



US-Style Torches

Fronius International, PM Welding torches
Information Class: Confidential



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MTG US-Style Torch „Ergo Handle“

Aluminum outer tube for best heat dissipation

Torch body rotatable in 60° steps

Rubber inserts help to prevent the torch from slipping in the hand



Simple wearing part system with only 3 wearing parts

Mechanical gun trigger

Comfortable handling due to the Ergo handle design with a ball joint

MTG US-Style Torch „Straight Handle“

Aluminum outer tube for
best heat dissipation

Torch body rotatable
in 60° steps

Kink protection spring

Simple wearing part
system with only 3
wearing parts

Mechanical
gun trigger

Comfortable handling due to
the long round handle desing



Simple wearing part system with only 3 wearing parts

- Gas nozzle insulated – temperature stays in gas nozzle and does not go into the handle
- Heavy duty gas nozzle as an option
- Nozzle stock made of brass with black coating for long life of the threads
- TPS/i contact tip



Torch body rotatable in 60° steps



Gun Trigger on the top „Straight Handle“

- Can easily be made independently
- Loosen one screw and turn the torch body 180°



Option Gun Trigger on the top „Ergo Handle“

- Can be ordered via a project



Fronius System Connector (FSC)

- MTG US-Style torches are equipped with the FSC connection
- Tool-free, simple and quick welding torch change without miss operation
- Process security because of defined current transfer
- No external control connectors - all control signals are integrated in the central connection
- One central connector for all applications (Manual-, Machines- and Robot systems – PAP and conventional)



Steel-, Universal- and CrNi- inner liners without isolation

- Clamping nipple can be mounted independently
- This allows the use of per meter goods



Adapter FSC welding torches to US power sources

- With clamping lever fixing from the FSC connector
- Simple and safe connection of the torch to competitor wire feeder in less than 10 seconds - without tools
- Part numbers:

44,0350,0601 Adapter OC/FSC

42,1000,0000 PowerPin suitable for **Lincoln**

42,1000,0001 PowerPin suitable for **Miller**

42,1000,0002 PowerPin suitable for **Hobart**

43,0004,0458 Control Plug **Lincoln**

43,0004,0457 Control Plug **Miller**

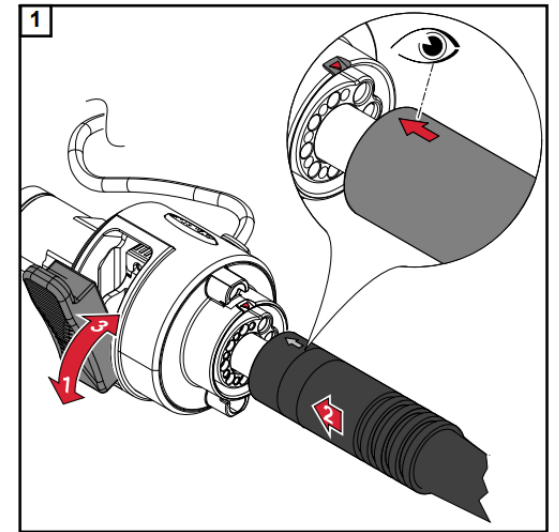
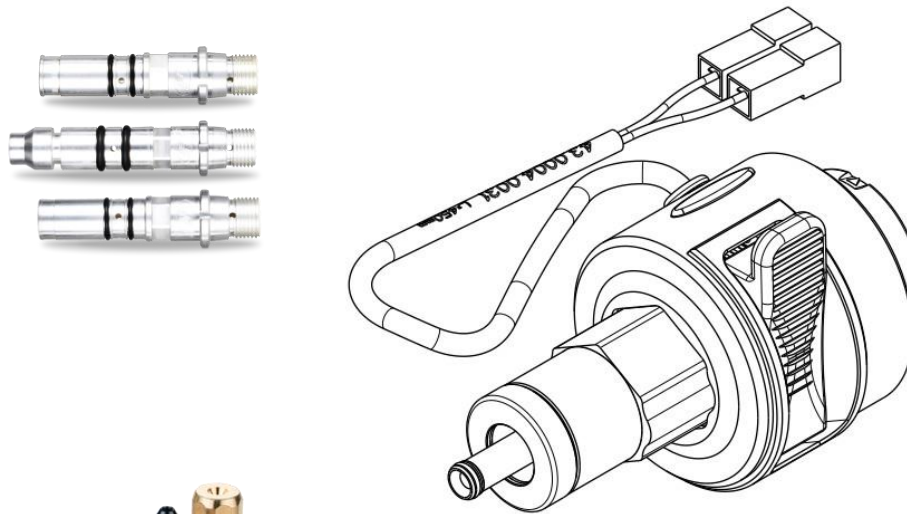
43,0004,0461 Control Plug **Tweco**

