



# Holch

## WIG torches

Instruction manual



[www.holch-siegen.de](http://www.holch-siegen.de)

# ZERTIFIKAT

für das Managementsystem nach

## DIN EN ISO 9001:2008

Der Nachweis der regelkonformen Anwendung wurde erbracht  
und wird gemäß TÜV PROFICERT-Verfahren bescheinigt für



Holch Schweißbrenner GmbH  
Bühlstraße 14  
D-57080 Siegen

Geltungsbereich:

Entwicklung und Herstellung von  
Schutzgas-Schweißbrennern und Ersatzteilen



Zertifikat-Registrier-Nr. 73 100 1110-29

Zertifikat gültig von 2015-04-16 bis 2018-04-15

Auditbericht-Nr. 4290 7062



*O. Maier*  
Darmstadt, 2015-04-16  
Zertifizierungsstelle des TÜV Hessen  
- Der Zertifizierungsstellenleiter -



# HOLCH

## Schweißbrenner



By purchasing a **HOLCH** welding torch you have made a decision for a brand-name product "Made in Germany". Please read this manual carefully before you initial use of the welding torch to ensure a safe and technically correct use of the product.

**HOLCH** welding torches are only to be used with genuine **HOLCH** spare parts or with high quality spare parts suitable for the required welding task provided by specialized dealers.

If there are any further queries, please state the torch type (Art.No.) and the type of machine side connection (T.- No.)

# HOLCH TW torch bodys

water-cooled



12-1-TW



AS-18-TW



SR-18-TW



wp-18SC-TW



20-TW



20F-TW

gas-cooled



9-TW



AS-17-TW



SR-17-TW



ABL-220-TW



SR 26-TW



SR 26F-TW

Small, handy grips.  
There are all circuits possible  
by exchangeable modules

Robust, always separate lines,  
the front with leather hose 1m  
and a very flexible welding cable

## 1. Contents

1.	Contents	1
2.	Delivery contents	2
3.	Application	2
4.	Explanation of symbols	3
5.	Safety instructions	3
6.	Function	5
7.	Initial startup	6
8.	Operating instructions	8
9.	Maintenance / cleaning	9
10.	Troubleshooting	11
11.	Proper disposal	12
12.	Warranty	12
13.	Technical data	13
14.	Packaging and transport	14

## 2. Delivery contents

**HOLCH** welding torches are delivered with the desired machine side connections and are all set up to be connected to the welding machine they were ordered for.

All machine side connections produced by **HOLCH** can be found in our "T-number" directory. Each of the approximately 300 T-numbers defines all technical specification of a certain machined side connection.

At delivery, all **HOLCH** TIG-torches are equipped with a long back cap.

For further information about all possible equipment gears as well as consumables and spare parts, please visit our homepage:

**[www.holch-siegen.de](http://www.holch-siegen.de)**

Tungsten electrodes and all other consumables depending on the size of the tungsten electrode are **not** included in the delivery!

## 3. Application

### **Caution!**

Never use a TIG-torch designed for water/liquid cooling on a gas-cooled machine!

Overloading a torch will break the torch!

Before use, the ready-to-connect **HOLCH** TIG-torch has to be equipped by a skilled employee for the specific welding task.

**HOLCH** TIG-torches are equipped with customary consumables which can be purchased at specialist dealers.

For further information also visit our homepage:

**[www.holch-siegen.de](http://www.holch-siegen.de)**

#### 4. Explanation of symbols



##### **INFO**

Technical information and operating instructions for users.



##### **CAUTION**

Danger of injury by ignoring guidelines for safety and operating procedures.



##### **Operating instructions**

Danger of damage of the torch or the welding machine by inappropriate usage of the torch.

All **HOLCH** TIG-torches are produced according to **EN 60794-7**.

All **HOLCH** products are subject to constant quality inspections during all stages of production according to **EN ISO 9001**.

#### 5. Safety instructions



##### **Please note :**

1. The usage of the torch is only permitted to skilled arc-welding staff.
2. There is risk for eyes, skin and ears ! Make sure to wear protective clothing as well as eye and ear protection.
3. Use the welding machine and all attached equipment, such as cooling devices, etc. according to their manuals.



