



Repair welding

Ultrafine, precise, powerful – the joke welding range provides innovative solutions with tried and trusted quality for the widest range of applications.

Everything you need for welding.

Dear Ladies and Gentlemen,

for many years, joke has represented utmost quality and this applies to repair welding too. When it comes to devices and accessories, as well as fillers, joke supplies first-rate products for optimum welding results.

Our unique multispot system achieves results similar to those obtained with a laser through its TIG pulse method. Since it allows highly versatile and mobile use, it is particularly suitable for work on large moulds that are difficult to access. Owing to its unique arc, it allows work with pinpoint accuracy using 0.2 mm welding fillers.

In recent years however, the laser device family has grown in particular. Today, joke offers laser-welding systems to meet almost every requirement. Yet all systems have one thing in common: with many included extras and high power, they offer an extremely high price/performance ratio.

Our team is out and about all over Germany with our joke welding vans. We will be pleased to pay you a visit too and introduce you to our complete product portfolio on site without any commitment on your part. Just consult us.



Fabian Bickenbach

Have you already seen our welding vans?



Every day, they are on the road throughout Germany and in a number of neighbouring countries. Not only browse through the brochure, but also try out your tool moulds on site - that is the motto here. No matter whether laser or pulse welding, we have everything on board!

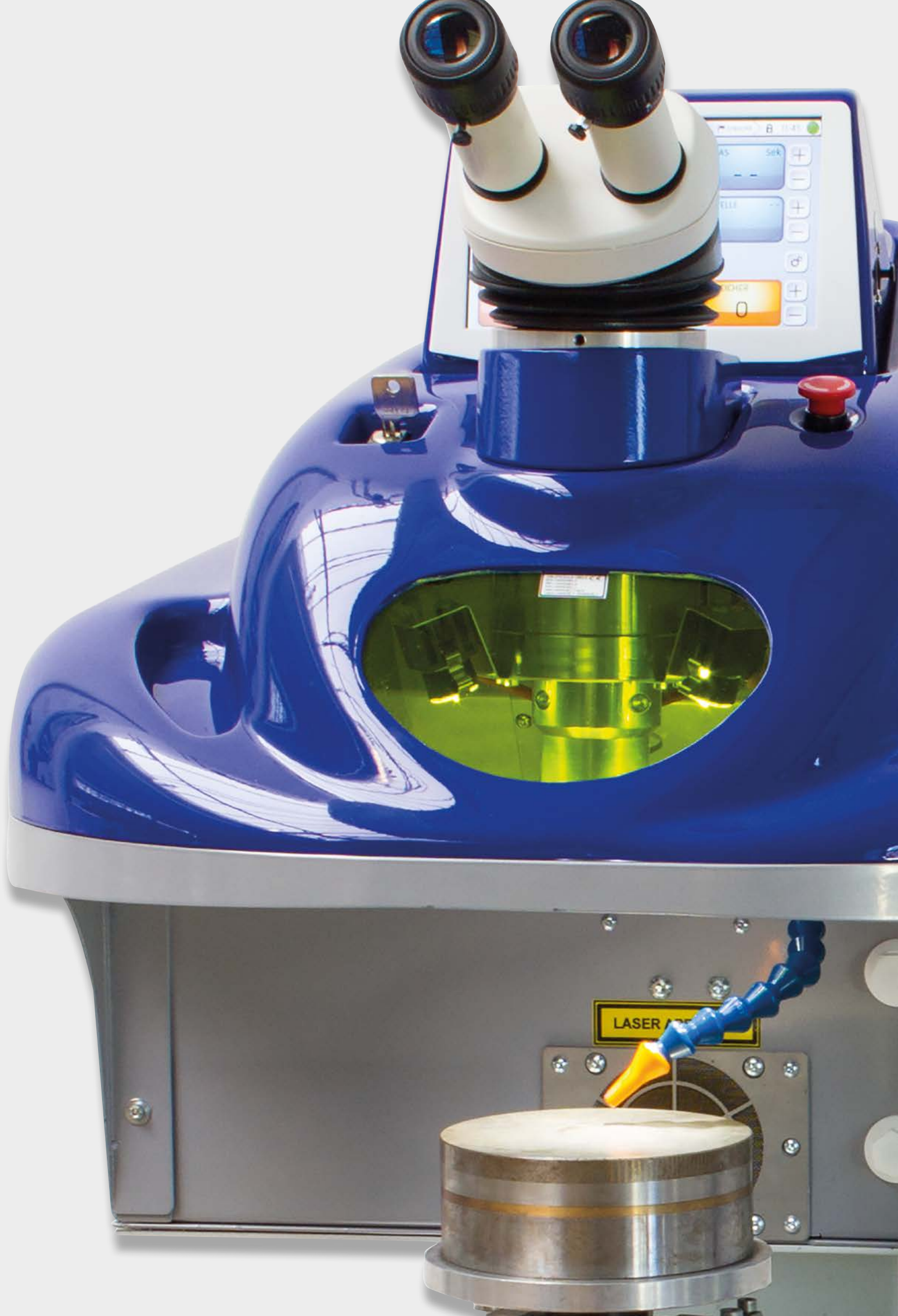
Would you like an appointment for a personal demonstration?

Our sales team will be happy to arrange the next possible date with you. They can be contacted at +49 (0) 2204 / 839-0 or by email at sales@joke.de.

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Welding devices

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Laser welding system

ENESKAlaser

The ENESKAlaser is particularly suitable as a mobile workstation, above all for smaller repairs and joining processes, with excellent results.

The entire control of the laser system is performed by means of a convenient touchscreen interface. Open laser welding systems can be operated using a joystick in combination with the 3-axis welding table (order no. 4 910 501). The laser output, pulse length, repetition rate and beam diameter can be conveniently adjusted on the display. Furthermore, it is possible to follow the welding process via the eyepieces, the touch screen or an external monitor. The software has a program management, under which various machining parameters can be stored (over 100 memory locations).

Highlights

- 7" colour touchscreen
- Leica stereo microscope, 10 x magnification
- 3-stage LED cold light illumination of the working area
- integrated camera with quadruple zoom
- Wi-Fi connection possible
- USB and HDMI connection optionally available










	ENESKAlaser 750 (open system)	ENESKAlaser 1000 (open system)	ENESKAlaser 750 (closed system)	ENESKAlaser 1000 (closed system)
Frequency	0.5 – 30 Hz	0.5 – 30 Hz	0.5 – 30 Hz	0.5 – 30 Hz
Gas post-flow time	0 – 10 s	0 – 10 s	0 – 10 s	0 – 10 s
Pulse time	0.1 – 20 ms	0.1 – 20 ms	0.1 – 20 ms	0.1 – 20 ms
Cooling	water-cooled	water-cooled	water-cooled	water-cooled
Max. pulse energy	80 J	140 J	80 J	140 J
Pulse frequency	0.5 – 30 Hz	0.5 – 30 Hz	0.5 – 30 Hz	0.5 – 30 Hz
Beam diameter	0.2 – 2 mm	0.2 – 2 mm	0.2 – 2 mm	0.2 – 2 mm
Power	75 W	100 W	75 W	100 W
Noise level	< 70 dB(A)	< 70 dB(A)	< 70 dB(A)	< 70 dB(A)
Dimensions	50 x 50 x 80 cm	50 x 50 x 80 cm	50 x 50 x 80 cm	50 x 50 x 80 cm
Power consumption	1700 W	1700 W	1700 W	1700 W
Supply voltage	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz	230 V, 50/60 Hz
Weight [kg]	55 kg	55 kg	55 kg	55 kg
Order No.	4 910 750	4 910 800	4 910 760	4 910 770
Price	18392.00 €	21177.00 €	18392.00 €	21177.00 €

**Our prices have
been changed.**

Please look at the new price list 2020 at
www.joke-technology.com
or contact us at
sales@joke.de

Laser welding system ENESKAlaser

⚙️ Accessories / spare parts

		Order No.	Price from 1 piece
3-axis welding table with joystick, motorized			
	X-Y-Z travel unit for precise positioning of the workpieces and for receiving the open laser devices ENESKAlaser 750/1000. The 3-axis table is equipped with 3 sturdy castors and is therefore mobile. Furthermore, the open ENESKAlaser together with the 3-axis table forms an optimum technical unit. Technical data: (Aluminium) worktop dimensions: 400 x 210 mm Travels of the individual axes X (right/left): 145 mm Y (forwards/reverse): 95 mm Z (up/down): 230 mm	4 910 501	10471.00 €
Lift table, automatically height-adjustable work table for ENESKAlaser models 750/1000 (closed system)			
	In combination with the ENESKAlaser, the Plexiglas table is height-adjustable from 700 mm to 880 mm.	4 910 763	1440.00 €
Lift table, manual workpiece height adjustment			
	Dimensions lifting plate: 100 x 100 mm Height adjustable from approx. 50 – 150 mm Stainless steel plate approx. 550 g	4 910 761	76.30 €
	Dimensions lifting plate: 200 x 200 mm Height adjustable from approx. 85 – 280 mm Stainless steel plate approx. 1.8 kg	4 910 762	99.95 €
Automatic Rotator			
	The pivoting device can be controlled using the welding table joystick. It is equipped with infinite speed control in addition to clockwise and anticlockwise running. This greatly facilitates welding of round seams. The rotary unit is infinitely adjustable through 0–90°.	4 910 502	2008.00 €
Eyepiece 25x magnification suitable for all ENESKAlaser models (1 pair)			
		4 910 817	1495.00 €
Gas pressure reducer (200 bar) with flowmeter			
	Cylinder pressure reducer with flowmeter for controlling the precise flow volume in l/min, with inlet pressure compensation for constant outlet pressure in case of decreasing inlet pressure. The float-type flowmeter is permanently set to a fixed pressure; regulation is performed via the shut-off valve.	4 800 250	173.00 €
Water cooling unit, external for models 750/1000			
	This unit serves to increase cooling capacity during continuous operation in order to avoid failure due to overheating.	4 910 818	1655.00 €
Leica Ergo Wedge 5° – 25°			
	The ergonomic wedge allows the binocular to be swivelled steplessly down to 25°. This provides optimum support for the ergonomic sitting position of the operator on the ENESKA laser.	4 910 808	1762.00 €



Leica Ergo Wedge 5° – 25°

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Laser welding system ENESKAlaser

Repair moulds/workpieces with ease

The laser welding system is suitable for repairing medium- and large-size moulds/workpieces. Ideal for mold shops. Simple and functional. Allows a wide range of repairs to be carried out directly on site.

The extension arm pivotable through 180° makes alignment with the workpiece very easy and flexible. The high quality 10 x stereo microscope with integrated safety filters and a very rapid, eye-friendly LCD shutter provides a perfect view and safety for the operator. The welding head is equipped with motorised beam diameter adjustment, dimmable LED workpiece lighting and a flexibly adjustable gas supply. A generously dimensioned colour touchscreen for configuring all the necessary laser parameters simplifies operation and control.

Equipment:

- Colour display with touchscreen function
- 100 program memory locations with names – Welding parameters can be stored in the internal memory
- Leica 10 x stereo microscope
- Integrated camera
- Powerful, integrated cooling system
- Joystick-controlled
- Extension arm length 1,200 mm
- Manual axis adjustment
- Dual-laser resonator – 15° pivotable and 30° rotatable resonator head
- LED lighting with white cold light
- HDMI port

Traverse paths:

- x-axis 410 mm
- y-axis 500 mm
- z-axis 600 mm



	Price from
Order No.	1 piece

ENESKAlaser 1500 mobile








Technical data	
Laser source / wavelength:	Nd:YAG 1064 nm x 2
Output:	150 W
Max. pulse power:	15 kW
Max. pulse energy:	200 J
Puls time:	0.1 – 20 ms
Pulse frequency:	0.5 – 30 Hz
Beam diameter:	0.6 – 2 mm
Joystick-controlled:	yes
External controlled:	colour display
Input:	230 V AC, 50/60 Hz, single
Ampere:	20 A
Max. dimension generator (W x D x H):	50 x 50 x 80 cm
Max. length of jib:	1,200 mm
Weight:	260 kg
Argon gas:	yes

4 910 880 57900.00 €

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Laser welding system ENESKAlaser

⚙️ Accessories / spare parts

		Load bearing capacity of work area	Dimensions	Order No.	Price from 1 piece
Platform trolley					
	Technical data:	300 kg	855 x 500 x 50 mm	4 910 881	534.00 €
	Colour:	blue (RAL 5002)			
	Tyre material:	polyurethane (PU)			
	Design:	platform trolley			
	Drive type:	manual			
	Lifting:	manual hydraulic			
	Number of increments up to max. height:	32			
	Weight:	82 kg			
	Lifting height:	900 mm			
	Length:	925 mm			
min. platform height:	340 mm				
Height:	970 mm				
Wheel diameter:	127 mm				
	Technical data:	1,500 kg	1,220 x 610 x 60 mm	4 910 882	1238.00 €
	Colour:	blue (RAL 5002)			
	Tyre material:	polyurethane (PU)			
	Design:	platform trolley			
	Drive type:	manual			
	Lifting:	manual hydraulic			
	Weight:	135 kg			
	Lifting height:	1,000 mm			
	Length:	1,379 mm			
	min. platform height:	420 mm			
Height:	962 mm				
Wheel diameter:	150 mm				
Automatic Rotator					
	optionally for ENESKAlaser welding systems			4 910 502	2008.00 €
	The pivoting device can be controlled using the welding table joystick.				
	It is equipped with infinite speed control in addition to clockwise and anticlockwise running. This greatly facilitates welding of round seams. The rotary unit is infinitely adjustable through 0–90°.				
Gas pressure reducer (200 bar) with flowmeter					
	Cylinder pressure reducer with flowmeter for controlling the precise flow volume in l/min, with inlet pressure compensation for constant outlet pressure in case of decreasing inlet pressure.			4 800 250	173.00 €
	The float-type flowmeter is permanently set to a fixed pressure; regulation is performed via the shut-of valve.				
Eyepiece 25x magnification suitable for all ENESKAlaser models (1 pair)					
				4 910 817	1495.00 €
Leica Ergo Wedge 5° – 25°					
	The ergonomic wedge allows the binocular to be swivelled steplessly down to 25°. This provides optimum support for the ergonomic sitting position of the operator on the ENESKA laser.			4 910 808	1762.00 €

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Welding system joke multiSpot 3 with individual pulse function

joke multiSpot 3 – the reference for pulsed welding for safe repair of tool moulds with laser-like results

Simple, fast and inexpensive. The ideal system for efficient in-house tool repair. The multiSpot pulse technology enables uniform, notch-free transitions. The individual pulses for the smallest and finest welds are triggered in a controlled manner. An interval circuit with adjustable pauses and welding times enables exact build-ups. Welding fillers of Ø 0.2 mm and more can be processed. Such fine and precise weldings only existed up to now with laser.

Technical Data

joke multiSpot 3

in accordance with IEC 974.1/EN 60974.1/CE declaration of conformity

Dimensions (L x W x H): 480 x 260 x 380 mm
 Weight: 26.2 kg
 Insulation class: H
 Type of protection: IP 23
 Cooling type: Forced-air cooled

Input data

Mains voltage U_1 : 230 Volt (single phase), 50/60 Hz
 Mains fuse I_1 : 16 A, slow-blow
 Efficiency factor $\cos \phi$: 0.9 at 150 A extraction
 Primary constant power S_1 : max. 5 kVA

Output data

No-load voltage U_0 : 85 Volt TIG/TIG/electrode
 Operating voltage U_2 : 19.1 – 16.5 V/TIG max. 18 V/Electrode max. 26 V
 Welding current ignition I_2 : from 3 A
 Welding current range I_2 : 3 – 210 (or 300) A
 Power-on time at 200 A: 50 % at +40 °C
 Power-on time at 130 A: 100 % at +40 °C
 Pulse time: 20 – 300 ms
 Break time: 20 – 1,000 ms



	Order No.	Price from 1 piece
Welding system joke multiSpot 3 AC/DC pulse with 300 A	4 904 300	15324.00 €



The top-of-the-range model from the multiSpot line with a particularly high performance – the all-rounder for fine and coarse applications. TIG and single-pulse welding for all weldable materials such as steel or aluminium for example. Convinces with its high performance of 300 A even for the coarse range.

Our prices have been changed.
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Welding system joke multiSpot 3 with individual pulse function

	Order No.	Price from 1 piece
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Welding system joke multiSpot 3 300 AC/DC



Very high-power TIG welding device (300 A) for steel, bronze, copper and aluminium. The unique TIG electric arc allows excellent weldings without single-pulse, but with a TIG pulse function.

4 903 300 9126.00 €

	Order No.	Price from 1 piece
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Welding system joke multiSpot 3 DC pulse



The model from the multiSpot line for simple use from fine to coarse for welding fine edges as well as TIG welding tasks – without aluminium function.

4 902 210 13594.00 €

	Order No.	Price from 1 piece
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Welding system joke multiSpot 3 AC/DC pulse



The model from the multiSpot line for daily use from fine to coarse. TIG and single-pulse welding for all weldable materials such as steel or aluminium for example.

4 901 210 14456.00 €

Welding system joke multiSpot 3 without pulse function

	Order No.	Price from 1 piece
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Welding system joke multiSpot 3 AC/DC









Using this device, you can achieve excellent welding results on steel and aluminium with welding fillers between Ø 0.8 and Ø 4 mm. No pulse function.

4 903 210 8263.00 €




Welding system joke multiSpot 3 with individual pulse function

Accessories / spare parts




	Order No.	Price from 1 piece
Foot pulse switch for multiSpot		
 <p>for triggering the welding pulses</p>	4 901 000	212.00 €
Foot pedal controller for multiSpot		
 <p>Foot control of the welding energy</p>	4 902 000	599.00 €
Earthing cable with crocodile clip		
	4 902 125	58.05 €
Earthing cable with magnetic pole clamps		
	4 902 124	65.10 €
Gas pressure reducer (200 bar) with flowmeter		
 <p>Cylinder pressure reducer with flowmeter for controlling the precise flow volume in l/min, with inlet pressure compensation for constant outlet pressure in case of decreasing inlet pressure.</p> <p>The float-type flowmeter is permanently set to a fixed pressure; regulation is performed via the shut-of valve.</p>	4 800 250	173.00 €
Double extraction valve		
	4 800 260	38.65 €

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Water cooling unit WK 3.1

		Order No.	Price from 1 piece
Water cooling unit, compact, type WK 3.1			
		with closed circuit cooling for connecting all suitable TIG or MAG torches	4 905 100 926.00 €
Technical data: Cooling capacity: 1.5 kW Water tank: 3.4 l Centrifugal pump: Qmax = 10 l/min. Hmax: 33 m Cooler: 3-row heat exchanger made of Cu material Fan: 230 V, 115 mm Water reservoir: VA material Electrical connection: 230 V / 50 Hz / 300 VA Supply lead: 3 x 1.5 mm ² / L = 1 m via a earthing pin plug Water connection: Rapid-release coupling for push-fit nipple, 9 mm Coolant: HKF 15.1 Empty weight: 15.7 kg Dimensions (H x W x L): 330 x 260 x 510 mm Protection class: IP 23, CE labelling Standard: EN 60974-2:2008-11			

Accessories / spare parts

		Order No.	Price from 1 piece
joke-Special coolant			
		suitable for water cooling unit Type WK 3.1 5-litre canister	4 905 105 47.05 €
Hose extension			
		Inflow	4 905 110 22.90 €
		Return flow	4 905 111 22.90 €

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Welding device joke easyWIG for TIG (tungsten-inert-gas) weldings

Welding device joke easyWIG

With easyWIG, the name says it all – easy configuration and understanding of the device within the shortest time is a matter of course here. If you are looking for a TIG welding device that is handy and light, yet still achieves professional results, the joke easyWIG is your ideal companion. With its ampere range adjustable between 5 and 140 A, it can be used for a broad spectrum.

Mobile use is no problem either owing to the light weight.

