

ARC M HIGH PERFORMANCE LIQUID-COOLED SERIES

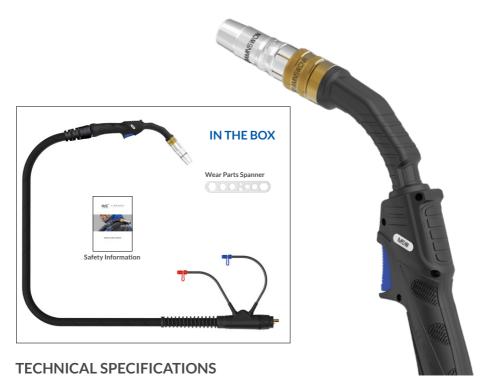


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Ideal for heavy duty 1.2mm high deposition and pulse applications with all wire types



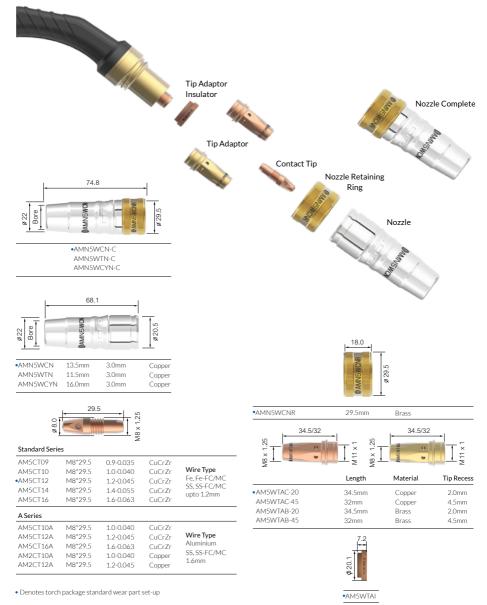
M5W IEC/EN 60974-7

Cooling Method	Liquid-Cooled			
	Cooler Rating	Max. A	Pulse	Max. Load
	1600W	560A	-	24KW
Rating: CO ₂	1200W	540A	-	22KW
	1000W	510A	-	20KW
Rating: Mixed Gas M21	1600W	540A	380A	22KW
	1200W	520A	350A	21KW
	1000W	500A	340A	19.5KW
Duty Cycle		100%	100%	
	Filler Wires	Fe, Fe-MC / FC		0.9-1.6mm
Wire Size	Filler Wires	Ss, Ss-MC / FC		0.9-1.6mm
	Filler Wires	Al		1.0-1.6mm
Minimum Liquid Flow Rate		1.5 l/min	Important:	
Minimum Liquid Inlet Pressure Maximum Liquid Inlet Pressure Maximum Liquid Inlet Temperature		2.5 Bar	Please note min	imum inlet
		5.0 Bar	pressure and flow rate. Low pressure will affect torch	
		50°C		
Operating Temperature Range		-10+40°C	performance	

M5W SET-UP GUIDE



M5W Torches are supplied "ready to weld" with all wear parts installed in accordance with the items listed below •



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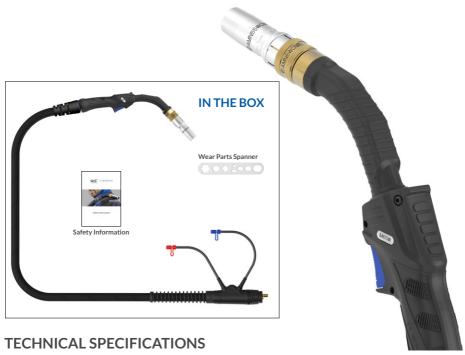
M55W/M65W/M65WS • CORCH





Liquid-Cooled Mig Welding Torch

 $\,$ M55W - Ideal for all high deposition applications with high reflected heat M65W - One Model - Optimized all wire types



M55W/M65W/M65WS

IEC/EN 60974-7

Cooling Method	Liquid-Cooled			
	Cooler Rating	Max. A	Pulse	Max. Load
Rating: CO ₂	1600W	580A	-	25KW
	1200W	550A	-	23KW
	1000W	520A	-	21KW
Rating: Mixed Gas M21	1600W	560A	400A	23KW
	1200W	530A	360A	21.5KW
	1000W	510A	350A	20KW
Duty Cycle		100%	100%	
	Filler Wires	Fe, Fe-MC / FC		0.9-2.0mm
Wire Size	Filler Wires	Ss, Ss-MC / FC		0.9-1.6mm
	Filler Wires	Al		1.0-2.0mm
Minimum Liquid Flow Rate		1.5 l/min	Important:	
Minimum Liquid Inlet Pressure Maximum Liquid Inlet Pressure Maximum Liquid Inlet Temperature Operating Temperature Range		2.5 Bar	Please note min	imum inlet
		5.0 Bar	pressure and flow rate. Low pressure will affect to performance	
		50°C		
		-10+40°C		

$M65WLP \ {\it Liquid-Cooled Mig Welding Torch}$



M65WLP - One Model - Optimized all wire types Ideal for high deposition and pulse applications with high reflected heat. Suitable for larger wire sizes, the 22 degree neck is better for feeding both stiff and soft wires.