44,0350,3703 Clamping piece **0,8/E**

44,0350,3704 Clamping piece **1,0/E**

44,0350,3705 Clamping piece **1,2/E**

44,0350,3706 Clamping piece **1,6/E**



Adapter FSC welding torches to TPS and VS power sources with F- and Euro connector

- FSC welding torches to F connector
 - 44,0350,3330 Adapter-ZA F / FSC-S-G



- FSC welding torches to Euro-ZA
 - 44,0350,3329 Adapter-ZA Euro/FSC



Option Ergo Handle Gun Trigger Extension 44,0350,5229

- Can be assembled independently
- You can slide your hand further back
- This brings you farther away from the hot arc



Option pistol grip 44,0350,5298

- Can be assembled independently
- No electrical wiring necessary
- Gun trigger movement is transmitted mechanically



Option metal spring 42,0404,0504

- Can be subsequently pushed over the torch body
- Serves as burn protection for the fingers



Variants and Technical Data

Ergo Handle | 45° and 60° torch body angle

- **MTG 320i** US-Style – **320A 40% DC** | 260A 60% DC | 210A 100% DC – MIXED / CO2
- **MTG 400i** US-Style – **400A 40% DC** | 320A 60% DC | 260A 100% DC – MIXED / CO2
- **MTG 500i** US-Style – **500A 30% DC** | 400A 60% DC | 300A 100% DC – MIXED / CO2

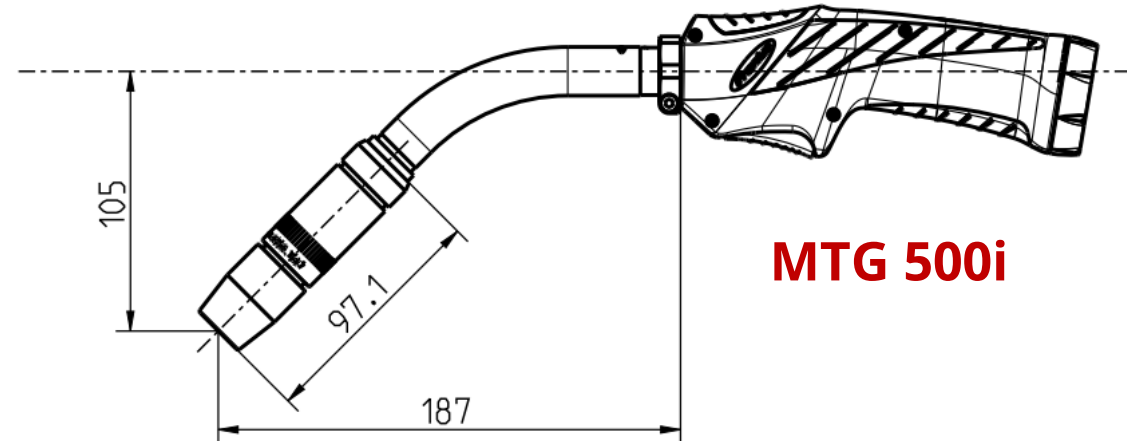
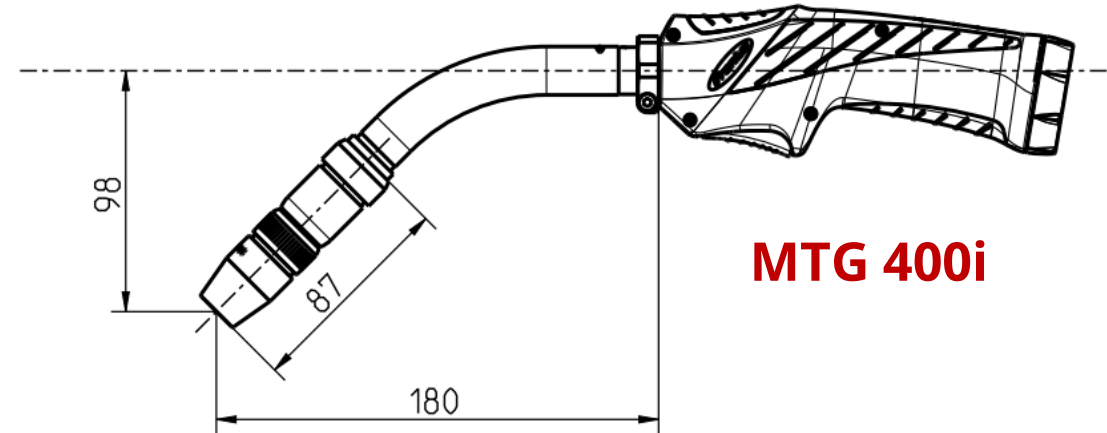
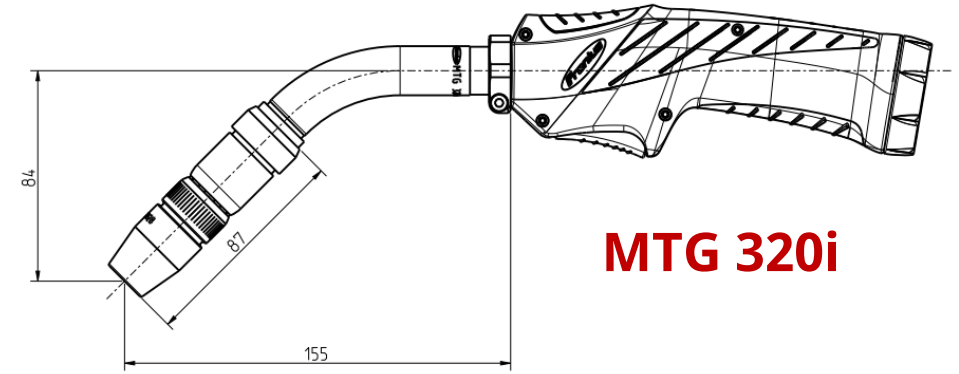
Welding torch lengths:
2,45m | 4,5m | 6,0m | 7,5m