Technical Data

Mains voltage:	230 V, 50/60 Hz
Phases:	1
Mains fuse:	16 A slow-blow
Type of protection:	IP 23
Insulation class:	H
Dimensions	(H x L x W): 340 x 365 x 165 mm
Weight:	12.7 kg
Mark of conformity:	EN 6097.4, IEC 974.1, S/CE identification
No-load voltage:	85 V
Max. output current:	165 A
Primary constant power ED 60/40 % (TIG / electrode):	4.4 kvA / 6 kvA
Temperature range:	0 – 40 °C
Upslope/Downslope:	0 – 20 sec. (on final value)

Postsurge gas-flow time:	0 – 25 sec
Presurge gas-flow time:	0.5 sec

Electrode welding

Welding current range:	5 – 140 A
Welding current range ED 40 %:	140 A (25 V)

TIG DC welding

HF ignition:	yes
Welding current range:	5 – 165 A
Welding current range ED 60 % (40 °C):	165 A (16,4 V)
Welding current range ED 100 % (40 °C):	120 A (14 V)








		Order No.	Price from 1 piece
Welding device joke easyWIG			
	Basic device without accessories	4 904 160	2529.00 €



Welding device joke easyWIG for TIG (tungsten-inert-gas) weldings

⚙️ Accessories / spare parts

	Order No.	Price from 1 piece
Foot pedal controller for easyWIG		
 <p>Foot control of the welding energy</p>	4 902 001	599.00 €
Earthing cable with crocodile clip		
	4 902 125	58.05 €
Earthing cable with magnetic pole clamps		
	4 902 124	65.10 €
Gas pressure reducer (200 bar) with flowmeter		
 <p>Cylinder pressure reducer with flowmeter for controlling the precise flow volume in l/min, with inlet pressure compensation for constant outlet pressure in case of decreasing inlet pressure.</p> <p>The float-type flowmeter is permanently set to a fixed pressure; regulation is performed via the shut-of valve.</p>	4 800 250	173.00 €
Double extraction valve		
	4 800 260	38.65 €

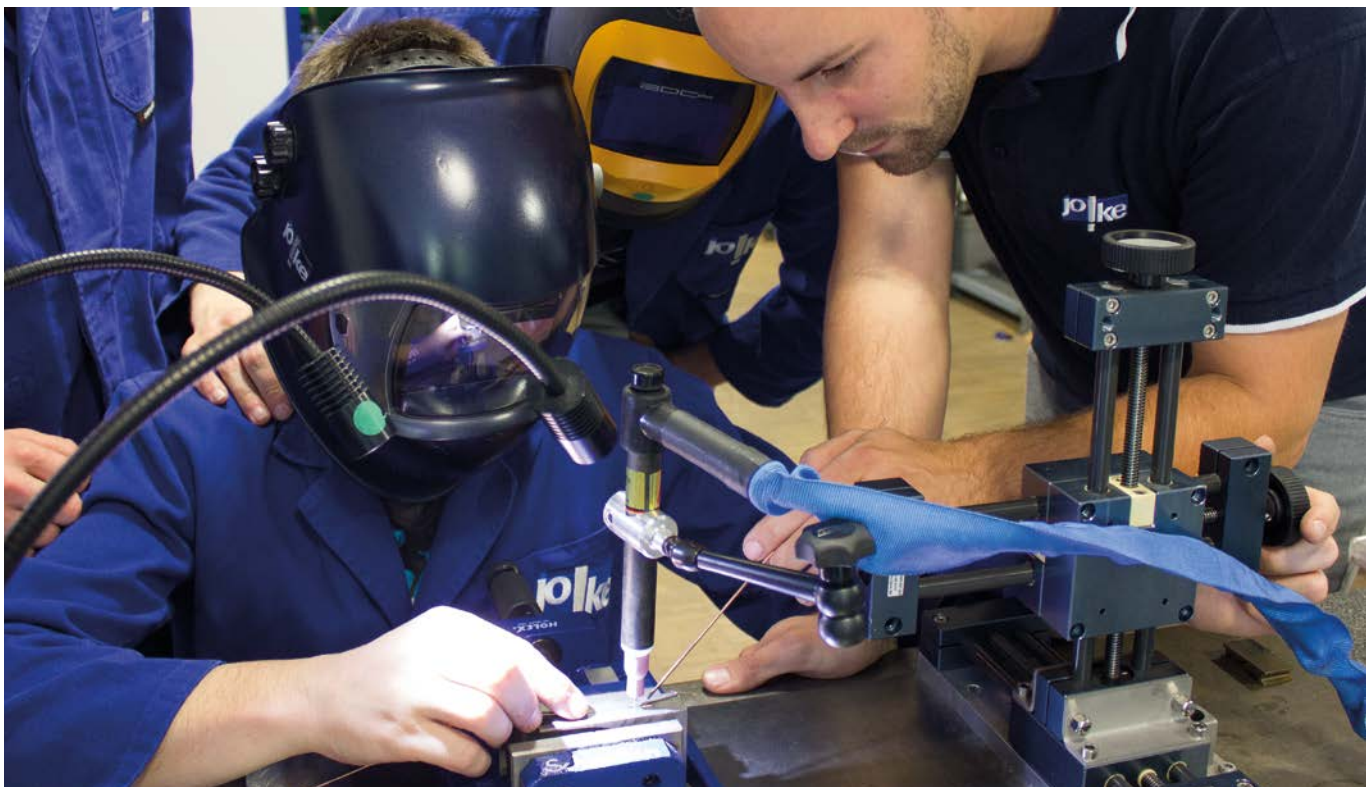
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Training programmes

“Welding in toolmaking and mould building”

Good reasons why a training course in welding is worthwhile:

- Wear, breakage, material fatigue, design change, human and mechanical failure, etc. etc. are normal – rapid, reliable repairs are called for in this case!
- “Learning-by-doing” is all well and good, but very time consuming and errors still creep in. Let our welding specialists show you the tricks of the trade!
- Modern production is no longer conceivable without repair welding – you should also move with the times!
- Minimise the costs for external welding providers by performing own on-site repairs.
- We train your employees individually for your specific applications here at joke or directly within your company. It is therefore possible to deal very specifically with your requirements and devise solutions to problems in daily practice in small training groups. Feel free to bring sample components along to practice on your workpieces straight away.
- Our recipe for success: the training programmes are geared to the participants’ daily working practice and over one to two days, mainly focus on practice in coordinated exercises in addition to the essential theoretical bases.
- Bridge the gap between TIG and LASER processes by optimum use of joke multiSpot technology.
- You will of course receive from joke all the necessary work utensils during the training in addition to a certificate for your further personal career.



Training programmes

“Welding in toolmaking and mould building”

Equipment: joke multiSpot including welding fillers and accessories

at joke in Bergisch Gladbach

3-day training programme “Welding in toolmaking and mould building” Order no.: 4 900 031

- Theoretical introduction to the multiSpot welding method, TIG and impulse welding
- Practical instruction in use of the devices, with emphases on fine welding of tool steel, aluminium using the TIG, multiSpot and laser methods
- Dates: by arrangement
- Participants: max. 8 participants - The order of registration will decide.
- Price: by arrangement

1-day training programme “Welding with multiSpot” Order no.: 4 900 033

- Theoretical introduction to the multiSpot welding method
- Practical instruction in using the multiSpot device
- Dates: by arrangement
- Participants: max. 4 participants - The order of registration will decide.
- Price: by arrangement

1-day training programme “TIG welding” Order no.: 4 900 039

- Theoretical introduction to the TIG welding method, meaning of direct and alternating current, seam preparation, selection and classification of welding fillers, welding of steel, chrome-nickel steel and aluminium
- Dates: by arrangement
- Participants: max. 4 participants - The order of registration will decide.
- Price: by arrangement

at your company

1-day training programme “Welding with multiSpot” Order no.: 4 900 032

- Theoretical introduction to the multiSpot welding method
- Practical instruction in using the multiSpot device and practical exercises on appropriate workpieces, debriefing and discussion
- Dates: by arrangement
- Participants: 2 - 4 participants
- Price: by arrangement

1-day training programme “TIG welding” Order no.: 4 900 038

- Theoretical introduction to the TIG welding method, meaning of direct and alternating current, seam preparation, selection and classification of welding fillers, practical exercises and discussion
- Welding of steel, chrome-nickel steel and aluminium
- Dates: by arrangement
- Participants: 2 - 4 participants
- Price: by arrangement

1-day training programme “Laser welding” Order no.: 4 900 040

- Laser welding for repairs in toolmaking and mould building in addition to production welding (only on the joke ENESKAlaser)
- Dates: by arrangement
- Price: by arrangement

Small hand welding torch



Microtorch



Welding torches



Large hand
welding torch

- 20 Series 9 machine torches
- 24 Large hand welding torches Series 17-18-26
- 28 Small hand welding torches Series 9
- 32 Microtorches Series 70-140



Machine
welding torch



Series 9 machine torches

Hose packs

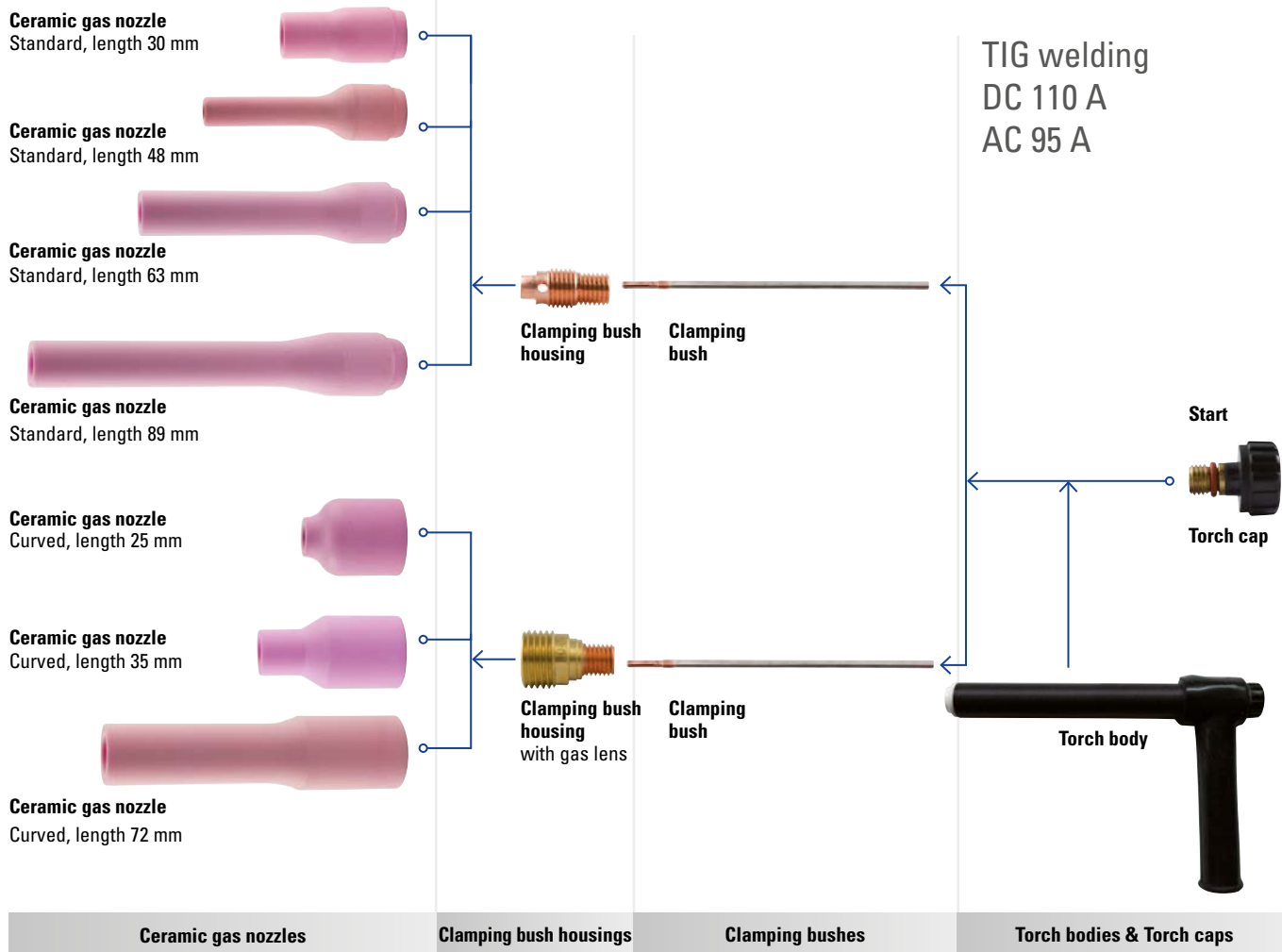
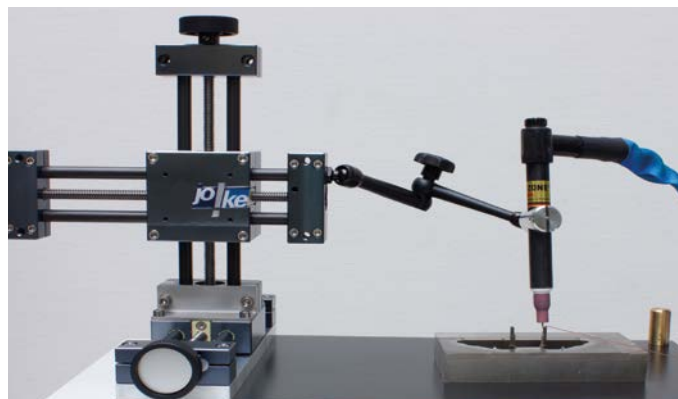
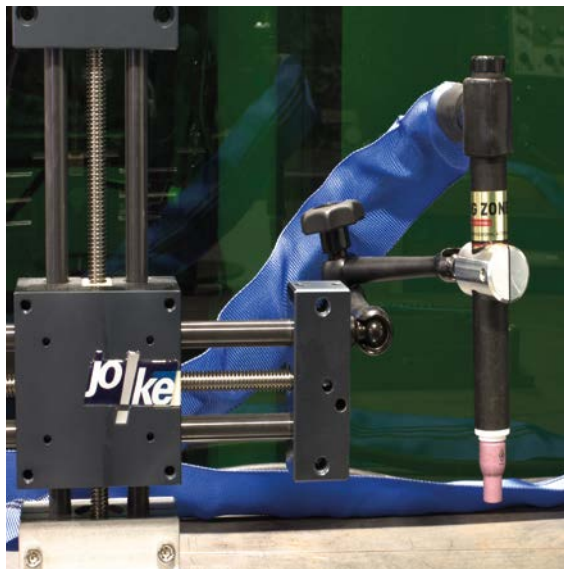


Illustration: Clamping bush original size








Series 9 machine torches

Hose packs

	Order No.	Price from 1 piece
Series 9 machine torch hose pack	4 516 000	518.00 €



Accessories / spare parts

	Design	Interior Ø	Length	Order No.	Price from 1 piece
Torch body					
	rigid, for series MT-9			4 511 200	190.00 €
Torch cap					
	short	Ø 7.8 mm	22 mm	4 513 600	17.05 €
Ceramic gas nozzle					
	Standard, size 4	Ø 6.5 mm	30 mm	4 512 004	4.28 €
	Standard, size 5	Ø 8.0 mm	30 mm	4 512 005	4.28 €
	Standard, size 6	Ø 9.5 mm	30 mm	4 512 006	4.28 €
	Standard, size 7	Ø 11.0 mm	30 mm	4 512 007	4.28 €
	Standard, size 8	Ø 13.5 mm	30 mm	4 512 008	4.28 €
	Standard, size 10	Ø 16.0 mm	30 mm	4 512 010	4.28 €
	Standard, size 3	Ø 5.0 mm	48 mm	4 512 103	13.25 €
	Standard, size 4	Ø 6.5 mm	48 mm	4 512 104	13.25 €
	Standard, size 5	Ø 8.0 mm	48 mm	4 512 105	13.25 €
	Standard, size 6	Ø 9.5 mm	48 mm	4 512 106	13.25 €
	Standard, size 4	Ø 6.5 mm	63 mm	4 512 204	14.60 €
	Standard, size 5	Ø 8.0 mm	63 mm	4 512 205	14.60 €
	Standard, size 4	Ø 6.5 mm	89 mm	4 512 304	15.60 €
	Curved, size 4	Ø 6.5 mm	25 mm	4 511 404	4.62 €
	Curved, size 5	Ø 9.5 mm	25 mm	4 511 405	4.62 €
	Curved, size 6	Ø 9.5 mm	25 mm	4 511 406	4.62 €
	Curved, size 7	Ø 11.0 mm	25 mm	4 511 407	4.62 €
	Curved, size 8	Ø 13.5 mm	25 mm	4 511 408	4.62 €

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Series 9 machine torches

Hose packs

Accessories / spare parts

	Design	Interior Ø	Length	Order No.	Price from 1 piece
	Curved, long, size 6	Ø 9.5 mm	35 mm	4 511 506	6.20 €
	Curved XL, size 6	Ø 9.5 mm	72 mm	4 511 706	13.25 €
Clamping bush housing					
	Standard	Ø 1.0 mm	21 mm	4 513 310	7.20 €
		Ø 1.6 mm	21 mm	4 513 316	7.20 €
	Gas lens	Ø 1.0 mm	22 mm	4 513 110	11.10 €
		Ø 1.6 mm	22 mm	4 513 116	11.10 €
Clamping bushes					
	Standard for type MT-9	Ø 1.0 mm	161 mm	4 513 510	16.30 €
		Ø 1.6 mm	161 mm	4 513 516	16.30 €

matching set

	Order No.	Price from 1 set
Spare parts set for series 9 machine torch	4 519 901	149.55 €
<p>Set contains:</p> <ul style="list-style-type: none"> • 1 x torch cap (order no. 4 513 600) • 5 x ceramic gas nozzles (order no. 4 512 004, 4 511 405, 4 511 407, 4 512 103, 4 512 204) • 4 x clamping bushes (order no. 4 513 510, 4 513 516) • 2 x clamping bush housings, gas lens (order no. 4 513 110 + 4 513 116) • 2 x clamping bush housings, standard (order no. 4 513 310, 4 513 316) • 4 x tungsten electrodes (order no. 4 569 010, 4 569 016) • 1 x fibreglass cleaning pen (order no. 4 805 501) • 1x storage box (order no. 0 200 820) 		

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The perfect complement to weld seam preparation

ENESKAmicro

- 30% more efficiency
- based on IP 54
- enhanced handpieces
- extremely high true running accuracy
- 20% higher final speed
- highest clamping force in the world
- handpieces & motors universally compatible regardless of manufacturer
- PLC suitable
- idletimer
- operator menu in eight different languages
- updatable



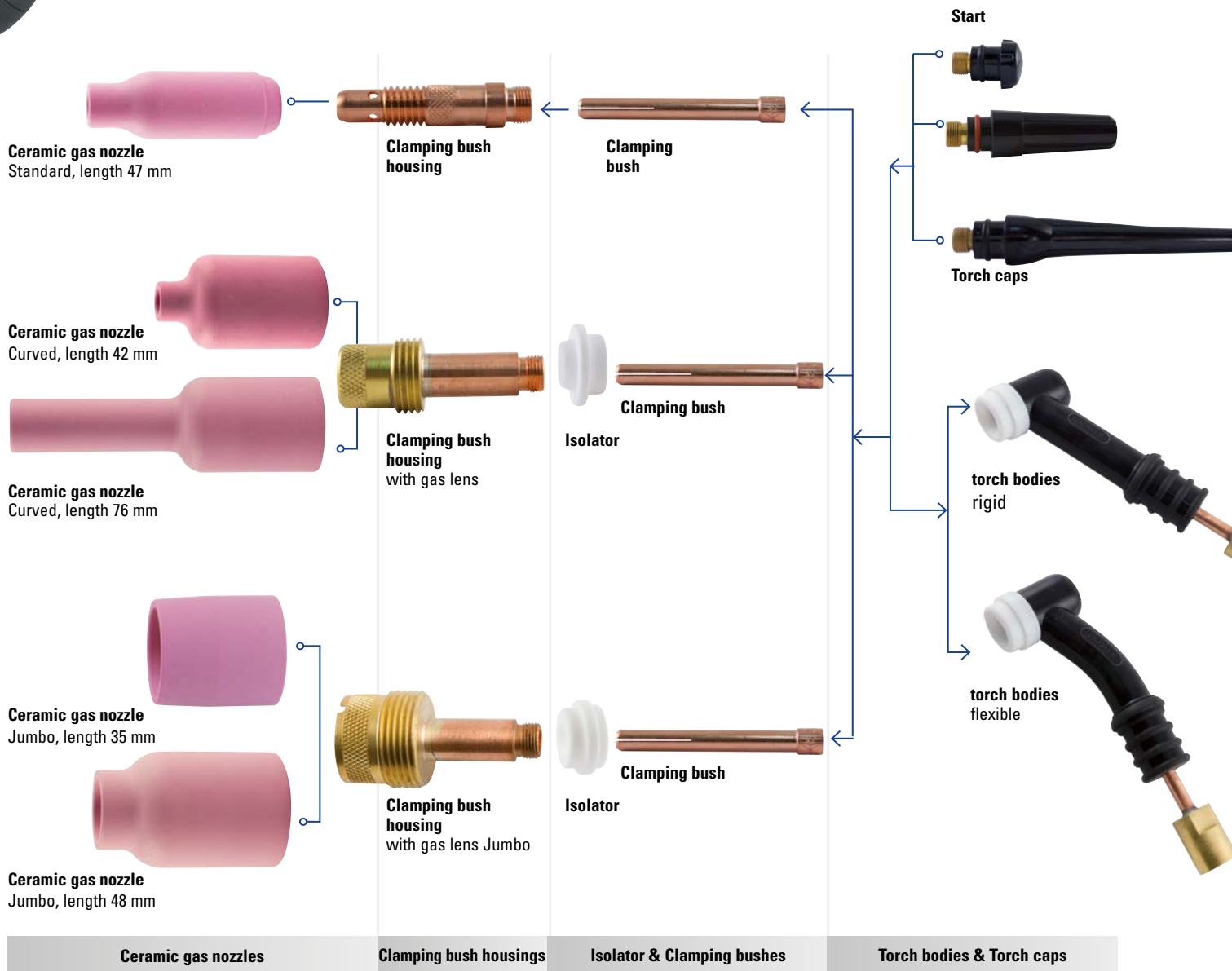
100%
Made in GERMANY

Large hand welding torches Series 17-18-26

Hose packs





TIG welding
DC 240 A
AC 200 A









Large hand welding torches Series 17-18-26

Hose packs

	Design	Order No.	Price from 1 piece
Series 18 hand torch hose pack			
	rigid hose pack for hand torch series 18 without pushbutton, 4 m long, large torch with water cooling (350 A)	rigid, 4 m, with pushbutton, with water cooling	4 526 200 408.00 €
Series 26 hand torch hose pack			
		rigid, 4 m, with pushbutton	4 525 200 364.00 €
		flexible, 4 m, with pushbutton	4 525 600 417.00 €

Accessories / spare parts

	Design	Interior Ø	Length	Order No.	Price from 1 piece
Torch body					
	flexible, for series 17			4 520 400	78.15 €
	flexible, for series 18			4 520 600	135.30 €
	flexible, for series 26			4 520 800	116.95 €
	rigid, for series 17			4 520 500	38.65 €
	rigid, for series 18			4 520 700	80.40 €
	rigid, for series 26			4 520 900	70.45 €
Torch cap					
	short	Ø 12 mm	25 mm	4 520 112	13.85 €
		Ø 13 mm	25 mm	4 520 113	13.85 €
	medium	Ø 12 mm	60 mm	4 520 312	13.85 €
	long	Ø 12 mm	120 mm	4 520 212	14.60 €
		Ø 13 mm	120 mm	4 520 213	14.60 €
Ceramic gas nozzle					
	Standard, size 4	Ø 6.5 mm	47 mm	4 522 204	4.39 €
	Standard, size 5	Ø 8.0 mm	47 mm	4 522 205	4.39 €
	Standard, size 6	Ø 9.5 mm	47 mm	4 522 206	4.39 €
	Standard, size 7	Ø 11 mm	47 mm	4 522 207	4.39 €
	Standard, size 8	Ø 13 mm	47 mm	4 522 208	4.39 €

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Large hand welding torches Series 17-18-26