TECHNICAL SPECIFICATIONS

M65WLP

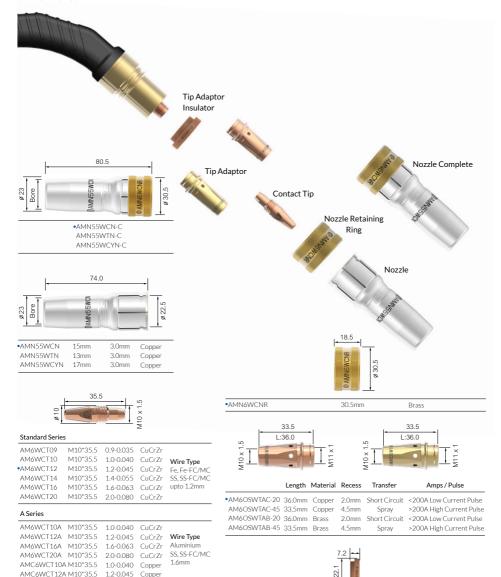
IEC/EN 60974-7

Cooling Method	Liquid-Cooled			
	Cooler Rating	Max. A	Pulse	Max. Load
Dating CO	1600W	590A	-	26KW
Rating: CO ₂	1200W	560A	-	24KW
	1000W	530A	-	22KW
	1600W	570A	420A	24KW
Rating: Mixed Gas M21	1200W	530A	380A	22KW
	1000W	500A	360A	19.5KW
Duty Cycle		100%	100%	
	Filler Wires	Fe, Fe-MC / FC		0.9-2.0mm
Wire Size	Filler Wires	Ss, Ss-MC / FC		0.9-1.6mm
	Filler Wires	Al		1.0-2.0mm
Minimum Liquid Flow Rate		1.5 l/min		
Minimum Liquid Inlet Pressure	'	2.5Bar	Important:	
Maximum Liquid Inlet Pressure		5.0 Bar	Please note minimum inlet	
Maximum Liquid Inlet Temperature		50°C	pressure and fl	ow rate.
Operating Temperature Range		-10+40°C		

M55W/M65W/M65WS/ M65WLP SET-UP GUIDE



M55W / M65W Series Torches are supplied 'ready to weld' with an M10 set-up in accordance with the items listed below •



[•] Denotes torch package standard wear part set-up

AM55WTA

LINER OPTIONS



Liners

Filler Metal

Steel Liner Recommended for: Fe, Fe-MC/FC. Light and medium duty applications

Part No.	Description	Contact Tip	Wire Size	
AM6SL-1012-30	Steel Liner x 3mt	Standard Series	1.0-1.2	•
AM6SL-1012-40	Steel Liner x 4mt	Standard Series	1.0-1.2	•
AM6SL-1012-50	Steel Liner x 5mt	Standard Series	1.0-1.2	•
AM6SL-16-30	Steel Liner x 3mt	Standard Series	1.6	
AM6SL-16-40	Steel Liner x 4mt	Standard Series	1.6	
AM6SL-16-50	Steel Liner x 5mt	Standard Series	1.6	
AM6SL-20-30	Steel Liner x 3mt	Standard Series	2.0	
AM6SL-20-40	Steel Liner x 4mt	Standard Series	2.0	
AM6SL-20-50	Steel Liner x 5mt	Standard Series	2.0	•

Filler Metal

Stainless Steel Liner Recommended for: SS, SS-MC/FC. Heavy Duty Fe. High amperages and heavy deposition welding

Part No.	Description	Contact Tip	Wire Size	
AM6SSTL-1012-30	Stainless Steel Liner x 3mt	Standard Series	1.0-1.2	•
AM6SSTL-1012-40	Stainless Steel Liner x 4mt	Standard Series	1.0-1.2	
AM6SSTL-1012-50	Stainless Steel Liner x 5mt	Standard Series	1.0-1.2	•
AM6SSTL-16-30	Stainless Steel Liner x 3mt	A Series	1.6	
AM6SSTL-16-40	Stainless Steel Liner x 4mt	A Series	1.6	•
AM6SSTL-16-50	Stainless Steel Liner x 5mt	A Series	1.6	•