Straight Handle | 45° and 60° torch body angle

- **MTG 320i** US-Style – **320A 40% DC** | 260A 60% DC | 210A 100% DC – MIXED / CO2
- **MTG 400i** US-Style – **400A 40% DC** | 320A 60% DC | 260A 100% DC – MIXED / CO2
- **MTG 500i** US-Style – **500A 30% DC** | 400A 60% DC | 300A 100% DC – MIXED / CO2

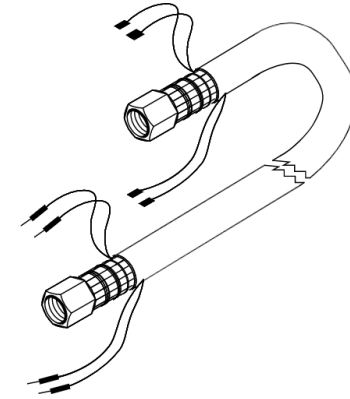
Torch body

- The MTG 320i has the shortest torch body
- The MTG 400i and MTG 500i have the same torch body
 - The only difference between the MTG 400i and MTG 500i is the length of the wear parts

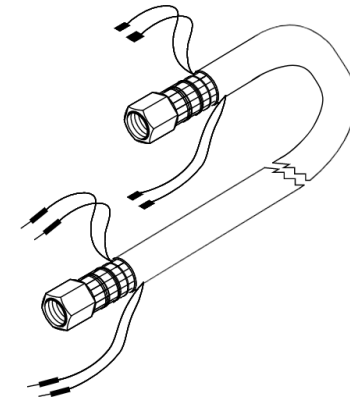


Coaxial cable

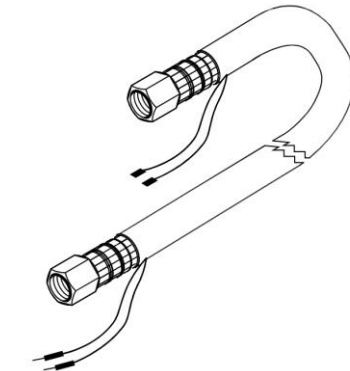
- MTG 320i has a 45mm²
- MTG 400i has a 50mm²
- MTG 500i has a 65mm²



MTG 320i



MTG 400i



MTG 500i

Part numbers Ergo Handle

MTG 320i US-Style Ergo Handle, FSC

- 4,036,406 MTG 320i US-Style FSC/EH/15'45°
- 4,036,407 MTG 320i US-Style FSC/EH/15'60°
- 4,036,410 MTG 320i US-Style FSC/EH/20'45°
- 4,036,411 MTG 320i US-Style FSC/EH/20'60°

MTG 400i US-Style Ergo Handle, FSC

- 4,036,449 MTG400i US Style FSC/EH/8' 45°
- 4,036,422 MTG 400i US-Style FSC/EH/15'45°
- 4,036,423 MTG 400i US-Style FSC/EH/15'60°
- 4,036,426 MTG 400i US-Style FSC/EH/20'45°
- 4,036,427 MTG 400i US-Style FSC/EH/20'60°

MTG 500i US-Style Ergo Handle, FSC

- 4,036,496 MTG500i US-Style FSC/EH/15'45°
- 4,036,497 MTG500i US-Style FSC/EH/20'45°
- 4,036,498 MTG500i US-Style FSC/EH/25'45°
- 4,036,499 MTG500i US-Style FSC/EH/15'60°
- 4,036,500 MTG500i US-Style FSC/EH/20'60°
- 4,036,501 MTG500i US-Style FSC/EH/25'60°