Hose packs

Accessories / spare parts

	Design	Interior Ø	Length	Order No.	Price from 1 piece
	Curved, size 4	Ø 6.5 mm	42 mm	4 521 404	4.18 €
	Curved, size 5	Ø 8.0 mm	42 mm	4 521 405	4.18 €
	Curved, size 6	Ø 9.5 mm	42 mm	4 521 406	4.18 €
	Curved, size 7	Ø 11 mm	42 mm	4 521 407	4.18 €
	Curved, size 8	Ø 12 mm	42 mm	4 521 408	4.18 €
	Curved, long, size 5	Ø 8.0 mm	76 mm	4 521 505	15.90 €
	Curved, long, size 6	Ø 9.5 mm	76 mm	4 521 506	15.90 €
	Curved, long, size 7	Ø 11 mm	76 mm	4 521 507	15.90 €
	Jumbo, short, size 15	Ø 24 mm	35 mm	4 511 815	10.05 €
	Jumbo, size 10	Ø 16 mm	48 mm	4 511 910	9.65 €
	Jumbo, size 12	Ø 19 mm	48 mm	4 511 912	10.05 €
Clamping bush housings					
	standard	Ø 1.0 mm	47 mm	4 523 310	6.90 €
		Ø 1.6 mm	47 mm	4 523 316	6.90 €
		Ø 2.4 mm	47 mm	4 523 324	6.90 €
		Ø 3.2 mm	47 mm	4 523 332	6.90 €
		Ø 4.0 mm	47 mm	4 523 340	6.90 €
Gas lens					
		Ø 1.0 mm	50 mm	4 523 110	12.00 €
		Ø 1.6 mm	50 mm	4 523 116	12.00 €
		Ø 2.4 mm	50 mm	4 523 124	12.00 €
		Ø 3.2 mm	50 mm	4 523 132	12.00 €
		Ø 4.0 mm	50 mm	4 523 140	12.00 €
	Jumbo	Ø 1.0 mm	50 mm	4 523 210	22.70 €
		Ø 1.6 mm	50 mm	4 523 216	22.70 €
		Ø 2.4 mm	50 mm	4 523 224	22.70 €
		Ø 3.2 mm	50 mm	4 523 232	22.70 €
Clamping bushes					
	Standard for type 17-18-26	Ø 1.0 mm	50 mm	4 522 710	3.95 €
		Ø 1.6 mm	50 mm	4 522 716	3.95 €
		Ø 2.4 mm	50 mm	4 522 724	3.95 €
		Ø 3.2 mm	50 mm	4 522 732	3.95 €
		Ø 4.0 mm	50 mm	4 522 740	3.95 €
		Ø 1.6 mm	52 mm	4 522 816	3.95 €
		Ø 2.4 mm	52 mm	4 522 824	3.95 €
		Ø 3.2 mm	52 mm	4 522 832	3.95 €
		Ø 4.0 mm	52 mm	4 522 840	3.95 €
		Isolator			
	for gas lens	Ø 25 mm	13 mm	4 522 400	6.40 €
	for jumbo gas lens	Ø 30 mm	16 mm	4 523 030	13.85 €


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Large hand welding torches Series 17-18-26

Hose packs

matching set

	Order No.	Price from 1 set
Spare parts set for series 26 large hand torch		
 <p>The set contains:</p> <ul style="list-style-type: none"> • 1 x torch cap, short (order no. 4 520 112) • 1 x torch cap, long (order no. 4 520 212) • 7 x ceramic gas nozzles, curved (order no. 4 521 404, 4 521 406, 4 521 408, 4 521 505) • 1 x isolator for gas lens (order no. 4 522 400) • 4 x clamping bushes (order no. 4 522 716 + 4 522 724) • 2 x clamping bush housings with gas lens (order no. 4 523 116 + 4 523 124) • 4 x tungsten electrodes, blue (order no. 4 569 016 + 4 569 024) • 1 x storage box (order no. 0 200 820) 	4 529 900	149.55 €

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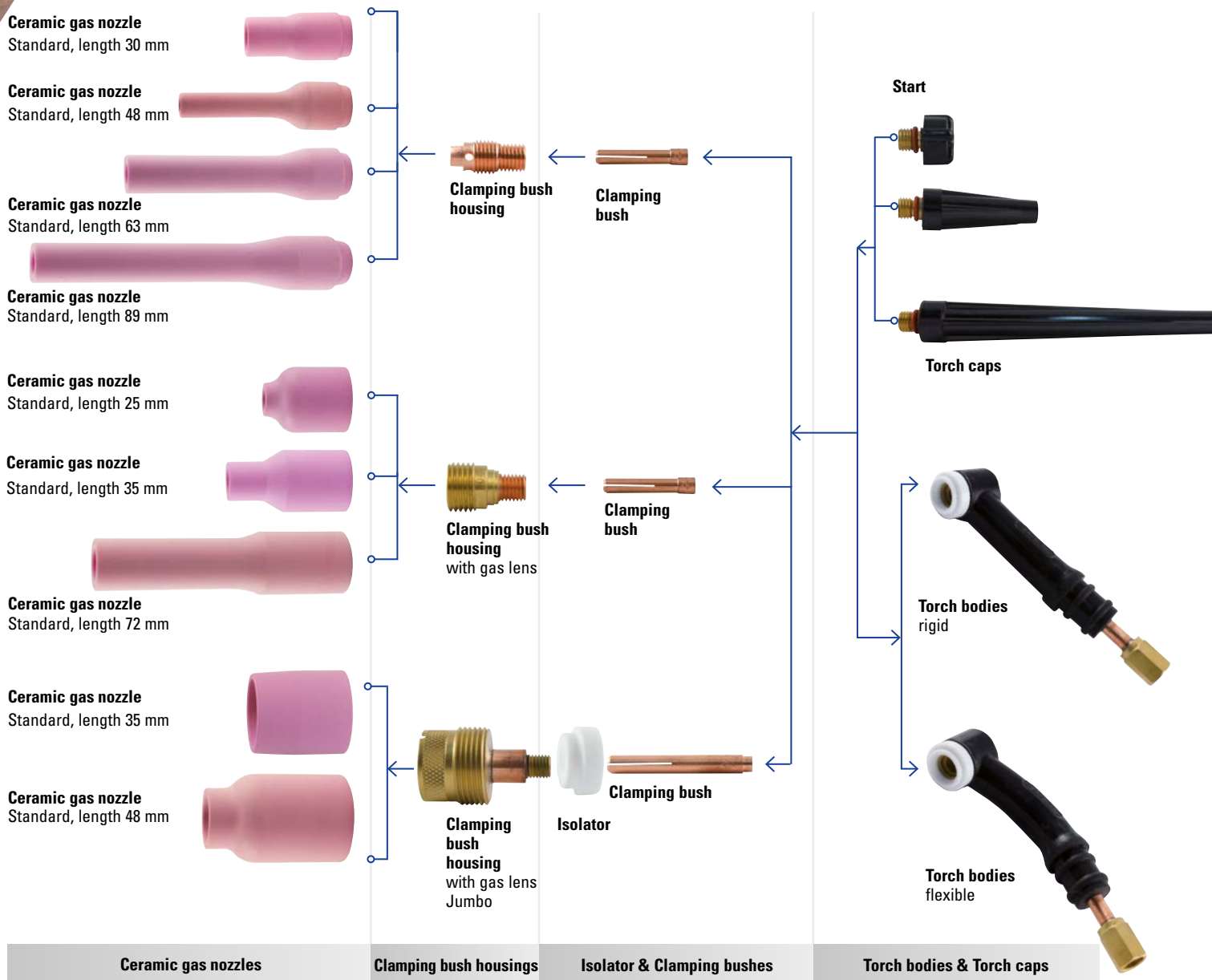


Small hand welding torches Series 9




Hose packs



TIG welding
DC 110 A
AC 95 A






Small hand welding torches Series 9 Hose packs

	Design	Order No.	Price from 1 piece
Series 9 hand torch hose pack			
	rigid, 4 m, without pushbutton	4 515 000	260.00 €
	rigid, 4 m, with pushbutton	4 515 200	322.00 €
	flexible, 4 m, without pushbutton	4 515 400	300.00 €
	flexible, 4 m, with pushbutton	4 515 600	373.00 €
	rigid hose pack joke 230 WK without pushbutton, 4 m long, small torch with water cooling (300 A)	rigid, 4 m, without pushbutton, with water cooling	4 517 010 322.00 €
	flexible hose pack with pushbutton, 4 m long, small torch with water cooling (300 A)	flexible, 4 m, with pushbutton, with water cooling	4 517 600 353.00 €

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Accessories / spare parts

	Design	Interior Ø	Length	Order No.	Price from 1 piece
Torch body					
	flexible, for series 9			4 511 000	71.65 €
	flexible, for series 20 WK			4 510 400	139.65 €
	rigid, for series 9			4 511 100	37.55 €
	rigid, for series 20 WK			4 510 500	100.15 €
Torch cap					
	short	Ø 8.6 mm	20 mm	4 510 186	10.15 €
	medium	Ø 8.6 mm	50 mm	4 510 386	10.60 €
	long	Ø 8.6 mm	145 mm	4 510 286	11.00 €

Small hand welding torches Series 9

Hose packs

Accessories / spare parts

	Design	Interior Ø	Length	Order No.	Price from 1 piece
Ceramic gas nozzle					
	Standard, size 4	Ø 6.5 mm	30 mm	4 512 004	4.28 €
	Standard, size 5	Ø 8.0 mm	30 mm	4 512 005	4.28 €
	Standard, size 6	Ø 9.5 mm	30 mm	4 512 006	4.28 €
	Standard, size 7	Ø 11.0 mm	30 mm	4 512 007	4.28 €
	Standard, size 8	Ø 13.5 mm	30 mm	4 512 008	4.28 €
	Standard, size 10	Ø 16.0 mm	30 mm	4 512 010	4.28 €
	Standard, size 3	Ø 5.0 mm	48 mm	4 512 103	13.25 €
	Standard, size 4	Ø 6.5 mm	48 mm	4 512 104	13.25 €
	Standard, size 5	Ø 8.0 mm	48 mm	4 512 105	13.25 €
	Standard, size 6	Ø 9.5 mm	48 mm	4 512 106	13.25 €
	Standard, size 4	Ø 6.5 mm	63 mm	4 512 204	14.60 €
	Standard, size 5	Ø 8.0 mm	63 mm	4 512 205	14.60 €
	Standard, size 4	Ø 6.5 mm	89 mm	4 512 304	15.60 €
	Curved XL, size 6	Ø 9.5 mm	72 mm	4 511 706	13.25 €
	Jumbo, short, size 15	Ø 24 mm	35 mm	4 511 815	10.05 €
	Curved, size 4	Ø 6.5 mm	25 mm	4 511 404	4.62 €
	Curved, size 5	Ø 9.5 mm	25 mm	4 511 405	4.62 €
	Curved, size 6	Ø 9.5 mm	25 mm	4 511 406	4.62 €
	Curved, size 7	Ø 11.0 mm	25 mm	4 511 407	4.62 €
	Curved, size 8	Ø 13.5 mm	25 mm	4 511 408	4.62 €
	Curved, long, size 6	Ø 9.5 mm	35 mm	4 511 506	6.20 €
	Jumbo, size 10	Ø 16 mm	48 mm	4 511 910	9.65 €
	Jumbo, size 12	Ø 19 mm	48 mm	4 511 912	10.05 €
Isolator					
	for jumbo gas lens	Ø 30 mm	14 mm	4 512 600	13.75 €

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Welding seam build-up - steel material



Welding seam build-up - bronze material








Welding seam build-up - aluminium material


Small hand welding torches Series 9

Hose packs

Accessories / spare parts

	Design	Interior Ø	Length	Order No.	Price from 1 piece
Clamping bush housings					
	standard	Ø 1.0 mm	21 mm	4 513 310	7.20 €
		Ø 1.6 mm	21 mm	4 513 316	7.20 €
		Ø 2.4 mm	21 mm	4 513 324	7.20 €
		Ø 3.2 mm	21 mm	4 513 332	7.20 €
Gas lens					
		Ø 1.0 mm	22 mm	4 513 110	11.10 €
		Ø 1.6 mm	22 mm	4 513 116	11.10 €
		Ø 2.4 mm	22 mm	4 513 124	11.10 €
		Ø 3.2 mm	22 mm	4 513 132	11.10 €
	Jumbo	Ø 1.0 mm	41 mm	4 513 210	22.70 €
		Ø 1.6 mm	41 mm	4 513 216	22.70 €
		Ø 2.4 mm	41 mm	4 513 224	22.70 €
		Ø 3.2 mm	41 mm	4 513 232	22.70 €
Clamping bushes					
	Standard for type 9-20	Ø 1.0 mm	25,4 mm	4 512 710	4.07 €
		Ø 1.6 mm	25,4 mm	4 512 716	4.07 €
		Ø 2.4 mm	25,4 mm	4 512 724	4.07 €
		Ø 3.2 mm	25,4 mm	4 512 732	4.07 €
	Jumbo	Ø 1.0 mm	40 mm	4 512 910	7.00 €
		Ø 1.6 mm	40 mm	4 512 916	7.00 €
		Ø 2.4 mm	40 mm	4 512 924	7.00 €

matching set

	Order No.	Price from 1 set
Spare parts set for series 9 small hand torch		
 <p>The set contains:</p> <ul style="list-style-type: none"> • 1 x torch cap, short (order no. 4 510 186), 1 x torch cap, long (order no. 4 510 286), 1 x torch cap, medium (order no. 4 510 386) • 2 x ceramic gas nozzles, curved (order no. 4 511 405 + 4 511 407) + 4 x ceramic gas nozzles, standard (order no. 4 512 004, 4 512 103, 4 512 204, 4 512 304) • 2 x clamping bushes (order no. 4 512 710 + 4 512 716) • 4 x clamping bush housings, gas lens (order no. 4 513 110, 4 513 116, 4 513 310, 4 513 316) • 4 x tungsten electrodes (order no. 4 569 010, 4 569 016) • 1 x fibreglass cleaning pen (order no. 4 805 501) • 1x storage box (order no. 0 200 820) 	4 519 900	149.55 €



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Microtorches Series 70-140

Hose packs



TIG welding
 Serie 70: 70 A
 Serie 140: 140 A
 with watercooling








	Order No.	Price from 1 set
Series 140 microtorch hose pack incl. accessory set		
 rigid hose pack for series 140 microtorch incl. accessories without pushbutton, with water cooling (140 A)	4 535 400	518.00 €
Series 70 microtorch hose pack incl. accessory set		
	4 535 000	491.00 €

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Microtorches Series 70-140

Hose packs

Accessories / spare parts

Design	Interior Ø	Length	Order No.	Price from 1 piece
PYREX gas nozzle				
	Ø 7.0 mm	15 mm	4 531 404	28.50 €
Insulating bush				
	Ø 8.2 mm	90 mm	4 532 400	28.70 €
Clamping bushes				
	for type 70-140	Ø 1.0 mm	4 532 710	15.10 €
		Ø 1.6 mm	4 532 716	15.10 €
		Ø 2.4 mm	4 532 724	15.10 €
Adjustment aid for tungsten electrode				
			4 533 400	39.70 €
45° replacement head for type 70-140				
			4 530 445	35.30 €
90° replacement head for type 70-140				
			4 530 590	35.30 €
Straight replacement head for type 70-140				
			4 530 618	35.30 €

matching set

	Order No.	Price from 1 set
Spare parts set for series 70-140 microtorches		
 <p>The set contains:</p> <ul style="list-style-type: none"> • 4 x clamping bushes (order no. 4 532 710 + 4 532 716) • 1 x insulating bush (order no. 4 532 400) • 2 x PYREX gas nozzle (order no. 4 531 404) • 6 x tungsten electrodes (order no. 4 569 010 + 4 569 016) 	4 539 900	149.55 €

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Portable tungsten electrode grinding device for a perfect seam

Tungsten electrode grinding device


It's all a matter of the "right grind"! The portable electrode grinding device from joke provides the optimum solution for giving your tungsten electrodes the right cylindrical grind, neatly and in a few simple moves. A precise grind at the tungsten electrode tip is tremendously important in ensuring a stable electric arc. A sharp-tipped tungsten electrode makes it possible to concentrate the electric arc energy on a small surface with deep penetration – which is how you ultimately achieve clean results!

About the technology: An integrated filter cartridge makes sure that the dusts generated during grinding are absorbed and are not dispersed in the atmosphere. A built-in diamond disc makes for the correct surface of your tungsten electrode tip. Furthermore, through the possibility of using different collets on the handle, you can also process all diameters between 1 and 4 mm.

In addition, the grinding device convinces through its light weight, for at 2.8 kg, it is easy to transport and therefore even more versatile. A carrying case rounds off the product.

Scope of supply:

- Diamond disc (already installed)
- Electrode holder
- Collets for electrode diameter 1.6 mm
- Collets for electrode diameter 2.4 mm
- Collets for electrode diameter 3.2 mm
- Allen key, 2 mm
- Allen key, 4 mm
- Chuck key 13/17
- Chuck key 13/14
- Disposable filter (already installed)
- Disposal bag for disposable filter
- Carrying case
- Operating instructions

	Order No.	Price from
Portable tungsten electrode grinding device in a carrying case	4 561 100	849.00 €
 <p>Technical data:</p> <p>Output: 650 W</p> <p>Power supply: 230 V</p> <p>Speed: min. 11500 bis 27000 rpm</p> <p>Sound pressure: 88.8 dB(A)</p> <p>Vibration value: 5 m/s²</p> <p>Diamond disc: Ø 40 mm</p> <p>Filter cartridge: disposable filter (classe:H12)</p> <p>Electrode diameter: 1 – 4 mm</p> <p>Grinding angle: 15° – 180° (infinitely adjustable)</p> <p>Shortest grindable electrode length: 15 mm</p> <p>Weight (device): 2.8 kg</p> <p>Weight (in case): 4.5 kg</p> <p>CE certification: yes</p>		

ⓘ Accessories on request!


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Tungsten electrodes non-radioactive


Tungsten electrodes, blue

Contains lanthanum special additives for perfect ignition even at the lowest inverter device current intensities. Very good service life and optimum re-ignition in the hot and cold state. Universally usable with direct and alternating current. Non-radioactive!

	Colour	Dimensions	Packing quantity	Order No.	Price from 1 piece
	blue	Ø 1.0 x 175 mm	10 pieces	4 569 010	2.91 €
		Ø 1.6 x 175 mm	10 pieces	4 569 016	4.28 €
		Ø 2.4 x 175 mm	10 pieces	4 569 024	8.55 €
		Ø 3.2 x 175 mm	10 pieces	4 569 032	14.80 €


Tungsten electrodes, gold

Very economical-to-use electrodes for direct and alternating current when the ignition current is within the medium to high range. Non-radioactive!

	Colour	Dimensions	Packing quantity	Order No.	Price from 1 piece
	gold	Ø 1.0 x 175 mm	10 pieces	4 569 210	2.58 €
		Ø 1.6 x 175 mm	10 pieces	4 569 216	3.95 €
		Ø 2.4 x 175 mm	10 pieces	4 569 224	8.45 €
		Ø 3.2 x 175 mm	10 pieces	4 569 232	12.00 €

Tungsten electrode, light green

The light green tungsten electrodes consist of pure tungsten and are mainly used for welding using alternating current. Non-radioactive!

	Colour	Dimensions	Packing quantity	Order No.	Price from 1 piece
	light green	Ø 1.0 x 175 mm	10 pieces	4 569 610	1.65 €
		Ø 1.6 x 175 mm	10 pieces	4 569 616	3.30 €
		Ø 2.4 x 175 mm	10 pieces	4 569 624	6.70 €
		Ø 3.2 x 175 mm	10 pieces	4 569 632	11.50 €

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Workplace & protection equipment



Workplace equipment

- 38 Premium cross table with flexible arm and steel plate
- 39 Flowmeter for all gases up to 25 l/min.
- 39 Transport trolley, large
- 40 Standing aid
- 40 joke easy-Work positioner
- 41 Magnetic clamping balls
- 42 Compact stereomicroscope
- 43 Cold light source

Protection equipment

- 45 Suction units
- 48 Automatic welding helmet Crystal 2.0, extra bright
- 49 Automatic welding helmet e684, extra light
- 50 Hand protection • Laser safety goggles
- 51 Mobile protection wall
- 51 Glare protection shield with flexible arm and magnetic foot

Workplace equipment / Accessories for the torch

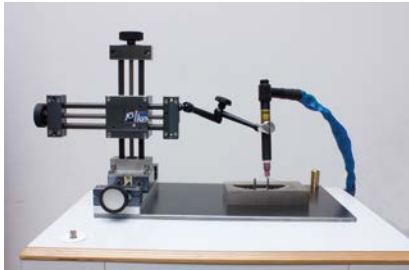
Premium cross table

Premium cross table

Modern component geometries – particularly on contours – require precision accuracy when guiding your torch. This is why joke recommends you the Premium cross table, a high-quality addition in order to achieve optimum welding results. The Premium cross table lets you position the machine torch with millimetre accuracy over the workpiece. Flexible and easy handling of the flexible arm ensure rapid alignment. Its fine bearing-mounted spindles guarantee smooth and continuous travel.

The Premium cross table is equipped with a ground point mounted on the base plate for protective earthing.

The earth cable with a spring clamp (order no. 4 902 125) can be easily connected here.


	Order No.	Price from 1 piece
Premium cross table with flexible arm and steel plate		
 <p>The cross table allows positioning of the machine torch with millimetre accuracy over the workpiece by means of x-y-z axes and the freely pivoting torch holder.</p>	4 901 700	1607.00 €

Accessories / spare parts

Dimensions	Order No.	Price from 1 piece
Magnetic foot (spare) for cross table		
 <p>120 x 50 x 60 mm</p>	4 901 603	185.00 €

Workplace equipment / Accessories for the torch

Welding torch holder

	Order No.	Price from 1 piece
Welding torch holder, magnetic		
 <ul style="list-style-type: none"> • for the secure storage of your welding torch • easy to install thanks to magnet 	4 802 000	30.65 €

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Workplace equipment Flowmeter

Flowmeter

The volumetric quantity of gas at the gas nozzle of the hose pack can be measured using the flowmeter. You can therefore ensure that the preset gas pressure of your inert gas cylinder also arrives at your hand torch.

	Order No.	Price from 1 piece
Flowmeter for all gases up to 25 l/min.	4 800 251	11.70 €



Workplace equipment Transport trolley

	Order No.	Price from 1 piece
Transport trolley, large	4 905 001	864.00 €



This trolley provides space for the welding device multiSpot 3, gas cylinder, cross table and other additional devices such as water cooling or other accessories.

Completely welded and powder-coated steel frame, robust, very free-running and partly lockable swivel and fixed castors, compartments with non-slip mat, chain for securing cylinders.

Dimensions (L x W x H): 860 x 500 x 1,250 mm
Weight: 35 kg



Standing aid

Standing aid

Even if you prefer to stand whilst working instead of sitting down – you still need the necessary support. Our standing aid relieves you during stand-up jobs resulting in enhanced efficiency with fewer inactivity periods due to injuries caused by poor posture.

- Integral foam padding
- Seat inclination 2–15° forwards
- Circular base with PU rim (anti-slip)
- Seat height adjustment by means of a pneumatic safety spring
- optimal as a supplement for your workplace

		Order No.	Price from
			1 piece
Standing aid			
Seat height:	630 – 850 mm	0 200 419	283.00 €
Seat surface (W x D):	390 x 350 mm		
Circular base:	Ø 430 mm		



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Positioner joke easy-Work for attachment to table

Positioner joke easy-Work

Compact and very flexible to use: the small rotating and pivoting unit unit joke easy-Work can be attached quickly and securely to almost any table by means of the drillings, such as the large joke Ergo-Work worktable.

