DEMMELER® Ergonomix M®
DEMMELER® Robotix turning unit
DEMMELER® Robotix IP

OUR PERFORMANCE
makes THE DIFFERENCE

DEMMELER® MANIPULATORS

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



EN

www.demmeler.com

OUTSTANDING WORKING ENVIRONMENT WITH ALL THE FREEDOM YOU NEED





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

Our specialists in precise positioning

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 and 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! 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!"

By phone: **+49 83 35 98 59-0**
By e-Mail: **sales@demmeler.com**
or in the online shop: **www.demmeler.com**

DEMMELER® manipulators and turning units: Simple, rapid work piece positioning



Ergonomix M®
Welding and assembly in the optimum position
page 7



Robotix turning unit
Turns and lifts medium loads from 2 t to 14 t
page 15

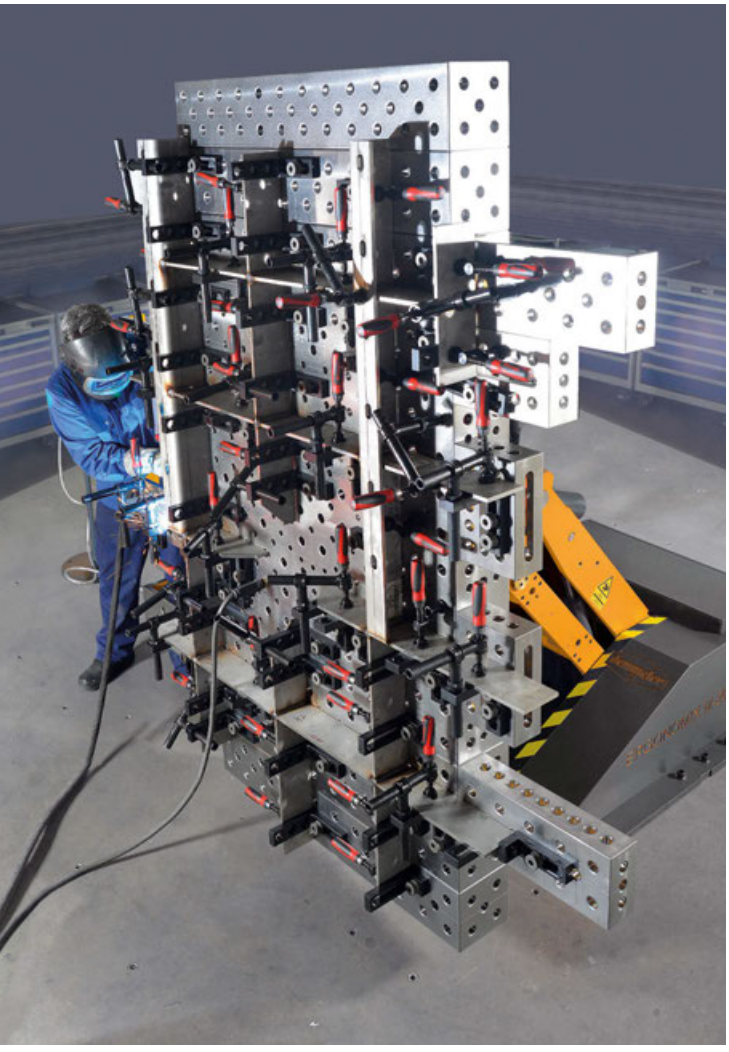


Robotix IP
Our specialist for heavy loads up to 40 t
page 16

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

Limited space.
Unlimited possibilities.

The size and bulkiness of workpieces often cause difficulties during welding, because not all points are easy to see. However, an optimal overview is a requirement for clean and error-free work. Due to their dimensions, workpieces have to be moved several times during the work process with a heavy device, usually a crane. Reduce this safety risk. The large 180° swivel range of the Ergonomix M® from DEMMELER has the crucial advantage of fully machining workpieces in a single clamping cycle without additional turning. There is no longer any need for repeated, time-consuming turning and rotating, for example using a crane. Staff always work in an ergonomically optimised working environment.





WORK SMART

Protection of health and safety
- Ergonomic work that protects your back
- Improved workplace safety

Increased productivity and improved quality
- Maximum work area with minimised footprint
- Unparalleled swivel range up to 180°
- Consistent quality with optional calibration function to save reproducible sequences
- Higher melting deposition rate when welding, as most seams can be produced in the optimal position (flat position)
- Secure workpieces with the standard thread (M24) – also in conjunction with the proven 3D clamping system

Extensive range of equipment is available
- Various clamping and adapter plates available in different sizes and shapes



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.