Part numbers Straight Handle

MTG 320i US-Style Straight Handle, FSC

- 4,036,408 MTG 320i US-Style FSC/SH/15'45°

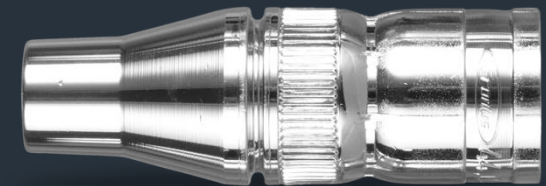
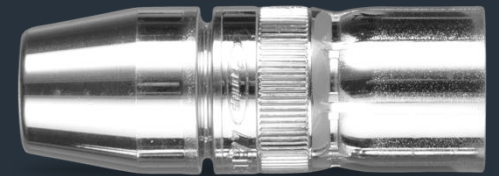
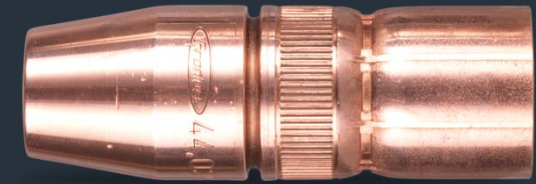
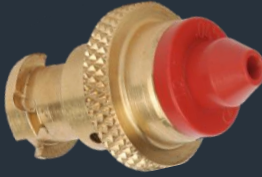
MTG 400i US-Style Straight Handle, FSC

- 4,036,450 MTG400i US-Style FSC/SH/8' 45°
- 4,036,424 MTG 400i US-Style FSC/SH/15'45°
- 4,036,425 MTG 400i US-Style FSC/SH/15'60°
- 4,036,428 MTG 400i US-Style FSC/SH/20'45°
- 4,036,429 MTG 400i US-Style FSC/SH/20'60°

MTG 500i US-Style Straight Handle, FSC

- 4,036,490 MTG500i US-Style FSC/SH/15'45°
- 4,036,491 MTG500i US-Style FSC/SH/20'45°
- 4,036,492 MTG500i US-Style FSC/SH/25'45°
- 4,036,493 MTG500i US-Style FSC/SH/15'60°
- 4,036,494 MTG500i US-Style FSC/SH/20'60°
- 4,036,495 MTG500i US-Style FSC/SH/25'60°

Wear parts

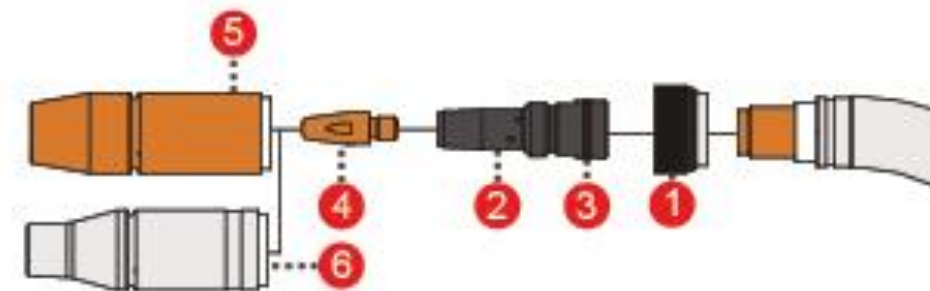


Wear parts MTG 320i / MTG 400i

- 1) 44,0350,4371 Insulating end ring $\varnothing 16$ / $\varnothing 27 \times 16$
- 2) 42,0001,6639,5 Nozzle stock M8x1,5 / 52,9 (Brass) *)
42,1000,0036,5 Nozzle stock M8x1,5 / 52,9 HD (Copper)
- 3) 42,0402,0334 O-ring MVQ70 15x2mm
- 4) Contact tip M8x1,5
- 5) 44,0350,2028,5 Gas nozzle $\varnothing 15$ / $\varnothing 25 \times 75$ M18x3 *)
44,0350,2030,5 Gas nozzle $\varnothing 15$ / $\varnothing 27 \times 75$ Heavy duty M18x3
44,0350,0059,5 Gas nozzle $\varnothing 15$ / $\varnothing 25 \times 68$ M18x3
- 6) 44,0350,2108,5 Gas nozzle narrow gap $\varnothing 13$ / $\varnothing 25 \times 75$ M18x3
44,0350,0068,5 Gas nozzle narrow gap $\varnothing 13$ / $\varnothing 25 \times 68$ M18x3

*) Standard equipment

The wear parts from the MTG 500i can also be used for the MTG 320i/400i. The mounting thread on the torch body is the same.