Filler Metal

Al - Combi Liner Recommended for: Liquid-Cooled torches with AIMg and frequent /repetitive arc starts

Part No.	Description	Contact Tip	Wire Size	
AM6CL-1012-30	Combi-Liner x 3mt	Standard Series	1.0-1.2	•
AM6CL-1012-40	Combi-Liner x 4mt	Standard Series	1.0-1.2	
AM6CL-1012-50	Combi-Liner x 5mt	Standard Series	1.0-1.2	
AM6CL-1620-30	Combi-Liner x 3mt	A Series	1.6	
AM6CL-1620-40	Combi-Liner x 4mt	A Series	1.6	
AM6CL-1620-50	Combi-Liner x 5mt	A Series	1.6	•

Filler Metal

Al - Soft Wire Liner Recommended for: Liquid-Cooled torches with AlMg, AlSi, Pure Al and copper wires

Part No.	Description	Contact Tip	Wire Size	
AM6OSWL-1012-30	Soft Wire Liner x 3mt	A Series	1.0-1.2	•
AM6OSWL-1012-40	Soft Wire Liner x 4mt	A Series	1.0-1.2	
AM6OSWL-1620-30	Soft Wire Liner x 3mt	A Series	1.6-2.0	
AM6OSWL-1620-40	Soft Wire Liner x 4mt	A Series	1.6-2.0	

HARD WIRE LINER SET-UP





Preparing the Torch and Fitting the Liner

Prepare the Torch

Step 1

Lay the torch out flat and straight

- Remove the nozzle.
- Remove the contact tip and tip adaptor.
- Remove the liner retaining nut, twist and pull out the old liner if necessary.

Important:

Liners should not be fitted if the torch is bent or coiled



Install the New Liner

Step 2

- Feed in the new liner in short strokes of 20cm per time.
- Twist the handle if the liner sticks when feeding the liner through the swan neck.
- Continue to feed until the liner nipple is inside gun plug body.
- Fit liner nut. The torque is about 2.5Nm.

Important:

Do not use a kinked liner



HARD WIRE LINER SET-UP



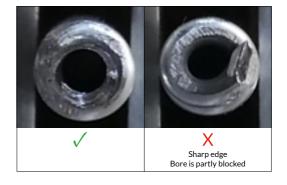
Install the New Liner, Cont.

Step 3

- Gently push the liner towards swan neck.
- Cut the excess liner so the liner sticks out of the swan neck front by about 5mm.
- Remove sharp burr from any internal and external surfaces from liner front-end with a file or a grinder.







Important:

The inner bore of the liner must be totally cylindrical and burr free.

Remove any external overhanging material prior to fitting the tip adaptor.

HARD WIRE LINER SET - UP

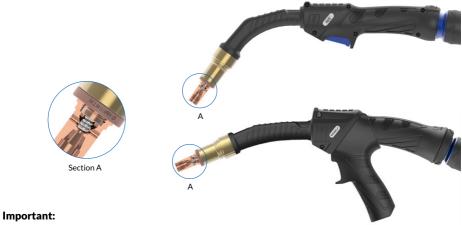




Install the New Liner, Cont.

Step 4

- Refit the tip adaptor.
- The liner front-end sits inside the tip adaptor as shown in Figure A.



The liner should always remain under light tension within the torch.

HARD WIRE LINER SET - UP





Feeding Wire Through the Torch

Preparing the Wire

Step 1

- Inch the wire out through the machine by 15-20cm. Using a file remove all sharp burrs from the leading edge of the filler metal.
- Feed the wire directly into the torch liner, carefully pulling the torch towards the machine if necessary.
- Mount the torch to the machine or feed unit





Feeding the Wire Through the Torch

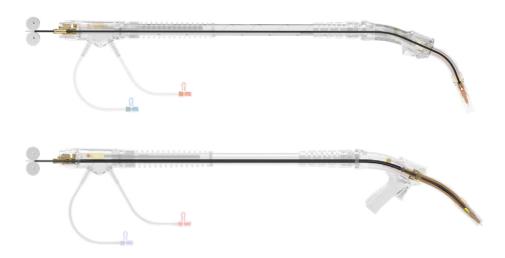
Step 2

- Slowly inch the wire through the torch until it appears at the end of the tip adaptor.
- Feed the wire through the tip being careful not to scratch the bore.
- Tighten the contact tip and refit the nozzle.