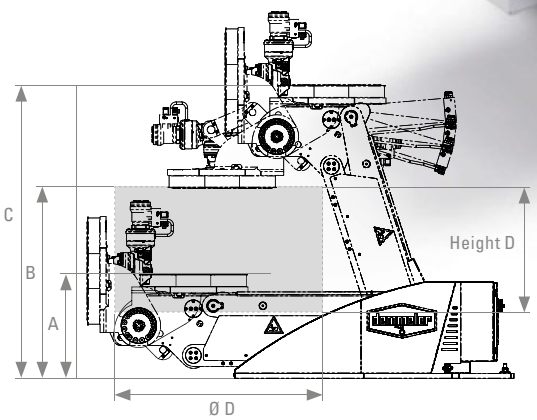
The manipulator Ergonomix M® enables ergonomic and back-friendly working due to its unique swivel range.

DEMMELER® Ergonomix M®: Maximum work area with minimized footprint.

Unique swivel range up to 180 degrees.







For more information about our DEMMELER Ergonomix M® manipulator range, please visit www.demmeler.com.

Ergonomix M® basic model

- Maximum work area with minimized footprint
- Solid construction, low installation height
- Unique swivel range up to 180° as standard
- Comfortable working
- Greater flexibility
- Improved workplace safety
- 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



DEMMELER PATENTED ERGONOMIX M® № 10 2010 041 466.2

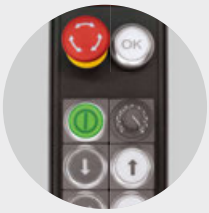
Description	M 2000 / V1250	M 2000 / V2500	NEW M 3000	M 4000	M 8000
Bearing load (w/o worktop) [kg]	2000	2000	3000	4000	8000
D=max. interference area at 180° (w/o worktop [mm]	1000	1000	1000	1500	2000
At Workpiece height [mm]	650	650	650	500	700
Max. speed [rpm]	1,4	1,4	1,4	1,4	1,5
Min. speed [rpm]	0,75	0,2	0,2	0,2	0,2
Torque [Nm]	1250	2500	2500	5000	10000
Tilt angle [°]	180	180	180	180	180
Tilting torque [Nm]	**8000**	**8000**	**19000**	**32000**	**64000**
A=min. height (w/o worktop) [mm]	490	490	490	750	895
B=max. height at 180° swivel angle [mm]	970	970	970	983	1142
C=max. height at 90° swivel angle [mm]	1480	1480	1480	1680	1940
Pendant control station	✓	✓	✓	✓	✓
10-speed control	✓	✓	✓	✓	✓
Foot switch	✓	✓	✓	✓	✓
Motors/rotary axis	1	2	2	2	2
Item no.	**M02-02000-006**	**M02-02000-007**	**M03-03000-047**	**M04-04000-000**	**M08-08000-000**

Specifications without worktop. You can find compatible clamping and adapter plates from page 11 onwards.
Other equipment details available on request.

Standard control options



1 Controller in the control cabinet
- Master switch
- Compact construction
- Housing integrated in the manipulator



2 Operation with pendant control panel
- Potentiometer – enabling reproducible speed settings
- Axis activation at the touch of a button
- Cable length 5 m



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

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 **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

② **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.

③ **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

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

NEW

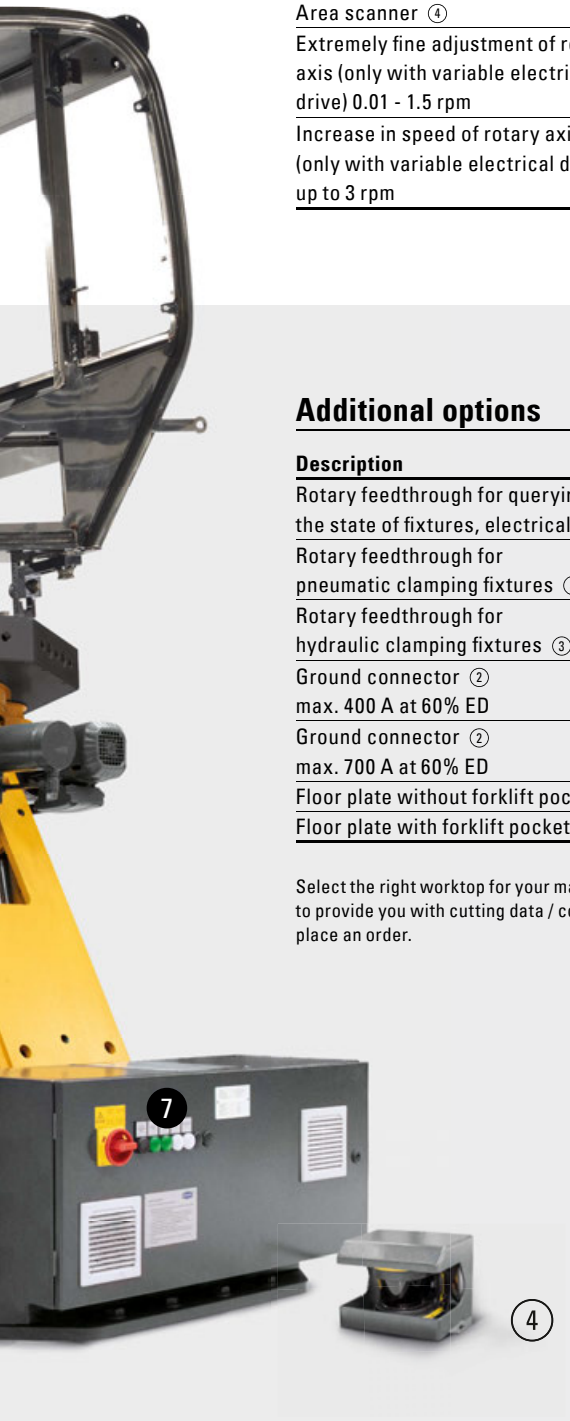
Description	M 2000 / V1250	M 2000 / V2500	M 3000	M 4000	M 8000
Teach controller ①	Z00-01001-024	Z00-01001-024	Z00-01001-024	Z00-01001-025	Z00-01001-026
Area scanner ④	Z00-01005-100	Z00-01005-100	Z00-01005-100	Z00-01005-100	Z00-01005-100
Extremely fine adjustment of rotary axis (only with variable electrical drive) 0.01 - 1.5 rpm	–	Z00-01002-022	Z00-01002-022	Z00-01002-047	–
Increase in speed of rotary axis (only with variable electrical drive) up to 3 rpm	–	Z00-01002-031	Z00-01002-031	–	–

