



# WELDING TURNTABLES

Circular welding - made easy!



TECHNOLOGY



AUTOMATION

Merkle welding turntables

# VERSATILE, FLEXIBLE,

Merkle develops and produces in-house welding turntables with a load capacity of 50 to 5000 kg. Decades of experience and proven technology are the key elements for perfect results in every circular welding application.

Merkle welding turntables guarantee precise speed control and a constant speed even with uneven loads.

All turntables can be tilted up to 135° and are ideally suited for use with MIG/MAG, TIG, MMA/stick electrode welding, plasma welding and cutting processes. All models also offer sockets for foot switches and remote controls as a standard.

Merkle welding turntables form the basis for many automated welding application and systems.

With various components from the Merkle automation program, individual solutions can be set up for a wide variety of applications.

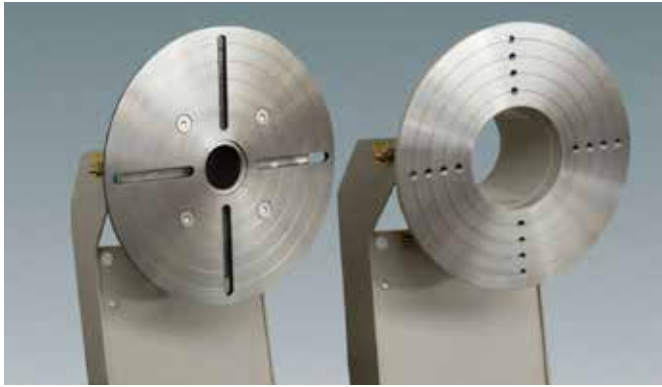


Circular welding unit with turntable and pneumatic torch positioning.



100 % „Made in Germany“: from construction, through to parts production and the final assembly.

# PRECISE.



## CENTER HOLE

All welding turntables have center holes as a standard. Through this hole the clamping tool and the work piece can be supplied with compressed air, cooling liquid or shield gas. The series D102/D302 and D150 touch have a standard center hole of 60 mm. As an option a hole of 150 mm is available for the series D150 touch. Pipes and long work pieces can be pushed through this hole.



The face plates can be locked by a lever and be tilted to any angle within a 135° range. In addition, they can be firmly locked in steps of 15 degrees. (D102, D302 and D150 touch)



The current collector is insulated and can be operated at 400 A/34 V, 80% duty cycle. (D53, D102, D302, D150 touch)



The compact design with dust-proof 24 V DC motor with worm gear, tacho generator and the electrically isolated motor controller enables maximum flexibility. (D102, D302)

D53 / D102 / D302

# COMPACT & VERSATILE!

Technical data	D53/25	D53/70
Table height	320 or 800 mm	
Load capacity	50 kg / 0.5 kN	
Speed (rpm)	0.25 - 2.5 min <sup>-1</sup>	0.70 - 9.0 min <sup>-1</sup>
Center hole diameter	10 mm	
Face plate diameter	250 mm	
Current collector	400 A (34 V) 80% d.c.	



Technical data	D102/60	D302/60
Table height	400 or 750 mm	
Load capacity	100 kg / 1 kN	
Speed (rpm)	0.1 - 10.0 min <sup>-1</sup>	0.05 - 5.0 min <sup>-1</sup>
Center hole diameter	60 mm	
Face plate diameter	400 mm	
Current collector	400 A (34 V) 80% d.c.	

not illustrated



If you need to weld pipe and flange joints on a regular basis you need welding turntables. With our product range of welding turntables, Merkle offers the right solution for the challenging applications.