The optionally available T-slot clamping plates ensure make fixing the workpieces child's play. These plates are made from aluminium and are optionally available in square or round shape.



		Order No.	Price from
			1 piece
joke easy-Work positioner with magnet Ø 125 mm			
Rotation range:	manually through 360°	0 200 872	1091.00 €
Pivoting range:	0 – 90° manually		
Dimensions (W x H x D):	200 x 160 x 250 mm		
Weight:	approx. 11 kg		
Clamping system:	magnet Ø 125 mm		




Magnetic clamping balls joke Magic-Ball

Magnetic clamping balls joke Magic-Ball

Comfortable and ergonomic 3-dimensional work. Ideal for polishing and welding workplaces. The Magic-Ball magnetic clamping balls bring your workpiece into almost any desired position. Depending on the workpiece geometry and weight, pivoting angles of up to 90° can be set. The balls are enclosed in leather-lined, chemically nickel-plated steel rings that hold them absolutely securely in any position – the sliding adhesion effect makes it possible! The powerful magnetic chuck of the Magic-Ball is activated using the key supplied (partial activation is also possible for optimum positioning of the workpiece). The balls available in four sizes are all of “Made in Germany” quality.

	Weight (kg)	Dimensions	Clamping force	Pole pitch	Order No.	Price from 1 piece
Magnetic clamping balls joke Magic-Ball						
	ball: 4 kg ring: 1 kg	magnet (Ø): 80 mm ball (Ø x H): 128 x 104 mm	80 N/cm ²	1.5 + 0.5 mm	0 200 323	789.00 €
	ball: 7 kg ring: 2 kg	magnet (Ø): 100 mm ball (Ø x H): 158 x 129 mm	100 N/cm ²	1.5 + 0.5 mm	0 200 324	956.00 €
	ball: 11 kg ring: 4 kg	magnet (Ø): 130 mm ball (Ø x H): 188 x 145 mm	100 N/cm ²	1.5 + 0.5 mm	0 200 325	1176.00 €
	ball: 17 kg ring: 5 kg	magnet (Ø): 160 mm ball (Ø x H): 218 x 164 mm	100 N/cm ²	1.5 + 0.5 mm	0 200 326	1384.00 €
Magnetic clamping balls joke Magic-Ball with earth cable especially for the multiSpot 3						
	ball: 4 kg ring: 1 kg	magnet (Ø): 80 mm ball (Ø x H): 128 x 104 mm	80 N/cm ²	1,5 + 0,5 mm	4 901 801	942.00 €
	ball: 7 kg ring: 2 kg	magnet (Ø): 100 mm ball (Ø x H): 158 x 129 mm	100 N/cm ²	1,5 + 0,5 mm	4 901 802	1110.00 €
	ball: 11 kg ring: 4 kg	magnet (Ø): 130 mm ball (Ø x H): 188 x 145 mm	100 N/cm ²	1,5 + 0,5 mm	4 901 803	1330.00 €
	ball: 17 kg ring: 5 kg	magnet (Ø): 160 mm ball (Ø x H): 218 x 164 mm	100 N/cm ²	1,5 + 0,5 mm	4 901 804	1538.00 €

Accessories / spare parts

	Order No.	Price from 1 piece
Earth cable (25 mm²), length: 1,000 mm		
 Earth cable is absolutely necessary for first-time use of the magnetic clamping ball joke Magic-Ball with earth connection and must be ordered separately.	4 902 110	38.45 €



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Compact stereo microscope for welding workstations

Compact stereo microscope

This welding microscope leaves nothing to be desired. The extended working distance of approx. 225 mm allows simple use even on workpiece geometries where access is difficult. Precise positioning and welding is possible through 10 x magnification. The first-rate glare-protection cartridge appeals by the following advantages:

- Variable shade level 8–12 (DIN), variable sensitivity adjustment, two-stage opening delay adjustment.
- By removing the glare-protection cartridge, the microscope is also highly suitable for use during polishing or for quality control!

		Order No.	Price from 1 piece
Compact stereomicroscope with XXL working distance			
Working distance:	approx. 225 mm	4 901 400	1744.00 €
Magnification:	10 x		
Filter cassette:	degree of protection 8–12 (DIN)		
Scope of delivery:	stereomicroscope with filter cassette, magnetic foot and flexible arm		




Our prices have been changed.
 Please look at the new price list 2020 at www.joke-technology.com or contact us at sales@joke.de

⚙️ Accessories / spare parts

		Order No.	Price from 1 piece
Replacement filter cassette			
	fits for glare protection shield and welding microscope	4 938 335	210.00 €






Cold light source LED

			Design	Order No.	Price from 1 piece
Cold light source LED, 30 W Power LED					
	Lamp:	Power-LED 30 W	30 W Power LED	0 200 745	478.00 €
	Colour temperature:	6,500 K			
	Bulb life:	approx. 25,000 h			
	Light brightness:	by rotary switch			
	Cooling:	by fan			
	Connection voltage:	100 – 240 V, 50/60 Hz			
	Fuse:	1.25 A, slow-blow			
Protection class:	IP 20				
Swan-necked light not in delivery					

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been changed.**

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Accessories / spare parts




		Order No.	Price from 1 piece
Single swan-necked light guide, 53 cm			
		0 200 730	116.75 €
Double swan-necked light guide, 53 cm			
		0 200 720	189.00 €
XXL Flexlight for cold light sources			
		0 200 778	591.00 €
For direct connection to our cold light sources. Delivery includes magnetic base for positioning on the workpiece in addition to two XXL swan necks (800 mm each) and flexible fibreglass supply lead (2,000 mm). Cold light source not included in scope of supply.			
Suitable light source:		0 200 745 and 0 200 710	

Cold light source P 100 W

Cold light source P 100 W





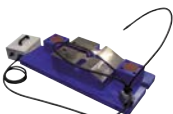
Powerful cold light source 100 watts of luminous power. Longlife illuminants as accessories are optionally available.

In this model, the brightness can be continuously adjusted by a rotary switch. The cold light sources are optionally available without, with a single swan-necked or double swannecked light guide.

		Design	Order No.	Price from 1 piece
Cold light source P 100 W				
  	Lamp: Halogen 100 W, 12 V Colour temperature: 3,200 K Bulb life: approx. 50 h Light brightness: by rotary switch Cooling: by fan Dimensions (W x H x D): approx. 110 x 155 x 240 mm Connection voltage: 230 V, 50/60 Hz Fuse: 1 A, slow blow Protection class: IP 20 Weight without light guide: approx. 4 kg Weight with light guide: approx. 4.4 kg	with double swan-necked light guide, 53 cm	0 200 700	496.00 €
		without swan-necked light guide	0 200 710	372.00 €
		with single swan-necked light guide, 53 cm	0 200 740	434.00 €

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Accessories / spare parts

		Order No.	Price from 1 piece
Illuminant, halogen 100 W			
		0 200 721	23.00 €
Illuminant, halogen 100 W, "Longlife" (approx. 1,500 h)			
	Lamp service life approx. 1,500 h, colour temperature 3,050 K	0 200 725	41.15 €
Single swan-necked light guide, 53 cm			
		0 200 730	116.75 €
Double swan-necked light guide, 53 cm			
		0 200 720	189.00 €
XXL Flexlight for cold light sources			
	For direct connection to our cold light sources. Delivery includes magnetic base for positioning on the workpiece in addition to two XXL swan necks (800 mm each) and flexible fibreglass supply lead (2,000 mm). Cold light source not included in scope of supply.	0 200 778	591.00 €
Suitable light source:		0 200 745 and 0 200 710	

Suction units

joke suction units

... Laser emissions, dust and fine particles, solvents, adhesive vapour, solder vapour/ welding vapour ...

at least one of these or some other pollutions also occur daily in your working environment. You should do something about them in order to avoid damage to health.

With a suction unit from joke, you create the optimum conditions for "good air" at the workplace – even if you ever "let it fly".

With us, you have a choice between two suction systems:

- **JF Compact** with favourably priced entrylevel products
- **AFD Premium** as a highly efficient system with comprehensive equipment details (high filter capacity, filter monitoring, serial interface for remote control)

Both systems can be configured with two filter modules. Suspended matter filter for dusts/fine particles and all particles that arise in mechanical processing sequences.

The activated charcoal filter is used wherever solvents, adhesive vapours, soldering vapour, smoke and similar gaseous pollutions arise. It eliminates or reduces them to a minimum.

Owing to the high density of the filters used, a very high level of separation of the particles and contaminants to be aspirated is achieved. The filters can be combined as individual modules and are easy to replace. Consequently, if replacement is required, you only actually need to change the saturated filter, whereas the remainder can continue to be used.

The turbine cooling (bypass cooling) inside the devices ensures very long services lives of the turbine units, even during constant use. The modular construction allows effective adaptation to individual requirements.

Suction arm for mounting on device

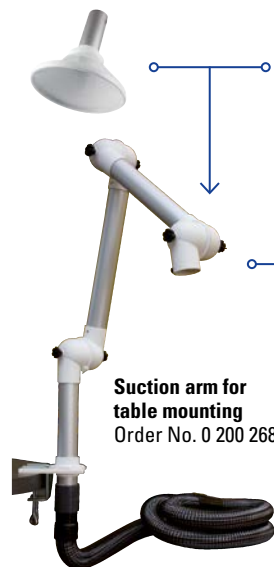
JF 5 Compact
Order No. 0 200 185

JF 10 Compact
Order No. 0 200 242-3

AFD Premium
Order No. 0 200 266

Suction hood
Order No. 0 200 248

Suction tube
Order No. 0 200 243



Suction arm for table mounting
Order No. 0 200 268



Suction unit

JF 5 Compact
Order No. 0 200 225

JF 10 Compact
Order No. 0 200 230-3

AFD Premium
Order No. 0 200 250-1



Things to know about contaminants at the workplace and use of suction units

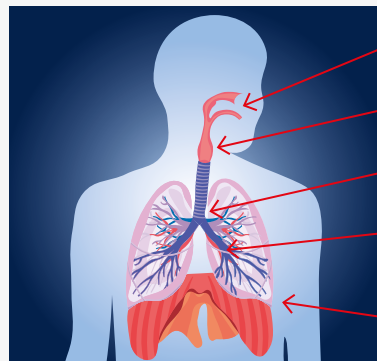
Aerolsols consist of a large number of dust and smoke particles of different diameters. They occur during production processes such as milling, drilling, laser work, cutting, soldering and engraving, etc. The particle size is indicated in micrometres ($\mu\text{m} = 10^{-6}\text{m}$). Contamination of the respiratory tracts depending on the particle size is shown in the diagram opposite.

Maintenance intervals of the filters

With a properly dimensioned unit, the following intervals result for the individual filter types, depending on the contamination:

- Z-line filter: 4 – 8 months
- suspended matter filters: 4 – 8 months
- activated charcoal filters: 6 – 12 months

Without a change of filter, no protection of your health exists!



Nasal mucosa and pharynx 10 μm

Larynx 4,7 – 5,8 μm

Trachea and main bronchi 3,3 – 4,7 μm


Secondary and terminal bronchi 1,1 – 3,3 μm

Alveoli 1 μm

Designed by Alvaro_cabrera/FreePik





Suction units

joke JF 10 Compact




		Design	Order No.	Price from 1 piece
Suction unit joke JF 10 Compact				
	Suction device with initial filter equipment, infinitely adjustable, operating hour counter, 4 castors for mobile use, not including accessories	with suspended matter filter	0 200 230-3	1957.00 €
	Technical data: Suction output, free blowing: 250 m³/h Effective suction output: 20 – 200 m³/h Max. compression: 6,000 Pa Motor: continuous running Connection: 120 – 230 V, 50/60 Hz Motor output: 0.65 kW Sound level: approx. < 62 dB(A) Weight: approx. 24 kg Dimensions (W x H x D): 300 x 510 x 300 mm Colour: RAL 7035 Suction connectors: 2 (rear) Suction connector for arm: 1 (top)	with activated charcoal filter	0 200 230-ZA1	2163.00 €
	Filter (0 200 230-3): Prefilter F5 + suspended particle filter H 13			
	Filter (0 200 230-ZA1): Prefilter F5 + suspended particle filter H 13 + activated charcoal filter			

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⚙️ Accessories / spare parts

		Order No.	Price from 1 piece
Suspended matter filter H 13, 250 x 250 x 190 mm			
		0 200 271	148.85 €
Filter mats F5, 230 x 230 mm (pack: 20 pieces)			
		0 200 257	44.90 €
Combination filter suspended matter/activated charcoal, 250 x 250 x 190 mm			
		0 200 240-4	359.00 €
Suction arm for mounting on device			
	850 mm long, 3 joints, without throttle valve, anodised aluminium tubes	0 200 242-3	294.00 €

Suction units Accessories

		Order No.	Price from 1 piece
Welding nozzle for suction arm			
	310 mm long, anodised aluminium	0 200 243	44.00 €
Connecting hose NW 44			
	2.5 m incl. 2 connecting sleeves	0 200 247	70.15 €
Suction shield for suction arm			
	Ø 200 mm	0 200 248	89.40 €
Reducing sleeve 50/63 to 40/50			
	For connecting to the suction duct on connecting hose NW 44	0 200 251-3	25.65 €
Suction arm for table mounting			
	850 mm long, 3 joints, with throttle valve, anodised aluminium tubes, incl. table bracket and 2.5 m hose	0 200 268	426.00 €
LED protective pane			
	Optimum protection for your work <ul style="list-style-type: none"> • ESG protective pane • SMD-LED lighting (daylight white) • Extraction via suction funnel • Bright and shadow-free illumination • incl. table stand Technical data: Colour temperature: 6,000 K Luminosity: 2,500 Lux (brighter than two 60 W incandescent bulbs) Nominal voltage: AC 100–240 V, 50/60 Hz Operating voltage: 12 V Power consumption: 8 watts Dimensions, protective pane: height 205 mm, width 160 mm, thickness 4 mm	0 200 510	356.00 €
Suction funnel			
	incl. receptacle for LED protective pane <ul style="list-style-type: none"> • For tabletop thickness up to 60 mm • Suction opening 100 x 80 mm • Connection for rectangular tube 80 x 30 mm 	0 200 514	194.00 €
Suction duct			
	Rectangular tube 80 x 30 mm for suction funnel <ul style="list-style-type: none"> • Length 500 mm • For mounting under table • Suction connectors Ø 37/41mm 	0 200 515	67.10 €

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Protection equipment

The optimal protection for your eyes with crystal clear vision

Automatic welding helmet Crystal 2.0, extra bright

The Crystal 2.0 automatic welding helmet, with a light transmission of 32 % in the light state (protection level 2), offers for the first time a practically unclouded and clear view of its working environment. All with a clarity that amounts to an insight into a new dimension.

	Order No.	Price from
		1 piece






Automatic welding helmet Crystal 2.0, extra bright



Technical data:		4 800 502-1	433.00 €
Field of vision:	50 x 100 mm		
Shade levels:	DIN 4/5-9 and DIN 4/9-13		
Weight:	460 g		

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⚙️ Accessories / spare parts

	Dioptres	Order No.	Price from
Magnifier			1 piece
	1.0	4 800 310	42.45 €
	1.5	4 800 315	42.45 €
	2.0	4 800 320	42.45 €
	2.5	4 800 325	42.45 €
	3.0	4 800 330	42.45 €
Replacement pane inside		4 800 351	2.22 €
			
Replacement pane outside		4 800 352	18.35 €
			
Replacement-headband with velcro		4 800 353	6.50 €
			
Backpack for automatic welding helmet		4 800 501	23.70 €
	High quality backpack for safely storing your welding helmet. The padded inner lining prevents scratches and scuffs. The cushioned straps offer maximum carrying comfort.		

Protection equipment

The optimal protection for your eyes with crystal clear vision

Automatic welding helmet e684

The welding helmet with an autopilot! Sorry, it still can't do the welding for you, but adjusts the brightness on its own. The adaptive shade level control automatically adjusts the appropriate shade level over the range S L 5 to 13. An integrated arc-extinguishing function ensures that the cartridge opens uninterruptedly from dark to light and vice versa. A further highlight is the grinding mode – if offers enhanced eye protection at the touch of a button.

	Order No.	Price from 1 piece
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Automatic welding helmet e684, extra light



Technical data:		
Field of vision:	50 x 100 mm	
Shade levels:	DIN 4/5–9 and DIN 4/9–13	
Weight:	490 g	

4 800 500 461.00 €



⚙️ Accessories / spare parts

	Dioptres	Order No.	Price from 1 piece
Magnifier			
	1.0	4 800 310	42.45 €
	1.5	4 800 315	42.45 €
	2.0	4 800 320	42.45 €
	2.5	4 800 325	42.45 €
	3.0	4 800 330	42.45 €
Replacement pane inside			
		4 800 351	2.22 €
Replacement pane outside			
		4 800 352	18.35 €
Replacement-headband with velcro			
		4 800 353	6.50 €
Backpack for automatic welding helmet			
	High quality backpack for safely storing your welding helmet. The padded inner lining prevents scratches and scuffs. The cushioned straps offer maximum carrying comfort.	4 800 501	23.70 €

Hand protection

- Grained goatskin with cuff (10 cm) made of cowhide leather
- Heat-resistant yet still supple
- Good finger sensitivity
- Reinforced seams made of heatproof Kevlar®
- Elastic band on wrist for optimum fit

	Size	Order No.	Price from 1 pair
TIG gloves			
	7/S	4 881 007	19.30 €
	8/M	4 881 008	19.30 €
	9/L	4 881 009	19.30 €
	10/XL	4 881 010	19.30 €
	11/XXL	4 881 011	19.30 €


Hand protection

- Chrome-free tanned, grained goatskin
- For sensitive skin types
- Very supple with good finger sensitivity
- Insensitive to water
- Elastic band on wrist for best fit

	Size	Order No.	Price from 1 pair
Universal gloves			
	9/L	4 881 109	20.65 €
	10/XL	4 881 110	20.65 €
	11/XXL	4 881 111	20.65 €

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Protective goggles

	Order No.	Price from 1 piece
 <p>also suitable for spectacle wearers, very light owing to plastic filter, adjustable temples, wide field of vision.</p> <p>Note: It is essential to compare before use the details concerning the operating mode, wavelength and shade level of the laser safety goggles with the safety requirements of the laser system.</p>	4 910 020-1	300.00 €

Protection equipment Anti-glare panel

	Order No.	Price from 1 piece
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Mobile protection wall



Extremely sturdy square tubing base frame.

4 881 200

649.00 €

Note: According to the Accident Prevention Regulations (UVV), workplaces for electric arc welding must be so arranged that uninvolved persons are protected against harmful effects of optical radiation on the skin and eyes.



Protection equipment Glare protection shield

Flexible arm system

This flexible arm system is the ideal supplement to make your welding work even easier and at the same time optimise the achievable results. You can choose between a flexible arm for receiving the machine torch on the cross table and two flexible arms with a magnetic foot for further accessories: If for example you work with the anti-glare panel, even without a welding helmet, this provides your eyes the right protection at all times.

The stereo microscope, also available with a flexible arm, lets you place even finer weld seams and welding spots on the workpiece owing to 10x magnification.

	Order No.	Price from 1 piece
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Glare protection shield with flexible arm and magnetic foot



This protection shield allows you to work safely even without a welding helmet! The glare protection cassette works with variable blackness values 8–12 (DIN). Sensitivity and delay can be adjusted in two settings respectively. The power supply is provided by solar cells. Since work is performed without magnification in this case, the working distance can be variably configured.

4 901 200

656.00 €

Accessories / spare parts

	Order No.	Price from 1 piece
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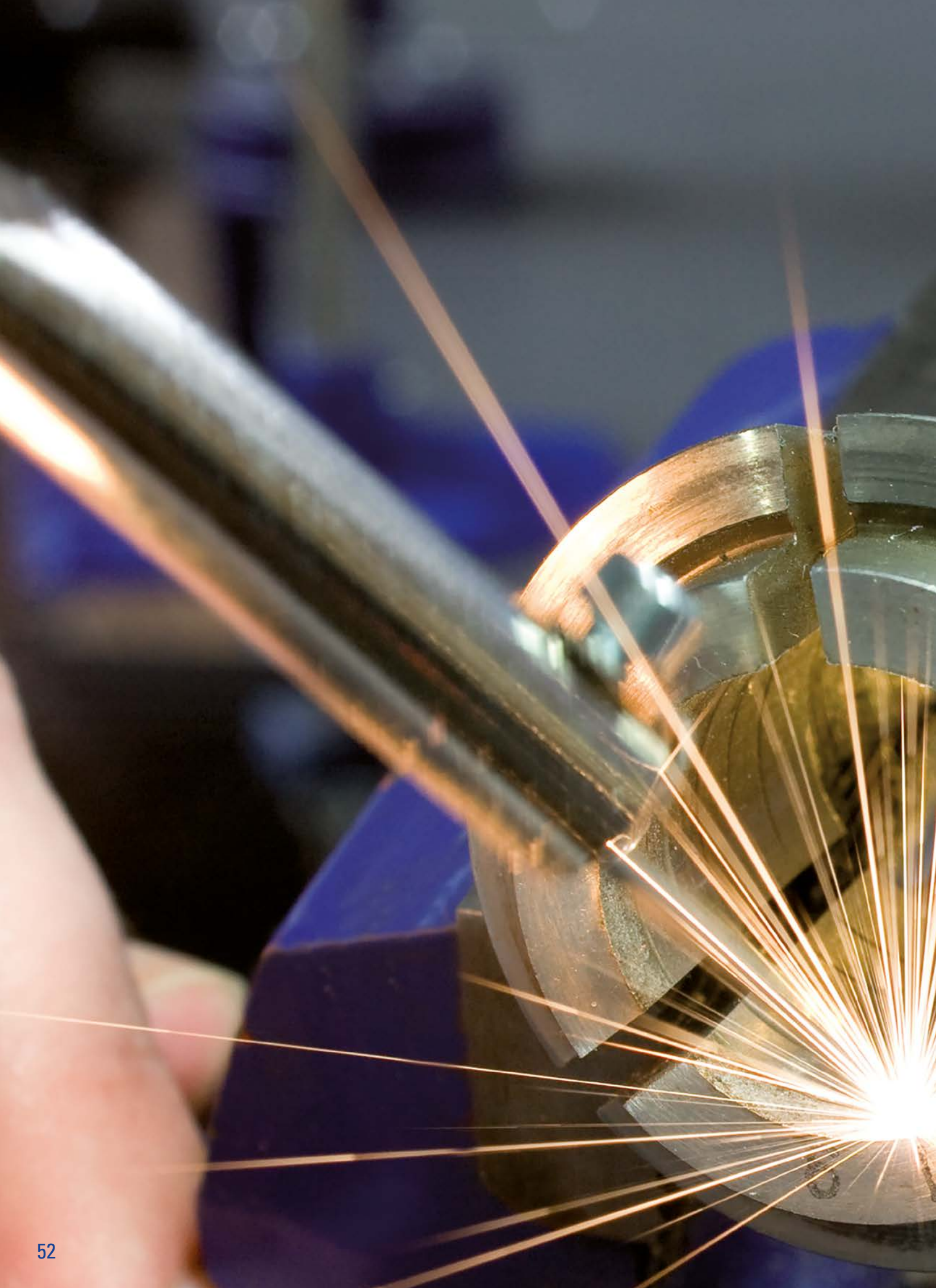
Replacement filter cassette



fits for glare protection shield and welding microscope

4 938 335

210.00 €



Tungsten carbide coating

54	Tungsten carbide coating unit tucadur® 2020
55	Coating gun
55	Tungsten carbide electrodes



Tungsten carbide coating unit

tucadur® 2020

Methods

Nowadays, very high demands are made on the toughness, hardness and surface wear resistance of tools, equipment and machines. Either hardness or toughness can be determined by the normal hardening process; in practice therefore a middle course is selected. The following options came to light in seeking a tough material with a more wear-resistant coating:

1. Galvanic coating with hard layers,
2. Plasma gun spraying method,
3. Electroerosive tungsten carbide coating.

The adhesive strength of the coatings in methods 1 and 2 is unsatisfactory in the case of heavy stresses since the coatings are likely to scale off. With the third method, however, it is possible to apply tungsten carbide in a very wear-resistant surface on the heavily stressed points of a workpiece.

