

**AL 2300/3000/4000, AW 2500/4000/5000/7000**

**UP/DOWN, JOBMASTER, MULTILOCK**



**PERFECT WELDING**



## QUALITY TAKES ON NEW FORMS

### GENERAL

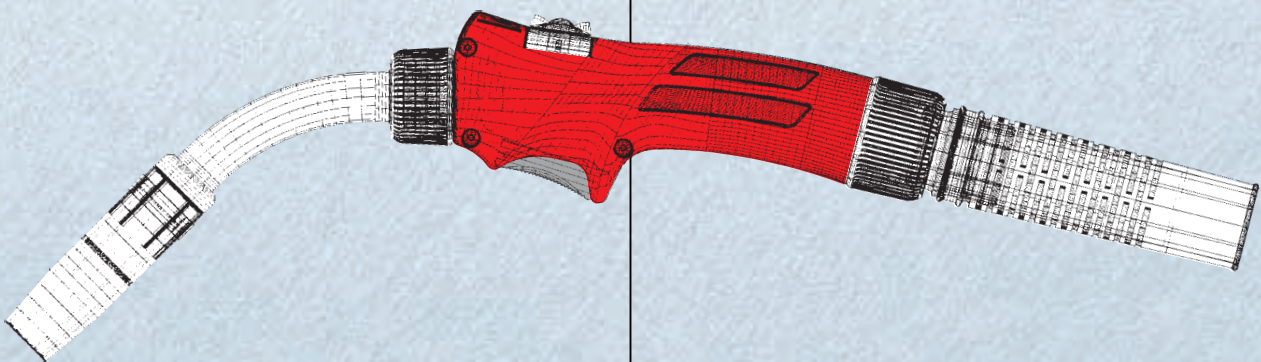
#### NEW - AND TRIED-AND-TESTED

The new welding torch family comprises both entirely new products and fully optimised existing systems. All of these new developments together have a joint aim: to improve handling and to give better, more precise welding properties.

Design has a key role here. A new feature of the MIG/MAG welding torches is their ergonomically perfected handles - the torch is secure and comfortable in the hand, making for easy manipulation. Apart from this, the design incorporates a technical achievement that will now let you operate the welding machine direct from the torch handle: the Job Master. Using this new feature you can set and read off the individual parameters before you start welding, and change them during the welding work.

Also new are a host of other technical advantages, for example the forced contacting arrangement for the wire, optimised gas-line, improved antikink protection, and the swivel-mounted hose pack.

The Multilock System is an already familiar feature permitting a simple exchange of the torch neck using a tube joint screw connection. Here too, there are innovations to report: the Up/Down control, for example, or the additional features that have come with the development of the new torch.



## UTILISATION

### A VERSATILE PROGRAMME

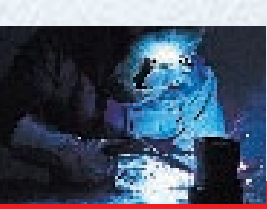
The new torch family gives you a broad range of operational possibilities. In general it is suitable for all jobs to be welded with air or water-cooled machines. For industrial as well as for workshop and craft applications.

In particular, the new products have been conceived for those tasks that demand maximum loadability and the very highest reliability, combined with superior welding properties.

The possible applications thus range from industries such as steel, mechanical engineering and apparatus construction to the automobile and automobile supply industries and shipbuilding. The new torches are also ideal for aluminium and high and low alloy steels

The Multilock System offers a particularly versatile range of applications because its torch neck can be rotated through 360°. This means that access is now much simpler for most jobs, but especially for welding in constricted positions. The numerous angles available for the torch neck mean many jobs that could previously only be electrode-welded can now be tackled efficiently with the much more cost effective MIG/MAG process.





# TAKE THE PROCESS FIRMLY IN HAND

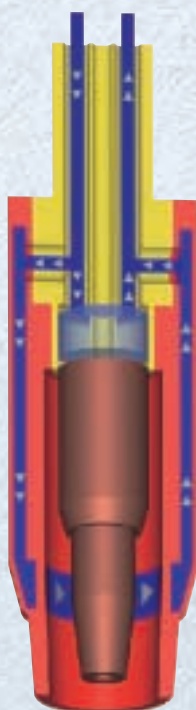
## WELDING PROPERTIES

### STABILITY IS EVERYTHING

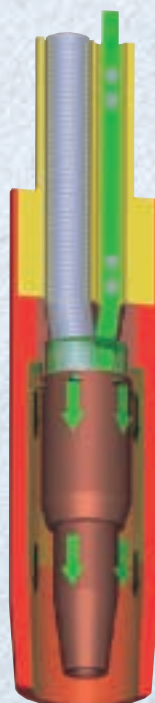
The most important requirement for any welding process is stability. Various factors are important if this is to be achieved. One of these is the cooling of the torch, and in particular of its wearing parts such as the contact tube and the gas nozzle. A reliable and stable welding process can only be assured in the long term when there is optimal cooling functionality. For this reason the new torches are characterised by a special construction which maximises the contact area between the contact tube and the Cu pick-up. The Cu pick-up is water cooled, which is ideal for conducting the heat away from the contact tube.

