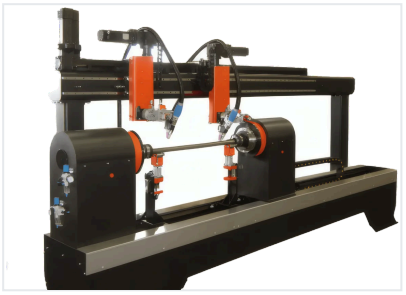
1.2 Circumferential Seam Welders

KMK • KMK-T • KMO • KMS • KEG

Circumferential welding in series production of boilers, fire extinguishers, air tanks and pressure vessels. Once the workpiece is in place, positioning, clamping and welding run automatically.

Applications Boilers, fire extinguishers, air tanks, pressure vessels, tank heads and shells.



KMK



KMK welding cell



KMK (mini version)

Description

Circumferential seam welders are typically used for series circumferential welding, such as joining tubes (boilers, fire extinguishers, air tanks, pressure vessels and the like). The welding process is similar to that of the VSV machines: motion on linear guides and control through a similar user interface. Once the workpiece is in place, all operations run automatically, including positioning, clamping and welding. Purpose-built tooling can be used as required. The machine is controlled by a PLC. Digital welding parameters allow precise configuration of the machine before welding. Any welding power source can be used.

Options

- Welding with two torches at the same time
- Laser or tactile seam tracking
- Welding cameras
- Wired or wireless remote control
- Segment welding (NC program)
- Touchscreen

Designation system

KMK	2	0	1
Machine type designation	*Workpiece length [m] (2 = 2,000 mm)*	*Welding process**	*Number of torches*

Welding process: 0 TIG (GTAW) • 1 MIG/MAG (GMAW) • 2 SAW • 3 Plasma • 9 Laser

Example: KMK 201 – workpiece length 2 m, TIG, one torch.

Machine types

Type	Principle	Page
KMK	Fixed rotary unit on one side, movable clamping unit (tailstock) on the other; can weld with several torches at once.	15
KMK-T	Tilting variant of the KMK (0° to 90°, manual or motorized); set up vertically or horizontally.	16
KMO	Thin-walled tubes and vessels; hydraulic clamping from the inside holds the workpiece round and provides gas backing.	17
KMS	Chimney elbows and similar parts; the torch is fixed in place while the workpiece rotates.	18
KEG	Orbital welding: the workpiece is fixed and the torch rotates around it – for example around fittings and connections.	18