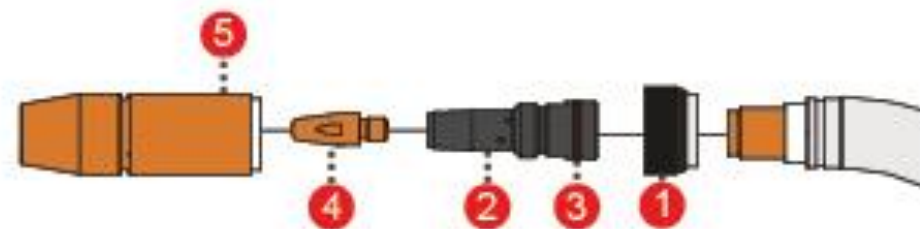


Wear parts MTG 500i

- 1) 44,0350,4371 Insulating end ring $\varnothing 16$ / $\varnothing 27 \times 16$
- 2) 42,0001,1145,5 Nozzle stock M8x1,5 / 62,9 (Brass)
- 3) 42,0402,0334 O-ring MVQ70 15x2mm
- 4) Contact tip M8x1,5
- 5) 44,0350,1567,5 Gas nozzle $\varnothing 17$ / $\varnothing 27 \times 85$ M18x3

*) Standard equipment

The wear parts from the MTG 320i/400i can also be used for the MTG500i. The mounting thread on the torch body is the same.



Contact Tip

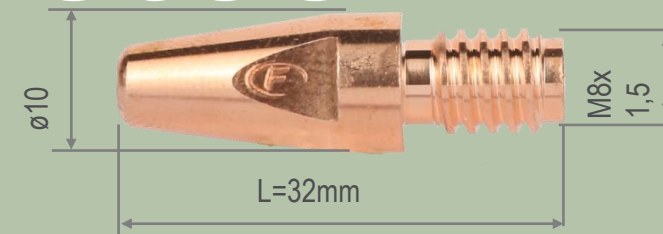


Small tip

- If the contact tip is worn out too fast, you can use a contact tip that is one size smaller.
 - Example: If the 1.2mm contact tip worn out too fast, you can use the 1.1mm contact tip or the WQ contact tip quality. See the table for the contact tubes.
- There are also steel and CrNi applications where a reduction of the contact tip bore occurs. This happens in a certain temperature range of the contact tip in combination with the quality of the filler material. In this case we recommend to use a contact tube one size larger.
 - Example: If at an 1.2mm contact tip you have a reduction of the contact tip bore, you can use a 1.3mm contact tip. See the table for the contact tubes.
- We recommend evaluating the lifetime of the contact tips on the customer's actual application.

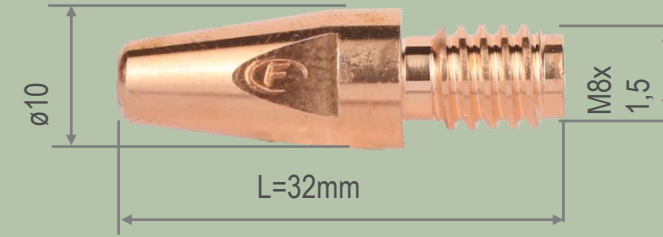
Matreial:
CuCrZr

Contact tip M8x1,5 for steel and CrNi



Article number	Description	Bore diameter	Suitable for wire diameter
42,0001,0136,10	Contact tip 0,6 / M8x1,5 / ø10x32	0,73mm	0,6mm
42,0001,6482,10	Contact tip 0,7 / M8x1,5 / ø10x32	0,88mm	0,7 / 0,8mm
42,0001,6464,10	Contact tip 0,8 / M8x1,5 / ø10x32	0,93mm	0,8mm
42,0001,6465,10	Contact tip 0,9 / M8x1,5 / ø10x32	1,05mm	0,9 / 1,0mm
42,0001,0128,10	Contact tip 1,0- / M8x1,5 / ø10x32	1,10mm	1,0mm
42,0001,6466,10	Contact tip 1,0 / M8x1,5 / ø10x32	1,16mm	1,0 / 1,1mm
42,0001,6483,10	Contact tip 1,1 / M8x1,5 / ø10x32	1,28mm	1,1 / 1,2mm
42,0001,6467,10	Contact tip 1,2 / M8x1,5 / ø10x32	1,39mm	1,2 / 1,3mm
42,0001,6484,10	Contact tip 1,3 / M8x1,5 / ø10x32	1,52mm	1,3 / 1,4mm
42,0001,6468,10	Contact tip 1,4 / M8x1,5 / ø10x32	1,62mm	1,4 / 1,5mm
42,0001,6485,10	Contact tip 1,5 / M8x1,5 / ø10x32	1,80mm	1,5 / 1,6mm
42,0001,6469,10	Contact tip 1,6 / M8x1,5 / ø10x32	1,83mm	1,6mm
42,0001,6470,10	Contact tip 1,8 / M8x1,5 / ø10x32	2,05mm	1,8mm
42,0001,6471,10	Contact tip 2,0 / M8x1,5 / ø10x32	2,30mm	2,0mm
42,0001,6472,10	Contact tip 2,4 / M8x1,5 / ø10x32	2,70mm	2,4mm
42,0001,4642,10	Contact tip 2,8 / M8x1,5 / ø10x32	3,30mm	2,8mm

