

# Product Information



Your Partner for  
Future-oriented Solutions in Welding Technology



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# LITTY Handelsgesellschaft mbH

## Your Specialist for Tungsten Electrodes

	Page
Tungsten Electrodes: Point-sharpened Electrodes and Custom Sizes	3-7
Pink Lymox® Tungsten Electrode: The Tungsten Electrode of the Future	7
Ceramic Gas Nozzles	8-9
Clamping Sleeves, Clamping Sleeve Casings	10-11
Torch Caps	10-11
Insulation Ring , Adapter	10-11
Piranha III: Electrode Sharpener for Stationary Operation	12
WIG 4: The semiautomatic electrode grinder	13
Power Pointer: The Miniature Electrode Sharpener	14
Protective Welding Masks	15
TIG Pen: Welding as Easily as Writing	16
Pliers	17
Spannfix, TIG-Spitz, Rollspitz: For Sharpening Electrodes	18
Stilo Tig: For Sharpening Electrodes	19
TIG - Box,	20
Mirrors	20

As a competent supplier we strive towards satisfying your wishes in a success-oriented manner.

Our flexibility and quality can be taken for granted.

We guarantee you:

- ✓ Fast processing of orders
- ✓ Preparation of offers on short notice
- ✓ Delivery from stock
- ✓ Highest quality
- ✓ Custom packaging



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Specialist for Tungsten Electrodes

# Tungsten Electrodes - Designation

Tungsten as the ideal electrode material for  
WIG and plasma-welding

Electron emission facilitating additives for:

- Increasing operating life
- Improving arc ignition
- Stabilizing



## Classification of tungsten electrodes - compositions

Short code	Oxide additive in %	Type	Identifying color
W	-	-	green
<b>Lymox</b>	<b>1.80 – 2.20</b>	<b>Mixed oxide</b>	<b>pink</b>
WC 20	1.80 – 2.20	CeO <sub>2</sub>	gray
WL 10	0.90 – 1.20	La <sub>2</sub> O <sub>3</sub>	black
WL 15	1.40 – 1.60	La <sub>2</sub> O <sub>3</sub>	gold
WL 20	1.90 – 2.10	La <sub>2</sub> O <sub>3</sub>	blue
WZ 8	0.70 – 0.90	ZrO <sub>2</sub>	white
WT 10*	0.80 – 1.20	ThO <sub>2</sub>	yellow
WT 20*	1.70 – 2.20	ThO <sub>2</sub>	red
WT 30*	2.80 – 3.20	ThO <sub>2</sub>	violet
WT 40*	3.80 – 4.20	ThO <sub>2</sub>	orange

\*Thorium oxide (ThO<sub>2</sub>) is a radioactive element.

The basis for the composition is either EN 26 848, ISO 6848 or ANSI / AWS A5.12 / A5.12M-98.



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# Tungsten Electrodes - Characteristics

## Application of the different compositions

What composition, diameter, and welding voltage to choose from is dependent on the type and size of the base material being cut or welded each.



## Ignitability, operating life, electrical capacity, and environmental compatibility

Electrode type	Ignitability	Operating life	electrical capacity	Environmental compatibility
W - green	F	E	E	A
Lymox <sup>®</sup> - pink	A	A	A	A
WC 20 - gray	B	B	B	A
WL 10 - black	D	B	C	A
WL 15 - gold	A	B	A	A
WL 20 - blue	A	A	B	A
WZ 8 - white	D	C	C	A
WT 10 - yellow*	D	D	D	C
WT 20 - red*	B	C	B	D
WT 40 - orange*	A	B	A	F

Annotation: A = very good/high  
F = bad/low



# Tungsten Electrodes - electrical capacity and Polarity

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## Electrical capacity range depending on electrode diameter for direct and alternating current

If the amperage is too low the electrode will be underloaded, the arc moves around and is unstable, tungsten particles are ejected.

An overloaded electrode will melt and drops of Tungsten will fall into the welding seam.



