotix LP

So that hard work doesn't feel hard



The models in the DEMMELER Robotix LP series of manipulators

Our Robotix LP series excels thanks to a range of unmissable strengths, for example a compact construction and versatility in operation. The models vary in their equipment and the available accessories. Irrespective of the solution you choose: You can be sure that every model will provide outstanding performance in compact format – just as you would expect from DEMMELER.



Benefits

- Enables positioning of work pieces with very high precision
- High repeat accuracy
- Two rotation axes and one lifting axis
- Suitable for integration in a robot cell
- Solid construction
- Lifting axis via servo-hydraulic system, speed continuously adjustable



1 | Robotix basic device

| Description | Unit | IP 1500 | IP 3000 | IP 6000 | IP 10000 | IP 20000 |
|--------------------------------|-------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Bearing load (without worktop) | kg | 1500 | 3000 | 6000 | 10000 | 20000 |
| Lifting axis: | | | | | | |
| > Drive | | servo-hydraulic | servo-hydraulic | servo-hydraulic | servo-hydraulic | servo-hydraulic |
| > Lifting speed | m/min | 2 | 2 | 1.5 | 1.5 | 1 |
| > Max. lifting height | mm | 1200 | 1500 | 2000 | 2200 | 2450 |
| > Minimum height | mm | 360 | 640 | 820 | 1050 | 1050 |
| > Maximum height | mm | 1560 | 2140 | 2820 | 3250 | 3500 |
| Rotary axis 1 / tilt axis: | | | | | | |
| > Min. - max. speed | RPM | 0.2 - 1.4 | 0.2 - 1.4 | 0.2 - 1.0 | 0.2 - 1.0 | 0.2 - 1.0 |
| > Angle of rotation | ° | ±360 cont. | ±360 cont. | ±360 cont. | ±360 cont. | ±360 cont. |
| > Torque | Nm | 4000 | 12000 | 20000 | 24000 | 50000 |
| Pendant control panel | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Item no. | | I01-01000-100 | I03-01000-100 | I06-01000-100 | I10-01000-100 | I20-01000-100 |

2 | Extension arm option

| Description | Unit | LP 1500 | LP 3000 | LP 6000 | LP 10000 | LP 20000 |
|--------------------------------------|------|---------------|---------------|---------------|---------------|---------------|
| Extension arm for Robotix | | Z01-01000-000 | Z03-01000-000 | Z06-01000-000 | Z10-01000-000 | Z20-01000-000 |
| > Maximum interference area diameter | mm | 3000 | 4000 | 5000 | 5500 | 6500 |

3 | Rotary axis 2 on extension arm option

| Description | Unit | LP 1500 | LP 3000 | LP 6000 | LP 10000 | LP 20000 |
|----------------------------|------|---------------|---------------|---------------|---------------|---------------|
| Rotary axis 2 | | Z01-01000-001 | Z03-01000-001 | Z06-01000-001 | Z10-01000-001 | Z20-01000-001 |
| > Min. - max. speed | RPM | 0.2 - 1.4 | 0.2 - 1.4 | 0.2 - 1.4 | 0.2 - 1.4 | 0.2-0.75 |
| > Angle of rotation | ° | 360 | 360 | 360 | 360 | 360 |
| > Torque | Nm | 2500 | 5000 | 10000 | 15000 | 40000 |
| > D=max. interference area | mm | 3000 | 4000 | 5000 | 6000 | 6000 |

Adapter plates for L-manipulators on request (see page 14/15 for version).
Other equipment details on request.

Equipment for the Robotix series

Stress-free work from the very beginning

THE NEW GENERATION

1 Operation with pendant control panel

- Potentiometer – enabling reproducible speed settings
- Axis activation at the touch of a button
- Cable length 5 m

2 Additional controller at the control console

- Master switch
- Compact construction
- Housing integrated in the manipulator

3 Laser scanner

- Personnel and component protection
- Scan radius 3 m (other ranges on request)
- Clearing after area infraction by key-operated switch integrated in the control cabinet door
- Safety zone status display in control cabinet door

4 Rotary feedthroughs

- Rotary feedthrough for querying the state of fixtures, electrical, 10 signals, teaching controller or controller in premises required
- Rotary feedthrough for pneumatic clamping equipment on worktop, pneumatic, 1-channel
- Rotary feedthrough for hydraulic clamping equipment on worktop, hydraulic, 1-channel



5 Ground connector

Ground connector for feeding the welding ground from the table/fixture setup to the interface next to the control cabinet, including sliding contact and quick coupling.