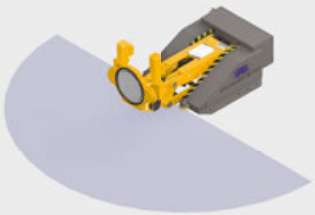
Additional options

NEW

Description	M 2000 / V1250	M 2000 / V2500	M 3000	M 4000	M 8000
Rotary feedthrough for querying the state of fixtures, electrical ③	Z00-01004-005	Z00-01004-005	Z00-01004-005	Z00-01004-005	Z00-01004-005
Rotary feedthrough for pneumatic clamping fixtures ③	Z00-01004-008	Z00-01004-008	Z00-01004-008	Z00-01004-008	Z00-01004-008
Rotary feedthrough for hydraulic clamping fixtures ③	Z00-01004-009	Z00-01004-009	Z00-01004-009	Z00-01004-009	Z00-01004-009
Ground connector ② max. 400 A at 60% ED	Z00-01000-002	Z00-01000-002	Z00-01000-002	Z00-01000-008	Z00-01000-003
Ground connector ② max. 700 A at 60% ED	Z00-01000-009	Z00-01000-009	Z00-01000-009	Z00-01000-013	Z00-01000-014
Floor plate without forklift pockets	00068212	00068212	00223918	00097630	–
Floor plate with forklift pockets	00096126	00096126	00238002	00106030	–

Select the right worktop for your manipulator from our extensive selection. See from page 11. 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.