## CONTROL PANEL

- Start/Stop button
- Selection left / right rotation
- Potentiometer for precise speed adjustment
- 2-stroke / 4-stroke selection
- Socket for foot switch or remote control
- Large buttons, controls and switches for safe operation even when wearing gloves
- Large emergency stop button



Control panel  
D53 series

New: D150 touch

# WITH DISPLAY-OPERATION

- Large, multi-colored display, easy to use
- Continuous speed control 0.05 - 10 min<sup>-1</sup>
- Display and setting of the welding speed (with work piece diameter)
- 2-/4-stroke mode and clockwise/counterclockwise rotation
- Connection for external foot switch or remote control
- Control panel with protective cover
- Center hole diameter 60 or 150 mm
- Intuitive and language-independent operation via touch display or rotary switch, even with gloves



The new welding turntables D150 touch are based on the proven models D102/D302. The new large display enables a simple and intelligent operation. A constant speed is guaranteed even in the lower speed range and with asymmetrical loads.

**Merkle turntables are „Made in Germany“.**

With the modular Merkle automation components, the turntables can be upgraded at any time: 3-jaw chucks, mounting flanges, limit switch overlap as well as torch holders, adjustment slides and much more.

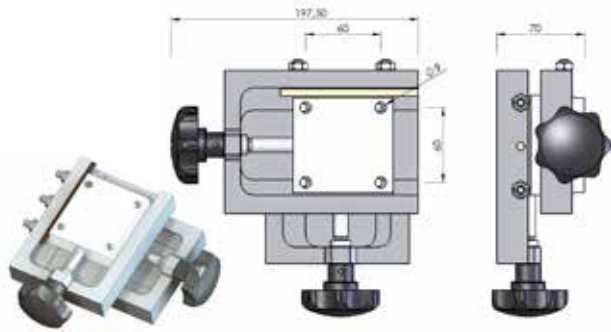
Technical data	D150 touch	
Table height	400 or 750 mm	
Load capacity	150 kg / 1.5 kN	
Speed (rpm)	0.05 - 10.0 min <sup>-1</sup>	
Center hole diameter	60 mm	150 mm
Tilting angle - face plate	135°	
Face plate diameter	400 mm	
Current collector	400 A (34 V) 80% d.c.	

## Overlap facility, connection for automated welding, zero point reference (for D150 touch)

The function „Overlap facility, connection for automated welding, zero point reference“ is available as an option. In automatic mode, an adjustable weld segment can be added (or reduced) to the 360° movement. The zero point reference fixes a defined starting position. Via the connection for automated welding the signals “Welding ON”, “Arc OK” and “Emergency stop” are available.



# Automation components



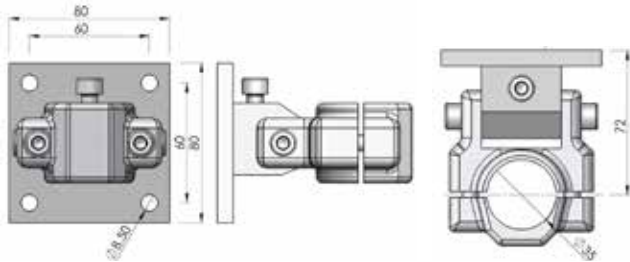
## Linear Slide, Hand (stroke 40 mm)

Weight: 1.4 kg  
Stroke: 40 mm  
Part no. 019.0.2500



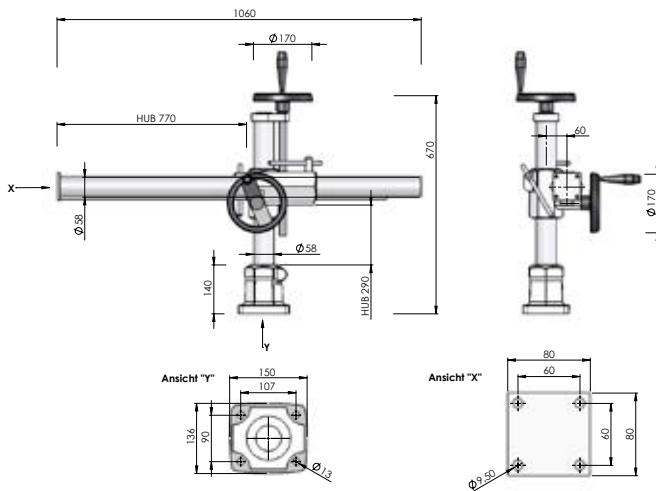
## Compound Slide, Hand (stroke 2 x 40 mm)

Fine adjustment of components and welding torches in 2 axis  
Weight: 2.8 kg  
Stroke: 2 x 40 mm  
Part no. 019.0.1500



The **torch and stand holder** has been designed for holding and positioning the machine and robot torches.