## electrical capacity range depending on electrode diameter for direct and alternating current

Electrode diameter	DC (A)				AC (A)			
	Electrode negative		Electrode positive		HF „unbalanced“		HF „balanced“	
	W pure	W+ oxide	W pure	W+ oxide	W pure	W+ oxide	W pure	W+ oxide
1,0	10-70	20-80	-	-	Up to 15	Up to 15	Up to 15	Up to 15
1,6	40-130	60-160	10-18	10-18	30-90	50-120	20-70	40-100
2,0	70-180	100-220	12-20	12-20	50-130	70-160	35-90	60-130
2,4	120-240	170-270	15-25	15-25	70-150	80-200	50-120	80-150
3,2	150-300	220-350	20-35	20-35	120-200	150-270	100-160	120-200
4,0	250-460	350-500	35-50	35-50	180-275	220-350	140-240	170-260
4,8	380-550	420-650	45-65	45-65	230-350	240-420	190-300	220-340
6,4	500-850	600-900	65-100	65-100	310-450	360-560	250-400	250-450



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# Tungsten Electrodes - Operating Guidelines

Electrode type and polarity depending on  
the welded material

- 1 = electric current type for best results
- 2 = electric current type for good results
- = not recommended or impossible



## Electrode type and polarity depending on the welded material

Material	Electrode type	DC		AC
		Electrode neg.	Electrode pos.	
Aluminum (width<2.5mm)	WL15, W, WZ8, Lymox®	2	2	1
Aluminum (width>2.5mm)	WL15, W, WZ8, Lymox®	2	--	1
Aluminum alloys	WL15, W, WZ8, Lymox®	2	--	1
Magnesium	W, Lymox®	--	2	1
Magnesium alloys	W, Lymox®	--	2	1
Carbon steel	WL15,WC20, WT20, Lymox®	1	--	--
Stainless steels	WL15,WC20, WT20, Lymox®	1	--	--
Aluminum bronze	W, Lymox®	1	--	--
Silicon bronze	WL15,WC20, WT20, Lymox®	1	--	2
Nickel and alloys	W, Lymox®	2	--	1
Copper	WL15,WC20, WT20, Lymox®	1	--	--
Bronze	WL15,WC20, WT20, Lymox®	1	--	2
Titanium	WL15,WC20, WT20, Lymox®	1	--	2



# Pink Lymox® Tungsten Electrode

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The radiation-free,  
readily sharpened electrode  
for instant use



## The Tungsten Electrode of Superlatives

- Radiation-free through the combination of several rare earths (oxides), no disposal problems, no health hazard.
- Significantly noticeable increase of operating life and ignitability.
- 100% reproducible welding results through our highly qualified lengthwise centric beveling of 28°.
- Applicable for all WIG and plasma welding techniques, ideal for automated operation, universally applicable, even for aluminum.



# Unthreaded Ceramic Gas Nozzles

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For use when WIG /  
plasma welding and cutting

Manufacturing is done using high-grade materials so highest electric insulation, thermal conductivity, and impact resistance are guaranteed.



Type	International item number	d (mm)	D (mm)	L (mm)	Size
	130-00	6.35	17.5	44	4
	131-00	7.95	17.5	44	5
	132-00	9.50	17.5	44	6
	133-00	11.1	17.5	44	7
	134-00	12.7	17.5	44	8
	135-00	14.3	17.5	44	9
	136-00	16.0	17.5	44	10
	137-00	18.0	17.5	44	12
	130-01	6.35	17.5	22	4
	131-01	7.95	17.5	22	5
	132-01	9.50	17.5	22	6
	133-01	11.1	17.5	22	7
	130-11	6.35	17.5	33	4
	131-11	7.95	17.5	33	5
	132-11	9.50	17.5	33	6
	133-11	11.1	17.5	33	7
	130-07	6.35	17.5	63	4
	131-07	7.95	17.5	63	5
	132-07	9.50	17.5	63	6
	133-07	11.1	17.5	63	7
	141-00	7.95	26.2	54	5
	142-00	9.95	26.2	54	6
	143-00	11.1	26.2	54	7
	144-00	12.7	26.2	54	8
	145-00	15.5	26.2	54	10