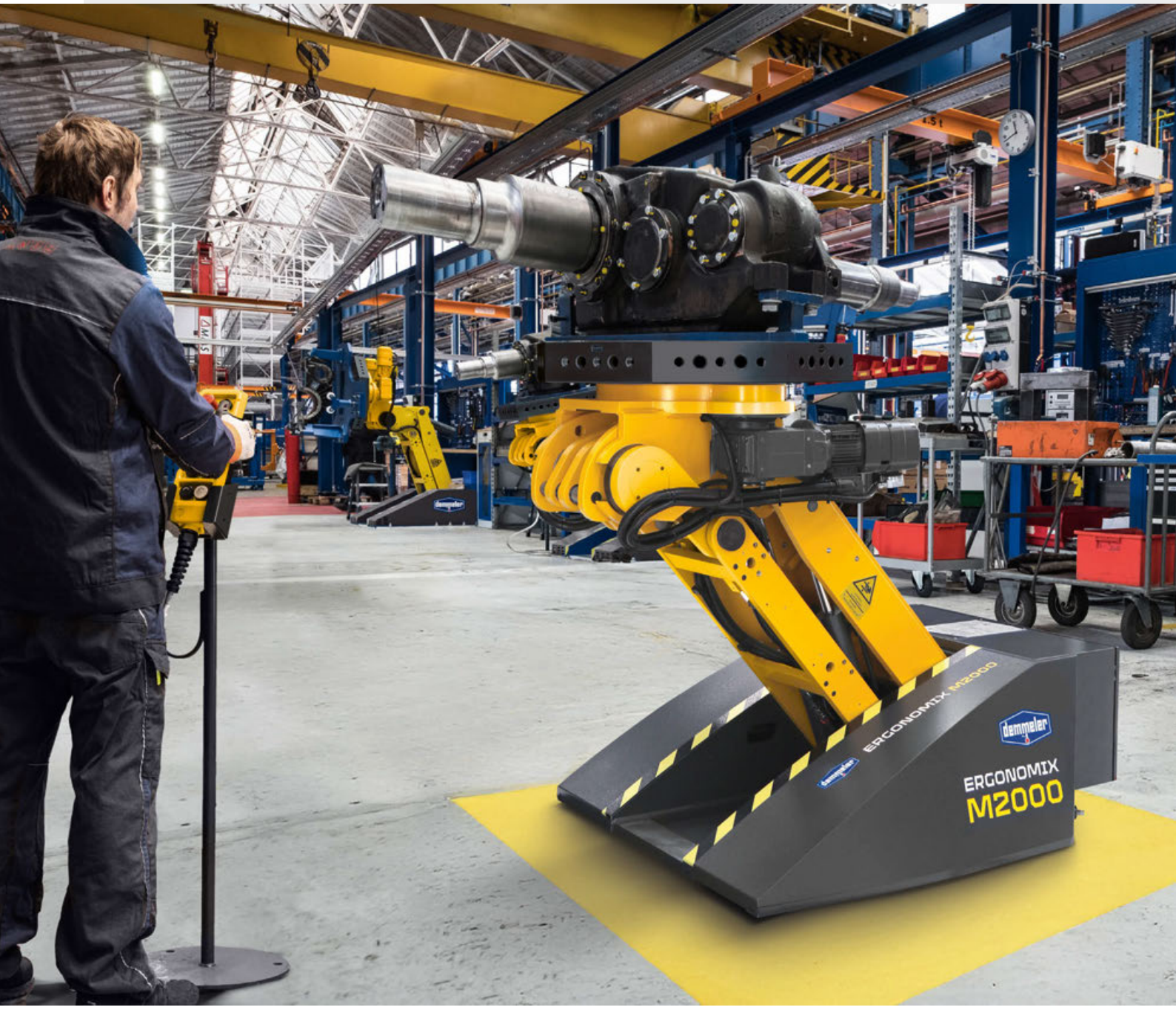


④ **Area scanner**
- Ensure both maximum safety and productivity
- Individually adaptable protection zone
- Display unit with monitor view/camera view and a clearly visible status LED for ultimate ease of use
- Programmable scanning radius: 8,4 m (Protection zone) and 26 m (Warning zone)

Standard equipment: ❺ Operation with pendant control panel ❻ Operation with foot pedal ❼ Controller in the control cabinet

3D work and welding tables for use on manipulators

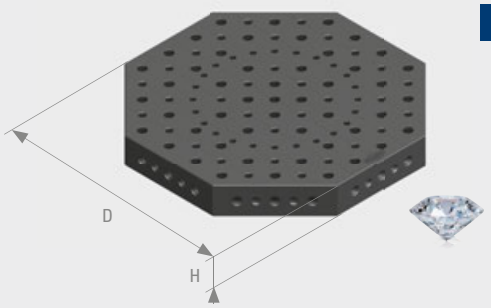
Clamping and adapter plates from DEMMELER for robot cell manipulators are designed for use when precise positioning of workpieces matters. And it goes without saying that you can use clamping accessories from DEMMELER in system sizes D28, D22 and D16.



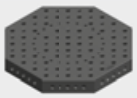
3D Worktable Okto

- 3D Worktable Okto with D28 system bores in 100 x 100 mm grid and M24 thread in diagonal grid
- Hardened DemontXBlack 760
- Includes cover plate on the underside as collision protection
- Other table variants on request

D28



3D Worktable Okto — D28

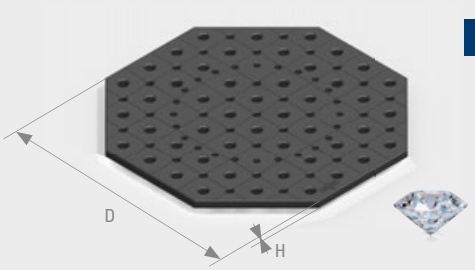


Typ	D in mm	H in mm	Approx. weight in kg	Grid	Item no.
M2000 / M3000	SW 800	100	155	100 x 100 mm	D28-01013-032
M4000	SW 1000	100	380	100 x 100 mm	D28-01038-028
M8000	SW 1500	200	770	100 x 100 mm	D28-12009-003

Clamping and Adapter Plates

- Clamping and Adapter Plate with D28 system bores in 100 x 100 mm grid and M24 thread in diagonal grid
- Hardened DemontXBlack 760
- Includes cover plate on the underside as collision protection
- Other table variants on request

D28



Clamping and Adapter Plates — D28

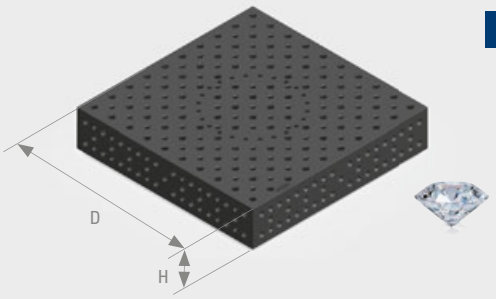


Typ	D in mm	H in mm	Approx. weight in kg	Grid	Item no.
M2000 / M3000	SW 800	25	120	100 x 100 mm	D28-02001-221
M4000	SW 1000	30	270	100 x 100 mm	D28-02001-255
M8000	SW 1500	45	620	100 x 100 mm	D28-02001-251

