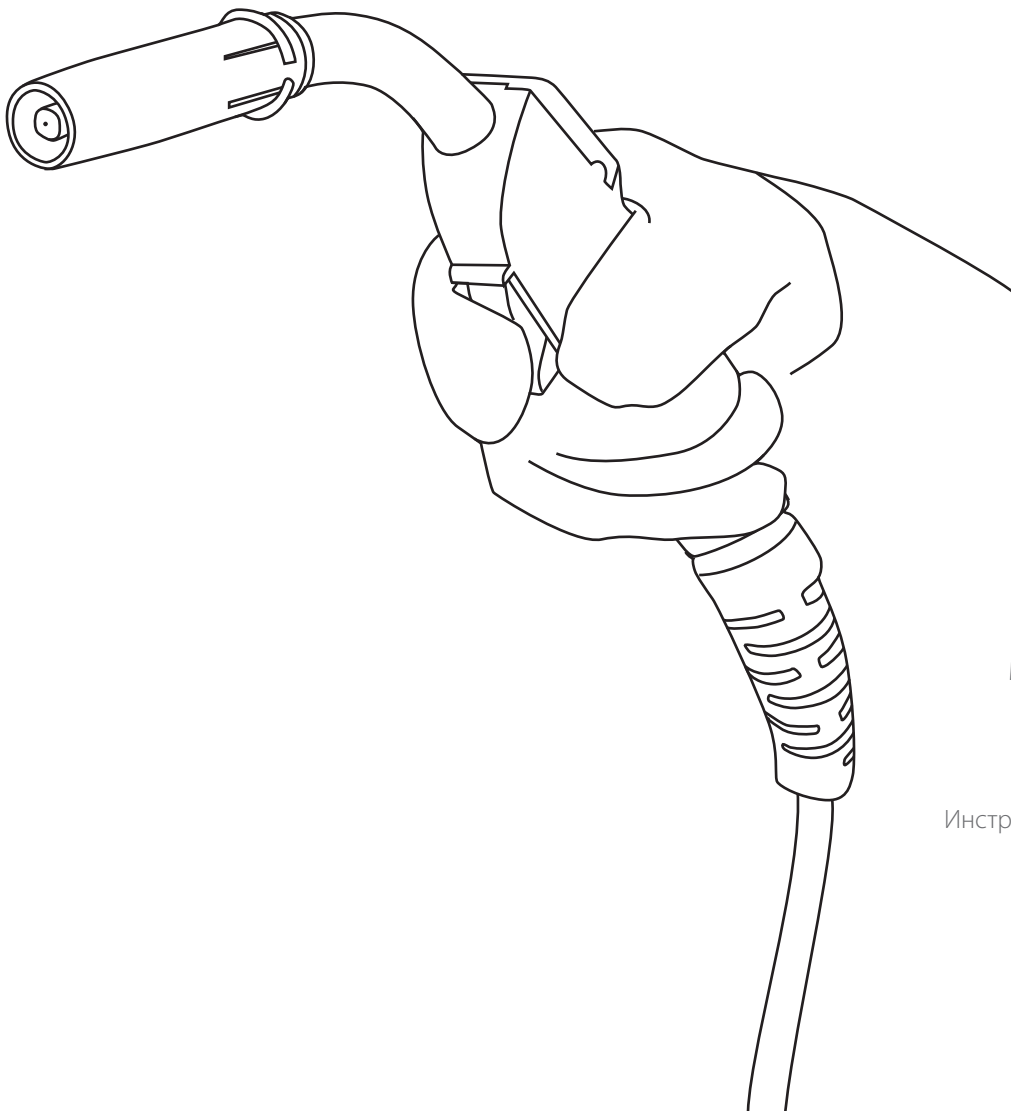


FE

20, 25, 27, 32, 35, 42



Operating manual	EN
Käyttöohje	FI
Bruksanvisning	SV
Bruksanvisning	NO
Brugsanvisning	DA
Gebrauchsanweisung	DE
Gebruiksaanwijzing	NL
Manuel d'utilisation	FR
Manual de instrucciones	ES
Instrukcja obsługi	PL
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OPERATING MANUAL

English

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EN

1. INTRODUCTION

1.1 General

Congratulations on choosing the Kemppi equipment. Used correctly, Kemppi products can significantly increase the productivity of your welding, and provide years of economical service.

This operating manual contains important information on the use, maintenance and safety of your Kemppi product. The technical specifications of the equipment can be found at the end of the manual.