You are ready to weld!



The correct fitting of your soft wire liner is essential.



Please Note:

The Arc Combi Liner systems have been developed to pick up the filler metal directly at the drive rolls and deliver it directly to the contact tip.

The outside dimension of the liner is 5.0mm and is the same dimension as the inside of the brass wire guide tube fitted to the machine/feed unit.

It may be necessary to remove any old wire guides used to support smaller OD liners prior to fitting the soft wire liner.





Preparing the Torch and Fitting the Liner

Prepare the Torch

Step 1

Lay the torch out flat and straight

- Remove the nozzle.
- Remove the contact tip.
- Remove the liner retaining nut, twist and pull out the old liner if necessary.

Important:

Liners should not be fitted if the torch is bent or coiled.

Install the New Liner

Step 2

- Open the liner collet by twisting the two halves.
- Feed in the new liner in short strokes of 20cm per time.
- Twist the handle if the liner sticks when feeding the liner through the swan neck.
- Continue to feed until the front nipple can be seen through the holes on the tip adaptor as shown in Figure A.

Important:

Do not use a kinked liner.



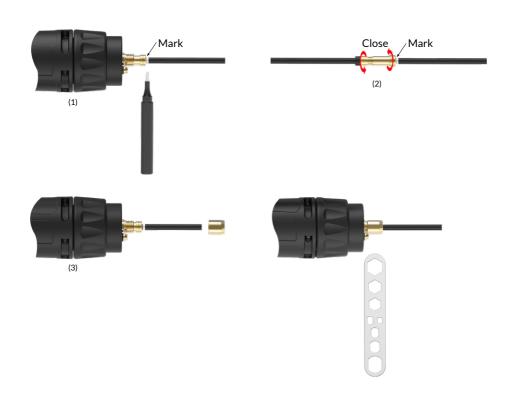




Install the New Liner, Cont.

Step 3

- Ensure the liner is under slight compression within the torch conduit and the front nipple can be seen through the tip adaptor holes. Mark the position at the rear of the liner nipple (Figure 1).
- Retract the liner back slightly and position the collet by tightening it to the liner at the marked position (Figure 2).
- Reposition and tighten the liner retaining nut (Figure 3).







Preparing the Machine to Fit the Torch

Measuring the Distance to the Drive Rolls

Step 1

- Remove the old wire guide from the machine / wire feed unit if necessary.
- Insert the liner measuring jig supplied into the machine Euro socket as shown.



 Ensure there is no gap between the shoulder of the plastic gauge and the machine Euro socket.



Using the Liner Measuring Jig, Cont.

Step 2

- Gently push the steel mandrel until the front-end touches the wire feed rollers.
- Remove the Jig from the machine ensuring there is no movement between the plastic gauge and the mandrel.







Cutting and Trimming the Liner

Step 3

- Offer the liner to the Jig and mark the point at the face of the plastic gauge.
- Cut the liner with the liner cutter provided.
- Use the liner sharpener provided to sharpen the leading edge of the liner.
- The sharpener is preset to the correct angle.



The Correct Set-up

Step 4

- Refit the torch to the machine and tighten the torch lock nut slowly, being mindful of the interface between the end of the liner and the drive rolls.
- The liner should now sit close to the drive rolls.







Feeding Wire Through the Torch

Important:

Remove the torch from the machine / feed unit

Step 1

Preparing the Wire

- Inch the wire out through the machine by 15-20cm. Using a file remove all sharp burrs from the leading edge of the filler metal.
- Feed the wire directly into the torch liner, carefully pulling the torch towards the machine if necessary.
- Mount the torch to the machine or feed unit.





Feeding the Wire Through the Torch

Step 2

- Slowly inch the wire through the torch until it appears at the end of the tip adaptor.
- Feed the wire through the tip being careful not to scratch the bore.
- Tighten the contact tip and refit the nozzle.

You are ready to weld!

TIPS ON CARE AND MAINTENANCE





Spatter Removal

Remove spatter from all external and internal surfaces. Regularly apply anti-spatter spray.



Nozzle Insulation Wear

In the event that shorting out or burn marks appear on the tip adaptor or nozzle surfaces it is a sign that the internal nozzle insulation has worn away.

Replace the nozzle immediately.



Nozzle Wear

In the event that the nozzle needs replacing, pull and remove the retaining ring.

Reassemble the ring on a new nozzle.



Contact Tip Wear

Replace worn contact tips.



Tip Adaptor and Insulator Wear

The tip adaptor and its insulator "snap fit" together. Replace either worn item or the complete assembly.