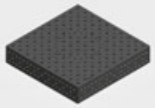
3D Work and Welding Table

- 3D Worktable with D28 system bores in 100 x 100 mm grid and M24 thread in diagonal grid
- Hardened DemontXBlack 760
- Other table variants on request

D28



3D Work and Welding Table — D28



Typ	D in mm	H in mm	Approx. weight in kg	Grid	Item no.
M2000 / M3000	1000 x 1000	200	355	100 x 100 mm	D28-01001-132
M4000	1200 x 1200	200	540	100 x 100 mm	D28-01056-053
M8000	1500 x 1500	200	675	100 x 100 mm	D28-01031-071



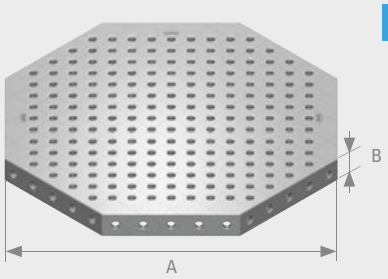
Recommended for automation solutions, robotics applications and use on manipulators

3D Okto 100 Worktable

Alu-Titan

- 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)
- Other table variants on request

D22



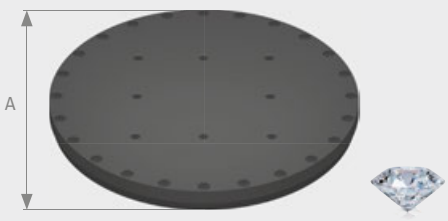
3D Okto 100 Worktable — D22



A in mm	B in mm	Description	Item no.
SW 600	100	Diagonal grid 100 x 100 mm	PL22-11008-001
SW 800	100	Diagonal grid 100 x 100 mm	PL22-01013-001
SW 1000	100	Diagonal grid 100 x 100 mm	PL22-01038-001

Adapter Plate

- Interface element for adaptation of Okto 100 D22 3D Worktable to welding robot or manipulator
- Hardened DemontXBlack 760
- Interface hole pattern produced in accordance with customer's wishes
- Including mounting screws



D22

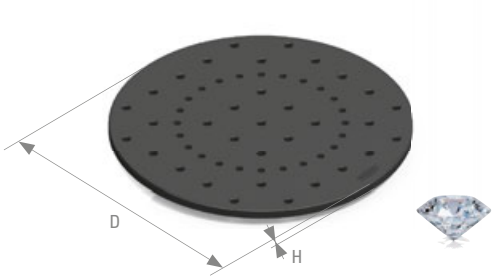
Adapter Plate D22



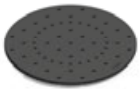
A in mm	Approx. weight in kg	Description	Item no.
SW 600	30,5	Adapter Plate for table AF 600	00116157
SW 800	65,0	Adapter Plate for table AF 800	00116159
SW 1000	108,0	Adapter Plate for table AF 1000	00116160

Worktops with Thread M24

- Worktop with Thread M24
- Hardened DemontXBlack 760
- Includes protective plate on the underside as collision protection
- Other table variants on request



Worktops with Thread M24



Typ	D in mm	H in mm	Approx. weight in kg	Grid	Item no.
M2000 / M3000	ø 800	25	110	100 x 100 mm	00059396
M4000	ø 1000	30	210	100 x 100 mm	00071838
M8000	ø 1500	45	700	100 x 100 mm	00064406



DEMMELER clamping and adapter plates for manipulators of robot cells can be found in the current main catalogue or in our online shop. You can also draw from the extensive range of DEMMELER accessories when setting up your clamping fixtures.

Robotix turning unit: Easily position heavy loads up to 14,000 kg

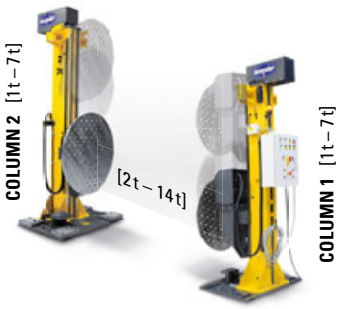
The Robotix turning unit from DEMMELER can be used to move long and heavy workpieces into the ideal position for welding and assembly work so that they can be lifted and lowered or turned in both directions using two electric lifting columns. Both of the turning unit's columns are mounted on the floor of the production facility. There is the option to mount the turning unit on the DEMMELER rail system. This allows the distance between the two face plates to be set to different workpiece sizes.

Benefits

- Ergonomic work that protects your back
- Improved workplace safety
- Ultimate productivity and improvement in quality thanks to the staff being in the ideal position for working
- Higher melting deposition rate when welding, as most seams can be produced in the optimal position (flat position)
- No need for time-consuming reclamping – the workpiece is lifted and turned in a single clamping cycle



For more information about the Robotix turning unit, please visit: www.demmeler.com.