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## Threaded Ceramic Gas Nozzles

For use when WIG /  
plasma welding and cutting



Type	International item number	d (mm)	D (mm)	L (mm)	Size
	10N50	6.5	18	47	4
	10N49	8.0	18	47	5
	10N48	9.8	18	47	6
	10N47	11.2	18	47	7
	10N46	12.7	18	47	8
	10N45	15.9	22	47	10
	10N44	19.0	24	47	12
	13N08	6.4	14.3	29.4	4
	13N09	7.9	14.3	29.4	5
	13N10	9.8	13.2	29.4	6
	13N11	11.2	14.3	29.4	7
	13N12	12.7	17.7	29.4	8
	13N13	15.9	20.9	29.4	10
	53N58	6.4	20	25.5	4
	53N59	8.0	20	25.5	5
	53N60	9.8	20	25.5	6
	53N61	11.2	20	25.5	7
	53N61-S	12.7	20	25.5	8
	53N23	4.2	16	16.5	3
	53N24	6.4	16	16.5	4
	53N25	8.0	16	16.5	5
	53N27	9.8	16	16.5	6
	54N18	6.4	24	42	4
	54N17	8.0	24	42	5
	54N16	9.8	24	42	6
	54N15	11.2	24	42	7
	54N14	12.7	24	42	8
	54N19	17.2	24	42	12
	14N57	6.4	26	32	4
	14N58	8.0	26	32	5
	14N59	9.5	26	32	6
	14N61	12.7	26	32	8



# Clamping Sleeves · Clamping Sleeve Casings · Torch Caps · Insulation Rings and Adapters for Torch Type 9/20

LITTY GmbH  
Specialist for Tungsten Electrodes

Clamping sleeves, clamping sleeve casings, torch caps, insulation rings, and adapters with international item number



## Clamping sleeves 9/20

Diameter in mm	Item number standard, 25 mm length	Item number Jumbo, 40 mm length
0.5	13N20	13N20L
1.0	13N21	13N21L
1.6	13N22	13N22L
2.0	13N2X	
2.4	13N23	13N23L
3.2	13N24	13N24L

## Clamping sleeve casings 9/20

Diameter in mm	Item number standard	Item number standard with gas lens	Item number jumbo with gas lens
0.5	13N25		45V0204S
1.0	13N26	45V42	45V0204S
1.6	13N27	45V43	45V116S
2.0	13N28X	45V44X	
2.4	13N8	45V44	45V64S
3.2	13N29	45V45	995795S

## Torch caps 9/20

	Item number
short	41V33
medium	41V35
long	41V24



## Insulation ring and adapter 9/20

	Item number
Insulation ring	598882
Adapter	54N63-20



Packaging unit: 5 / 10 items



# Clamping Sleeves · Clamping Sleeve Casings · Torch Caps · Insulation Ring and Adapter for Torch Type 17/18/26

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Clamping sleeves, clamping sleeve casings, torch caps, insulation ring, and adapter with international item numbers



## Clamping sleeves 17/18/26

Diameter in mm	Item number 50 mm length	Item number 52 mm length
0.5	10N21	10N21D
1.0	10N22	10N22D
1.6	10N23	10N23D
2.0	10N2X	
2.4	10N24	10N24D
3.2	10N25	10N25D
4.0	54N20	54N20D

## Clamping sleeve casings 17/18/26

Diameter in mm	Item number standard	Item number standard with gas lens	Item number jumbo with gas lens
1.0	10N30	45V24	
1.6	10N31	45V25	45V116
2.0	10N32X	45V26X	
2.4	10N32	45V26	45V64
3.2	10N28	45V27	995795
4.0	406488	45V28	45V63

## Torch caps 17/18/26

	Item number
short	57Y04
short	57Y04D
medium	57Y03
long	57Y02
long	57Y02D



## Insulation ring and adapter 17/18/26

	Item number
Insulation ring	18CG
Adapter	54N01
Adapter -VE 5 Item	54N63



Packaging unit: 10 items



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## Tungsten Electrode Sharpener Piranha III

### Electrode sharpener

This tungsten electrode grinder was developed for stationary use. It is a top quality product, and fulfills all the demands that may be placed on such a device. Work pieces can be ground, cut to length and smoothed readily without additional tools or adjustments. The diamond wheel can be matched to every application by selecting various grains.