### **Please note :**

4. Switch off the power source (welding machine) before cleaning the torch or changing its consumables.
5. Do not drag the cable assembly over sharpe edges. Do not let cable assembly get in touch with hot items.
6. Be sure to protect others from eye flash burns by using appropriate protective screens or walls.
7. Make sure to follow all regulations of the compressed gas regulations.
8. Use only in appropriate places. A welding fume exhaust ventilation is required. Be sure to take precautions against climatic influences when using the torch outdoors.
9. Make sure there are no degreasers containing chloride close to the welding location. Make sure to clean all work pieces which have been degreased with a chloride containing degreaser with clear water afterwards to avoid any forming of phosgene gases.
10. Welding under tight space conditions might result in an electrical hazard. Make sure to use isolating pads and be sure to provide good ventilation.
11. Do not exceed the indicated performance data, as it indicates the torches threshold value. Exceeding the indicated value may lead to the destruction of the torch!



## 5. Safety instructions



All metal vapors, particularly lead, cadmium, copper and beryllium are harmful to health!

Make sure to always provide good ventilation and/or use fume exhaust ventilation!

Be sure to provide appropriate fire retardants at the place of welding!

## 6. FUNCTION

The equipped welding torch will generate an electric arc, when being used together with a welding machine.

For TIG welding a tungsten electrode is being used. The weld pool and the electric arc are shielded by an inert gas. Current is transferred via the collet to the tungsten electrode. The electric arc is being ignited at a distance of about 5mm to the work piece.

The cable assembly serves as a supply line and contains supply lines for current, inert gas and depending on the model also supply lines for cooling liquids. The cable assembly also contains a control line which enables the welder to control the welding machine as well as the torch.

The cable assembly is equipped with all connection elements to fit to a specific welding machine.

Only use spare parts suitable for the required welding task provided by specialized dealers.



**A pointed tungsten electrode increases the danger of injury when mounting the spare parts onto the torch body.**

1. Screw the collet body with the collet into the torch body from the front.
2. Inert the tungsten electrode into the collet from the rear.
3. When the tungsten electrode has reached the desired position, screw the back cap against the collet in order to fix the position of the electrode.
4. Screw the gas nozzle onto the torch body.



You can use a gas lens instead of the collet body. Due to its design the gas diffuser produces a laminar gas flow.

## Tungsten electrode

1. The type of electrode is set by **EN 26 848**
2. The max. stick out of the electrode depends on the type of torch  
(See technical data)



Welding behavior depends on the kind of consumables and the tungsten electrode that is being used. Please make sure that the surface of the tungsten electrode is smooth and free of grooves.

## Connecting the torch

The machine side connections of the cable assembly are compatible with your power source. Please note that changing the machine side connections is only permitted to qualified personnel or the producer of the torch.

Please follow the operation instruction of the welding machine manufacturer.

## Set inert gas flow

The flow rate depends on the welding task and the size of the gas nozzle.

## Connect the coolant supply circuits

(only on liquid-cooled welding torches)

Please make sure that the coolant supply and return circuit are connected the right way. Never reverse supply and return circuit.

Coolant **supply** circuit - connector nipple with **blue** marking

Coolant **return** circuit - connector nipple with **red** marking

Ventilate the entire cooling system at the very first use as well as after every change of the welding torch in the following way:

1. Release the coolant return line on the running coolant unit and hold it above a collecting container.

2. Close and open the return hose several times abruptly until the coolant is flowing continuously and without any air bubbles into the collecting container.
3. Switch off the coolant device and reconnect the coolant return cable to the coolant unit.



Be sure to check if there is enough cooling liquid in the cooling unit before starting the welding process. Liquid-cooled TIG torches may only be operated with suitable cooling liquids available at specialized dealers.

## 8. Operating instructions

### **Check before welding :**

1. Are all connections of the welding torch firmly connected to the power supply?
2. Are the spare parts on the torch body suitable for the scheduled welding task?
3. If using a liquid-cooled torch: is the coolant unit working and does the coolant liquid flow?

### **Welding process**

Make sure that all relevant parameters at the power supply unit are set suitable for your welding task.



Make sure you are wearing appropriate clothing and are using appropriate protective equipment. Also, make sure to check the surrounding area for possible dangers.

4. After ignition hold the welding arc close to the edge of the material to be welded until a molten pool is formed.
5. Move the torch over the entire seam keeping the arch length consistent.
6. After switching off, hold the torch in position for a few seconds to allow the molten pool to solidify under the protection of the inert gas without any atmospheric interference.



There is a danger of injury due to hot workpieces and torch parts!