Please read the operating manual and the safety instructions booklet carefully before using the equipment for the first time. For your own safety and that of your working environment, pay particular attention to the safety instructions in the manual.

For more information on Kemppi products, contact Kemppi Oy, consult an authorised Kemppi dealer, or visit the Kemppi web site at www.kemppi.com.

The specifications presented in this manual are subject to change without prior notice.

Important notes

Items in the manual that require particular attention in order to minimise damage and personal harm are indicated with the **NOTE!** notation. Read these sections carefully and follow their instructions.

Disclaimer

While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions. Kemppi reserves the right to change the specification of the product described at any time without prior notice. Do not copy, record, reproduce or transmit the contents of this guide without prior permission from Kemppi.

1.2 Produktintroduktion

Kemppi FE MIG/MAG guns are designed for professional users, mainly welding ferrous materials. They are compatible with all MIG/MAG welding equipments fitted with a Euro connector.

1.3 Operation Safety

Please read and follow these operational safety instructions when installing, operating and servicing the welding gun.

Welding arc and welding spatter

Welding arc can harm unprotected eyes. Also be aware of the risks to other people in and around the working area, as reflected arc and arc flash presents a serious risk. Welding arc and hot spatter will burn unprotected skin. Use specified, good quality safety equipment and protective clothing.

Danger for fire or explosion

Observe the local fire safety regulations and complete an adequate risk assessment, prior to commencing work. Remove flammable or explosive materials from welding place. Always ensure there is adequate fire-fighting equipment available. Be aware of welding hazards eg. the danger of fire or explosion when welding container type work pieces or enclosed spaces.

***NOTE!** Fire can start from welding sparks and hot spatter, even several hours after the welding work has finished!*

Mains voltage

Never take the welding machine inside a work piece (eg. container or truck). Do not place the welding machine on a wet surface. Always check cables before operating the machine. Change defective cables without delay. Defective cables may cause an injury or increase the risk of fire. Connection cables and hoses should be protected from damage from heavy objects, sharp edges or hot work pieces.

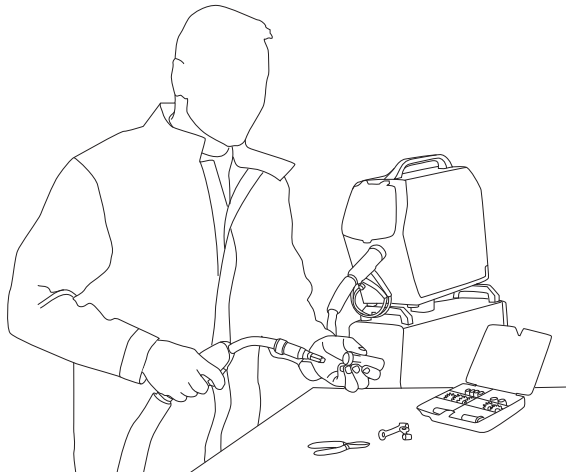
Welding power circuit

Protect yourself by using proper protective clothing suitable for the welding application and environment. Do not work in wet or damp conditions. Do not wear wet clothing when welding. Never use equipment with defective or damaged cables. Unless in a designed gun holder, do not place the welding gun on the welding machine if the machine is live. Never point the welding gun towards your face or that of others.

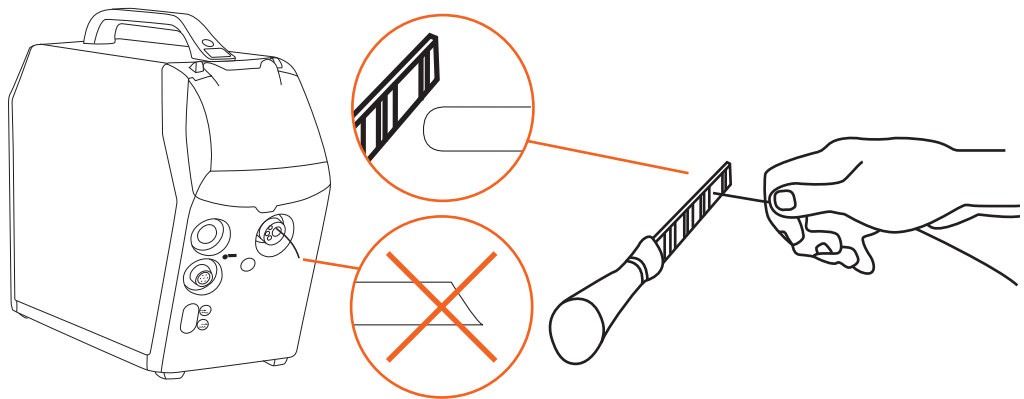
Welding fumes

Ensure there is sufficient ventilation during welding. Observe safety recommendations and precautions when welding metals which contain lead, cadmium, zinc, mercury or beryllium and other harmful substances. Ensure you use appropriate protective respiratory equipment suitable for the welding application, environment and materials being welded.