- Compact construction, optimal durability and perfect repeat precision
- Solid, functional design
- Grinding in the longitudinal direction for optimal arc ignition and high arc stability
- Precise cylindrical grinding, closely centered
- Universal collet for all common diameters (1.0 – 3.2 mm)
- Grinding range 10° - 50°
- Depth adjustment for flattening the electrode tip
- Device for simple cutting of the electrodes to length
- The grinding dust is collected internally and can be disposed of very simply, without need of an external vacuum system
- Device for removing used tips
- Capable of processing short electrodes (min. 45 mm)
- High grinding performance means short processing times



## Tungsten Electrode Sharpener WIG 4

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Grinding device for electrodes,  
with automatic advance and electrode actuation

This device has been particularly developed to sharpen tungsten electrodes with a diameter from 1,0 to 4,0 mm and a tip angle between 15° and 180°.

The centric orientation in the longitudinal direction provides for a stable arc and significantly increases the tool life of the tungsten electrodes.



- Centric sharpening in longitudinal direction (with respect to the center line)
- Stable arc
- Increased lifetime
- User-friendly design
- Portable without any problem



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## Tungsten Electrode Miniature-Sharpening-Device Power Pointer

### Miniature Electrode Sharpening Device

The Power Pointer is a small, handy electrode sharpener ensuring a very good quality of electrode sharpening. Sharpening is carried out lengthwise by means of a diamond wheel coated on both sides.



For optimum results we recommend additionally using the Tig-Spitz.



- Ensures a longer operating life and ignitability of the tungsten electrode
- Continuously adjustable 220 V electric motor
- Particularly for small batch production directly at the construction site
- Standardized sharpening of tungsten electrode at 30°
- Reproducible welding results
- 1000 to 1500 sharpening operations without changing the grinding wheel

Adding an adapter for individually adjusting the angle is possible.



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## Welding Masks

### Protective welding mask • Best Vision

- automatic darkening
- Solar panels used for electric source and lithium batteries as backup
- for all welding techniques, other than laser and acetylene welding
- optimum wearing comfort



### Protective welding mask • Servo Glas 4000

- automatic darkening
- Solar panels used for electric source and lithium batteries as backup
- for all welding techniques, other than laser and acetylene welding
- optimum wearing comfort
- ultra-light





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## TIG-Pen

### Welding as easily as writing



The ideal aid for applying the additional filler metal manually and continuously during the welding process.

#### Easy Handling:

Insert filler metal at the rear and transport by using index finger.

- TIG-Pen for  $\varnothing$  0,8 mm up to 3,2 mm
- the wire is used up almost entirely



- considerably improves the welding seam's quality
- reduces the thermal strain to the welder