6 Teach controller

- Up to 100 programmes with 50 positions each
- Touch screen operation
- Start movement by pressing the enabling button
- Offline programming possible
- Editing programmes in a text editor possible
- Data transfer per USB interface
- 10" display

You can move to the positions manually with the buttons and save specific positions in the work piece programme using the teach controller by pressing buttons. This results in a consistent movement sequence from one position to the next. Several different work piece programmes can be stored and called up as needed.



| Control options | LP 1500 | LP 3000 | LP 6000 | LP 10000 | LP 20000 |
|-------------------------------------|---------------|---------------|---------------|---------------|---------------|
| Controller at control console ② | Z01-01000-100 | Z03-01000-100 | Z06-01000-100 | Z10-01000-100 | Z20-01000-100 |
| Laser scanner ③ | Z01-01000-101 | Z03-01000-101 | Z06-01000-101 | Z10-01000-101 | Z20-01000-101 |
| Teaching controller ⑥ | Z01-01000-102 | Z03-01000-102 | Z06-01000-102 | Z10-01000-102 | Z20-01000-102 |
| Connection as additional robot axis | Z01-01000-103 | Z03-01000-103 | Z06-01000-103 | Z10-01000-103 | Z20-01000-103 |

● Series equipment ○ Special equipment

| Additional options | LP 1500 | LP 3000 | LP 6000 | LP 10000 | LP 20000 |
|---|---------------|---------------|---------------|---------------|---------------|
| Rotary feedthrough for querying the state of fixtures, electrical ④ | Z01-01000-104 | Z03-01000-104 | Z06-01000-104 | Z10-01000-104 | Z20-01000-104 |
| Rotary feedthrough for pneumatic clamping fixtures ④ | Z01-01000-105 | Z03-01000-105 | Z06-01000-105 | Z10-01000-105 | Z20-01000-105 |
| Rotary feedthrough for hydraulic clamping fixtures ④ | Z01-01000-106 | Z03-01000-106 | Z06-01000-106 | Z10-01000-106 | Z20-01000-106 |
| Ground connector for welding device ⑤ | Z01-01000-107 | Z03-01000-107 | Z06-01000-107 | Z10-01000-107 | Z20-01000-107 |

3 | 6 | 12 | 20 | 40 tons

Manipulator Robotix IP

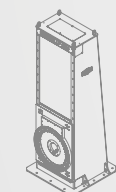
When you have something big in mind

Stress-free assembly and efficient welding

Those who think in big dimensions need equipment that offers numerous possibilities. With the Robotix IP manipulator, you can position your work pieces flexibly, manufacture efficiently and work ergonomically. In a relaxed posture, a welding seam can be welded far more exactly. Optimum positioning of the work piece also enables an ideal production process: No flowing of the welding material. We offer the right product for you out of numerous solutions.



Rotation axis
±360° continuous turning



Robotix basic device

| Description | Unit | IP 1500 | IP 3000 | IP 6000 | IP 10000 | IP 20000 |
|--------------------------------|-------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Bearing load (without worktop) | kg | 1500 | 3000 | 6000 | 10000 | 20000 |
| Lifting axis: | | | | | | |
| > Drive | | servo-hydraulic | servo-hydraulic | servo-hydraulic | servo-hydraulic | servo-hydraulic |
| > Lifting speed | m/min | 2 | 2 | 1.5 | 1.5 | 1 |
| > Max. lifting height | mm | 1200 | 1500 | 2000 | 2200 | 2450 |
| > Minimum height | mm | 360 | 640 | 820 | 1050 | 1050 |
| > Maximum height | mm | 1560 | 2140 | 2820 | 3250 | 3500 |
| Rotary axis 1 / tilt axis: | | | | | | |
| > Min. - max. speed | RPM | 0.2 - 1.4 | 0.2 - 1.4 | 0.2 - 1.0 | 0.2 - 1.0 | 0.2 - 1.0 |
| > Angle of rotation | ° | ±360 cont. | ±360 cont. | ±360 cont. | ±360 cont. | ±360 cont. |
| > Torque | Nm | 4000 | 12000 | 20000 | 24000 | 50000 |
| Pendant control panel | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Item no. | | I01-W1000-100 | I03-W1000-100 | I06-W1000-100 | I10-W1000-100 | I20-W1000-100 |