Properties of the tungsten carbide coat

The layer applied combines joins perfectly with the steel and adheres in such a way that it withstands almost any mechanical stress. Blows, bending, stretching or compressive strains are incapable of detaching the coating. This can only be done by grinding or special sand blasting; it can, however, be relapped with diamond or silicon carbide. The steel beneath is not softened by the coating but increases in hardness in the upper zone. In the case of certain steel alloys the tungsten carbide layer even penetrates into the base material. The coating produces a hardness of up to 82 HR 30N, without the workpiece undergoing any change or distortion since the depositing process is practically cold. The coating possesses a high degree of heat resistance. The surface is uniform and shows no directional texture. With good saturation, it achieves a mean roughness of 2-9 µm.

Examples of applications

1. Hardness coating of tools or wear parts to extend service life.
2. Adhesion: coating of smooth surfaces in order to achieve greater adhesion through the structure of the layer.
3. Lubricating film: coating of smooth surfaces in order to maintain a lubricating film, as the lubricant remains embedded in the structure and therefore is not immediately squeezed out again.
4. Cold welding: coating of sliding surfaces in order to avoid cold weldings as a result of the structure of the layer, i.e. sticking of material.

Materials and their pretreatment

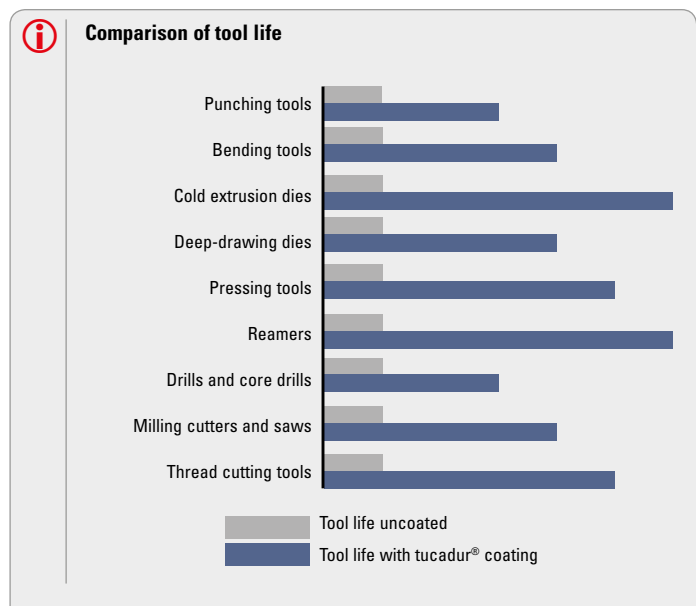
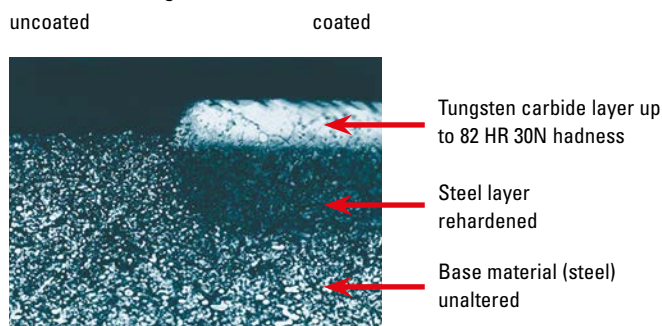
Any soft, heat-treated and hardened unalloyed or alloyed steel is suitable as material for coating with tungsten carbide. The surface must be clean and metallurgically pure. Scale and oxide layers must be removed without fail. Ground, polished or brightly machined parts must be degreased. If the tungsten carbide coating is applied to an unclean surface, no satisfactory adhesive strength can be obtained and the coating becomes irregular and exhibits inclusions.

Principle of operation

The coating device functions in accordance with the principle of electro-erosion. A tungsten carbide electrode is attached to the positive pole in a d.c. circuit with electric current and voltage regulation to which condensers of varying capacities are connected. The vibrator (coating gun) causes oscillations in the electrode and this is brought into contact with the workpiece to be treated. The workpiece is connected to the negative pole. By contact of the electrode with the workpiece, an ionised field results, which ensures that oxide-free fusion of the tungsten carbide with the base material occurs. This field is constantly re-constituted with the aid of the vibrator. With uniform to-and-fro movement of the electrode a compact hard metal layer results. The predetermined layer thickness cannot be exceeded, since no more uptake of material occurs once saturation is reached. The selected layer thickness is so precise that it does not normally need any finishing operation. It can nevertheless be lapped and polished if necessary. Coating using the tucadur® 2020 is so easy that anyone can do it.



Micro-section magnified 250 times



Tungsten carbide coating unit

tucadur® 2020

	Order No.	Price from
Tungsten carbide coating unit tucadur® 2020		1 piece



Control unit
 Max. hardness of coating: 82 HR 30N
 Layer thickness adjustable: from 2-40 micron
 Vibration level: adjustable
 Power supply: 230 V, 50 Hz
 Dimensions (W x T x H): 210 x 320 x 220 mm
 Weight: 11 kg

0 700 000 5235.00 €

Coating gun
 Vibration frequency: 100 Hz
 Illumination: built-in

Scope of supply:
 Control unit, coating gun, mains cable, foot switch, contact magnet, 1 set (24 pieces) of tungsten carbide electrodes, hexagon head screwdriver



⚙️ Accessories / spare parts

	Order No.	Price from
Coating gun		1 piece
	0 700 213	556.00 €



Shape	Dimensions	Order No.	Price from	
			1 piece	10 pieces
Tungsten carbide electrodes, for tucadur® 2020				
square	1.1 x 50 mm	0 700 039	8.65 €	6.70 €
	1.6 x 50 mm	0 700 040	10.15 €	7.60 €
	2.1 x 50 mm	0 700 041	12.75 €	9.85 €
triangular	1.95 x 50 mm	0 700 042-0	10.50 €	7.80 €
round	Ø 1.0 x 50 mm	0 700 036	9.95 €	7.60 €
	Ø 1.3 x 50 mm	0 700 046	8.35 €	6.50 €
	Ø 1.8 x 50 mm	0 700 047	9.25 €	7.20 €
	Ø 2.3 x 50 mm	0 700 048	10.50 €	7.90 €

⬇️ matching set

	Order No.	Price from
Set of tungsten carbide electrodes (24 pieces)		1 set 10 set



3 tungsten carbide electrodes respectively in each shape and size **0 700 034** 204.00 € 157.00 €



The image shows a variety of welding filler rods. In the foreground, there is a large, dense bundle of copper-colored rods. Behind it, several individual rods are displayed, including a prominent copper rod, a silver rod, and a grey rod. The rods are arranged in a way that shows their different colors and textures. A white banner with the text 'Welding filler' is overlaid on the image.

Welding filler

Welding filler joke Fill

Overview

Welding filler joke Fill

- Alloys adapted specifically for repairs and modifications in tool making and mould building
- Likewise matching alloys are available for serial production
- TIG rods in a handy length of 500 mm
- Economical and durable packaging in as little as 50 g upwards
- Effective and fair prices without any concealed surcharges
- Laser wires as straightened rods now also in a length of 500 mm for fewer remnants
- Even more economical than endless wire on large reels in quantities of 50 g and more
- Special grades or other quantities and diameter on request!
- Our wires are constantly being optimised in cooperation with well-known raw material suppliers and users

Suitable for	Application hardness	joke Fill	For materials
Steel	soft	W - 05	1.2311 • 1.2312 • 1.2738 • 1.2162 and similar
Steel	soft	W - 10	1.2311 • 1.2312 • 1.2738 • 1.2162 and similar
Steel	soft	W - 22	1.2343 • 1.2344 • 1.2082 • 1.2083 • 1.2367 • 1.2606 and similar
Steel	soft	W - 25	1.2713 • 1.2714 • 1.2740 • 1.2744 • 1.2764 • 1.2767 and similar
Steel	soft	W - 60	Nickel, nickel-based alloys, GG (grey cast iron), GGG (spheroidal graphite cast iron), GGL (lamellar graphite cast iron)
Steel	medium	M - 30	1.2343 • 1.2344 • 1.2764 • 1.2767 and similar
Steel	medium	M - 33	1.2343 • 1.2344 • 1.2764 • 1.2767 and similar
Steel	medium	M - 40	1.2343 • 1.2344 • 1.2360 • 1.2362 and similar
Steel	medium	M - 45	1.2343 • 1.2344 • 1.2362 • 1.2363 • 1.2367 and similar
Steel	medium	M - 50	1.2082 • 1.2083 • 1.2316 • 1.4115 • 1.4120 and similar
Steel	medium	M - 55	1.2343 • 1.2344 and all other hot-work steels
Steel	hard	H - 40	1.2343 • 1.2344 and all other hot-work steels
Steel	hard	H - 50	1.2842 • 1.2762 • 1.2743 • 1.2721 • 1.2710 and similar
Steel	hard	H - 55	1.2343 • 1.2344 • 1.2311 • 1.2312 • 1.2738 • 1.2767 and similar
Steel	hard	H - 60	1.2358 • 1.2363 • CARMO • CALMAX and similar
Steel	hard	H - 65	1.2379 • 1.2436 • 1.2080 • 1.2601 • and similar cold-work steels
Steel	hard	H - 80	1.2379 • 1.2436 • 1.2080 • 1.2601 • and similar cold-work steels
Steel	hard	H - 90	1.3243 • 1.3333 • 1.3340 • 1.3344 • 1.3348 and similar HSS and PM steels
Corrosion resistant		K - 16	1.4301 • 1.4401 • 1.4541 • 1.4571 and similar V2A - V4A - alloys
Corrosion resistant		K - 33	Joins and intermediate layers on almost all tool steels
Corrosion resistant		K - 35	1.2083 • 1.2085 • 1.2316 • 1.4034 • Mirrax, Corrax, Ramax and similar steels
Corrosion resistant		K - 40	universally for case-hardened, quenched and tempered and hot-work steels, nitrated steels
Corrosion resistant		K - 77	for cracks and primers on all steel types, including mixed joins
Aluminium		A - 50	very universally for the majority of aluminium alloys up to F30
Aluminium		A - 70	for high strength aluminium alloys from F28 onwards, hardened
Multi-alloy bronzes		G - 10	AMPCO® in addition to other aluminium and manganese multi-alloy bronzes, all steels
Copper		R - 80	copper alloys, bronze, steel
Copper		R - 90	copper, copper materials, AMPCOLOY®
Titanium		S - 90	titanium and titanium alloys

Welding filler joke Fill

Overview




Characteristics	joke Fill	Page
soft, very easily etchable	W - 05	60
similar in colour	W - 10	61
similar in colour, readily workable	W - 22	62
similar in colour, readily workable	W - 25	63
very soft, corrosion-resistant, non-hardening	W - 60	64
very crack-resistant, tough and easily polishable	M - 30	65
good wear resistance, tough and easily polishable	M - 33	66
similar in colour and structurally synchronous	M - 40	67
high wear resistance, similar in structure and colour	M - 45	68
corrosion-resistant and wear-resistant	M - 50	69
readily workable, improvement material	M - 55	70
good wear resistance, nitratable and crack-resistant	H - 40	71
flame hardenable, high wear resistance	H - 50	71
wear-resistant, hard	H - 55	72
hard, heat-resistant	H - 60	73
wear-resistant, hard	H - 65	74
wear-resistant, hard	H - 80	75
hard, heat-resistant, wear-resistant	H - 90	76
tough, corrosion-resistant and acid-resistant	K - 16	77
high strength, tough, corrosion-resistant	K - 33	78
corrosion and seawater-resistant, wear-resistant	K - 35	79
very tough, corrosion-resistant, improvement material	K - 40	80
soft and tough, heat-resistant, resistant to temperature change, rustproof	K - 77	81
very crack-resistant, anodisable to a limited extent	A - 50	82
high strength and crack resistance, polishable	A - 70	83
high thermal conductivity, good sliding characteristic	G - 10	84
high thermal conductivity and wear resistance	R - 80	85
very high thermal conductivity	R - 90	86
	S - 90	86

Welding filler joke Fill W-05

Low-alloy welding wire for rapid repair of plastic injection moulds. Optimised characteristics for subsequent processing. Suitable for identical-structure etching and erosion; very easy to polish and coat. The hardness is a very favourable max. 36 HRC for easy manual reworking.

Materials: 1.2311, 1.2312, 1.2738 in addition to similar non-alloy or low-alloy steels

				Order No.	Price from 1 pack
Design	Weight	Dimensions			
joke Fill W-05					
 Rods	50 g	Ø 0.2 x 500 mm		4 152 402	66.05 €
	50 g	Ø 0.3 x 500 mm		4 152 403	61.85 €
	50 g	Ø 0.4 x 500 mm		4 152 404	56.70 €
	50 g	Ø 0.5 x 500 mm		4 152 405	52.40 €
	50 g	Ø 0.6 x 500 mm		4 152 406	50.35 €
	250 g	Ø 0.2 x 500 mm		4 132 402	262.00 €
	250 g	Ø 0.3 x 500 mm		4 132 403	249.00 €
	250 g	Ø 0.4 x 500 mm		4 132 404	225.00 €
	250 g	Ø 0.5 x 500 mm		4 132 405	211.00 €
	250 g	Ø 0.6 x 500 mm		4 132 406	202.00 €
	1000 g	Ø 0.2 x 500 mm		4 112 402	774.00 €
	1000 g	Ø 0.3 x 500 mm		4 112 403	732.00 €
	1000 g	Ø 0.4 x 500 mm		4 112 404	666.00 €
	1000 g	Ø 0.5 x 500 mm		4 112 405	617.00 €
	1000 g	Ø 0.6 x 500 mm		4 112 406	595.00 €
	1000 g	Ø 0.8 x 500 mm		4 312 408	43.90 €
	1000 g	Ø 1.0 x 500 mm		4 312 410	42.25 €
	1000 g	Ø 1.2 x 500 mm		4 312 412	40.80 €
1000 g	Ø 1.6 x 500 mm		4 312 416	39.30 €	

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ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder
for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen
for weld filler metals from Ø 0.2 to 0.6 mm





Order No.	Price
4 806 100	103.75 €

Welding filler joke Fill W-10

Cr-Mn alloy for synchronous- structure application and joining of injection and blow moulds made of low-alloy and medium-alloy Cr steels for plastics and rubber. Very good processing and optimum similarity of colour. Thermal and mechanical treatments are identical to the base material. Polishable, erodible, nitratable, etchable, chrome-platable, can be quenched and tempered.
Hardness approx. 360 – 400 HB

Materials: 1.2311, 1.2312, 1.2162, 1.2738 and similar

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill W-10					
 Rods	50 g	Ø 0.2 x 500 mm	4 152 502	91.15 €	
	50 g	Ø 0.3 x 500 mm	4 152 503	89.10 €	
	50 g	Ø 0.4 x 500 mm	4 152 504	83.85 €	
	50 g	Ø 0.5 x 500 mm	4 152 505	77.60 €	
	50 g	Ø 0.6 x 500 mm	4 152 506	71.25 €	
	250 g	Ø 0.2 x 500 mm	4 132 502	368.00 €	
	250 g	Ø 0.3 x 500 mm	4 132 503	357.00 €	
	250 g	Ø 0.4 x 500 mm	4 132 504	333.00 €	
	250 g	Ø 0.5 x 500 mm	4 132 505	309.00 €	
	250 g	Ø 0.6 x 500 mm	4 132 506	287.00 €	
	1000 g	Ø 0.2 x 500 mm	4 112 502	1092.00 €	
	1000 g	Ø 0.3 x 500 mm	4 112 503	1057.00 €	
	1000 g	Ø 0.4 x 500 mm	4 112 504	984.00 €	
	1000 g	Ø 0.5 x 500 mm	4 112 505	913.00 €	
	1000 g	Ø 0.6 x 500 mm	4 112 506	846.00 €	
	1000 g	Ø 0.8 x 500 mm	4 312 508	48.70 €	
	1000 g	Ø 1.0 x 500 mm	4 312 510	46.95 €	
	1000 g	Ø 1.2 x 500 mm	4 312 512	45.35 €	
	1000 g	Ø 1.6 x 500 mm	4 312 516	43.60 €	
	1000 g	Ø 2.4 x 500 mm	4 312 524	40.30 €	
 Spools	50 g	Ø 0.2 mm	4 252 502		89.10 €
	50 g	Ø 0.3 mm	4 252 503		86.00 €
	50 g	Ø 0.4 mm	4 252 504		78.65 €
	50 g	Ø 0.5 mm	4 252 505		74.45 €
	50 g	Ø 0.6 mm	4 252 506		68.20 €
	250 g	Ø 0.2 mm	4 232 502		349.00 €
	250 g	Ø 0.3 mm	4 232 503		339.00 €
	250 g	Ø 0.4 mm	4 232 504		314.00 €
	250 g	Ø 0.5 mm	4 232 505		292.00 €
	250 g	Ø 0.6 mm	4 232 506		271.00 €
	1000 g	Ø 0.2 mm	4 212 502		1013.00 €
	1000 g	Ø 0.3 mm	4 212 503		979.00 €
	1000 g	Ø 0.4 mm	4 212 504		913.00 €
	1000 g	Ø 0.5 mm	4 212 505		845.00 €
	1000 g	Ø 0.6 mm	4 212 506		786.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

Our prices have been changed.
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The perfect complement

Welding filler holder
for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen
for weld filler metals from Ø 0.2 to 0.6 mm





Order No.	Price
4 806 100	103.75 €

Welding filler joke Fill W-22

Cr-Mo-Mn alloy for repairs of injection and blow moulds made of low-alloy and medium-alloy Cr steels in addition to pressing tools for plastics. Good corrosion resistance owing to increased Cr content and reduced carbon. Tough, heat-resistant and readily workable. Very easily weldable using the TIG and LASER methods. Polishable, erodible, nitratable, etchable, chrome-platable, can be quenched and tempered. Hardness between 38 HRC and max. 56 HRC possible depending on the dilution.

Materials: 1.2343, 1.2344, 1.2082, 1.2083, 1.2367 and similar Cr alloy steels.



Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill W-22					
 Rods	50 g	Ø 0.2 x 500 mm	4 152 602	128.95 €	
	50 g	Ø 0.3 x 500 mm	4 152 603	125.80 €	
	50 g	Ø 0.4 x 500 mm	4 152 604	107.95 €	
	50 g	Ø 0.5 x 500 mm	4 152 605	101.70 €	
	50 g	Ø 0.6 x 500 mm	4 152 606	96.50 €	
	250 g	Ø 0.2 x 500 mm	4 132 602	512.00 €	
	250 g	Ø 0.3 x 500 mm	4 132 603	501.00 €	
	250 g	Ø 0.4 x 500 mm	4 132 604	429.00 €	
	250 g	Ø 0.5 x 500 mm	4 132 605	405.00 €	
	250 g	Ø 0.6 x 500 mm	4 132 606	383.00 €	
	1000 g	Ø 0.2 x 500 mm	4 112 602	1519.00 €	
	1000 g	Ø 0.3 x 500 mm	4 112 603	1485.00 €	
	1000 g	Ø 0.4 x 500 mm	4 112 604	1274.00 €	
	1000 g	Ø 0.5 x 500 mm	4 112 605	1202.00 €	
	1000 g	Ø 0.6 x 500 mm	4 112 606	1129.00 €	
	1000 g	Ø 0.8 x 500 mm	4 312 608	83.15 €	
	1000 g	Ø 1.0 x 500 mm	4 312 610	77.60 €	
1000 g	Ø 1.2 x 500 mm	4 312 612	71.35 €		
1000 g	Ø 1.6 x 500 mm	4 312 616	67.15 €		
 Spools	50 g	Ø 0.2 mm	4 252 602		123.65 €
	50 g	Ø 0.3 mm	4 252 603		120.55 €
	50 g	Ø 0.4 mm	4 252 604		102.75 €
	50 g	Ø 0.5 mm	4 252 605		97.50 €
	50 g	Ø 0.6 mm	4 252 606		91.25 €
	250 g	Ø 0.2 mm	4 232 602		486.00 €
	250 g	Ø 0.3 mm	4 232 603		473.00 €
	250 g	Ø 0.4 mm	4 232 604		406.00 €
	250 g	Ø 0.5 mm	4 232 605		384.00 €
	250 g	Ø 0.6 mm	4 232 606		360.00 €
	1000 g	Ø 0.2 mm	4 212 602		1410.00 €
	1000 g	Ø 0.3 mm	4 212 603		1375.00 €
	1000 g	Ø 0.4 mm	4 212 604		1180.00 €
	1000 g	Ø 0.5 mm	4 212 605		1114.00 €
	1000 g	Ø 0.6 mm	4 212 606		1047.00 €

① All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

Welding filler joke Fill W-25

Ni-Mn alloys with additions of Cr and Mo for similar-structure applications and joining of low-alloy steels in plastic mould building. Also readily workable in the transitions in case of cavity repairs. Coordinated in colour with the alloys containing approx. 2 – 5 % nickel. Very tough and resistant to temperature change. Polishable, erodible, nitratable, etchable, chrome-platable, can be quenched and tempered. Hardness approx. 360 – 420 HB depending on the dilution.

Materials: 1.2764, 1.2767, 1.2713, 1.2714 and similar alloys.