Specifications without worktop.
Other equipment details available on request.

Basic model of the Robotix turning unit

Description	WE 2000	WE 4000	WE 6000	WE 8000
Load capacity per column [kg]	1000	2000	3000	4000
Total load capacity [kg]	2000	4000	6000	8000
Standard height of rotation axis [mm]	540	600	600	600
Effective stroke [mm]	1700	1700	1700	1700
Turning radius [mm]	2240	2300	2300	2250
Torque [Nm]	2000	3000	6000	10000
Controller at control cabinet	✓	✓	✓	✓
Item no.	**I02-02000-050**	**I04-04000-050**	**I06-06000-050**	**I08-08000-050**

Description	WE 10000	WE 12000	WE 14000
Load capacity per column [kg]	5000	6000	7000
Total load capacity [kg]	10000	12000	14000
Standard height of rotation axis [mm]	600	600	600
Effective stroke [mm]	1700	1700	1700
Turning radius [mm]	2250	2250	2250
Torque [Nm]	10000	12000	12500
Controller at control cabinet	✓	✓	✓
Item no.	**I10-10000-050**	**I12-12000-050**	**I14-14000-050**

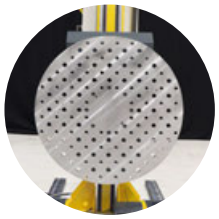


❶ Controller at control cabinet
- Axis activation at the touch of a button
- Optional potentiometer, for setting the speed





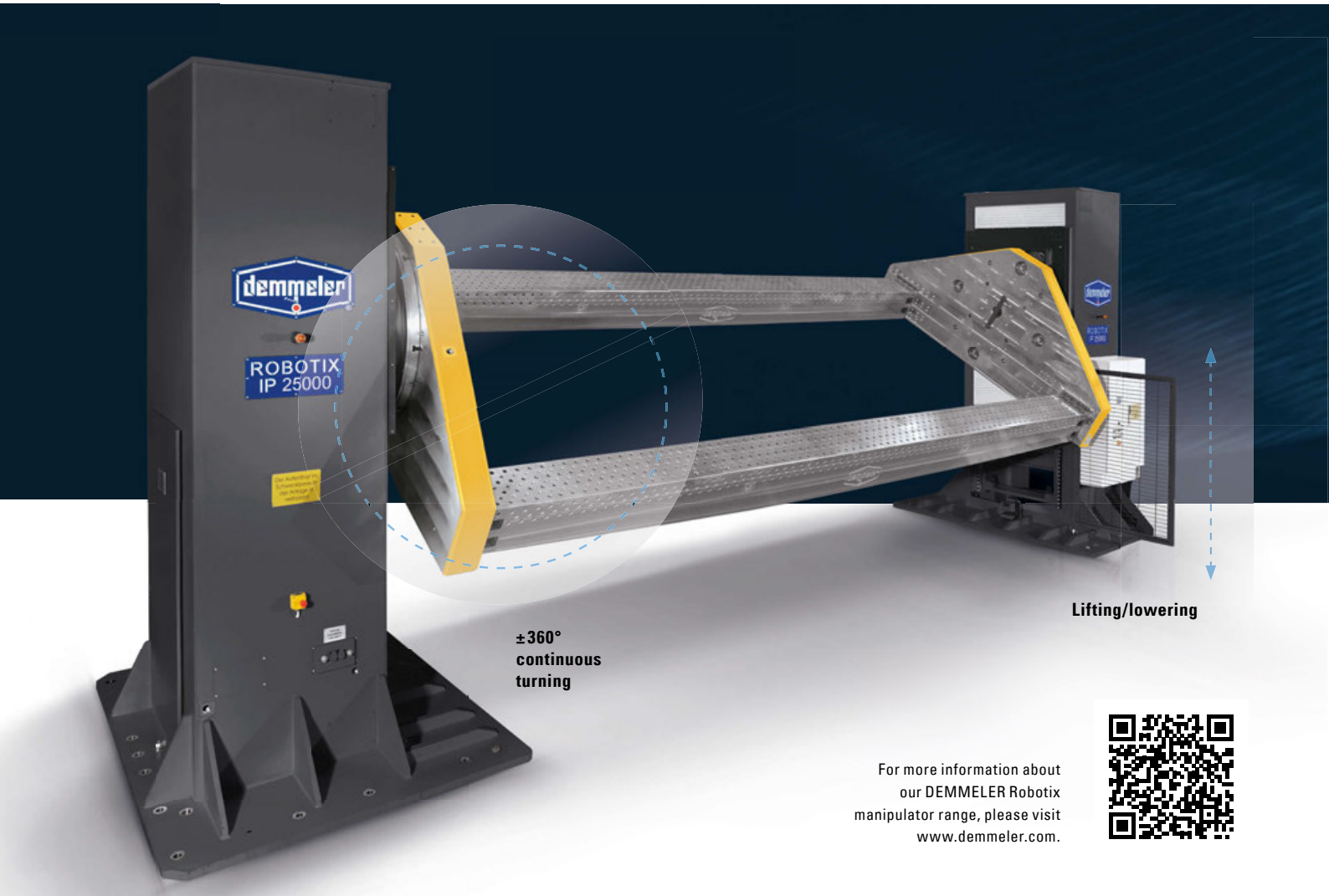
❷ Area scanner
- Ensure both maximum safety and productivity
- Individually adaptable protection zone
- Display unit with monitor view/camera view and a clearly visible status LED for ultimate ease of use