TIPS ON CARE AND MAINTENANCE



Every Wire Change

Remove the wear parts and clean the liner by blowing it out with clean dry compressed air.

Blow from the torch front to the torch back-end. Make sure you wear eye protection



Every Liner Change

Check all liner and gun body 'O' Rings for signs of damage or wear. Replace if necessary.





M5W WATER FLOW, COOLING POWER AND TORCH PERFORMANCE





Torch Performance depends on both water flow and cooler capacity.

To measure water flow

- Connect torch as per illustration
- Measure the water flow after 60 seconds

Arc M5W Ratings

CO₂ @100 Duty Cycle

Mixed Gas M21 @100 Duty Cycle

Coolant Capacity	Flow Rate			Coolant Cap	
Coolant Capacity	1.5 I/min	1.2 l/min		Coolant Cap	
1600W Cooler	560A	530A		1600W Coo	
1200W Cooler	540A	510A		1200W Coo	
1000W Cooler	510A	485A		1000W Cod	

 Flow Rate

 1.5 I/min
 1.2 I/min

 1600W Cooler
 540A
 510A

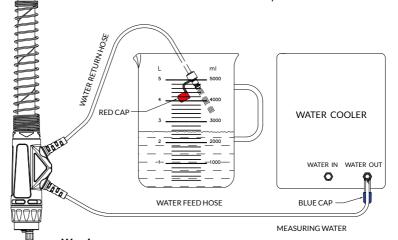
 1200W Cooler
 520A
 490A

 1000W Cooler
 500A
 470A

Note: Indicative performance on 4m length torches

Flow rates and pump pressures

It is important to follow guidelines on minimum inlet pressures and coolant flow rates in order to maximize torch performance.



Warning

We recommend the use of a flow switch which will disable the torch in event of low flow / no flow.

M55W/M65W/M65WS WATER FLOW, COOLING POWER AND TORCH PERFORMANCE





Torch Performance depends on both water flow and cooler capacity.

To measure water flow

- Connect torch as per illustration
- Measure the water flow after 60 seconds

Arc M55W/M65W/M65WS Ratings

CO₂ @100 Duty Cycle

Mixed Gas M21 @100 Duty Cycle

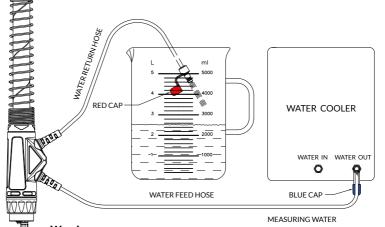
Coolant Capacity	Flow Rate			Coo
Coolant Capacity	1.5 l/min	1.2 l/min		Coo
1600W Cooler	580A	550A		160
1200W Cooler	550A	530A		120
1000W Cooler	520A	500A		100

Coolant Capacity	Flow Rate		
Coolant Capacity	1.5 l/min	1.2 l/min	
1600W Cooler	560A	530A	
1200W Cooler	530A	490A	
1000W Cooler	510A	470A	

Note: Indicative performance on 4m length torches

Flow rates and pump pressures

It is important to follow guidelines on minimum inlet pressures and coolant flow rates in order to maximize torch performance.



Warning

We recommend the use of a flow switch which will disable the torch in event of low flow / no flow.

M65WLP WATER FLOW, COOLING POWER AND TORCH PERFORMANCE







Torch Performance depends on both water flow and cooler capacity.

To measure water flow

- Connect torch as per illustration
- Measure the water after 60 seconds

Arc M65WLP Ratings

CO₂ @100 Duty Cycle

Coolant Capacity	Flow	Rate
Coolant Capacity	1.5 l/min	1.2 l/min
1600W Cooler	590A	560A
1200W Cooler	560A	530A
1000W Cooler	530A	500A

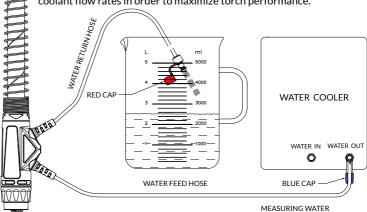
Mixed Gas M21@100 Duty Cycle

Coolant Capacity	Flow Rate	
	1.5 I/min	1.2 l/min
1600W Cooler	570A	540A
1200W Cooler	530A	500A
1000W Cooler	500A	480A

Note: Indicative performance on 4m length torches

Flow rates and pump pressures

It is important to follow guidelines on minimum inlet pressures and coolant flow rates in order to maximize torch performance.



ARC M HIGH PERFORMANCE SERIES

Make Work Life Easier

2023.04