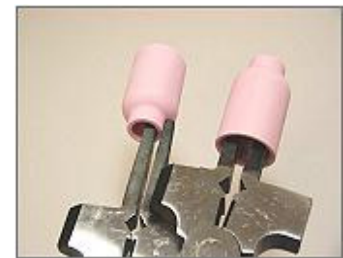


## Handy accessories

For trouble-free handling of wires, nozzles, bars, and lines

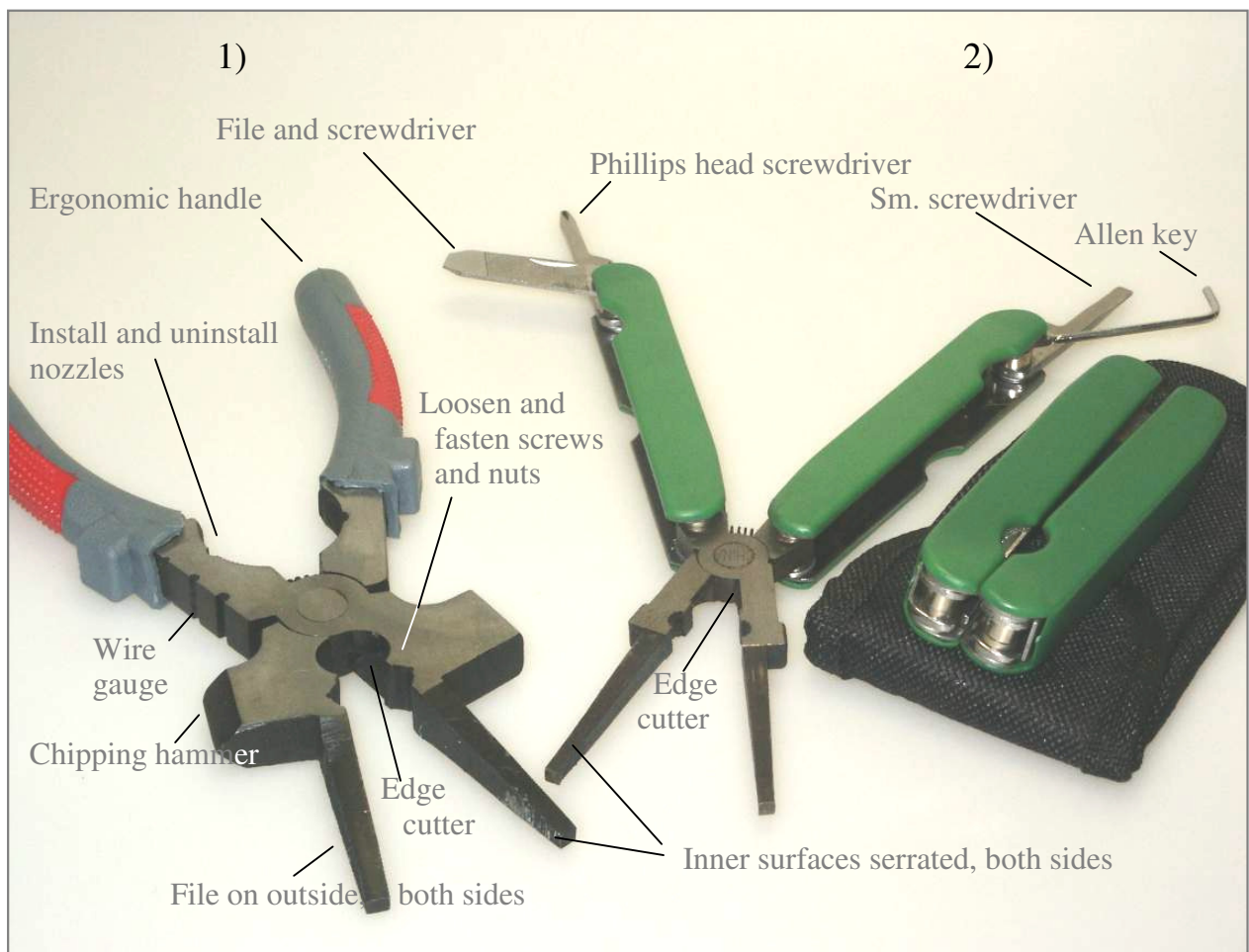
### 1) MIG / MAG pliers:

Practical, handy and developed specifically for use in welding



### 2) Universal pliers:

The versatile complement an indispensable aid for smaller repairs



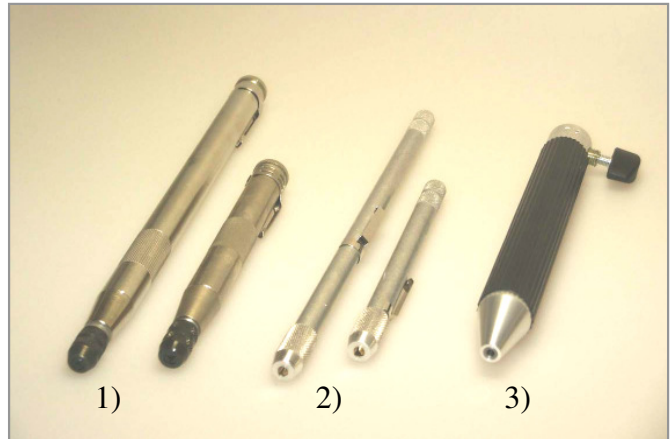


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## Spannfix · TIG-Spitz · Rollspitz