❸ Adapter plates
Adapter plates with D28 system bores in a 100 x 100 mm grid and M24 thread are available as an option

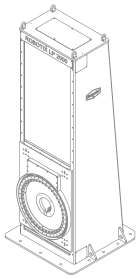
Optional equipment versions (available on request)

Adapter plates from dia. 600 to dia. 1500 mm
Slave lifting block is mobile and not stationary
Drive lifting block is mobile and not stationary
Welding current supply 350 A
LCD display on the control box
Variable frequency control of the rotary drive for continuously variable speed selection up to 12,500 Nm
Variable frequency control of the rotary drive for continuously variable speed selection above 20,000 Nm
Adjustable torque limit using friction clutch in the rotary drive
Area scanner for preventing the system from colliding with an obstacle or turning onto an obstacle
Effective stroke increased every 100 mm
Special flange plate or drilling pattern change



For more information about our DEMMELER Robotix manipulator range, please visit www.demmeler.com.

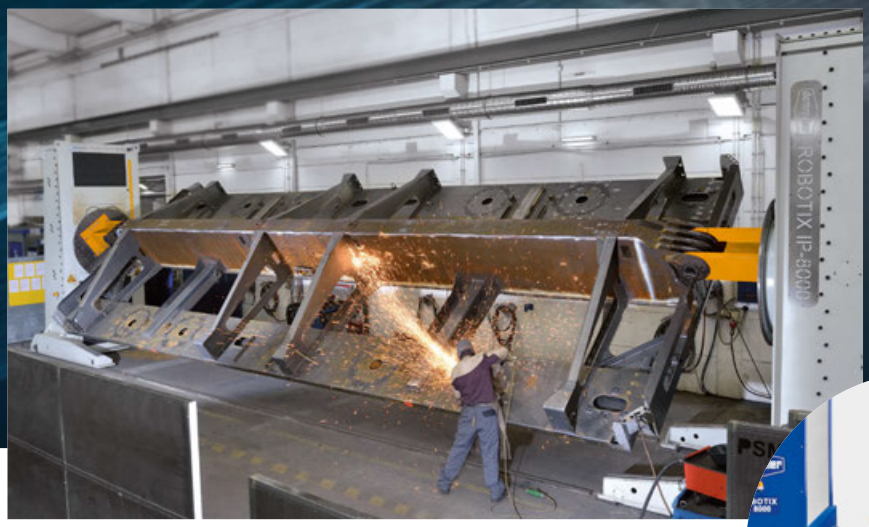
When you have something big in mind. Lift and turn workpieces up to 40,000 kg.



Robotix basic device

Description	IP 20000	IP 40000
Bearing load (w/o worktop) [kg]	20000	40000
Lifting axis:		
Drive	hydraulic	hydraulic
Lifting speed [m/min]	1,5	1
Max. lifting height [mm]	2200	2450
Minimum height [mm]	1050	1050
Maximum height [mm]	3250	3500
Rotary axis 1		
Min./max. speed [rpm]	0,2 – 1,0	0,2 – 1,0
Angle of rotation [°]	± 360 continuous turning	± 360 continuous turning
Torque [Nm]	24000	50000
Controller at control cabinet	✓	✓
Item no.	**I20-01000-100**	**I40-01000-100**

Specifications without worktop. Other equipment details available on request.





We develop, design and construct customised clamping fixtures for you on request

When you have big ambitions, you need machinery to match. With the Robotix IP manipulator, you can position your workpieces flexibly, manufacture efficiently and work ergonomically. In a relaxed posture, a welding seam can be welded far more precisely. Optimum positioning of the workpiece also achieves an ideal production process: No flowing of the welding material. We can offer you the right product among numerous solutions.