Weight: 0.52 kg  
Bore: 35 mm  
Flange hole pattern: 60 x 60 mm, 4 x 8.5 mm  
Part no. 019.0.0201



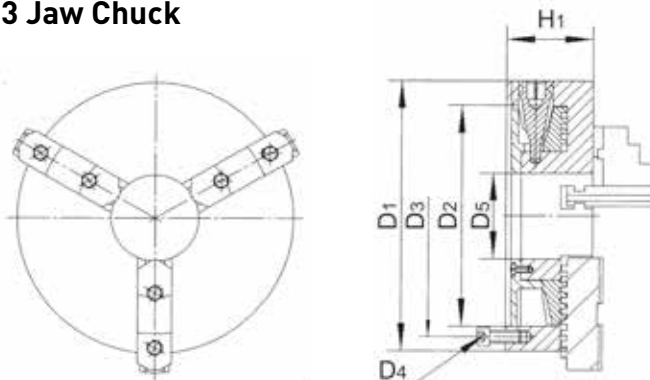
The **torch stand / 30** is designed to be solid and free from the influence of vibrations. The flange plate is standardised to match the Merkle-automaton components system.

## Technical Details:

Weight: 23.5 kg  
Stroke: horizontal: 770 mm  
vertical: 290 mm  
Rotation in stand base: 360°  
Max Loading: 30 kg

Part no. 019.0.0305

## 3 Jaw Chuck



All chucks have a cylindrical central mounting face to DIN 6350 standards. Included with every chuck is a set of internal and external clamping jaws

For mounting Chucks to face plates, various mounting flanges are available.

Technical data	ME-DBS-125	ME-DBS-160	ME-DBS-200	ME-DBS-250
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### 3 jaw chuck

D1 (mm)	125	160	200	250
D2 (mm)	95	130	165	206
D3 (mm)	108	142	180	226
D4	3 x M8	3 x M8	3 x M10	3 x M12
D5 (mm)	30	45	65	80
H1 (mm)	78	95	109	120
Work piece-Ø (mm)	min	3	4	6
	max	135	175	230
Spindle bore (mm)	30	40	65	80
Weight (kg)	4,6	9	15,3	26,5
Part no:	113.050	113.052	113.054	113.056

### Mounting flange:

for D53	Part no	117.028	117.038	-	-
for D102, D302 & D150 touch	Part no	-	129.212	117.074	117.076

This is just an extract from our extensive automation catalog. We are happy to help!