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill W-25					
 Rods	50 g	Ø 0.2 x 500 mm	4 152 702	92.30 €	
	50 g	Ø 0.3 x 500 mm	4 152 703	89.10 €	
	50 g	Ø 0.4 x 500 mm	4 152 704	83.85 €	
	50 g	Ø 0.5 x 500 mm	4 152 705	77.60 €	
	50 g	Ø 0.6 x 500 mm	4 152 706	71.25 €	
	250 g	Ø 0.2 x 500 mm	4 132 702	368.00 €	
	250 g	Ø 0.3 x 500 mm	4 132 703	357.00 €	
	250 g	Ø 0.4 x 500 mm	4 132 704	333.00 €	
	250 g	Ø 0.5 x 500 mm	4 132 705	309.00 €	
	250 g	Ø 0.6 x 500 mm	4 132 706	287.00 €	
	1000 g	Ø 0.2 x 500 mm	4 112 702	1092.00 €	
	1000 g	Ø 0.3 x 500 mm	4 112 703	1057.00 €	
	1000 g	Ø 0.4 x 500 mm	4 112 704	984.00 €	
	1000 g	Ø 0.5 x 500 mm	4 112 705	913.00 €	
	1000 g	Ø 0.6 x 500 mm	4 112 706	846.00 €	
	1000 g	Ø 0.8 x 500 mm	4 312 708	50.55 €	
	1000 g	Ø 1.0 x 500 mm	4 312 710	48.30 €	
	1000 g	Ø 1.2 x 500 mm	4 312 712	45.85 €	
1000 g	Ø 1.6 x 500 mm	4 312 716	41.45 €		
 Spools	50 g	Ø 0.2 mm	4 252 702		89.10 €
	50 g	Ø 0.3 mm	4 252 703		86.00 €
	50 g	Ø 0.4 mm	4 252 704		79.65 €
	50 g	Ø 0.5 mm	4 252 705		74.45 €
	50 g	Ø 0.6 mm	4 252 706		69.20 €
	250 g	Ø 0.2 mm	4 232 702		349.00 €
	250 g	Ø 0.3 mm	4 232 703		338.00 €
	250 g	Ø 0.4 mm	4 232 704		314.00 €
	250 g	Ø 0.5 mm	4 232 705		292.00 €
	250 g	Ø 0.6 mm	4 232 706		271.00 €
	1000 g	Ø 0.2 mm	4 212 702		1013.00 €
	1000 g	Ø 0.3 mm	4 212 703		980.00 €
	1000 g	Ø 0.4 mm	4 212 704		913.00 €
	1000 g	Ø 0.5 mm	4 212 705		845.00 €
	1000 g	Ø 0.6 mm	4 212 706		787.00 €

① All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler

joke Fill W-60

Nickel wire with special additives for synchronous-structure application and joining of moulds, tools and apparatus made of pure or low-alloy nickel. Colour and thermal conductivity in addition to corrosion resistance are adapted to the commonly available nickel alloys.

Also suitable for very elastic and soft application, joining and buffering on crackprone GG (grey cast iron), GGG (spheroidal graphite cast iron), GGL (lamellar graphite cast iron) and similar types.

Materials: nickel, nickel-based alloys, grey cast iron

	Design	Weight	Dimensions	Order No.	Price from 1 pack
joke Fill W-60					
	Rods	50 g	Ø 0.2 x 500 mm	4 152 802	151.00 €
		50 g	Ø 0.3 x 500 mm	4 152 803	148.85 €
		50 g	Ø 0.4 x 500 mm	4 152 804	141.50 €
		50 g	Ø 0.5 x 500 mm	4 152 805	135.20 €
		50 g	Ø 0.6 x 500 mm	4 152 806	127.85 €
		250 g	Ø 0.2 x 500 mm	4 132 802	602.00 €
		250 g	Ø 0.3 x 500 mm	4 132 803	594.00 €
		250 g	Ø 0.4 x 500 mm	4 132 804	565.00 €
		250 g	Ø 0.5 x 500 mm	4 132 805	541.00 €
		250 g	Ø 0.6 x 500 mm	4 132 806	511.00 €
		1000 g	Ø 0.2 x 500 mm	4 112 802	1786.00 €
		1000 g	Ø 0.3 x 500 mm	4 112 803	1757.00 €
		1000 g	Ø 0.4 x 500 mm	4 112 804	1679.00 €
		1000 g	Ø 0.5 x 500 mm	4 112 805	1599.00 €
		1000 g	Ø 0.6 x 500 mm	4 112 806	1511.00 €
		1000 g	Ø 1.0 x 500 mm	4 312 810	106.85 €
		1000 g	Ø 1.2 x 500 mm	4 312 812	105.50 €
		1000 g	Ø 1.6 x 500 mm	4 312 816	103.85 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder
for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen
for weld filler metals from Ø 0.2 to 0.6 mm



Order No.	Price
4 806 100	103.75 €

**Our prices have
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Welding filler joke Fill M-30

High-alloy Cr-Mo-Mn filler with very good properties. Extremely tough and highly abrasion-resistant. Suitable for moderately hard repair of plastic moulds, pressing and embossing tools, in addition to die-casting moulds; also for elastic high-strength intermediate layers in case of a harder top layer.

Hardness of between 36 HRC and 44 HRC achievable depending on the dilution.

Materials: hot-work steels such as 1.2343, 1.2344, 1.2367 and similar.

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill M-30					
 Rods	50 g	Ø 0.2 x 500 mm	4 151 602	112.15 €	
	50 g	Ø 0.3 x 500 mm	4 151 603	105.90 €	
	50 g	Ø 0.4 x 500 mm	4 151 604	99.55 €	
	50 g	Ø 0.5 x 500 mm	4 151 605	92.30 €	
	50 g	Ø 0.6 x 500 mm	4 151 606	84.90 €	
	250 g	Ø 0.2 x 500 mm	4 131 602	446.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 603	423.00 €	
	250 g	Ø 0.4 x 500 mm	4 131 604	399.00 €	
	250 g	Ø 0.5 x 500 mm	4 131 605	366.00 €	
	250 g	Ø 0.6 x 500 mm	4 131 606	338.00 €	
	1000 g	Ø 0.2 x 500 mm	4 111 602	1324.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 603	1253.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 604	1180.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 605	1086.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 606	999.00 €	
	 Spools	50 g	Ø 0.2 mm	4 251 602	
50 g		Ø 0.3 mm	4 251 603		101.70 €
50 g		Ø 0.4 mm	4 251 604		95.45 €
50 g		Ø 0.5 mm	4 251 605		89.10 €
50 g		Ø 0.6 mm	4 251 606		81.80 €
250 g		Ø 0.2 mm	4 231 602		422.00 €
250 g		Ø 0.3 mm	4 231 603		400.00 €
250 g		Ø 0.4 mm	4 231 604		377.00 €
250 g		Ø 0.5 mm	4 231 605		347.00 €
250 g		Ø 0.6 mm	4 231 606		319.00 €
1000 g		Ø 0.2 mm	4 211 602		1199.00 €
1000 g		Ø 0.3 mm	4 211 603		1161.00 €
1000 g		Ø 0.4 mm	4 211 604		1093.00 €
1000 g		Ø 0.5 mm	4 211 605		1007.00 €
1000 g	Ø 0.6 mm	4 211 606		926.00 €	

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder
for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen
for weld filler metals from Ø 0.2 to 0.6 mm



Order No.	Price
4 806 100	103.75 €

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Welding filler

joke Fill M-33

Cr-Mo-Mn wire with special additives for the harder and highly wear-resistant repair of hot and cold-work steel, particularly in case of heavily stressed aluminium die-cast moulds and for plastic moulds. Very easy to polish and corrosion-resistant.

Moderate hardness of 40 – 48 HRC achievable with optimum toughness.

Materials: 1.2343, 1.2344, 1.2367 and also for tough application to 12 %-Cr steel.

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill M-33					
 Rods	50 g	Ø 0.2 x 500 mm	4 151 702	126.80 €	
	50 g	Ø 0.3 x 500 mm	4 151 703	120.55 €	
	50 g	Ø 0.4 x 500 mm	4 151 704	109.00 €	
	50 g	Ø 0.5 x 500 mm	4 151 705	100.70 €	
	50 g	Ø 0.6 x 500 mm	4 151 706	97.50 €	
	250 g	Ø 0.2 x 500 mm	4 131 702	503.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 703	481.00 €	
	250 g	Ø 0.4 x 500 mm	4 131 704	436.00 €	
	250 g	Ø 0.5 x 500 mm	4 131 705	401.00 €	
	250 g	Ø 0.6 x 500 mm	4 131 706	389.00 €	
	1000 g	Ø 0.2 x 500 mm	4 111 702	1490.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 703	1425.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 704	1289.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 705	1188.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 706	1152.00 €	
 Spools	50 g	Ø 0.2 mm	4 251 702		127.85 €
	50 g	Ø 0.3 mm	4 251 703		115.35 €
	50 g	Ø 0.4 mm	4 251 704		104.25 €
	50 g	Ø 0.5 mm	4 251 705		96.50 €
	50 g	Ø 0.6 mm	4 251 706		93.30 €
	250 g	Ø 0.2 mm	4 231 702		493.00 €
	250 g	Ø 0.3 mm	4 231 703		455.00 €
	250 g	Ø 0.4 mm	4 231 704		412.00 €
	250 g	Ø 0.5 mm	4 231 705		379.00 €
	250 g	Ø 0.6 mm	4 231 706		367.00 €
	1000 g	Ø 0.2 mm	4 211 702		1355.00 €
	1000 g	Ø 0.3 mm	4 211 703		1275.00 €
	1000 g	Ø 0.4 mm	4 211 704		1195.00 €
	1000 g	Ø 0.5 mm	4 211 705		1101.00 €
	1000 g	Ø 0.6 mm	4 211 706		1068.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder
for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen
for weld filler metals from Ø 0.2 to 0.6 mm



Order No.	Price
4 806 100	103.75 €



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Welding filler joke Fill M-40

Filler for hot-work steels. Hardenable and annealable similarly to the base material. Structurally synchronous or similar to many hot-work steels. Equalises tension in the martensitic range. Chrome-platable, nitratable, etchable and can be quenched and tempered. Hardness of the weld metal approx. 34 to 44 HRC, depending on the blend, in relation to the base materials. Hardenable up to 58 HRC.

Predominately for hot-work steels such as 1.2343 – 1.2344 and similar.

	Design	Weight	Dimensions	Order No.	Price from	
					1 pack	1 piece
joke Fill M-40						
	Rods	50 g	Ø 0.2 x 500 mm	4 151 802	119.55 €	
		50 g	Ø 0.3 x 500 mm	4 151 803	113.20 €	
		50 g	Ø 0.4 x 500 mm	4 151 804	101.70 €	
		50 g	Ø 0.5 x 500 mm	4 151 805	95.45 €	
		50 g	Ø 0.6 x 500 mm	4 151 806	89.10 €	
		25 g	Ø 0.2 x 500 mm	4 131 802	475.00 €	
		25 g	Ø 0.3 x 500 mm	4 131 803	451.00 €	
		25 g	Ø 0.4 x 500 mm	4 131 804	405.00 €	
		25 g	Ø 0.5 x 500 mm	4 131 805	381.00 €	
		25 g	Ø 0.6 x 500 mm	4 131 806	356.00 €	
		1000 g	Ø 0.2 x 500 mm	4 111 802	1411.00 €	
		1000 g	Ø 0.3 x 500 mm	4 111 803	1339.00 €	
		1000 g	Ø 0.4 x 500 mm	4 111 804	1202.00 €	
		1000 g	Ø 0.5 x 500 mm	4 111 805	1129.00 €	
		1000 g	Ø 0.6 x 500 mm	4 111 806	1057.00 €	
		1000 g	Ø 0.8 x 500 mm	4 311 808	76.10 €	
		1000 g	Ø 1.0 x 500 mm	4 311 810	72.80 €	
		1000 g	Ø 1.2 x 500 mm	4 311 812	68.50 €	
		1000 g	Ø 1.6 x 500 mm	4 311 816	65.95 €	
	Spools	50 g	Ø 0.2 mm	4 251 802		114.20 €
		50 g	Ø 0.3 mm	4 251 803		109.00 €
		50 g	Ø 0.4 mm	4 251 804		97.50 €
		50 g	Ø 0.5 mm	4 251 805		91.25 €
		50 g	Ø 0.6 mm	4 251 806		86.00 €
		250 g	Ø 0.2 mm	4 231 802		451.00 €
		250 g	Ø 0.3 mm	4 231 803		428.00 €
		250 g	Ø 0.4 mm	4 231 804		385.00 €
		250 g	Ø 0.5 mm	4 231 805		361.00 €
		250 g	Ø 0.6 mm	4 231 806		339.00 €
		1000 g	Ø 0.2 mm	4 211 802		1309.00 €
		1000 g	Ø 0.3 mm	4 211 803		1243.00 €
		1000 g	Ø 0.4 mm	4 211 804		1114.00 €
		1000 g	Ø 0.5 mm	4 211 805		1047.00 €
		1000 g	Ø 0.6 mm	4 211 806		980.00 €



ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler joke Fill M-45

Cr-Mo-V-W filler with stabilising elements. Dense structure. Aircuring and shock-curable. High edge strength and heat-resistant. Chrome-platable to a limited extent, yet polishable, erodible, nitratable, etchable and can be quenched and tempered. Good thermal conductivity. Particularly for rapid repairs to aluminium, magnesium and zinc die-cast moulds, punches and sliders. Hardness in the 1st layer up to 58 HRC depending on the dilution.

Materials: 1.2343 • 1.2344 • 1.2362 • 1.2363 • 1.2367 and similar

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill M-45					
 Rods	50 g	Ø 0.2 x 500 mm	4 151 902	118.40 €	
	50 g	Ø 0.3 x 500 mm	4 151 903	113.20 €	
	50 g	Ø 0.4 x 500 mm	4 151 904	101.70 €	
	50 g	Ø 0.5 x 500 mm	4 151 905	98.55 €	
	50 g	Ø 0.6 x 500 mm	4 151 906	95.45 €	
	250 g	Ø 0.2 x 500 mm	4 131 902	472.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 903	453.00 €	
	250 g	Ø 0.4 x 500 mm	4 131 904	406.00 €	
	250 g	Ø 0.5 x 500 mm	4 131 905	394.00 €	
	250 g	Ø 0.6 x 500 mm	4 131 906	381.00 €	
	1000 g	Ø 0.2 x 500 mm	4 111 902	1397.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 903	1339.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 904	1202.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 905	1166.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 906	1129.00 €	
	1000 g	Ø 0.8 x 500 mm	4 311 908	93.50 €	
	1000 g	Ø 1.0 x 500 mm	4 311 910	90.20 €	
	1000 g	Ø 1.2 x 500 mm	4 311 912	82.55 €	
1000 g	Ø 1.6 x 500 mm	4 311 916	77.40 €		
 Spools	50 g	Ø 0.2 mm	4 251 902		113.20 €
	50 g	Ø 0.3 mm	4 251 903		109.00 €
	50 g	Ø 0.4 mm	4 251 904		97.50 €
	50 g	Ø 0.5 mm	4 251 905		94.30 €
	50 g	Ø 0.6 mm	4 251 906		91.25 €
	250 g	Ø 0.2 mm	4 231 902		446.00 €
	250 g	Ø 0.3 mm	4 231 903		428.00 €
	250 g	Ø 0.4 mm	4 231 904		385.00 €
	250 g	Ø 0.5 mm	4 231 905		372.00 €
	250 g	Ø 0.6 mm	4 231 906		360.00 €
	1000 g	Ø 0.2 mm	4 211 902		1295.00 €
	1000 g	Ø 0.3 mm	4 211 903		1243.00 €
	1000 g	Ø 0.4 mm	4 211 904		1114.00 €
	1000 g	Ø 0.5 mm	4 211 905		1080.00 €
	1000 g	Ø 0.6 mm	4 211 906		1047.00 €



ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler joke Fill M-50

This chrome material has stabilising additives and is very well suited for corrosion-resistant steels in mould building. Can be quenched and tempered and is likewise rust and wear-resistant owing to an increased Cr content. Polishable, erodible and nitratable. Etchable to a limited extent, non-chrome-platable. Particularly suited for moulds and tools when GRP is being processed. Hardness of the weld material: 45 – 50 HRC.

Materials: 1.2082, 1.2083, 1.2316, 1.4115, 1.4120, STAVAX and similar Cr steels.

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill M-50					
 Rods	50 g	Ø 0.2 x 500 mm	4 152 002	134.20 €	
	50 g	Ø 0.3 x 500 mm	4 152 003	131.00 €	
	50 g	Ø 0.4 x 500 mm	4 152 004	125.80 €	
	50 g	Ø 0.5 x 500 mm	4 152 005	119.55 €	
	50 g	Ø 0.6 x 500 mm	4 152 006	113.20 €	
	250 g	Ø 0.2 x 500 mm	4 132 002	535.00 €	
	250 g	Ø 0.3 x 500 mm	4 132 003	524.00 €	
	250 g	Ø 0.4 x 500 mm	4 132 004	502.00 €	
	250 g	Ø 0.5 x 500 mm	4 132 005	478.00 €	
	250 g	Ø 0.6 x 500 mm	4 132 006	451.00 €	
	1000 g	Ø 0.2 x 500 mm	4 112 002	1584.00 €	
	1000 g	Ø 0.3 x 500 mm	4 112 003	1549.00 €	
	1000 g	Ø 0.4 x 500 mm	4 112 004	1485.00 €	
	1000 g	Ø 0.5 x 500 mm	4 112 005	1413.00 €	
	1000 g	Ø 0.6 x 500 mm	4 112 006	1339.00 €	
	1000 g	Ø 0.8 x 500 mm	4 312 008	202.00 €	
	1000 g	Ø 1.0 x 500 mm	4 312 010	173.00 €	
	1000 g	Ø 1.2 x 500 mm	4 312 012	103.55 €	
 Spools	50 g	Ø 0.2 mm	4 252 002		128.95 €
	50 g	Ø 0.3 mm	4 252 003		125.80 €
	50 g	Ø 0.4 mm	4 252 004		119.55 €
	50 g	Ø 0.5 mm	4 252 005		114.20 €
	50 g	Ø 0.6 mm	4 252 006		109.00 €
	250 g	Ø 0.2 mm	4 232 002		506.00 €
	250 g	Ø 0.3 mm	4 232 003		495.00 €
	250 g	Ø 0.4 mm	4 232 004		474.00 €
	250 g	Ø 0.5 mm	4 232 005		451.00 €
	250 g	Ø 0.6 mm	4 232 006		428.00 €
	1000 g	Ø 0.2 mm	4 212 002		1469.00 €
	1000 g	Ø 0.3 mm	4 212 003		1437.00 €
	1000 g	Ø 0.4 mm	4 212 004		1375.00 €
	1000 g	Ø 0.5 mm	4 212 005		1309.00 €
	1000 g	Ø 0.6 mm	4 212 006		1243.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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The perfect complement

Welding filler holder

for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen

for weld filler metals from Ø 0.2 to 0.6 mm





Order No.	Price
4 806 100	103.75 €

Welding filler joke Fill M-55

Ni-Co-Mo special alloy specifically for the aluminium and zinc die-cast field. The martensitic weld material is extremely crack-resistant and tough with minimal preheating. Particularly suitable for highly stressed hot-working tools, highly resistant to temperature change and corrosion-proof. Hardness approx. 30 – 35 HRC; hardnesses of approx. 50 – 54 HRC are achieved through artificial aging in addition to pressure and hammering.

Materials: improving for all hot-work steels


	Design	Weight	Dimensions	Order No.	Price from	
					1 pack	1 piece
joke Fill M-55						
	Rods	50 g	Ø 0.2 x 500 mm	4 152 102	161.00 €	
		50 g	Ø 0.3 x 500 mm	4 152 103	156.00 €	
		50 g	Ø 0.4 x 500 mm	4 152 104	143.65 €	
		50 g	Ø 0.5 x 500 mm	4 152 105	137.25 €	
		50 g	Ø 0.6 x 500 mm	4 152 106	131.00 €	
		250 g	Ø 0.2 x 500 mm	4 132 102	637.00 €	
		250 g	Ø 0.3 x 500 mm	4 132 103	618.00 €	
		250 g	Ø 0.4 x 500 mm	4 132 104	570.00 €	
		250 g	Ø 0.5 x 500 mm	4 132 105	547.00 €	
		250 g	Ø 0.6 x 500 mm	4 132 106	523.00 €	
		1000 g	Ø 0.2 x 500 mm	4 112 102	1888.00 €	
		1000 g	Ø 0.3 x 500 mm	4 112 103	1832.00 €	
		1000 g	Ø 0.4 x 500 mm	4 112 104	1694.00 €	
		1000 g	Ø 0.5 x 500 mm	4 112 105	1621.00 €	
		1000 g	Ø 0.6 x 500 mm	4 112 106	1549.00 €	
		1000 g	Ø 1.0 x 500 mm	4 312 110	213.00 €	
		1000 g	Ø 1.2 x 500 mm	4 312 112	193.00 €	
		1000 g	Ø 1.6 x 500 mm	4 312 116	169.00 €	
		1000 g	Ø 2.4 x 500 mm	4 312 124	157.00 €	
	Spools	50 g	Ø 0.2 mm	4 252 102		153.00 €
		50 g	Ø 0.3 mm	4 252 103		147.85 €
		50 g	Ø 0.4 mm	4 252 104		137.25 €
		50 g	Ø 0.5 mm	4 252 105		131.00 €
		50 g	Ø 0.6 mm	4 252 106		125.80 €
		250 g	Ø 0.2 mm	4 232 102		602.00 €
		250 g	Ø 0.3 mm	4 232 103		585.00 €
		250 g	Ø 0.4 mm	4 232 104		541.00 €
		250 g	Ø 0.5 mm	4 232 105		517.00 €
		250 g	Ø 0.6 mm	4 232 106		495.00 €
		1000 g	Ø 0.2 mm	4 212 102		1750.00 €
		1000 g	Ø 0.3 mm	4 212 103		1697.00 €
		1000 g	Ø 0.4 mm	4 212 104		1571.00 €
		1000 g	Ø 0.5 mm	4 212 105		1503.00 €
		1000 g	Ø 0.6 mm	4 212 106		1437.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler joke Fill H-40

Cr-Mo alloy for repair to hot-work steels with good thermal conductivity. The weld material is nitratable and highly crack-resistant and tough owing to a reduced carbon content. Achievable hardnesses 42 – 48 HRC depending on preheating.