Optional equipment

| Control options | IP 1500 | IP 3000 | IP 6000 | IP 10000 | IP 20000 |
|-------------------------------------|---------------|---------------|---------------|---------------|---------------|
| Teaching controller | Z01-W1000-102 | Z03-W1000-102 | Z06-W1000-102 | Z10-W1000-102 | Z20-W1000-102 |
| Controller at control console | Z01-W1000-100 | Z03-W1000-100 | Z06-W1000-100 | Z10-W1000-100 | Z20-W1000-100 |
| Laser scanner | Z01-W1000-101 | Z03-W1000-101 | Z06-W1000-101 | Z10-W1000-101 | Z20-W1000-101 |
| Connection as additional robot axis | Z01-W1000-103 | Z03-W1000-103 | Z06-W1000-103 | Z10-W1000-103 | Z20-W1000-103 |
| Counterpiece for rotary axis 1 | Z01-W1000-108 | Z03-W1000-108 | Z06-W1000-108 | Z10-W1000-108 | Z20-W1000-108 |

| Positioning options | IP 1500 | IP 3000 | IP 6000 | IP 10000 | IP 20000 |
|---|---------------|---------------|---------------|---------------|---------------|
| Preparation for assembly on DEMMELER track system for each lifting column | Z01-W1000-109 | Z03-W1000-109 | Z06-W1000-109 | Z10-W1000-109 | Z20-W1000-109 |
| DEMMELER track system (per metre) | D28-W2003-000 | D28-W2003-000 | D28-W2003-000 | D28-W2003-000 | D28-W2003-000 |

| Additional options | IP 1500 | IP 3000 | IP 6000 | IP 10000 | IP 20000 |
|---|---------------|---------------|---------------|---------------|---------------|
| Rotary feedthrough for querying the state of fixtures, electrical | Z01-W1000-104 | Z03-W1000-104 | Z06-W1000-104 | Z10-W1000-104 | Z20-W1000-104 |
| Rotary feedthrough for pneumatic clamping fixtures | Z01-W1000-105 | Z03-W1000-105 | Z06-W1000-105 | Z10-W1000-105 | Z20-W1000-105 |
| Rotary feedthrough for hydraulic clamping fixtures | Z01-W1000-106 | Z03-W1000-106 | Z06-W1000-106 | Z10-W1000-106 | Z20-W1000-106 |
| Ground connector for welding device | Z01-W1000-107 | Z03-W1000-107 | Z06-W1000-107 | Z10-W1000-107 | Z20-W1000-107 |

Up to 4 tons

Reversible Clamping Device Rotatorix® R 360° work piece machining



TURNING



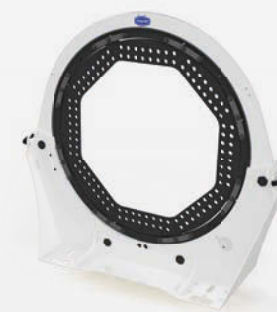
- Bearing load 2,000 kg per reversible clamping device unit, 4,000 kg when using two units
- Swing diameter 1,250 mm
- Centre of rotation at a height of 785 mm
- With 950 mm hole
- Device dimensions approx. 1,500 x 1,300 mm
- Flexibly adjustable length
- Torque 1770 Nm

Continuous rotation of growing or asymmetrical work pieces of up to 4,000 kg around their own axes