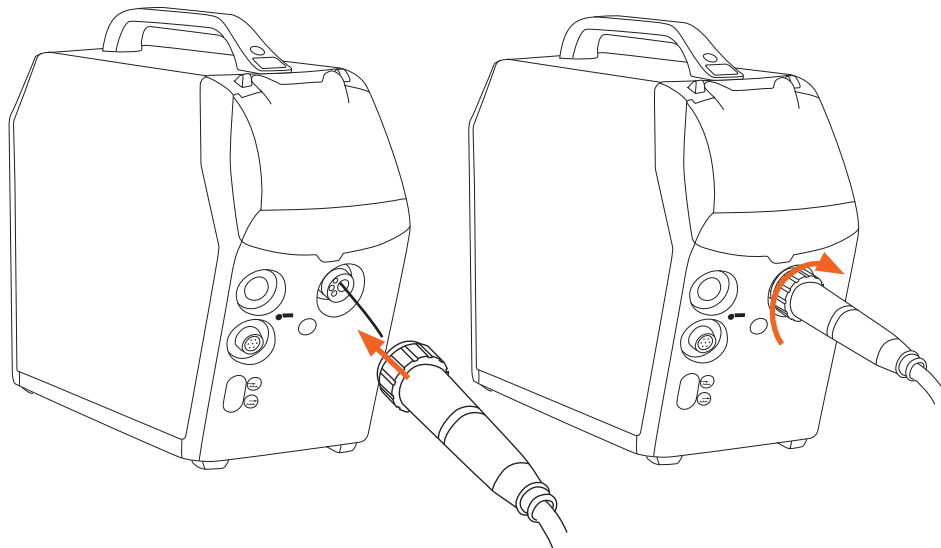
2. CONNECTING THE GUN



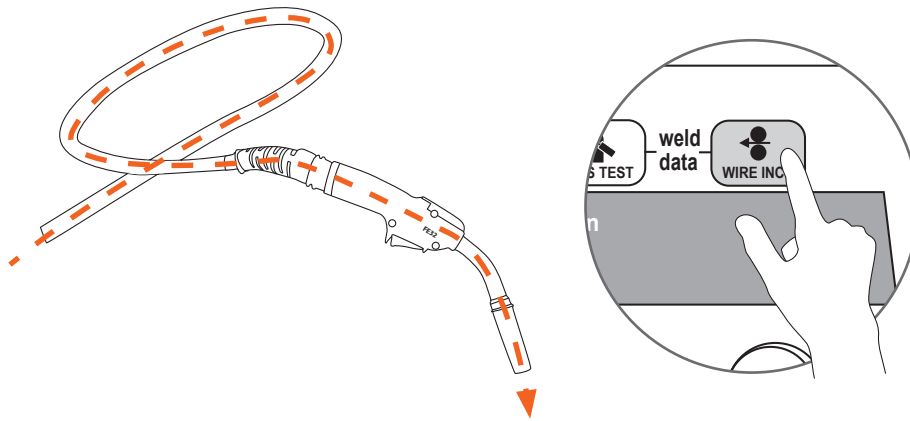
Check wire liner and contact tip suit the wire type and size used. For further information, please refer to section 5. Ordering numbers in this manual.



Dress the sharp filler wire. Improves wire loading and consumables life.

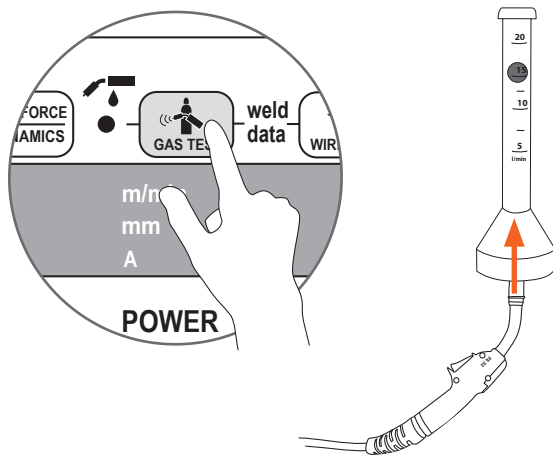


Connect the welding gun and hand tighten the collar.