A well cooled gas nozzle is also vital for a stable welding process. So for high-power jobs or the high-performance T.I.M.E. process, the gas nozzle is directly water cooled. This brings many advantages with it, for example radiant arc heat is swiftly conducted away and there is minimum spatter adhesion to the gas nozzle, meaning that this never gets warmer than 50° C. You can even touch the gas nozzle with your hand immediately after welding!

Another point about the water-cooled torches AW 4000/5000/7000 is that the gas reaches the gas nozzle without any loss. This is achieved by a controlled gas-flow with one single line all the way into the gas nozzle. This makes it impossible for even the tiniest quantities of gas to escape via the wire inner-liner. In this way, maximum gas protection is available during the entire welding process.



*Optimised  
2-way cooling system*



*Loss-free  
gas-line*



## HANDLING

### THE FORCED CONTACTING ARRANGEMENT

One of the most important factors affecting the stability of the welding process is the transfer of welding power to the weld wire. Up to now, this transition has always been the weakest link in the entire chain of the welding process. And this is precisely the point that



Fronius has tackled in developing this new technology. The result of these intensive efforts is the forced contacting arrangement for manual welding torches as well. This ensures a defined current transfer throughout the welding process. The result - high stability and precision. The forced contacting arrangement was first tested on robot applications, where it delivered excellent results. The unique advantage of the forced contacting arrangement is now also available for manual torches as well.

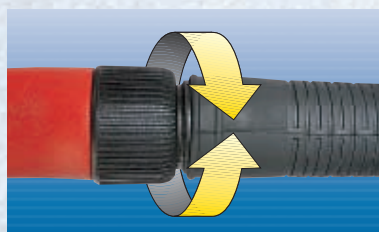
### ERGONOMICS PLAYS THE LEADING ROLE

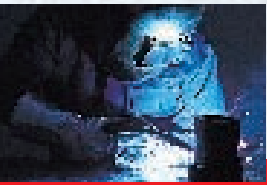
The torch has a direct influence on the entire welding process. It can be regarded as an extension of the welder's arm. This makes quality even more important. And the quality starts right with the design. Because the design of the torch directly affects the handling, it determines how well you can manipulate the torch. Superior ergonomics was thus the determining factor in the development of the torch.

The grip handle has been completely re-modelled. The good gripping qualities of the surface together with the clear finger positioning give you a secure hold and make the torch especially compact. The torch switch is protected to prevent the machine being switched on accidentally. It should also be mentioned that the torch trigger functions highly reliably under even the toughest conditions.



The new hose pack makes for even easier handling. Much less force is now required to control e.g. torch oscillation, since the wire-feed hose and protective hose are now swivel-mounted. A new and improved antikink function ensures gently rounded transition zones between the hosepack and the central connector and where the hosepack meets the torch handle.





# ALL WELL THOUGHT-OUT

## HANDLING



AL 2300/AW 2500



AL 3000/AW 4000



AL 4000/AW 5000



AW 7000



AW 335

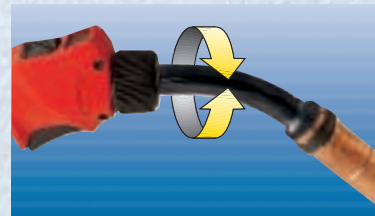


AW 332

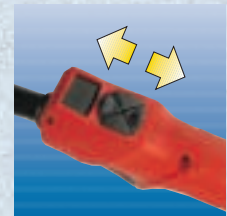
### MULTILOCK-SYSTEM: EVERYTHING IS POSSIBLE

Extreme flexibility is typical of the Multilock System. Depending on the power range you are welding in - from 250 up to 700 A - you can simply unscrew the torch neck and fix it in any position you want. The torch neck can be rotated through 360°, which makes it much easier for you to get at those hard-to-reach parts.