Optional equipment

Control options	**IP 20000**	**IP 40000**
Programming controller	Z10-W1000-102	Z20-W1000-102
Laser scanner	Z10-W1000-101	Z20-W1000-101
Connection as additional robot axis	Z10-W1000-103	Z20-W1000-103
Counter-support for rotary axis 1	Z10-W1000-108	Z20-W1000-108

Positioning options	**IP 20000**	**IP 40000**
Preparation for assembly on DEMMELER rail system for each lifting column	Z10-W1000-109	Z20-W1000-109
DEMMELER rail system (per metre)	D28-W2003-000	D28-W2003-000

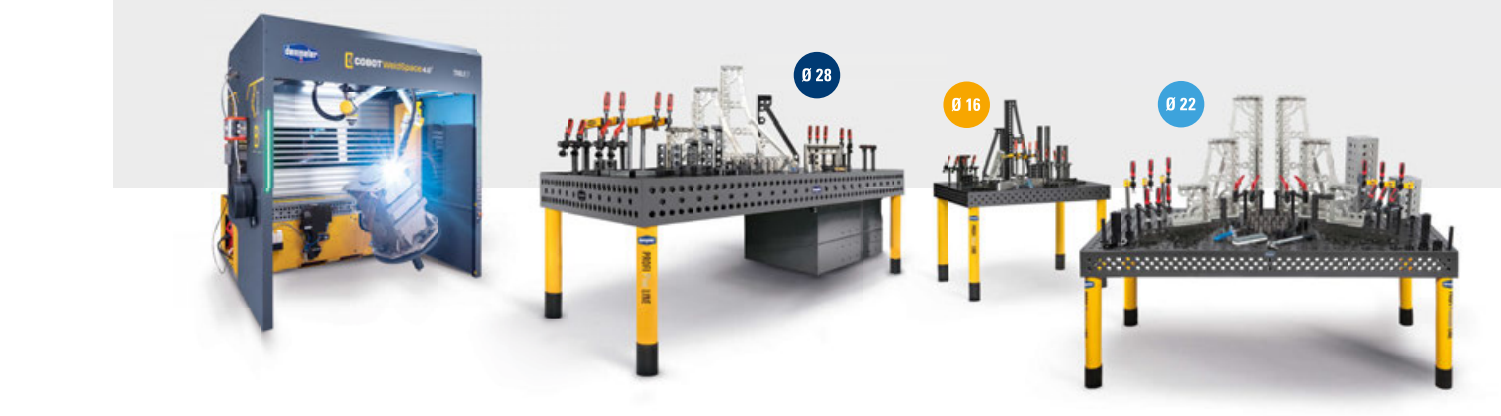
Additional options	**IP 20000**	**IP 40000**
Rotary feedthrough for status queries, electrical	Z10-W1000-104	Z20-W1000-104
Rotary feedthrough for pneumatic clamping fixtures	Z10-W1000-105	Z20-W1000-105
Rotary feedthrough for hydraulic clamping fixtures	Z10-W1000-106	Z20-W1000-106
Earth connection for welding device	Z10-W1000-107	Z20-W1000-107

THE 3D CLAMPING SYSTEM FROM DEMMELER. THE ORIGINAL.

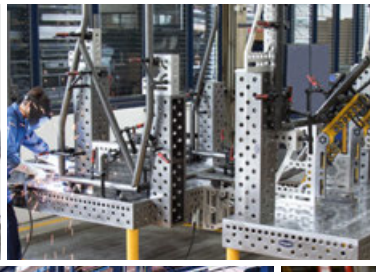
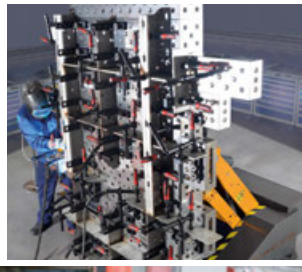
ONE SYSTEM FOR VARIOUS TASKS

WELDING TABLES
THE ORIGINAL
FROM THE INVENTOR
BY DEMMELER

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Vehicle construction

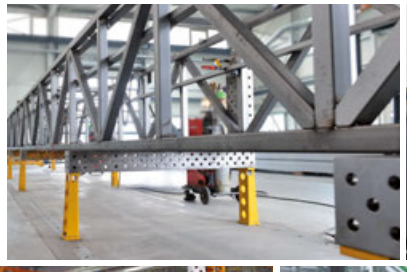
Shipbuilding

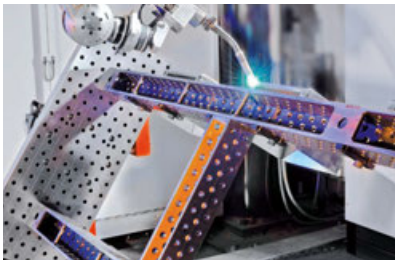
Aircraft construction



You can also draw from the extensive range of DEMMELER accessories when setting up your clamping fixtures. Accessories from DEMMELER offer maximum freedom and flexibility in everyday work. Our main catalogue comprises 300 pages and offers a complete overview of our entire product line with many interesting example applications.





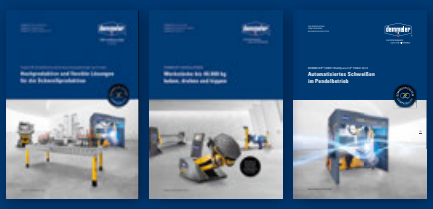


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3D CLAMPING SYSTEMS
MANIPULATORS
COBOT WELDSPACE 4.0®
NC ROTARY TABLES
TOOL ARENAS
CONTRACT MANUFACTURING



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