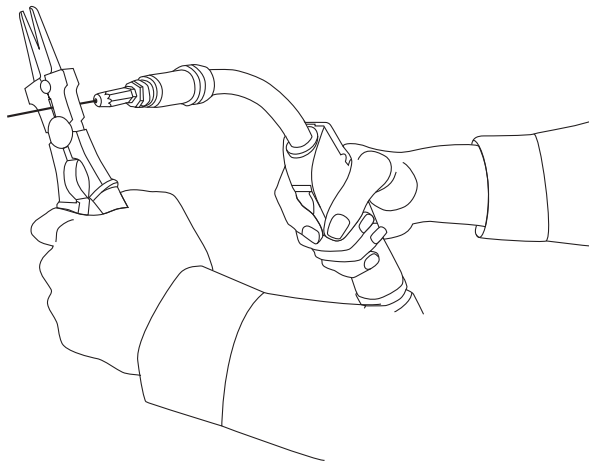


Load filler wire using the WIRE INCH button, or use the gun trigger.

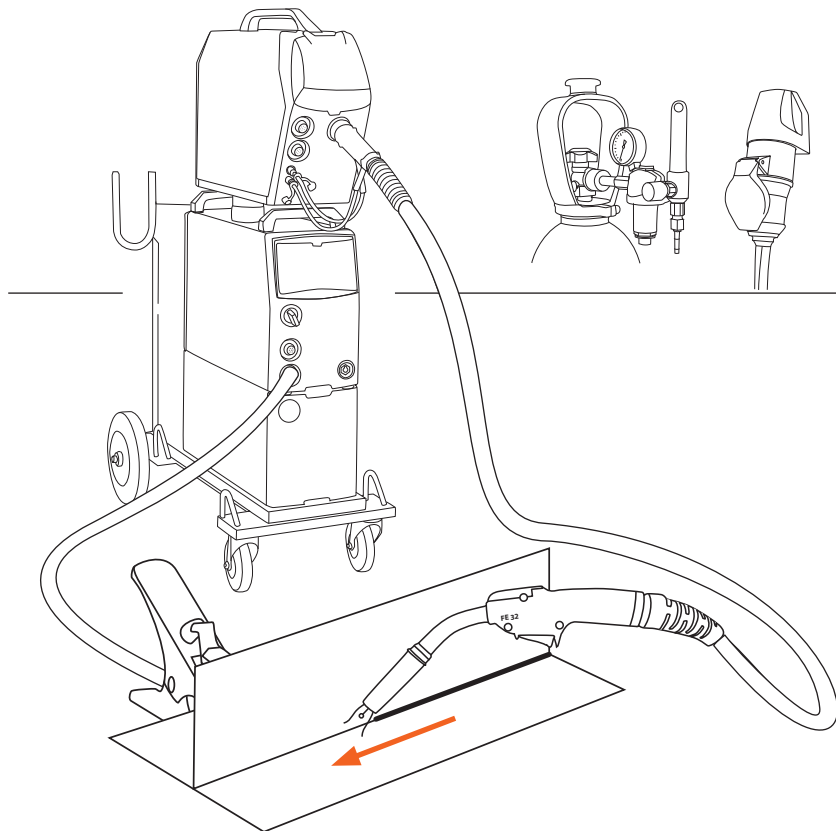
EN



Check gas flow rate and adjust to suit your application.



Trim excess filler wire at a slight angle before welding. This improves ignition.

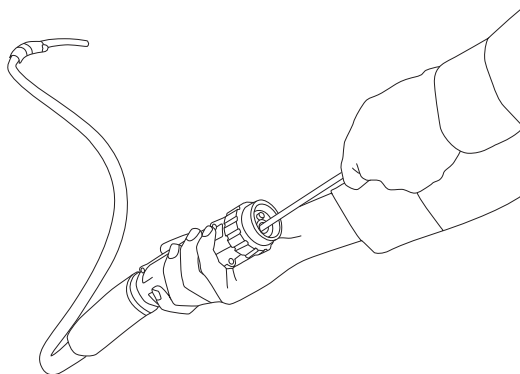


Enjoy using FE welding gun!