### **Ending the welding process**

7. Switch off the power supply.
8. Close the shut-off valve of the gas supply.

### 9. Maintenance / Cleaning



Make sure that before and during any maintenance or cleaning work the power supply is shut off and the gas shut-off valve is closed.

### **Welding torch**

1. Make sure that all power, coolant and gas connections are clean, that the metal surfaces are bare and the connections are fitted tightly.
2. Make sure that all the lines are in good condition.

3. Replace all damaged, deformed or worn parts. Defective welding torches may only be repaired by trained personnel or specialized dealers.

### **Tungsten electrode**

For sharpening the tungsten electrode use a sharpening device with a diamond plate. The following principles apply:

1. Point is ground centric to the center axis
2. Automatic regulation of the tungsten electrode by gravity
3. Diameter adjustable for all electrodes
4. Stepless adjustment of angle

## 10. Trouble shooting

Problem	Cause	Solution
No welding arc	<ol style="list-style-type: none"> <li>1. Power supply to work-piece or torch interrupted</li> <li>2. Fault with power supply or control system</li> <li>3. Control lead broken</li> <li>4. Protection not activated in power supply</li> </ol>	<ol style="list-style-type: none"> <li>1. Close power circuit</li> <li>2. Repair</li> <li>3. Replace</li> <li>4. See operating instruction of power supply</li> </ol>
Torch body or power supply overheating	<ol style="list-style-type: none"> <li>1. Inadequate flow of coolant</li> <li>2. Welding amperage too high</li> <li>3. Cooling liquid line/ return line blocked or constricted</li> <li>4. Tungsten electrode loose</li> </ol>	<ol style="list-style-type: none"> <li>1. Make sure the circulating unit is working correctly</li> <li>2. Reduce welding amperage</li> <li>3. Check flow and replace defective hoses if necessary</li> <li>4. Tighten with back cap</li> </ol>

Welding torches may only be repaired by trained or specialized dealers.

## 11. Proper disposal

The welding torch consists mainly of steel, plastics and non ferrous metal and has to be disposed in accordance with the local environmental regulations. This applies to the disposal of the coolant liquid as well.

## 12. Warranty

TIG welding torch produced by **HOLCH** Schweißbrenner GmbH stand for flawless production.

At time of delivery **HOLCH** Schweißbrenner GmbH guarantees the flawless production and function according to the regulations at the time of production.

This warranty cover manufacturing faults but does not cover any damages resulting from natural wear and tear, or improper use.



### 13. TECHNICAL DATA

General data	Temperature of ambient air	During welding -10°C bis + 40°C During transport -10°C bis + 55°C During storage -15°C bis + 55°C
General torch data	Type of voltage  Polarity of electrode at DC  Type of guide  Voltage limitation  Safety class of machine side connections  Shielding gas  Tungsten electrode	Direct current (DC) or alternating current (AC)  Negative, as a rule  Manual  Peak value of 113V  IP3X  As per EN ISO 14175:2008  Industry standard tungsten electrodes
Electrical control devices	Breaking capacity of potentiometer Breaking voltage of button Breaking current of button Breaking capacity of button	1W at +40°  0,02-42V (DC and AC)  0,01-100mA  Max. 1W