With the Rotatorix® R 2000 / 950, when using two reversible clamping devices, work pieces of up to 4,000 kg can be continuously rotated round their own axis to enable a worker to easily access them from all sides. Each work piece can be manually or electrically rotated – mainly for growing or asymmetrical work pieces – which means less strain on the worker's back. Not only does this prevent overloading and symptoms of fatigue, but it also enables access to the work area, eliminating the need for dangerous and time-consuming turning of the work piece by crane. In addition, the best possible quality can also be obtained as, thanks to optimised welding sequences, less welding distortion is produced on the work pieces. The Rotatorix® also increases deposition efficiency. The system is based on the D28 clamping system.



Rotatorix® with frequency-controlled drive on a DEMMELER foundation track system for work pieces of varying lengths



Rotatorix® R 2000 / 950 basic device

The reversible clamping device is available in several versions to ensure the best conditions for each application. So, for example, both assemblies can be equipped with rollers for perfect flexibility, or one assembly can be fitted with rollers while the other is fixed to the floor with plugs. The DEMMELER rail system is also available in a version with guide rollers. Individual work pieces are clamped either by means of a standard brace with an attachment chain or using individual braces which are specially designed for the respective requirements. Where drive options are concerned, the possibilities range from manual drives and highly accurate frequency-controlled drives to the connection of an additional robot axis.

Rotatorix® R 2000 / 950 basic device consisting of one reversible clamping unit. Turning unit for 360° continuous rotation of growing, symmetrical and asymmetrical work pieces

Item no. R02-01000-001

Equipment options

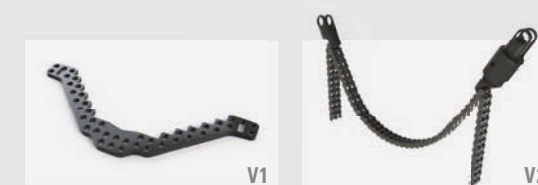
| Item | Drive options | Item no. |
|------|--|---------------|
| A1 | Manual drive , comprises a rotation unit for manual operation and clamp | RA2-01000-002 |
| A2 | Motorised drive for electrically-driven rotation of work pieces with set rotation speeds including control panel and confirm key | RA2-01000-003 |
| A3 | Frequency-controlled drive for electrically-driven rotation of work pieces with infinitely variable rotation speeds controlled by potentiometer, for example, for circular welding. Includes a control panel and confirm key. | RA2-01000-001 |
| A4 | Drive with arrangement for integrating the Rotatorix® as an external robot axis , mainly for circular welding (e.g. for robots of type ABB, Cloos, Kuka, Fanuc, etc.) | RA2-01000-004 |
| A5 | Foot switch for rotating the work pieces with pre-set speed – in combination with the motorised drive | RA2-01000-005 |
| A6 | Confirm key for rotating the work pieces with pre-set speed for use in the customer's own protective enclosure – in combination with the motorised drive | RA2-01000-006 |



| Item | Positioning options | Item no. |
|------|--|---------------|
| P1 | For perfectly flexible positioning (manual adjustment) of an assembly on a level factory floor, comprising 4 rollers | RP2-01000-001 |
| P2 | For using an assembly on a Demmeler foundation track system, comprising 4 rollers and 4 x D28 PPC bolts | RP2-01000-002 |
| P3 | For attaching an assembly in position, comprising 4 floor anchors | RP2-01000-003 |
| P4 | For partially attaching an assembly in position, comprising 4 adjustable feet | RP2-01000-004 |

| Item | Additional options | Item no. |
|------|---|---------------|
| M1 | Ground connection, D28 system for welding device (load up to 500 A) | RM2-01000-001 |

| Item | Positioning options | Item no. |
|------|---|---------------|
| V1 | 1 x brace including 2 x D28 PPC bolts for attaching the brace | RV2-01000-001 |
| V2 | 1 x chain tensioner including chain and plastic protection caps | RV2-01000-002 |



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3D WELDING TABLES



CNC CLAMPING SYSTEM



ROTARY AND
 TURNING TABLES



TOOL ARENAS



CONTRACT MANUFACTURING