Even on water-cooled torches, the torch neck can be turned, loosened and pulled up to 3 mm out of its coupling without any welding defects occurring because of water leakage. This makes handling very much easier for you.



Multilock System



Up/Down button

As does the new, optimised Up/Down button. This lets you adjust the welding power continuously. A specially designed rubber cover protects the button from dirt and welding spatter.

### JOBMASTER: CONTINUOUS REMOTE CONTROL RIGHT FROM THE TORCH HANDLE

The Job Master system is unique. For the first time, it gives you the opportunity to control a range of welding parameters directly from the torch handle. A single glance at the display is all you need. Depending on the parameters you previously set, you will be given a continuous read-out of the values you want to monitor. If you work with jobs, you can also select these and read them off directly. You can easily change the welding power at any time directly from the handle, simply and continuously using the Up/Down button. Job Master gives you permanent control over the welding process, without your having to leave the scene of the action even once. As well as saving time and nerves, this is beautifully practical.



JobMaster

## ECONOMY

### BORN PENNY-PINCHERS

Fronius products always have to fulfil an additional specification: Cost effectiveness. And the new torch system is no exception! The forced contacting arrangement is a good example of this: It makes for an optimum ignition and welding process, and thus for reduced spatter and uniform weld-seams – no need for any costly follow-up work! Or the Job Master for example. It is not only simple to use, but brings enormous time savings because you are monitoring and controlling the whole process directly from the job site. The cooling system also helps you make big savings. Thanks to the generously sized contact tube, heat is very effectively conducted away and wear is significantly reduced.

*Common non-Fronius copper contact tip*



*Generously sized contact tip from Fronius*

In general terms, improved handling saves time and money. And as we've seen, the new torch system is not exactly short on innovations to make things easier for you! The way the Multilock System makes it easier for you to get at difficult corners, for example, thanks to its rotatable torch neck. And that's just one example of many. The best thing would be for you to try out all the many advantages for yourself!

## DURABILITY

### THE LONGER THE BETTER

There are many factors that influence the service life of a welding torch. The more of these that are recognised and taken into account in the development phase, the better. And you'll be delighted to know that that's just what we've done!

Take the contact tubes and the gas nozzles. Their operational lifespan is directly dependent on the cooling system.

As we well know - which is why there've been no compromises. The water conduits are generously sized and ensure optimum heat transfer.

The hosepack, too, has a considerable influence on the service life, as it is under constant heavy strain. Top-grade components protect it from wearing too quickly, and ensure prolonged availability even in industrial use. The finely stranded copper braiding of the power cable, for example, ensures a maximum number of bending cycles, while the high quality EPDM rubber fabric tube ensures the very highest resistance to spatter and ultra-violet radiation. The rubber anti-kink feature has also been improved. This is now even more elastic, and protects the hosepack components particularly well in critical areas such as right by the handle and around the central connector.

In the same way as all Fronius power sources, our welding torches also have to undergo rigorous testing - and so offer a reassuringly high level of safety. As shown by the fact that every single torch bears the CE mark to EN 50078.

As you can see, the new torches have an enormous number of details that all share one single purpose: Prolonging the life-span. And as we said - the longer the better.

## CHECKLIST

### AL 2300 / AL 3000 / AL 4000

#### Gascooled manual torches

Plug-type gas nozzles  
Superior spatter protection and extremely heat-resistant  
Contact tip of CuCrZr alloy  
Forced contacting  
Gascooled cone-area  
Double-tube construction  
Ergonomic handle  
Coaxial cable  
Anti-kink protection on both ends of the hosepack

### AW 2500 / AW 4000 / AW 5000 / AW 7000

#### Watercooled manual torches

Plug-type gas nozzle  
Perfect spatter-protection with superior thermal resistance  
Contact tip of CuCrZr alloy  
Forced contacting arrangement  
Swirl-free flow of gas – no loss of gas  
Highly effective cooling of contact tip and gas nozzle  
Ergonomic handle  
Anti-kink protection on both ends of the hosepack  
High-quality hose material

### Multilock-System

#### for gas- and watercooled torches

Torch neck can be swivelled through 360°  
Simple coupling even of special torch necks

### JobMaster

Integrated remote-control unit  
Digital display of welding parameters  
Up/Down function  
Call-up mode for operating points and jobs  
Sequential parameter retrieval  
Parameter-correction mode