## Product specific data as laid out in EN 60974-7

Type	Type of cooling	Rating DC(A)	Rating AC(A)	Duty cycle (%)	Electrode diameter Ø / Max. Length 175mm	Gasflowrate (l/min)	Max. feed temp. (°C)	Min. flowrate (l/min)	Min. flow pressure (bar)	Max. flow pressure (bar)	
with HOLCH TW torch body	<b>9-TW</b>	Gas	110	95	100	1,0-1,6	5-12				
	<b>AS 17-TW</b>	Gas	140	125	100	1,0-2,4	5-15				
	<b>SR 17-TW</b>	Gas	140	125	100	1,0-2,4	5-15				
	<b>SR 26-TW</b>	Gas	240	200	100	1,0-3,2	5-18				
	<b>ABL 220-TW</b>	Gas	240	200	100	1,0-3,2	5-18				
	<b>12-1-TW</b>	Water	350	260	100	1,6-4,0	8-22	50	0,8	2,5	3,5
	<b>AS-18-TW</b>	Water	320	240	100	1,0-4,0	8-22	50	0,8	2,5	3,5
	<b>SR-18-TW</b>	Water	320	240	100	1,0-4,0	8-22	50	0,8	2,5	3,5
	<b>wp-18SC-TW</b>	Water	400	320	100	1,0-4,8	8-22	50	0,8	2,5	3,5
	<b>20-TW</b>	Water	220	200	100	1,0-3,2	5-18	50	0,8	2,5	3,5
	<b>AUT 210-S</b>	Gas	240	200	100	1,0-4,0	5-18				
	<b>AUT 230-S</b>	Gas	240	200	100	1,0-4,0	5-18				
<b>AUT 410-S</b>	Water	400	320	100	1,6-4,0	8-22	50	0,8	2,5	3,5	
with import torch body	<b>SR 9</b>	Gas	110	95	60	1,0-1,6	5-12				
	<b>SR 17</b>	Gas	140	125	60	1,0-2,4	5-15				
	<b>SR26 / HP 26</b>	Gas	240	200	60	1,0-3,2	5-18				
	<b>SR 18</b>	Water	320	240	60	1,0-4,0	8-22	50	0,8	2,5	3,5
	<b>SR 20</b>	Water	220	200	60	1,0-3,2	5-18	50	0,8	2,5	3,5
	<b>W 30F</b>	Water	200	180	60	1,0-2,4	5-18	50	0,8	2,5	3,5
	<b>AUT SR 9P</b>	Gas	110	95	60	1,0-1,6	5-12				
	<b>AUT SR 26P</b>	Gas	240	200	60	1,0-3,2	5-18				
	<b>AUT SR 18P</b>	Water	320	240	60	1,0-4,0	8-22	50	0,8	2,5	3,5
	<b>AUT SR 20P</b>	Water	220	200	60	1,0-3,2	5-18	50	0,8	2,5	3,5
	<b>AUT SR 25FP</b>	Water	220	200	60	1,0-3,2	5-18	50	0,8	2,5	3,5

### 14. Packaging and transport

The products are carefully checked and packaged before shipping, however damage may occur during shipping.

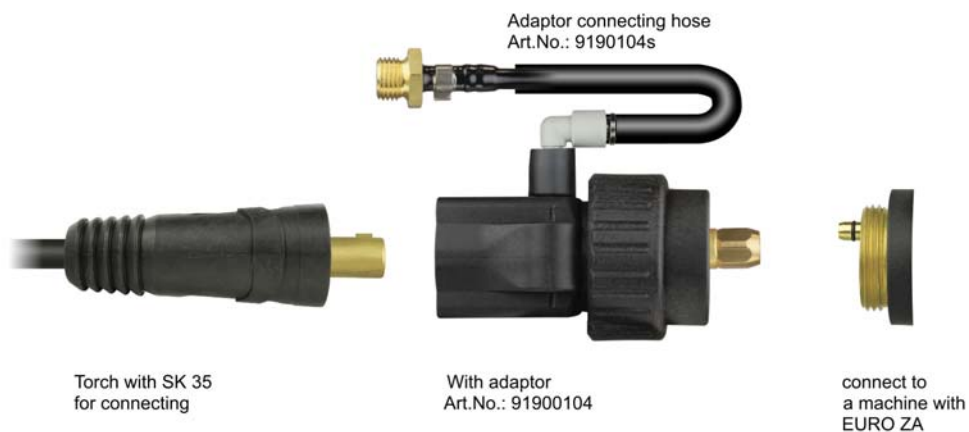
Upon arrival check that the shipment is correct by referring to the delivery note.

Check the package and components for visible damage.

In case of complaints get in contact with the responsible carrier immediately.