				Price from	
Design	Weight	Dimensions	Order No.	1 pack	
joke Fill H-40					
 Rods	1000 g	Ø 0.8 x 500 mm	4 310 508	98.55 €	
	1000 g	Ø 1.0 x 500 mm	4 310 510	93.10 €	
	1000 g	Ø 1.2 x 500 mm	4 310 512	85.90 €	
	1000 g	Ø 1.6 x 500 mm	4 310 516	83.05 €	

ⓘ Alle Schweißzusätze in Stäben und Spulen auch in weiteren Grammaturen wie 100 und 500 g erhältlich.

Welding filler joke Fill H-50

Cr-Mn filler for case-hardened and heat treatable steels. The weld material is very hardenable, nitratable and highly abrasionresistant. Also highly crack-resistant in several layers for welding. Optimum sliding properties versus high-alloy materials. Also well suited for facings and pinched dges of plastic injection and blow moulds.

Hardness of the weld material: approx. 50 – 56 HRC; up to approx. 64 HRC after flame hardening.

				Price from	
Design	Weight	Dimensions	Order No.	1 pack	
joke Fill H-50					
 Rods	50 g	Ø 0.2 x 500 mm	4 150 602	120.55 €	
	50 g	Ø 0.3 x 500 mm	4 150 603	114.20 €	
	50 g	Ø 0.4 x 500 mm	4 150 604	107.95 €	
	50 g	Ø 0.5 x 500 mm	4 150 605	101.70 €	
	50 g	Ø 0.6 x 500 mm	4 150 606	95.45 €	
	250 g	Ø 0.2 x 500 mm	4 130 602	444.00 €	
	250 g	Ø 0.3 x 500 mm	4 130 603	454.00 €	
	250 g	Ø 0.4 x 500 mm	4 130 604	423.00 €	
	250 g	Ø 0.5 x 500 mm	4 130 605	413.00 €	
	250 g	Ø 0.6 x 500 mm	4 130 606	402.00 €	
	1000 g	Ø 0.2 x 500 mm	4 110 602	1408.00 €	
	1000 g	Ø 0.3 x 500 mm	4 110 603	1345.00 €	
	1000 g	Ø 0.4 x 500 mm	4 110 604	1273.00 €	
	1000 g	Ø 0.5 x 500 mm	4 110 605	1201.00 €	
	1000 g	Ø 0.6 x 500 mm	4 110 606	1128.00 €	
	1000 g	Ø 1.0 x 500 mm	4 310 610	54.25 €	
1000 g	Ø 1.2 x 500 mm	4 310 612	51.60 €		
1000 g	Ø 1.6 x 500 mm	4 310 616	48.40 €		

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder

for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen

for weld filler metals from Ø 0.2 to 0.6 mm





Order No.	Price
4 806 100	103.75 €

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Welding filler joke Fill H-55

Cr-Mo-Si-W-Mn-V filler for plastic moulds in case of edge wear, if hardness and toughness are desired. Non-etchable, only chrome-platable to a limited extent. The weld material is highly resistant to temperature change and similar to thermally conductive hot-work steels, yet superior in terms of service life. Hardness 52 – 58 HRC, depending on blend and preheating of the base material. Hardenable up to approx. 62 HRC.

Materials: 1.2343, 1.2344, 1.2311, 1.2312, .2738, 1.2767, 1.2764 and similar.

	Design	Weight	Dimensions	Order No.	Price from	
					1 pack	1 piece
joke Fill H-55						
	Rods	50 g	Ø 0.2 x 500 mm	4 150 702	118.40 €	
		50 g	Ø 0.3 x 500 mm	4 150 703	113.20 €	
		50 g	Ø 0.4 x 500 mm	4 150 704	107.95 €	
		50 g	Ø 0.5 x 500 mm	4 150 705	101.70 €	
		50 g	Ø 0.6 x 500 mm	4 150 706	95.45 €	
		250 g	Ø 0.2 x 500 mm	4 130 702	471.00 €	
		250 g	Ø 0.3 x 500 mm	4 130 703	453.00 €	
		250 g	Ø 0.4 x 500 mm	4 130 704	429.00 €	
		250 g	Ø 0.5 x 500 mm	4 130 705	405.00 €	
		250 g	Ø 0.6 x 500 mm	4 130 706	383.00 €	
		1000 g	Ø 0.2 x 500 mm	4 110 702	1397.00 €	
		1000 g	Ø 0.3 x 500 mm	4 110 703	1339.00 €	
		1000 g	Ø 0.4 x 500 mm	4 110 704	1274.00 €	
		1000 g	Ø 0.5 x 500 mm	4 110 705	1202.00 €	
		1000 g	Ø 0.6 x 500 mm	4 110 706	1129.00 €	
		1000 g	Ø 0.8 x 500 mm	4 310 708	113.50 €	
		1000 g	Ø 1.0 x 500 mm	4 310 710	90.65 €	
		1000 g	Ø 1.2 x 500 mm	4 310 712	86.65 €	
		1000 g	Ø 1.6 x 500 mm	4 310 716	83.05 €	
1000 g	Ø 2.4 x 500 mm	4 310 724	82.75 €			
	Spools	50 g	Ø 0.2 mm	4 250 702		113.20 €
		50 g	Ø 0.3 mm	4 250 703		109.00 €
		50 g	Ø 0.4 mm	4 250 704		103.75 €
		50 g	Ø 0.5 mm	4 250 705		97.50 €
		50 g	Ø 0.6 mm	4 250 706		91.25 €
		250 g	Ø 0.2 mm	4 230 702		446.00 €
		250 g	Ø 0.3 mm	4 230 703		427.00 €
		250 g	Ø 0.4 mm	4 230 704		407.00 €
		250 g	Ø 0.5 mm	4 230 705		385.00 €
		250 g	Ø 0.6 mm	4 230 706		361.00 €
		1000 g	Ø 0.2 mm	4 210 702		1295.00 €
		1000 g	Ø 0.3 mm	4 210 703		1243.00 €
		1000 g	Ø 0.4 mm	4 210 704		1180.00 €
		1000 g	Ø 0.5 mm	4 210 705		1114.00 €
		1000 g	Ø 0.6 mm	4 210 706		1047.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.



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Welding filler joke Fill H-60

Cr-Mo-Mn-W-V filler with extremely wear-resistant, tensile properties. Suitable for hard applications on cold-work steels with a chrome content exceeding 5%. Crack-free and rapidly hardening, high edge strength. Can be thermally treated like the base material. The weld material is nitratable, erodible, chrome-platable and can be quenched and tempered.

Hardness of approx. 56 – 62 HRC possible depending on the method, blend and layers.

Materials: medium and high-alloy chrome cold-work steels, CARMO, CALMAX

Ausführung	Gewicht [g]	Maße	Bestell-Nr	1 Pack.	Preis ab 1 Stück
joke Fill H-60					
 Stäbe	50 g	Ø 0,2 x 500 mm	4 150 802	136,25 €	
	50 g	Ø 0,3 x 500 mm	4 150 803	131,00 €	
	50 g	Ø 0,4 x 500 mm	4 150 804	125,80 €	
	50 g	Ø 0,5 x 500 mm	4 150 805	119,55 €	
	50 g	Ø 0,6 x 500 mm	4 150 806	113,20 €	
	250 g	Ø 0,2 x 500 mm	4 130 802	544,00 €	
	250 g	Ø 0,3 x 500 mm	4 130 803	524,00 €	
	250 g	Ø 0,4 x 500 mm	4 130 804	502,00 €	
	250 g	Ø 0,5 x 500 mm	4 130 805	478,00 €	
	250 g	Ø 0,6 x 500 mm	4 130 806	451,00 €	
	1000 g	Ø 0,2 x 500 mm	4 110 802	1613,00 €	
	1000 g	Ø 0,3 x 500 mm	4 110 803	1549,00 €	
	1000 g	Ø 0,4 x 500 mm	4 110 804	1485,00 €	
	1000 g	Ø 0,5 x 500 mm	4 110 805	1413,00 €	
	1000 g	Ø 0,6 x 500 mm	4 110 806	1339,00 €	
	1000 g	Ø 1,0 x 500 mm	4 310 810	101,50 €	
	1000 g	Ø 1,2 x 500 mm	4 310 812	98,00 €	
1000 g	Ø 1,6 x 500 mm	4 310 816	96,15 €		
 Spools	50 g	Ø 0,2 mm	4 250 802		131,00 €
	50 g	Ø 0,3 mm	4 250 803		125,80 €
	50 g	Ø 0,4 mm	4 250 804		120,55 €
	50 g	Ø 0,5 mm	4 250 805		114,20 €
	50 g	Ø 0,6 mm	4 250 806		109,00 €
	250 g	Ø 0,2 mm	4 230 802		515,00 €
	250 g	Ø 0,3 mm	4 230 803		495,00 €
	250 g	Ø 0,4 mm	4 230 804		474,00 €
	250 g	Ø 0,5 mm	4 230 805		451,00 €
	250 g	Ø 0,6 mm	4 230 806		428,00 €
	1000 g	Ø 0,2 mm	4 210 802		1496,00 €
	1000 g	Ø 0,3 mm	4 210 803		1438,00 €
	1000 g	Ø 0,4 mm	4 210 804		1375,00 €
	1000 g	Ø 0,5 mm	4 210 805		1308,00 €
	1000 g	Ø 0,6 mm	4 210 806		1243,00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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The perfect complement

Welding filler holder

for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen

for weld filler metals from Ø 0.2 to 0.6 mm





Order No.	Price
4 806 100	103.75 €

Welding filler joke Fill H-65

Cr-Mn-Si-V welding filler with structurestabilising elements for the repair and modification of highalloy cold-work steels. Chrome-platable to a limited extent, nitratable and erodible. The weld material is closely similar to the 12 % Cr steels.

Pay attention to appropriate preheating in case of application to hardened tools. Hardenable and annealable up to approx. 62 HRC like the base material.

Materials: 1.2080, 1.2379, 1.2436, 1.2601 and similar cold-work steels.

	Design	Weight	Dimensions	Order No.	Price from	
					1 pack	1 piece
joke Fill H-65						
	Rods	50 g	Ø 0.2 x 500 mm	4 150 902	128.95 €	
		50 g	Ø 0.3 x 500 mm	4 150 903	125.80 €	
		50 g	Ø 0.4 x 500 mm	4 150 904	113.20 €	
		50 g	Ø 0.5 x 500 mm	4 150 905	107.95 €	
		50 g	Ø 0.6 x 500 mm	4 150 906	101.70 €	
		250 g	Ø 0.2 x 500 mm	4 130 902	512.00 €	
		250 g	Ø 0.3 x 500 mm	4 130 903	501.00 €	
		250 g	Ø 0.4 x 500 mm	4 130 904	451.00 €	
		250 g	Ø 0.5 x 500 mm	4 130 905	431.00 €	
		250 g	Ø 0.6 x 500 mm	4 130 906	406.00 €	
		1000 g	Ø 0.2 x 500 mm	4 110 902	1519.00 €	
		1000 g	Ø 0.3 x 500 mm	4 110 903	1485.00 €	
		1000 g	Ø 0.4 x 500 mm	4 110 904	1339.00 €	
		1000 g	Ø 0.5 x 500 mm	4 110 905	1274.00 €	
		1000 g	Ø 0.6 x 500 mm	4 110 906	1202.00 €	
		1000 g	Ø 0.8 x 500 mm	4 310 908	103.15 €	
		1000 g	Ø 1.0 x 500 mm	4 310 910	98.30 €	
		1000 g	Ø 1.2 x 500 mm	4 310 912	95.45 €	
		1000 g	Ø 1.6 x 500 mm	4 310 916	88.40 €	
	Spools	50 g	Ø 0.2 mm	4 250 902		123.65 €
		50 g	Ø 0.3 mm	4 250 903		120.55 €
		50 g	Ø 0.4 mm	4 250 904		109.00 €
		50 g	Ø 0.5 mm	4 250 905		103.75 €
		50 g	Ø 0.6 mm	4 250 906		97.50 €
		250 g	Ø 0.2 mm	4 230 902		485.00 €
		250 g	Ø 0.3 mm	4 230 903		473.00 €
		250 g	Ø 0.4 mm	4 230 904		428.00 €
		250 g	Ø 0.5 mm	4 230 905		406.00 €
		250 g	Ø 0.6 mm	4 230 906		384.00 €
		1000 g	Ø 0.2 mm	4 210 902		1409.00 €
		1000 g	Ø 0.3 mm	4 210 903		1376.00 €
		1000 g	Ø 0.4 mm	4 210 904		1242.00 €
		1000 g	Ø 0.5 mm	4 210 905		1180.00 €
		1000 g	Ø 0.6 mm	4 210 906		1115.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.



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Welding filler joke Fill H-80

Cr-Mo-Mn-V filler with rapid hardening properties. Very high toughness and excellent cutting properties. Particularly suited for TIG rapid repair of chipped or worn cut edges. Nitratable, erodible and chromeplatable, hardenable like the base material. Buffer with joke Fill K-33 for multilayer welding.

Hardness following cooling in air approx. 58 – 61 HRC depending on preheating.

Materials: 1.2080, 1.2379, 1.2436, 1.2601 and similar cold-work steels.

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill H-80					
 Rods	50 g	Ø 0.2 x 500 mm	4 151 002	142.50 €	
	50 g	Ø 0.3 x 500 mm	4 151 003	137.25 €	
	50 g	Ø 0.4 x 500 mm	4 151 004	125.80 €	
	50 g	Ø 0.5 x 500 mm	4 151 005	116.35 €	
	50 g	Ø 0.6 x 500 mm	4 151 006	107.95 €	
	250 g	Ø 0.2 x 500 mm	4 131 002	568.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 003	547.00 €	
	250 g	Ø 0.4 x 500 mm	4 131 004	502.00 €	
	250 g	Ø 0.5 x 500 mm	4 131 005	464.00 €	
	250 g	Ø 0.6 x 500 mm	4 131 006	429.00 €	
	1000 g	Ø 0.2 x 500 mm	4 111 002	1686.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 003	1622.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 004	1485.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 005	1375.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 006	1274.00 €	
	1000 g	Ø 0.8 x 500 mm	4 311 008	122.10 €	
	1000 g	Ø 1.0 x 500 mm	4 311 010	112.45 €	
	1000 g	Ø 1.2 x 500 mm	4 311 012	105.90 €	
1000 g	Ø 1.6 x 500 mm	4 311 016	101.90 €		
 Spools	50 g	Ø 0.2 mm	4 251 002		136.25 €
	50 g	Ø 0.3 mm	4 251 003		131.00 €
	50 g	Ø 0.4 mm	4 251 004		120.55 €
	50 g	Ø 0.5 mm	4 251 005		111.15 €
	50 g	Ø 0.6 mm	4 251 006		103.75 €
	250 g	Ø 0.2 mm	4 231 002		539.00 €
	250 g	Ø 0.3 mm	4 231 003		518.00 €
	250 g	Ø 0.4 mm	4 231 004		475.00 €
	250 g	Ø 0.5 mm	4 231 005		441.00 €
	250 g	Ø 0.6 mm	4 231 006		406.00 €
	1000 g	Ø 0.2 mm	4 211 002		1563.00 €
	1000 g	Ø 0.3 mm	4 211 003		1504.00 €
	1000 g	Ø 0.4 mm	4 211 004		1375.00 €
	1000 g	Ø 0.5 mm	4 211 005		1275.00 €
	1000 g	Ø 0.6 mm	4 211 006		1180.00 €

① All welding fillers as rods and reels also available in grammages other than 100 and 500 g.


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Welding filler joke Fill H-90

Mo-Cr-W-V filler, high-alloy. The hot hardness corresponds to that of a high speed steel (HSS). Pressure, abrasion and impact resistant. Also extremely crack-resistant, even in case of applications of several layers. For hard repair of cutting and punching tools or for increasing service life with simple cold-work steels. Hardness approx. 57 – 62 HRC, hardened up to 66 HRC.

Observe preheating: high speed steels approx. 400 – 500 °C, Cr tools steels approx. 300 – 400 °C

Materials: 1.3243, 1.3245, 1.3344, 1.3346, 1.3348 and similar

				Price from	
Design	Weight	Dimensions	Order No.	1 pack	
joke Fill H-90					
	Rods	50 g	Ø 0.2 x 500 mm	4 151 102	148.85 €
	50 g	Ø 0.3 x 500 mm	4 151 103	143.65 €	
	50 g	Ø 0.4 x 500 mm	4 151 104	128.95 €	
	50 g	Ø 0.5 x 500 mm	4 151 105	122.60 €	
	50 g	Ø 0.6 x 500 mm	4 151 106	115.35 €	
	250 g	Ø 0.2 x 500 mm	4 131 102	593.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 103	573.00 €	
	250 g	Ø 0.4 x 500 mm	4 131 104	513.00 €	
	250 g	Ø 0.5 x 500 mm	4 131 105	488.00 €	
	250 g	Ø 0.6 x 500 mm	4 131 106	460.00 €	
	1000 g	Ø 0.2 x 500 mm	4 111 102	1758.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 103	1700.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 104	1519.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 105	1447.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 106	1360.00 €	
	1000 g	Ø 1.0 x 500 mm	4 311 110	130.90 €	
	1000 g	Ø 1.2 x 500 mm	4 311 112	118.00 €	
	1000 g	Ø 1.6 x 500 mm	4 311 116	113.00 €	

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder
for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen
for weld filler metals from Ø 0.2 to 0.6 mm





Order No.	Price
4 806 100	103.75 €

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Welding filler joke Fill K-16

Rust and acid-resistant Cr-Ni-Mo filler for joining and buffering when high corrosionresistance and toughness are required. The ductile weld material is non-hardenable and very readily polishable. No hard carbide layers form at the periphery owing to an extremely reduced carbon content. Cannot be nitrated or quenched and tempered.

Materials: 1.4301, 1.4306, 1.4401, 1.4404, 1.4541, 1.4571 and similar V2A and V4A alloys.

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill K-16					
 Rods	50 g	Ø 0.2 x 500 mm	4 151 202	41.95 €	
	50 g	Ø 0.3 x 500 mm	4 151 203	32.50 €	
	50 g	Ø 0.4 x 500 mm	4 151 204	31.50 €	
	50 g	Ø 0.5 x 500 mm	4 151 205	30.45 €	
	50 g	Ø 0.6 x 500 mm	4 151 206	28.30 €	
	250 g	Ø 0.2 x 500 mm	4 131 202	167.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 203	128.95 €	
	250 g	Ø 0.4 x 500 mm	4 131 204	124.75 €	
	250 g	Ø 0.5 x 500 mm	4 131 205	119.55 €	
	250 g	Ø 0.6 x 500 mm	4 131 206	112.15 €	
	1000 g	Ø 0.2 x 500 mm	4 111 202	493.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 203	386.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 204	369.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 205	355.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 206	333.00 €	
	1000 g	Ø 0.8 x 500 mm	4 311 208	45.75 €	
	1000 g	Ø 1.0 x 500 mm	4 311 210	35.30 €	
	1000 g	Ø 1.2 x 500 mm	4 311 212	34.65 €	
	1000 g	Ø 1.6 x 500 mm	4 311 216	32.00 €	
	1000 g	Ø 2.4 x 500 mm	4 311 224	30.45 €	
 Spools	50 g	Ø 0.2 mm	4 251 202		39.90 €
	50 g	Ø 0.3 mm	4 251 203		31.50 €
	50 g	Ø 0.4 mm	4 251 204		30.45 €
	50 g	Ø 0.5 mm	4 251 205		28.30 €
	50 g	Ø 0.6 mm	4 251 206		27.30 €
	250 g	Ø 0.2 mm	4 231 202		159.00 €
	250 g	Ø 0.3 mm	4 231 203		122.60 €
	250 g	Ø 0.4 mm	4 231 204		117.40 €
	250 g	Ø 0.5 mm	4 231 205		113.20 €
	250 g	Ø 0.6 mm	4 231 206		105.90 €
	1000 g	Ø 0.2 mm	4 211 202		458.00 €
	1000 g	Ø 0.3 mm	4 211 203		357.00 €
	1000 g	Ø 0.4 mm	4 211 204		343.00 €
	1000 g	Ø 0.5 mm	4 211 205		331.00 €
	1000 g	Ø 0.6 mm	4 211 206		310.00 €



ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler joke Fill K-33

High-alloy Cr-Ni wire for joining and buffering all low, medium and highalloy cold work steels. For mixed joints when increased strength and toughness are required. The corrosion-resistant weld material increases the hardness by pressure and hammering, very tough, crackresistant and rustproof. Excellent weldability by all methods.

Strength up to approx. 850 N/mm².

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill K-33					
 Rods	50 g	Ø 0.2 x 500 mm	4 151 302	94.30 €	
	50 g	Ø 0.3 x 500 mm	4 151 303	89.10 €	
	50 g	Ø 0.4 x 500 mm	4 151 304	77.60 €	
	50 g	Ø 0.5 x 500 mm	4 151 305	69.20 €	
	50 g	Ø 0.6 x 500 mm	4 151 306	59.80 €	
	250 g	Ø 0.2 x 500 mm	4 131 302	376.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 303	357.00 €	
	250 g	Ø 0.4 x 500 mm	4 131 304	309.00 €	
	250 g	Ø 0.5 x 500 mm	4 131 305	277.00 €	
	250 g	Ø 0.6 x 500 mm	4 131 306	238.00 €	
	1000 g	Ø 0.2 x 500 mm	4 111 302	1115.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 303	1057.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 304	912.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 305	819.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 306	702.00 €	
	1000 g	Ø 0.8 x 500 mm	4 311 308	92.30 €	
	1000 g	Ø 1.0 x 500 mm	4 311 310	81.10 €	
	1000 g	Ø 1.2 x 500 mm	4 311 312	78.65 €	
	1000 g	Ø 1.6 x 500 mm	4 311 316	76.70 €	
 Spools	50 g	Ø 0.2 mm	4 251 302		90.10 €
	50 g	Ø 0.3 mm	4 251 303		86.00 €
	50 g	Ø 0.4 mm	4 251 304		74.45 €
	50 g	Ø 0.5 mm	4 251 305		66.05 €
	50 g	Ø 0.6 mm	4 251 306		56.60 €
	250 g	Ø 0.2 mm	4 231 302		356.00 €
	250 g	Ø 0.3 mm	4 231 303		339.00 €
	250 g	Ø 0.4 mm	4 231 304		293.00 €
	250 g	Ø 0.5 mm	4 231 305		263.00 €
	250 g	Ø 0.6 mm	4 231 306		225.00 €
	1000 g	Ø 0.2 mm	4 211 302		1034.00 €
	1000 g	Ø 0.3 mm	4 211 303		979.00 €
	1000 g	Ø 0.4 mm	4 211 304		846.00 €
	1000 g	Ø 0.5 mm	4 211 305		758.00 €
	1000 g	Ø 0.6 mm	4 211 306		652.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler

joke Fill K-35



Corrosion and seawater resistant Cr-Mo alloy, wear-resistant and machinable.