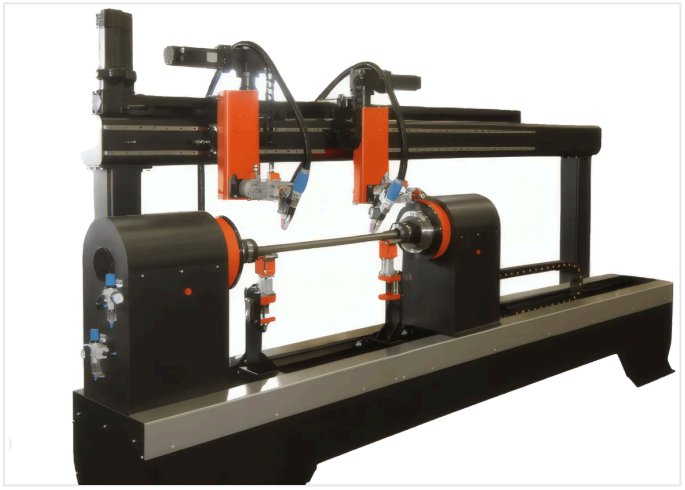
1.2 KMK

Circumferential Seam Welders

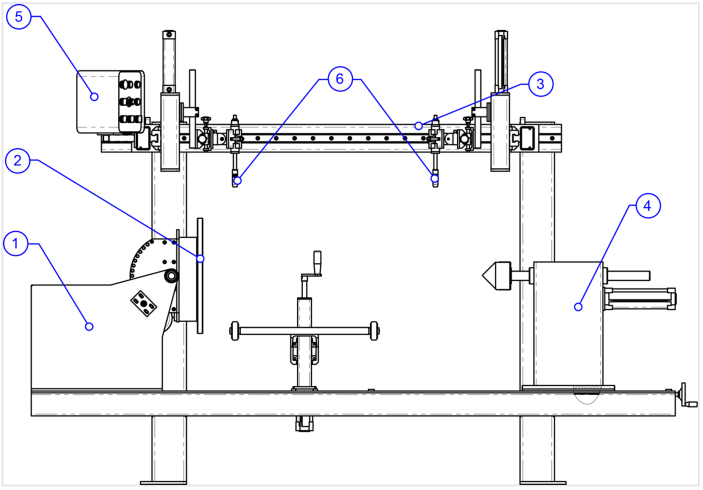
Fixed rotary unit on one side, movable clamping unit (tailstock) on the other. Can weld with several torches at once.

Description

The KMK is a versatile circumferential seam welder that enables both circumferential and longitudinal butt welding. It is often used for welding vessel heads (end caps); when fitted with two torches, both ends can be welded at the same time. Workpiece dimensions and welding parameters can be fully adapted to the application.



KMK



Main components

Components

1. **Frame**
   Fixed rotary table; movable tailstock.
2. **Rotary table**
   Various diameters; clamping tooling can be added.
3. **Bridge**
   Horizontal travel of one or two torches.
4. **Tailstock**
   Pneumatic, adjustable.
5. **Control panel**
   Setting of parameters and machine operation.
6. **Torch**
   Various torch types, customized for each order.

Technical data

		KMK 201
Load capacity	kg	400
Max. workpiece diameter	mm	Ø600
Max. workpiece length	mm	2,000
Rotary plate diameter	mm	Ø500
Rotation speed	rpm	0.2 – 5
Bridge travel (equal to max. workpiece length)	mm	2,000
Number of torches		1
Rated voltage	V	230

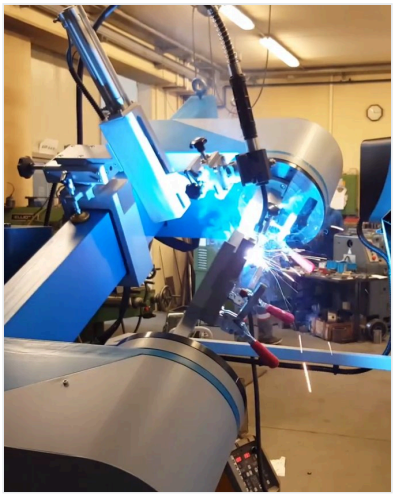
Load capacity is the same for all standard KMK machines. The maximum workpiece diameter is often adapted to the customer's requirements.

1.2 KMK-T

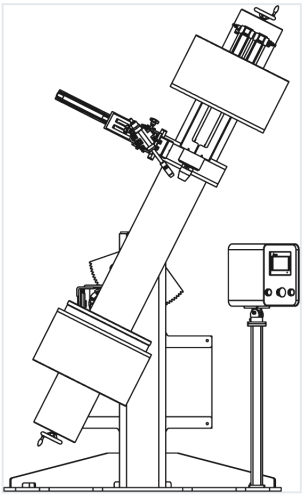
Circumferential Seam Welders • tilting variant



KMK-T 111



Welding



KMK-T 111

Description

The KMK-T circumferential welding machine is a variant of our KMK machines. In addition to some of the functions offered by the KMK, it can be tilted from 0° to 90°, with manual or motorized tilt available. This means the machine can be set up vertically, like a rotary welding table, or horizontally, like a standard KMK. This flexibility enables welding of complex parts that need specific tilt angles to bring the torch into the best possible position. The machine welds circumferential seams; it does not allow longitudinal welding.

The KMK-T consists of three main units: the rotary table, the torch carrier unit and the tailstock unit. All three units can be moved manually along the axis by a handle (spindle). They are mounted on linear guides at the rear of the machine, which keeps them away from welding spatter. The torch can be rotated manually and adjusted on several axes to reach the desired angle. After welding, the torch retracts automatically, which makes it easier to remove the clamped, welded part.

Custom clamping tooling can also be made for this machine.