# OVERVIEW WELDING TURNTABLES



Technical data	a) D53/25 b) D53/70	a) D102/60 b) D302/60	D150 touch a) 60 b) 150	D653	D1003	D5002	
<b>Load Capacity (vertical)</b>	50 kg/0.5 kN	100 kg/1.0 kN	150 kg/1.5 kN	650 kg/6.5 kN	1000 kg/10 kN	5000 kg/50 kN	
<b>Speed RPM</b>	a) 0.25 – 2.5 min <sup>-1</sup> b) 0.70 – 9.0 min <sup>-1</sup>	a) 0.1 – 10 min <sup>-1</sup> b) 0.05 – 5 min <sup>-1</sup>	0.05 – 10 min <sup>-1</sup>	0.075 – 3.26 min <sup>-1</sup>	0.01 – 1.3 min <sup>-1</sup>	0.002 – 1.1 min <sup>-1</sup>	
<b>Torque</b>	a) 2.5 – 15 Nm b) 2.5 – 10 Nm	a) 15 – 50 Nm b) 30 – 100 Nm	50 Nm	700 Nm	1025 Nm	5000 Nm	
<b>Face plate diameter</b>	250 mm	400 mm	400 mm	920 mm		1000 mm	
<b>Table height</b>	low high	320 mm 800 mm	400 mm 750 mm	400 mm 750 mm	970 mm	895 mm	1444 mm
<b>Axle height</b>	low high	270 mm 750 mm	320 mm 670 mm	320 mm 670 mm	825 mm	736 mm	1275 mm
<b>Center hole diameter</b>	10 mm	60 mm	a) 60 mm b) 150 mm	47.5 mm	56 mm	60 mm	
<b>Centralising bore (chuck or jig mount)</b>	∅ 50H7 3 mm deep	∅ 78H7 3 mm deep	a) ∅ 78H7, 3 mm deep b) ∅ 154H7, 25 mm deep	∅ 64H7 3 mm deep		∅ 64H7 20 mm deep	
<b>Tilting angle - face plate</b>	135°	135°	135°	135°	135°	135°	
<b>Tilting operation</b>	manual lockable	manual lockable		motor driven v = 4.4°	motor driven v = 6.3°	hydraulic	
<b>Tilting moment</b>	90 Nm	130 Nm	130 Nm	1100 Nm	3000 Nm	31750 Nm	
<b>Max. rotating dia</b>	low high	450 mm 1340 mm	490 mm 1160 mm	490 mm 1160 mm	1400 mm		2400 mm 2000 mm b. ext.
<b>Current collector</b>	400 A (34 V) 80% d.c.			400 A	800 A	1200 A	
<b>Mains voltage</b>	1 x 230 V			3 x 400 V			
<b>Frequency</b>	50 / 60 Hz			50 Hz			
<b>Mains connection cable</b>	3 x 2.5 mm <sup>2</sup> , 5 m with Schuko plug			5 x 2.5 mm <sup>2</sup> , 5 m with CEE-plug 16 A		5 x 4 mm <sup>2</sup> , 5 m with CEE-plug 32 A	
<b>Interface for external operation</b>	Foot switch, hand and foot remote						
<b>Speed control range</b>	1:10	1:100	1:200	1:4,3,5	1:130	1:550	
<b>Limit switch overlap 360° + connection for automation</b>	no	no	option	option	option	option	
<b>Weight</b>	low version high version	33 kg 44 kg	a) 55 kg b) 56 kg a) 65 kg b) 66 kg	55 kg 65 kg	420 kg	550 kg	2200 kg
<b>Part-No.</b>	a) D53/25 25-320: 157.184 25-800: 157.188 b) D53/70 70-320: 157.186 70-800: 157.190	a) D102 60-400: 117.766 60-750: 116.738 b) D302 60-400: 117.768 60-750: 116.476	a) D150-60 touch 60-400: 161.866 60-750: 161.862 b) D150-150 touch 150-400: 161.868 150-750: 161.864	121.070	119.142	137.748	

# Automation Systems

## Components and Solutions



Double circumferential welding device with two turntables and one control centre in the middle.



Circular welding unit for long pipes with a diameter of 150 to 500 mm.

### PRODUCT RANGE

- MIG/MAG Welding Units
- Synergic Pulse Welding Units
- TIG Welding Units
- MMA / Stick Electrode Welding Units
- Plasma Welding and Cutting Units
- Turntables and Roller Drive Units
- Welding and Cutting Torches
- Automation Components and Solutions
- Merkle Weld Factory – The **Industry 4.0** Solution
- Merkle Robotics

### Merkle Schweissanlagen-Technik GmbH

Industriestr. 3 • D-89359 Koetz • Germany  
Phone: +49 8221 915-0 • Fax: +49 8221 915-40  
Email: [info@merkle.de](mailto:info@merkle.de)

[www.merkle.de](http://www.merkle.de)