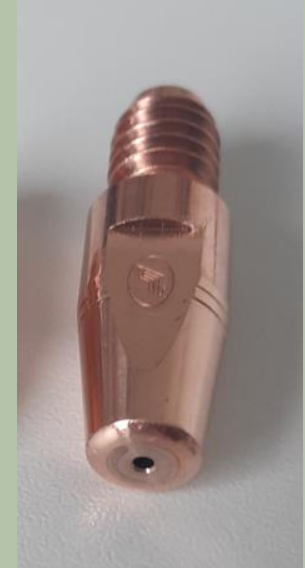
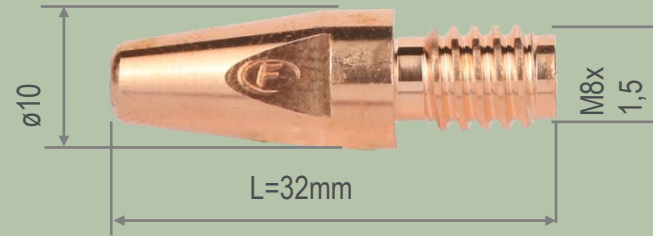
Contact tip M8x1,5 for Aluminum and CuSi



Article number	Description	Bore diameter	Suitable for wire diameter
42,0001,6537,10	Contact tip 0,8 / M8x1,5 / ø10x32 Al	0,97mm	0,8mm / 0,9mm Stahl und CrNi
42,0001,4750,10	Contact tip 1,0 / M8x1,5 / ø10x32 Al	1,20mm	1,0mm / 1,1mm Stahl und CrNi
42,0001,4751,10	Contact tip 1,2 / M8x1,5 / ø10x32 Al	1,43mm	1,2mm / 1,3mm Stahl und CrNi
42,0001,4752,10	Contact tip 1,6 / M8x1,5 / ø10x32 Al	1,90mm	1,6mm / 1,8mm Stahl und CrNi

WQ Quality
(Material: WCu)

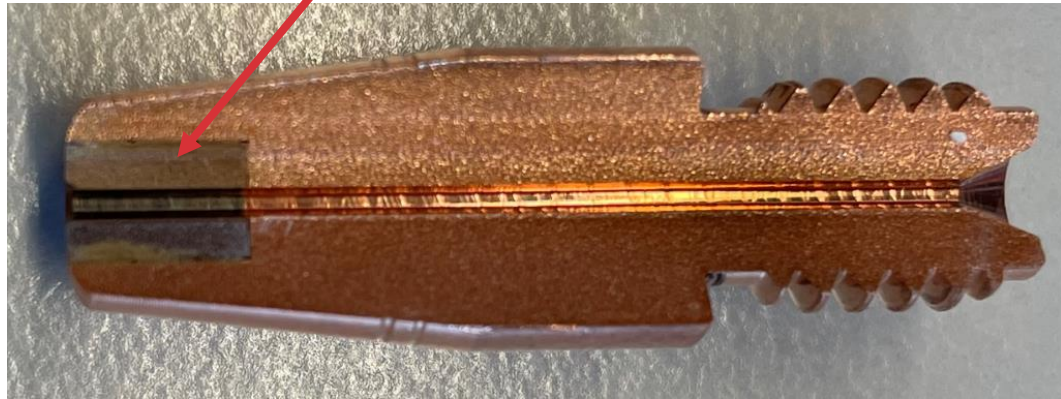
Contact tip WQ Quality M8x1,5 for Steel und CrNi if worn out too fast



Article number	Description	Bore diameter	Suitable for wire diameter
42,0001,7050,10	Contact tip 0,9 / M8x1,5 / $\varnothing 10 \times 32$ / WQ	1,05mm	0,9mm / 1,0mm Steel and CrNi
42,0001,7051,10	Contact tip 1,0 / M8x1,5 / $\varnothing 10 \times 32$ / WQ	1,10mm	1,0mm Steel and CrNi
42,0001,7052,10	Contact tip 1,2 / M8x1,5 / $\varnothing 10 \times 32$ / WQ	1,28mm	1,1mm / 1,2mm Steel and CrNi
42,0001,7053,10	Contact tip 1,6 / M8x1,5 / $\varnothing 10 \times 32$ / WQ	1,80mm	1,5mm / 1,6mm Steel and CrNi

Contact tips WQ – Tungsten Copper Quality

- In order to **increase the lifetime** of the contact tips, a **new quality** of contact tips is now available.
- These are **E-Cu contact tips** with a core on **tungsten copper** in the front area



Features of material

- **Tungsten-copper** materials are **used as arcing contacts** in SF6 **power switch** for **high** and **medium voltages**
- The **high temperature resistance** is one of the most important **advantages of tungsten**, while the copper content increases the electrical and thermal conductivity
 - excellent burn-off resistance
 - excellent electrical conductivity
 - high strength
 - good machinability
 - very good thermal conductivity
 - low thermal expansion



Advantages and Application

- For applications where **worn out of the contact tips** occurs
 - preferably with steel and CrNi
- In tests carried out, a **5-15 times longer lifetime** could be determined **compared** to the **CuCrZr** contact tubes.
- Advantages: higher availability, **increased productivity** and **reduced maintenance** effort
- The **lower change interval reduces** the **stress on the nozzle stock and gas nozzle thread**
- The contact tips are **possible to be changed** with the **Robacta CTC**



Cost reduction

- Even the **5 times higher price**, the **running costs can be reduced by using WQ contact tips**, depending on the lifetime increase and application area.