**Subject to change without notice**

# Adaptor for gas-cooled and water-cooled WIG torches

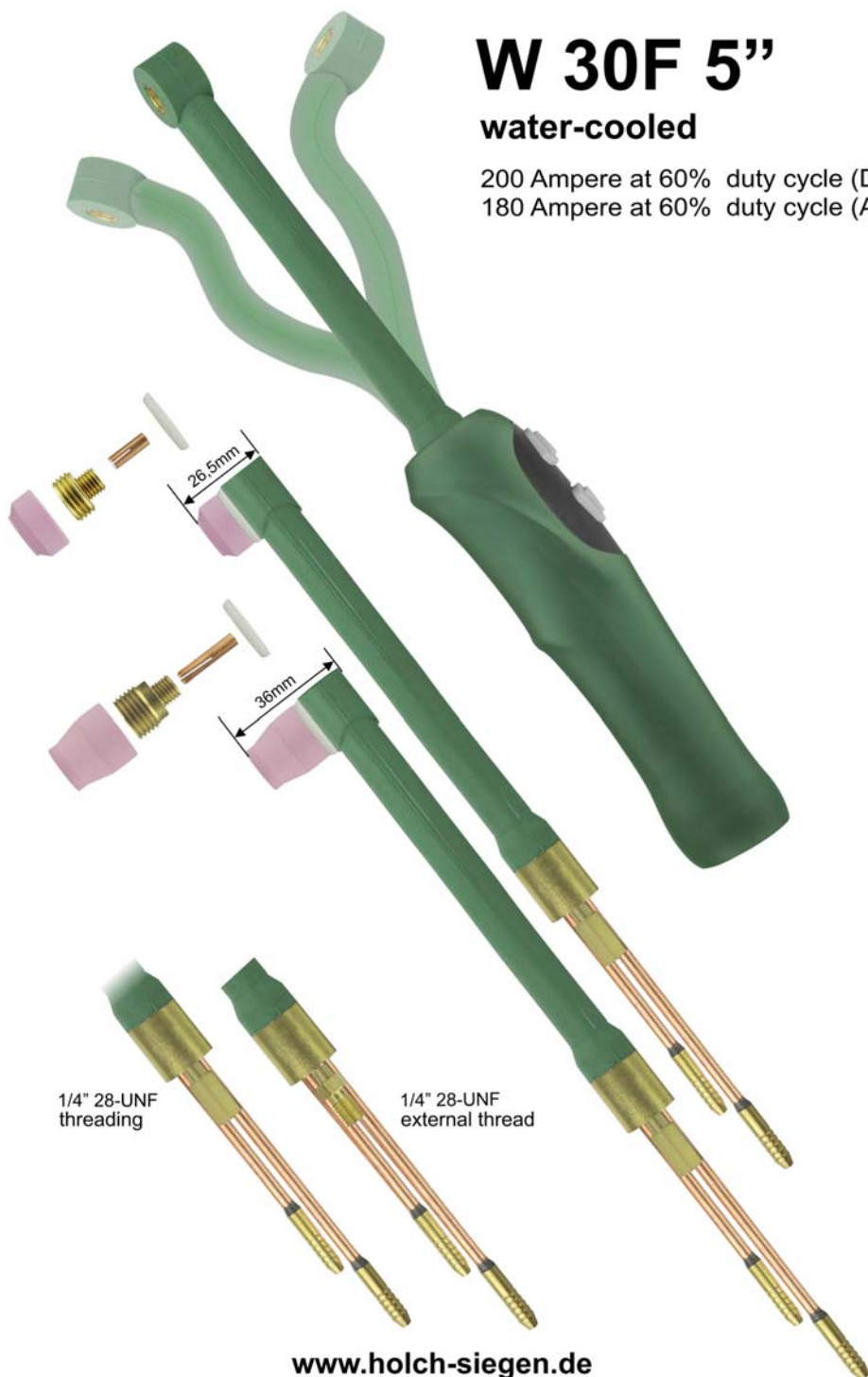


# W 30F 5''

**water-cooled**

200 Ampere at 60% duty cycle (DC)

180 Ampere at 60% duty cycle (AC)



**NEW**

# MG-handle

Proven quality with new function.

Now also with ball joint!



**handy - robust - flexible**

## Water-cooled special plugs fits for many types of machines



fits Lorch - special plug water-cooled



fits Dalex - special plug water-cooled



fits Kempfi - NEW with CA IG-R1/4" water-cooled



fits Dalex - NEW Electricity/Gas plug CW system with water diversion outside



fits Merkle - special plug water-cooled



fits Fronius - special plug water-cooled



fits Cloos - special plug water-cooled

## Gas-cooled special plugs fits for many types of machines



fits Lorch - special plug gas-cooled



fits Oerlikon - Electricity/Gas plug prestotig



fits Lorch / Merkle - special plug gas-cooled



fits Fronius - special plug gas-cooled



fits Dalex - special plug gas-cooled

# Machine-side connections WIG fits ESAB



# Machine-side connections WIG SK25 and SK35



# FORMA

HANDLE WITH BALL JOINT

ERGONOMIC  
HANDY



4 Modular switch units  
4 Colours

 **Holch**  
Schweißbrenner

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