## TECHNICAL DATA

EN 50078

	Hosepack length	Welding current		Duty cycle	Wire Ø
		CO <sub>2</sub>	Ar/CO <sub>2</sub>		
AL 2300 gascooled	3.5 / 4.5 m	230 A	200 A	40 %	0.6-1.0 mm
AL 3000 gascooled	3.5 / 4.5 m	300 A	250 A	40 %	0.8-1.2 mm
AL 4000 gascooled	3.5 / 4.5 m	400 A	350 A	40 %	1.0-1.6 mm
Multilock gascooled	3.5 / 4.5 m	400 A	350 A	40 %	0.6-1.6 mm
AW 2500 watercooled	3.5 / 4.5 m	250 A	220 A	100 %	0.6-1.2 mm
AW 4000 watercooled	3.5 / 4.5 m	400 A	350 A	100 %	0.8-1.2 mm
AW 5000 watercooled	3.5 / 4.5 m	500 A	400 A	100 %	1.0-1.6 mm
AW 7000 watercooled	3.5 / 4.5 m	700 A	550 A	100 %	1.0-1.6 mm
AW 332 watercooled	3.5 / 4.5 m	250 A	200 A	60 %	0.8-1.2 mm
AW 335 watercooled	3.5 / 4.5 m	250 A	200 A	60 %	0.8-1.2 mm
Multilock watercooled	3.5 / 4.5 m	500 A	400 A	100 %	0.6-1.6 mm

CE

## ARTICLE NUMBERS

Manual torches	Fronius++ connector		Euro connector	
	3.5 m	4.5 m	3.5 m	4.5 m
AL 2300	4,035,637	4,035,638	4,035,637,001	4,035,638,001
AL 2300 U/D	4,035,639	4,035,640	4,035,639,001	4,035,640,001
AL 3000	4,035,600	4,035,601	4,035,600,001	4,035,601,001
AL 3000 U/D	4,035,622	4,035,623	4,035,622,001	4,035,623,001
AL 4000	4,035,602	4,035,603	4,035,602,001	4,035,603,001
AL 4000 U/D	4,035,624	4,035,625	4,035,624,001	4,035,625,001
AW 2500	4,035,641,000	4,035,642,000	4,035,641,001	4,035,642,001
AW 2500 U/D	4,035,643,000	4,035,644,000	4,035,643,001	4,035,644,001
AW 2500 JobMaster	4,035,645,000	4,035,646,000	4,035,645,001	4,035,646,001
AW 4000	4,035,594,000	4,035,595,000	4,035,594,001	4,035,595,001
AW 4000 U/D	4,035,616,000	4,035,617,000	4,035,616,001	4,035,617,001
AW 4000 JobMaster	4,035,610,000	4,035,611,000	4,035,610,001	4,035,611,001
AW 5000	4,035,604,000	4,035,605,000	4,035,604,001	4,035,605,001
AW 5000 U/D	4,035,618,000	4,035,619,000	4,035,618,001	4,035,619,001
AW 5000 JobMaster	4,035,612,000	4,035,613,000	4,035,612,001	4,035,613,001
AW 7000	4,035,596,000	4,035,597,000	4,035,596,001	4,035,597,001
AW 7000 U/D	4,035,620,000	4,035,621,000	4,035,620,001	4,035,621,001
AW 7000 JobMaster	4,035,614,000	4,035,615,000	4,035,614,001	4,035,615,001

Hosepack Multilock	Fronius++ connector		Euro connector	
	3.5 m	4.5 m	3.5 m	4.5 m
Gascooled	4,035,402	4,035,403	4,035,402,001	4,035,403,001
Gascooled U/D	4,047,120	4,047,121	4,047,120,001	4,047,121,001
Watercooled	4,035,404,000	4,035,405,000	4,035,404,001	4,035,405,001
Watercooled U/D	4,047,119,000	4,047,118,000	4,047,119,001	4,047,118,001
Watercooled JobMaster	4,047,266,000	4,047,267,000	4,047,266,001	4,047,267,001

Torch-neck Multilock	AL 2300/AW 2500	AL 3000/AW 4000	AL 4000/AW 5000	AW 7000	AW 332	AW 335
	Torch-neck beding 0°	34,0350,1848	34,0350,1852	34,0350,1856	34,0350,1860	–
Torch-neck beding 15°	34,0350,1849	34,0350,1853	34,0350,1857	34,0350,1861	–	–
Torch-neck beding 30°	34,0350,1850	34,0350,1854	34,0350,1858	34,0350,1862	44,0350,0871	–
Torch-neck beding 45°	34,0350,1851	34,0350,1855	34,0350,1859	34,0350,1863	–	–



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