- **Example:**

- **2 shift operation**
- Changing of **CuCrZr tips: 1x per shift**
- **Lifetime increase WQ contact tip: 5 times**
- Required **time for contact tip change: 5 minutes**
- **Costs of robot per hour: € 100,-**
- **Costs of employee per hour: € 60,-**
- This example results in a **saving of € 21,33 per day**.
- A **10-times longer lifetime** results in a **saving of € 25,27 per day**.

Link calculation document

<https://collaboration.fronius.com/pw/products/productsandservices/tor/Documents/Calculation%20of%20cost%20reduction%20contact%20tips%20WQ%20vs.%20CuCrZr.xlsx?d=w4a9e06ec3a8b4dc29d4fab2bc0421f17>



Attention

- There are **also steel and CrNi applications** where the contact tips **bore becomes smaller**. This happens in a certain temperature range of the contact tip in combination with the quality of the additional material.
- **In these cases we don't recommend** the use of **this contact tip**. In these cases, a **larger bore hole diameter** of a standard CuCrZr contact tip should be used.
- We therefore recommend **evaluating the lifetime of the contact tips at the customer's site on the actual application**

Inner liner



Steel inner liner for gas- and watercooled | coil length 5m, 15m, 50m

- 40,0002,0040,005 Bare steel inner liner **0,8 / 5m** Iø1,4x1,5mm
- 40,0002,0040,015 Bare steel inner liner **0,8 / 15m** Iø1,4x1,5mm
- 40,0002,0040,050 Bare steel inner liner **0,8 / 50m** Iø1,4x1,5mm
- 40,0002,0041,005 Bare steel inner liner **1,0 / 5m** Iø1,6x1,6mm
- 40,0002,0041,015 Bare steel inner liner **1,0 / 15m** Iø1,6x1,6mm
- 40,0002,0041,050 Bare steel inner liner **1,0 / 50m** Iø1,6x1,6mm
- 40,0002,0042,005 Bare steel inner liner **1,2 / 5m** Iø1,9x1,5mm
- 40,0002,0042,015 Bare steel inner liner **1,2 / 15m** Iø1,9x1,5mm
- 40,0002,0042,050 Bare steel inner liner **1,2 / 50m** Iø1,9x1,5mm
- 40,0002,0043,005 Bare steel inner liner **1,6 / 5m** Iø2,5x1,2mm
- 40,0002,0043,015 Bare steel inner liner **1,6 / 15m** Iø2,5x1,2mm
- 40,0002,0043,050 Bare steel inner liner **1,6 / 50m** Iø2,5x1,2mm



CrNi inner liner for gas- and watercooled / coil length 5m, 15m, 50m

- 40,0002,0044,005 CrNi-bare inner liner **0,8 / 5m** Iø1,4x1,5mm
- 40,0002,0044,015 CrNi-bare inner liner **0,8 / 15m** Iø1,4x1,5mm
- 40,0002,0044,050 CrNi-bare inner liner **0,8 / 50m** Iø1,4x1,5mm
- 40,0002,0045,005 CrNi-bare inner liner **1,0 / 5m** Iø1,6x1,6mm
- 40,0002,0045,015 CrNi-bare inner liner **1,0 / 15m** Iø1,6x1,6mm
- 40,0002,0045,050 CrNi-bare inner liner **1,0 / 50m** Iø1,6x1,6mm
- 40,0002,0046,005 CrNi-bare inner liner **1,2 / 5m** Iø1,9x1,5mm
- 40,0002,0046,015 CrNi-bare inner liner **1,2 / 15m** Iø1,9x1,5mm
- 40,0002,0046,050 CrNi-bare inner liner **1,2 / 50m** Iø1,9x1,5mm
- 40,0002,0047,005 CrNi-bare inner liner **1,6 / 5m** Iø2,5x1,2mm
- 40,0002,0047,015 CrNi-bare inner liner **1,6 / 15m** Iø2,5x1,2mm
- 40,0002,0047,050 CrNi-bare inner liner **1,6 / 50m** Iø2,5x1,2mm



Combi inner liner with bronze piece L=40mm for aluminum gas cooled and CuSi gas- and water cooled