Also for heat resistant repairs and changes to forms and tools of plastic, rubber and glass industry, stamping and pressing tools.

Especially suitable for martensitic steels with a chromium content of 13% – 18%, martensitic, ferritic and austenitic.

By lowered carbon content very crack resistant, polishes well, color synchronous on similar alloyed alloys. Hardness depending on composition about 40 – 46 HRC.

For materials: 1.2083, 1.2085, 1.2316, 1.4034, M333, M340, Mirrax, Corrax, Ramax and similar steels

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill K-35					
 Rods	50 g	Ø 0.2 x 500 mm	4 152 902	69.20 €	
	50 g	Ø 0.3 x 500 mm	4 152 903	65.00 €	
	50 g	Ø 0.4 x 500 mm	4 152 904	41.95 €	
	50 g	Ø 0.5 x 500 mm	4 152 905	37.75 €	
	50 g	Ø 0.6 x 500 mm	4 152 906	33.65 €	
	250 g	Ø 0.2 x 500 mm	4 132 902	273.00 €	
	250 g	Ø 0.3 x 500 mm	4 132 903	259.00 €	
	250 g	Ø 0.4 x 500 mm	4 132 904	167.00 €	
	250 g	Ø 0.5 x 500 mm	4 132 905	148.85 €	
	250 g	Ø 0.6 x 500 mm	4 132 906	132.05 €	
	1000 g	Ø 0.2 x 500 mm	4 112 902	811.00 €	
	1000 g	Ø 0.3 x 500 mm	4 112 903	767.00 €	
	1000 g	Ø 0.4 x 500 mm	4 112 904	493.00 €	
	1000 g	Ø 0.5 x 500 mm	4 112 905	442.00 €	
	1000 g	Ø 0.6 x 500 mm	4 112 906	392.00 €	
	1000 g	Ø 1.0 x 500 mm	4 312 910	51.15 €	
	1000 g	Ø 1.2 x 500 mm	4 312 912	48.80 €	
	1000 g	Ø 1.6 x 500 mm	4 312 916	44.10 €	
	1000 g	Ø 2.4 x 500 mm	4 312 924	42.45 €	
 Spools	50 g	Ø 0.2 mm	4 252 902		66.05 €
	50 g	Ø 0.3 mm	4 252 903		61.85 €
	50 g	Ø 0.4 mm	4 252 904		39.90 €
	50 g	Ø 0.5 mm	4 252 905		35.70 €
	50 g	Ø 0.6 mm	4 252 906		31.50 €
	250 g	Ø 0.2 mm	4 232 902		260.00 €
	250 g	Ø 0.3 mm	4 232 903		245.00 €
	250 g	Ø 0.4 mm	4 232 904		158.00 €
	250 g	Ø 0.5 mm	4 232 905		140.45 €
	250 g	Ø 0.6 mm	4 232 906		124.75 €
	1000 g	Ø 0.2 mm	4 212 902		752.00 €
	1000 g	Ø 0.3 mm	4 212 903		712.00 €
	1000 g	Ø 0.4 mm	4 212 904		457.00 €
	1000 g	Ø 0.5 mm	4 212 905		409.00 €
	1000 g	Ø 0.6 mm	4 212 906		363.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler joke Fill K-40

High-alloy Co-Cr-Mo- Mn-W-Fe filler for many heat treatable, case-hardened and hot-work steels with universal properties. Very tough and resistant to temperature change.

Optimum poreless fusion to nitrated steels, high edge strength at high temperatures, acid proof. Non-chromeplatable. Polishable, only delayed erodibility. Structure hardly thermally modifiable.

Hardness approx. 26 – 38 HRC

Materials: 1.4841, 1.2294

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill K-40					
 Rods	50 g	Ø 0.2 x 500 mm	4 151 402	168.00 €	
	50 g	Ø 0.3 x 500 mm	4 151 403	162.00 €	
	50 g	Ø 0.4 x 500 mm	4 151 404	156.00 €	
	50 g	Ø 0.5 x 500 mm	4 151 405	147.85 €	
	50 g	Ø 0.6 x 500 mm	4 151 406	143.65 €	
	250 g	Ø 0.2 x 500 mm	4 131 402	663.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 403	641.00 €	
	250 g	Ø 0.4 x 500 mm	4 131 404	618.00 €	
	250 g	Ø 0.5 x 500 mm	4 131 405	594.00 €	
	250 g	Ø 0.6 x 500 mm	4 131 406	570.00 €	
	1000 g	Ø 0.2 x 500 mm	4 111 402	1967.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 403	1903.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 404	1832.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 405	1759.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 406	1694.00 €	
	1000 g	Ø 0.8 x 500 mm	4 311 408	131.35 €	
	1000 g	Ø 1.0 x 500 mm	4 311 410	121.60 €	
	1000 g	Ø 1.2 x 500 mm	4 311 412	111.85 €	
	1000 g	Ø 1.6 x 500 mm	4 311 416	103.85 €	
 Spools	50 g	Ø 0.2 mm	4 251 402		160.00 €
	50 g	Ø 0.3 mm	4 251 403		155.00 €
	50 g	Ø 0.4 mm	4 251 404		148.85 €
	50 g	Ø 0.5 mm	4 251 405		142.50 €
	50 g	Ø 0.6 mm	4 251 406		137.25 €
	250 g	Ø 0.2 mm	4 231 402		628.00 €
	250 g	Ø 0.3 mm	4 231 403		608.00 €
	250 g	Ø 0.4 mm	4 231 404		586.00 €
	250 g	Ø 0.5 mm	4 231 405		561.00 €
	250 g	Ø 0.6 mm	4 231 406		542.00 €
	1000 g	Ø 0.2 mm	4 211 402		1825.00 €
	1000 g	Ø 0.3 mm	4 211 403		1765.00 €
	1000 g	Ø 0.4 mm	4 211 404		1698.00 €
	1000 g	Ø 0.5 mm	4 211 405		1631.00 €
	1000 g	Ø 0.6 mm	4 211 406		1570.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.



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Welding filler joke Fill K-77

Particularly versatile nickel-based alloy with special elements to avoid hard carbide areas. The weld material is extremely resistant to rust, acid, heat and cold; non-nitratable, hardenable and chromeplatable, non-etchable!

Particularly suited for very crack-resistant, extremely elastic and corrosion-resistant base and intermediate layers on all types of steel in addition to all mixed joins of different steels, including GG (grey cast iron), GGG (spheroidal graphite cast iron) and GS (cast steel).

Materials: for joining and buffering all grades of steel and cast iron

Design	Weight	Dimensions	Order No.	Price from	
				1 pack	1 piece
joke Fill K-77					
 Rods	50 g	Ø 0.2 x 500 mm	4 151 502	152.00 €	
	50 g	Ø 0.3 x 500 mm	4 151 503	147.85 €	
	50 g	Ø 0.4 x 500 mm	4 151 504	143.65 €	
	50 g	Ø 0.5 x 500 mm	4 151 505	137.25 €	
	50 g	Ø 0.6 x 500 mm	4 151 506	131.00 €	
	250 g	Ø 0.2 x 500 mm	4 131 502	605.00 €	
	250 g	Ø 0.3 x 500 mm	4 131 503	594.00 €	
	250 g	Ø 0.4 x 500 mm	4 131 504	570.00 €	
	250 g	Ø 0.5 x 500 mm	4 131 505	547.00 €	
	250 g	Ø 0.6 x 500 mm	4 131 506	523.00 €	
	1000 g	Ø 0.2 x 500 mm	4 111 502	1793.00 €	
	1000 g	Ø 0.3 x 500 mm	4 111 503	1758.00 €	
	1000 g	Ø 0.4 x 500 mm	4 111 504	1694.00 €	
	1000 g	Ø 0.5 x 500 mm	4 111 505	1623.00 €	
	1000 g	Ø 0.6 x 500 mm	4 111 506	1549.00 €	
	1000 g	Ø 0.8 x 500 mm	4 311 508	123.95 €	
	1000 g	Ø 1.0 x 500 mm	4 311 510	115.35 €	
	1000 g	Ø 1.2 x 500 mm	4 311 512	103.25 €	
	1000 g	Ø 1.6 x 500 mm	4 311 516	95.15 €	
 Spools	50 g	Ø 0.2 mm	4 251 502		145.70 €
	50 g	Ø 0.3 mm	4 251 503		142.50 €
	50 g	Ø 0.4 mm	4 251 504		137.25 €
	50 g	Ø 0.5 mm	4 251 505		131.00 €
	50 g	Ø 0.6 mm	4 251 506		125.80 €
	250 g	Ø 0.2 mm	4 231 502		573.00 €
	250 g	Ø 0.3 mm	4 231 503		561.00 €
	250 g	Ø 0.4 mm	4 231 504		542.00 €
	250 g	Ø 0.5 mm	4 231 505		518.00 €
	250 g	Ø 0.6 mm	4 231 506		496.00 €
	1000 g	Ø 0.2 mm	4 211 502		1663.00 €
	1000 g	Ø 0.3 mm	4 211 503		1631.00 €
	1000 g	Ø 0.4 mm	4 211 504		1570.00 €
	1000 g	Ø 0.5 mm	4 211 505		1504.00 €
	1000 g	Ø 0.6 mm	4 211 506		1438.00 €



① All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler joke Fill A-50

Aluminium special alloy with very good connection to all aluminium grades, Si, Pb, Cu or Mg alloy. Clean application and joining to types that are difficult to weld and for improving fusion in case of subsequently application with highstrength alloys. Excellent LASER weldability, anodisable to a limited extent!

Materials: Aluminium case and wrought alloys, ZAMAG

	Design	Weight	Dimensions	Order No.	Price from	
					1 pack	1 piece
joke Fill A-50						
	Rods	50 g	Ø 0.3 x 500 mm	4 150 103	56.60 €	
		50 g	Ø 0.4 x 500 mm	4 150 104	53.65 €	
		50 g	Ø 0.5 x 500 mm	4 150 105	51.40 €	
		50 g	Ø 0.6 x 500 mm	4 150 106	48.30 €	
		250 g	Ø 0.3 x 500 mm	4 130 103	226.00 €	
		250 g	Ø 0.4 x 500 mm	4 130 104	213.00 €	
		250 g	Ø 0.5 x 500 mm	4 130 105	203.00 €	
		250 g	Ø 0.6 x 500 mm	4 130 106	190.00 €	
		1000 g	Ø 0.3 x 500 mm	4 110 103	666.00 €	
		1000 g	Ø 0.4 x 500 mm	4 110 104	630.00 €	
		1000 g	Ø 0.5 x 500 mm	4 110 105	601.00 €	
		1000 g	Ø 0.6 x 500 mm	4 110 106	564.00 €	
		1000 g	Ø 1.0 x 500 mm	4 310 110	72.60 €	
		1000 g	Ø 1.6 x 500 mm	4 310 116	62.75 €	
		1000 g	Ø 2.4 x 500 mm	4 310 124	54.15 €	
	Spools	50 g	Ø 0.3 mm	4 250 103		54.55 €
		50 g	Ø 0.4 mm	4 250 104		51.40 €
		50 g	Ø 0.5 mm	4 250 105		48.30 €
		50 g	Ø 0.6 mm	4 250 106		46.15 €
		250 g	Ø 0.3 mm	4 230 103		214.00 €
		250 g	Ø 0.4 mm	4 230 104		201.00 €
		250 g	Ø 0.5 mm	4 230 105		193.00 €
		250 g	Ø 0.6 mm	4 230 106		181.00 €
		1000 g	Ø 0.3 mm	4 210 103		618.00 €
		1000 g	Ø 0.4 mm	4 210 104		585.00 €
		1000 g	Ø 0.5 mm	4 210 105		557.00 €
		1000 g	Ø 0.6 mm	4 210 106		523.00 €


ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

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Welding filler joke Fill A-70

Al-Mg-Mn aluminium wire with special additives for crack-resistant application and joining of the common aluminium wrought alloys in mould building; anodisable and polishable, artificially and naturally ageable. Fumigate zincbased alloys by multiple overmelting or buffer with A-50. Also easily weldable in multiple layers. The hardness values depend on the blend in relation to the base material and are approx. 300 – 450 N/mm² depending on condition.

Materials: highstrength aluminium wrought alloys

	Design	Weight	Dimensions	Order No.	Price from 1 pack
joke Fill A-70					
	Rods	50 g	Ø 0.3 x 500 mm	4 150 303	51.40 €
	Rods	50 g	Ø 0.4 x 500 mm	4 150 304	49.35 €
	Rods	50 g	Ø 0.5 x 500 mm	4 150 305	46.15 €
	Rods	50 g	Ø 0.6 x 500 mm	4 150 306	43.10 €
	Rods	250 g	Ø 0.3 x 500 mm	4 130 303	203.00 €
	Rods	250 g	Ø 0.4 x 500 mm	4 130 304	198.00 €
	Rods	250 g	Ø 0.5 x 500 mm	4 130 305	183.00 €
	Rods	250 g	Ø 0.6 x 500 mm	4 130 306	172.00 €
	Rods	1000 g	Ø 1.0 x 500 mm	4 310 310	50.85 €
	Rods	1000 g	Ø 0.3 x 500 mm	4 110 303	601.00 €
	Rods	1000 g	Ø 0.4 x 500 mm	4 110 304	587.00 €
	Rods	1000 g	Ø 0.5 x 500 mm	4 110 305	544.00 €
	Rods	1000 g	Ø 0.6 x 500 mm	4 110 306	507.00 €
	Rods	1000 g	Ø 2.4 x 500 mm	4 310 324	34.05 €
	Rods	1000 g	Ø 1.6 x 500 mm	4 310 316	43.30 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder

for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen

for weld filler metals from Ø 0.2 to 0.6 mm



Order No.	Price
4 806 100	103.75 €

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Welding filler

joke Fill G-10

Al-Mn-Cu-Fe composite bronze for application, joining and repair on most AMPCO® bronzes. Similar in colour and structure, very easily weldable, very good sliding properties in case of metal-against-metal friction, e. g. on drawing and bending tools. No hardened transitions when directly applied to steel. Very little shrinkage. Also suitable for crack weldings on the temperature control channels of plastic moulds. Hardness up to approx. 300 HB

Materials: bronze, AMPCO®, steel

	Design	Weight	Dimensions	Order No.	Price from	
					1 pack	1 piece
joke Fill G-10						
	Rods	50 g	Ø 0.3 x 500 mm	4 150 403	119.55 €	
		50 g	Ø 0.4 x 500 mm	4 150 404	113.20 €	
		50 g	Ø 0.5 x 500 mm	4 150 405	107.95 €	
		50 g	Ø 0.6 x 500 mm	4 150 406	101.70 €	
		250 g	Ø 0.3 x 500 mm	4 130 403	478.00 €	
		250 g	Ø 0.4 x 500 mm	4 130 404	451.00 €	
		250 g	Ø 0.5 x 500 mm	4 130 405	431.00 €	
		250 g	Ø 0.6 x 500 mm	4 130 406	406.00 €	
		1000 g	Ø 0.3 x 500 mm	4 110 403	1411.00 €	
		1000 g	Ø 0.4 x 500 mm	4 110 404	1339.00 €	
		1000 g	Ø 0.5 x 500 mm	4 110 405	1274.00 €	
		1000 g	Ø 0.6 x 500 mm	4 110 406	1202.00 €	
		1000 g	Ø 1.0 x 500 mm	4 310 410	98.20 €	
		1000 g	Ø 1.2 x 500 mm	4 310 412	96.50 €	
		1000 g	Ø 1.6 x 500 mm	4 310 416	88.60 €	
1000 g	Ø 2.4 x 500 mm	4 310 424	83.65 €			
	Spools	50 g	Ø 0.2 mm	4 250 402		116.35 €
		50 g	Ø 0.3 mm	4 250 403		114.20 €
		50 g	Ø 0.4 mm	4 250 404		109.00 €
		50 g	Ø 0.5 mm	4 250 405		103.75 €
		50 g	Ø 0.6 mm	4 250 406		97.50 €
		250 g	Ø 0.2 mm	4 230 402		460.00 €
		250 g	Ø 0.3 mm	4 230 403		451.00 €
		250 g	Ø 0.4 mm	4 230 404		428.00 €
		250 g	Ø 0.5 mm	4 230 405		406.00 €
		250 g	Ø 0.6 mm	4 230 406		384.00 €
		1000 g	Ø 0.2 mm	4 210 402		1336.00 €
		1000 g	Ø 0.3 mm	4 210 403		1308.00 €
		1000 g	Ø 0.4 mm	4 210 404		1243.00 €
		1000 g	Ø 0.5 mm	4 210 405		1180.00 €
		1000 g	Ø 0.6 mm	4 210 406		1114.00 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder

for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen

for weld filler metals from Ø 0.2 to 0.6 mm



Order No.	Price
4 806 100	103.75 €


Our prices have
been changed.

Please look at the new price list 2020 at
www.joke-technology.com
or contact us at
sales@joke.de

Welding filler joke Fill R-80

„Beryllium copper wire with special additives for the repair of molds and dies, where a very high conductivity of heat or electricity is required. High hardness and good wear resistance, polishable, nonmagnetic. When welding use fume extractor!
Hardness approx 250 – 300 HB. By temperature treatments hardness up to 40 HRC are possible.

Materials: copper alloys, bronze, steel.

Design	Weight	Dimensions	Order No.	Price from 1 pack
joke Fill R-80				
 Rods	50 g	Ø 0.2 x 500 mm	4 153 002	97.50 €
	50 g	Ø 0.3 x 500 mm	4 153 003	84.90 €
	50 g	Ø 0.4 x 500 mm	4 153 004	79.65 €
	50 g	Ø 0.5 x 500 mm	4 153 005	76.60 €
	50 g	Ø 0.6 x 500 mm	4 153 006	73.40 €
	250 g	Ø 0.2 x 500 mm	4 133 002	389.00 €
	250 g	Ø 0.3 x 500 mm	4 133 003	340.00 €
	250 g	Ø 0.4 x 500 mm	4 133 004	317.00 €
	250 g	Ø 0.5 x 500 mm	4 133 005	306.00 €
	250 g	Ø 0.6 x 500 mm	4 133 006	294.00 €
	1000 g	Ø 0.2 x 500 mm	4 113 002	1151.00 €
	1000 g	Ø 0.3 x 500 mm	4 113 003	1006.00 €
	1000 g	Ø 0.4 x 500 mm	4 113 004	941.00 €
	1000 g	Ø 0.5 x 500 mm	4 113 005	907.00 €
	1000 g	Ø 0.6 x 500 mm	4 113 006	869.00 €
1000 g	Ø 1.0 x 500 mm	4 313 010	238.00 €	

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder

for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen

for weld filler metals from Ø 0.2 to 0.6 mm




Order No.	Price
4 806 100	103.75 €

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Welding filler joke Fill R-90

Cu-Ag-Cr-Fe filler for beryllium-free application and joining of pure copper and bronze with a very high copper content. Very good electrical and thermal conduction properties, identical in colour. An increase in hardness of up to 30 % is possible by deep freezing at -20°C and more. Hardness approx. 90 HB, up to 130 HB after deep freezing.


Materials: copper, copper materials, AMPCOLOY®

	Design	Weight	Dimensions	Order No.	Price from 1 pack
joke Fill R-90					
	Rods	50 g	Ø 0.2 x 500 mm	4 152 202	82.85 €
		50 g	Ø 0.3 x 500 mm	4 152 203	71.25 €
		50 g	Ø 0.4 x 500 mm	4 152 204	65.00 €
		50 g	Ø 0.5 x 500 mm	4 152 205	61.85 €
		50 g	Ø 0.6 x 500 mm	4 152 206	58.75 €
		250 g	Ø 0.2 x 500 mm	4 132 202	330.00 €
		250 g	Ø 0.3 x 500 mm	4 132 203	283.00 €
		250 g	Ø 0.4 x 500 mm	4 132 204	259.00 €
		250 g	Ø 0.5 x 500 mm	4 132 205	248.00 €
		250 g	Ø 0.6 x 500 mm	4 132 206	234.00 €
		1000 g	Ø 0.2 x 500 mm	4 112 202	977.00 €
		1000 g	Ø 0.3 x 500 mm	4 112 203	977.00 €
		1000 g	Ø 0.4 x 500 mm	4 112 204	839.00 €
		1000 g	Ø 0.5 x 500 mm	4 112 205	731.00 €
		1000 g	Ø 0.6 x 500 mm	4 112 206	694.00 €
		1000 g	Ø 1.0 x 500 mm	4 312 210	93.80 €
1000 g	Ø 1.6 x 500 mm	4 312 216	90.75 €		
1000 g	Ø 2.4 x 500 mm	4 312 224	77.60 €		

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

Welding filler joke Fill S-90

Titanium welding filler for joint and build-up weldings on titanium and titanium alloys. Most frequently used filler for components from the fields of medical and dental engineering in addition to aerospace technology. Its essential components correspond to material no. 3.7025.

	Design	Dimensions	Order No.	Price from 1 piece
joke Fill S-90				
	Spools	Ø 0.3 x 1000 mm	4 252 303	4.82 €
		Ø 0.5 x 1000 mm	4 252 305	4.50 €

ⓘ All welding fillers as rods and reels also available in grammages other than 100 and 500 g.

The perfect complement

Welding filler holder

for weld filler metals from Ø 0.2 to 1.0 mm



Order No.	Price
4 806 000	8.85 €

The perfect complement

Welding rod feeding pen

for weld filler metals from Ø 0.2 to 0.6 mm



Order No.	Price
4 806 100	103.75 €

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Conversion table for hardness values according to DIN 50150

Rockwell hardness HRC	Brinell hardness HB	Vickers hardness HV	HV tensile strength N/mm ² or MPa
25	253	266	854
26	254	273	873
27	265	279	897
28	272	286	914
29	274	294	944
30	287	302	970
31	295	310	995
32	302	318	1024
33	311	327	1052
34	320	336	1082
35	329	345	1111
36	337	355	1139
37	346	364	1168
38	354	373	1198
39	363	382	1227
40	373	392	1262
41	382	402	1296
42	392	412	1327
43	402	423	1362
44	413	434	1401
45	424	446	1442
46	436	459	1481
47	448	471	1524
48	460	484	1572
49	474	499	1625
50	488	513	1668
51	502	528	1733
52	518	545	1793
53	532	560	1845
54	548	578	1912
55	566	596	1979
56	585	615	2050
57	603	634	2121
58	-	654	-
59	-	675	-
60	-	698	-

An extensive topic is sometimes
a source of enquiry - contact us!
We will be pleased to help you!

Your welding expert team



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