3. USE AND MAINTENANCE

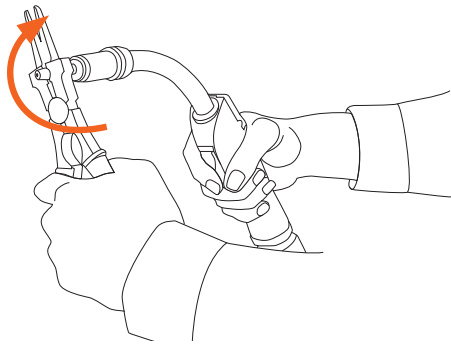
The amount of use and working environment should be taken into consideration when planning the maintenance of MIG guns. Correct use and preventive maintenance will help ensure trouble-free operation and excellent gun life.

Due to high temperatures and wear, the welding end of the MIG gun requires the most frequent maintenance. The condition of other parts, including the gun cable, should also be checked for wear or damage.



When fitting new liners, lay the gun straight on a flat surface.

The gun is equipped at the factory with a spiral liner for welding normal steel wire. Before connecting the gun to the welding machine, make sure that the liner type meets the recommendations for the welding filler wire to be used.

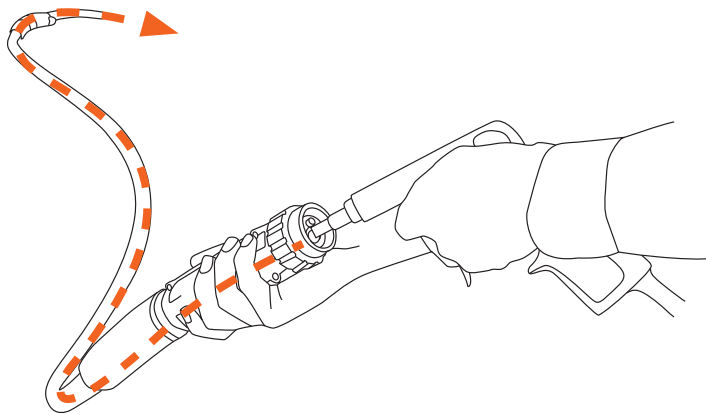


Components can become loose during welding heat cycles. Check regularly.

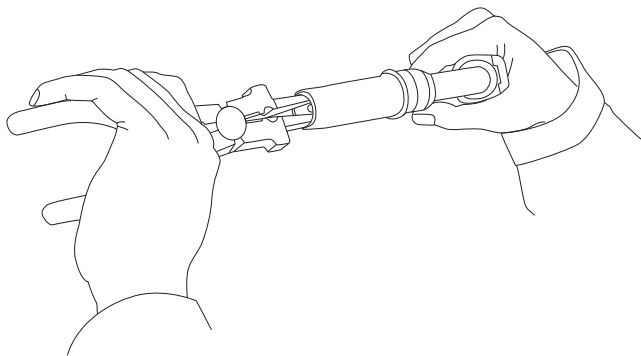
Gun cable

Clear dust from the liner every day during heavy use.

- Clean wire liner when replacing wire reel, or more often.



- Check daily that insulations of handle and gun cable are undamaged.
- Check that there are no sharp bends in gun cable.



Check and remove any spatter build-up from the nozzle.

4. OPERATION DISTURBANCES

Welding performance can be effected by a number of issues, including the welding gun and/ or other parts of the welding system. The following information will help you to check, identify and rectify possible causes of welding malfunction.

NOTE! *The problems listed and the possible causes are not definitive, but serve to suggest some standard and typical situations that may present during normal use when using the MIG/MAG process.*