- 44,0350,3404 Combi inner liner G Al / **0,8 / 3,8m** CuSi G / W / ID1,2 / AD4,7
- 44,0350,3408 Combi inner liner G Al / **0,8 / 4,8m** CuSi G / W / ID1,2 / AD4,7
- 44,0350,3405 Combi inner liner G Al / **1,0 / 3,8m** CuSi G / W / ID1,5 / AD4,7
- 44,0350,3409 Combi inner liner G Al / **1,0 / 4,8m** CuSi G / W / ID1,5 / AD4,7
- 44,0350,3406 Combi inner liner G Al / **1,2 / 3,8m** CuSi G / W / ID1,8 / AD4,7
- 44,0350,3410 Combi inner liner G Al / **1,2 / 4,8m** CuSi G / W / ID1,8 / AD4,7
- 44,0350,3407 Combi inner liner G Al / **1,6 / 3,8m** CuSi G / W / ID2,4 / AD4,7
- 44,0350,3411 Combi inner liner G Al / **1,6 / 4,8m** CuSi G / W / ID2,4 / AD4,7



Combi inner liner with bronze piece L=40mm for aluminum gas cooled and CuSi gas- and water cooled

- 44,0350,3400 Combi inner liner G Al /**0,8/2,0m** CuSi G/W / ID1,2/AD4,7
- 44,0350,3401 Combi inner liner G Al /**1,0/2,0m** CuSi G/W / ID1,5/AD4,7
- 44,0350,3402 Combi inner liner G Al /**1,2/2,0m** CuSi G/W / ID1,8/AD4,7
- 44,0350,3403 Combi inner liner G Al /**1,6/2,0m** CuSi G/W / ID2,4/AD4,7
- 44,0350,3618 Combi inner liner G Al /**2,0/2,0m** CuSi G/W / ID3,0/AD4,7



Combi inner liner with bronze piece L=320mm for aluminum and CuSi gas cooled

- 44,0350,5513 Combi inner liner G /0,8/3,8m
- 44,0350,5518 Combi inner liner G /0,8/4,8m
- 44,0350,5514 Combi inner liner G /1,0/3,8m
- 44,0350,5519 Combi inner liner G /1,0/4,8m
- 44,0350,5515 Combi inner liner G /1,2/3,8m
- 44,0350,5520 Combi inner liner G /1,2/4,8m
- 44,0350,5516 Combi inner liner G /1,6/3,8m
- 44,0350,5521 Combi inner liner G /1,6/4,8m
- 44,0350,5517 Combi inner liner G /2,0/3,8m
- 44,0350,5522 Combi inner liner G /2,0/4,8m



Steel inner liner coated, universally applicable

- 40,0002,0052,005 Steel inner liner C **0,8 / 5 m** Coated IØ1,4x1,53mm
- 40,0002,0052,015 Steel inner liner C **0,8 / 15 m** Coated IØ1,4x1,53mm
- 40,0002,0052,050 Steel inner liner C **0,8 / 50 m** Coated IØ1,4x1,53mm
- 40,0002,0053,005 Steel inner liner C **1,0 / 5 m** Coated IØ1,6x1,53mm
- 40,0002,0053,015 Steel inner liner C **1,0 / 15 m** Coated IØ1,6x1,53mm
- 40,0002,0053,050 Steel inner liner C **1,0 / 50 m** Coated IØ1,6x1,53mm
- 40,0002,0054,005 Steel inner liner C **1,2 / 5 m** Coated IØ1,9x1,53mm
- 40,0002,0054,015 Steel inner liner C **1,2 / 15 m** Coated IØ1,9x1,53mm
- 40,0002,0054,050 Steel inner liner C **1,2 / 50 m** Coated IØ1,9x1,53mm
- 40,0002,0055,005 Steel inner liner C **1,6 / 5 m** Coated IØ2,5x1,2mm
- 40,0002,0055,015 Steel inner liner C **1,6 / 15 m** Coated IØ2,5x1,2mm
- 40,0002,0055,050 Steel inner liner C **1,6 / 50 m** Coated IØ2,5x1,2mm



Clamping piece – color coded



Gray
ø0,8mm
44,0350,3315,5 Fe / CrNi
44,0350,3314,5 Al / CuSi



Blue
ø0,9/ø1,0mm
44,0350,3317,5



Red
ø1,2mm
44,0350,3318,5



Black
Ø1,4/1,6mm
44,0350,3320,5

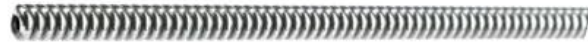
Basic kit for 0,9mm and 1,2mm is in box of the torch



ø0,9mm
42,0001,6465



Ø1,2mm
42,0001,6467



Coated Ø1,2mm / 15m
40,0002,0054,015



ø0,9/ø1,0mm
44,0350,3317,5



ø1,2mm
44,0350,3318,5



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