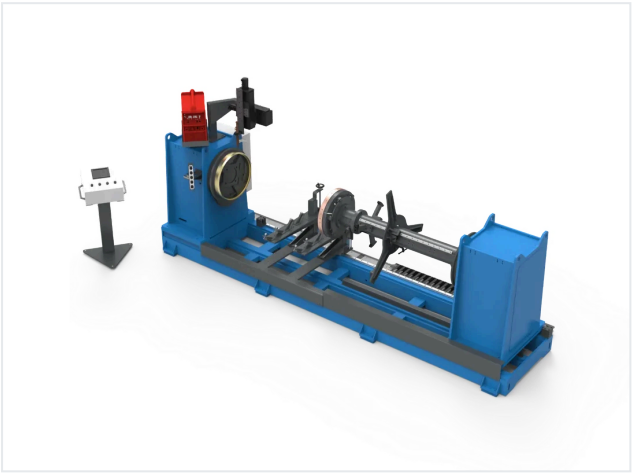
Technical data

		KMK-T 111
Load capacity	kg	100 – 400
Max. workpiece length	mm	1,300
Max. workpiece diameter	mm	Ø600
Clamping plate diameter	mm	Ø400
Rotation speed	rpm	0.2 – 5
Tilt	°	0 – 90

1.2 KMO

Circumferential Seam Welders • thin-walled vessels

Specialized for thin-walled tubes and vessels. Hydraulic clamping from the inside holds the workpiece round and provides gas backing. **New upgraded type**



KMO



Sample product

Description

KMO circumferential seam welders are designed for welding the heads (bottoms) and tubes (shells) of vessels made of thin sheet. A hydraulic clamping device grips both the tube (cylinder) and the head securely and accurately. It expands from the inside and stretches the thin sheet into an ideal circle – even if the blank is not round, or is so thin that it cannot stand on its own. This allows automatic welding without prior tack welding.

Gas backing from inside the clamp keeps the need for weld cleaning to a minimum, which saves time. The welds are incomparably better in quality and more repeatable than manual welding. With this machine our customers can also use thinner sheet than they are able to weld manually, which saves material.

For inserting the tube, the machine retracts sideways on linear guides. The tube is supported on both sides. At the rear, bearing supports can be extended manually by a spindle to suit the required diameter. The support bearings can also be moved longitudinally (motorized), depending on the tube length. The front support is the hydraulic clamping device mentioned above, with a copper backing bar that can be exchanged to suit the tube diameter.

Technical data

		KMO
Load capacity	kg	100
Workpiece diameter min. / max.*	mm	Ø400 / Ø2,000
Max. workpiece length**	mm	5,000
Wall thickness	mm	0.3 – 2
Rotation speed	rpm	0.1 – 5
Hydraulic expansion range	mm	approx. 20 (on diameter)
Drive voltage	V	230 or 400 (several drives)

*A separate clamping tool is required for each workpiece diameter (purchased separately). **The maximum length depends on the diameter: a workpiece of small diameter cannot be 5 m long.

1.2 KMS and KEG

Circumferential Seam Welders

KMS

Chimney elbows and round parts



KMS 201



KMS 201



Sample product (chimney elbow)

The KMS machine is intended for automatic circumferential welding of chimney elbows and other round parts. Torch movement is pneumatic as standard; electromotive movement with an AVC system is available as an option. The machine has a built-in program for 360° + overlap welding.

The operator can easily program the welding of a specific part (segment) of the circumferential weld path. Direction, speed and other parameters are set through a control panel similar to those of our other machines.

KEG

Orbital welding



KEG 111



KEG 111 (workpiece)

KEG is designed for automatic orbital welding. The workpiece is clamped in place while the torch rotates 360° and beyond. This allows welding of hard-to-reach areas – around fittings, water heater tubes, connections and the like.

- Torch rotation speed: 2–20 rpm
- Maximum diameter of the welded tube or connection: 40 mm
- Pneumatic torch movement
- Pneumatic or motorized movement between several connections
- Water-cooled machine torch with elements for precise torch positioning
- Pneumatic tools
- Numerical machine control; after welding the torch returns to the start position