### Handy accessories for sharpening electrodes

Three appliances for trouble-free sharpening of tungsten electrodes on an available grinding machine.



1) Spannfix	2) TIG-Spitz	3) Rollspitz
Tightly clamped electrode		Loosely suspended electrode
Simplifies sharpening Allows treating very short electrodes No thermal strain on user		Electrode can rotate on its own during sharpening, optimum shaping of electrode spike
Integrated storage for a maximum of <b>20</b> electrodes	Integrated storage for a maximum of <b>5</b> electrodes	
	Smaller and lighter than Spannfix, for carrying in breast pocket of working clothes.	Easy and trouble-free to carry around
Available in several storage lengths, with different clamping sleeves for Ø 1,6 / 2,4 / 3,2	Available in several storage lengths, adaptable to diameter	Available in several diameters.

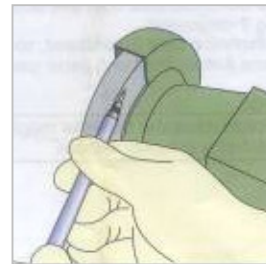


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## Stilo Tig

Handy accessories  
for sharpening electrodes

Stilo Tig:  
The new handling device for grinding  
tungsten electrodes on an existing  
wheel stand without problems.



Perfectly simple, safe grinding for:  
Ø 1,6 mm and 2,4 mm  
Ø 3,2 mm and 4,0 mm

Length 205 mm



Lightweight, and easy to carry in the  
breast pocket of your work clothing.



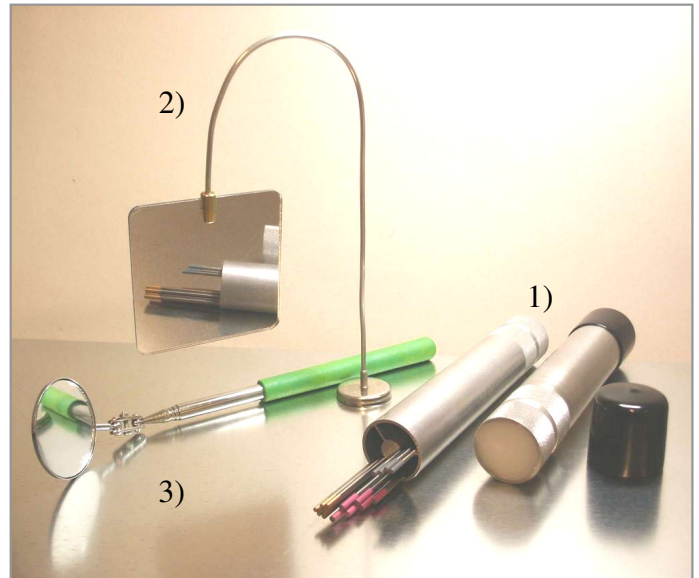
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## TIG-Box · Mirrors

Handy accessories for  
WIG and plasma welding  
and cutting

TIG-Box:  
The ideal container for  
tungsten electrodes.

Mirrors:  
For simplifying and controlling worksteps.



1)TIG Box	2)Mirror	3)Inspecting mirror (unfortunately not available)
Keeps electrodes clean	With magnetic mount	With telescopic handle
Sealing out of soft plastics, hence no damaging of electrode spike possible	For welding ducts with a wire always bendable at the optimum position.	For welding ducts
<b>Three chamber system</b> providing order and visibility  Storage of several sizes of tungsten electrodes	Size: 8.5 x 8.5 cm	Diameter: 5 cm

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