Dirty, poor quality weld?
<ul style="list-style-type: none">• Check that spatter is not blocking the nozzle or contact tip adapter• Check shielding gas supply• Check and set gas flow rate• Check gas type for application• Check gun polarity. Example: Fe solid filler wire: Earth return socket should be connected to the - pole, wire feed/Gun connection to the + pole• Check power supply – Phase down?
Variable welding performance?
<ul style="list-style-type: none">• Check wire feed mechanism is correctly adjusted• Check correct drive rolls are fitted• Check wire spool/hub overrun tension is correctly adjusted• Check gun liner is not blocked. Replace if necessary• Check correct gun liner is fitted for the filler wire size and type• Check contact tip for size, type and wear• Check gun is not over heating for the application• Check cable connections and earth return clamp• Check welding parameter settings.
Filler wire won't feed?
<ul style="list-style-type: none">• Check wire feed mechanism. Adjust as necessary• Check welding gun switch function.• Check euro gun connector is correctly fitted• Check gun liner is not blocked• Check contact tip, size, type, wear• Check filler wire diameter for correct size
High spatter volume?
<ul style="list-style-type: none">• Check welding parameter values• Check inductance/Dynamics values• Check gas type and flow• Check welding polarity and cable connections• Check filler material selection• Check filler wire delivery system• Check power supply. Are all electrical phases present?• Check that operator maintains correct technique/Arc length/travel speed/Gun angle

NOTE! *Many of these checks may be carried out by the operator. However certain checks relating to mains power must be completed by an authorised trained electrician.*

5. ORDERING NUMBERS

NOTE! Orange part code colour denotes standard delivery specification.

FE 20: 6602003 (3.5 m), 6602004 (5.0 m)



Gas nozzle (A x B x C)	9580101	60.5 x 18 x 14 mm, standard				
	958010101	60.5 x 18 x 14 mm, with insulating bush (= 95801010 + 9591079)				
	4113470	60.5 x 18 x 14 mm, for spot welding				
	9580101E	60.5 x 20 x 14 mm, thick wall				
Insulating bush	9591010					
Contact tip (M6)	9876634	ø 0.6				
	9876635	0.8				
	9876633	0.9				
	9876636	1.0				
	9876637	1.2				
Contact tip adapter (M6)	9580173					
Insulating ring	9591079					
Locking spring	4275240					
Neck	4153040	45°				
Wire liner	4188573		ø 0.6–0.8 mm		3.5 m	
	W006453		0.9–1.2 mm		3.5 m	
	W006457		0.8–1.0 mm	Al/Ss	3.5 m	
	W006459		1.0–1.6 mm	Al/Ss	3.5 m	
	4188576		0.6–0.8 mm		5 m	
	W006454		0.9–1.2 mm		5 m	
	W006458		0.8–1.0 mm	Al/Ss	5 m	
	W006460		1.0–1.6 mm	Al/Ss	5 m	



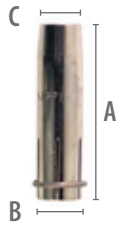
FE 25: 6602503 (3.5 m), 6602504 (5.0 m)



Gas nozzle (A x B x C)	9580101	60.5 x 18 x 14 mm, standard				
	958010101	60.5 x 18 x 14 mm, with insulating bush (= 95801010+ 9591079)				
	4113470	60.5 x 18 x 14 mm, for spot welding				
	9580101E	60.5 x 20 x 14 mm, thick wall				
Insulating bush	9591010					
Contact tip (M6)	9876634	ø 0.6				
	9876635	0.8				
	9876633	0.9				
	9876636	1.0				
	9876637	1.2				
Contact tip adapter (M6)	9580173					
Insulating ring	9591079					
Locking spring	4275240					
Neck	4153040	45°				
Wire liner	4188573		ø 0.6–0.8 mm		3.5 m	
	W006453		0.9–1.2 mm		3.5 m	
	W006457		0.8–1.0 mm	Al/Ss	3.5 m	
	W006459		1.0–1.6 mm	Al/Ss	3.5 m	
	4188576		0.6–0.8 mm		5 m	
	W006454		0.9–1.2 mm		5 m	
	W006458		0.8–1.0 mm	Al/Ss	5 m	
	W006460		1.0–1.6 mm	Al/Ss	5 m	

FE 27: 6602703 (3.5 m), 6602704 (5.0 m)

FE 32: 6603203 (3.5 m), 6603204 (5.0 m)



Gas nozzle (A x B x C)	4295760	76 x 20 x 14 mm, standard / M8				
	4295760L	79 x 20 x 14 mm, long / M8				
	4295760C	76 x 20 x 12 mm, conical / M8				
	4294970	70 x 20 x 14 mm, standard / M6				
Contact tip (M6)	9876634	ø 0.6 mm				
	9876635	0.8				
	9876633	0.9				
	9876636	1.0				
	9876637	1.2				
	9876639	1.6				
(M8)	9580122	ø 0.8 mm		9580122A	ø 0.8 mm	
	9580121	0.9		9580121A	0.9	
	9580123	1.0		9580123A	1.0	
	9580124	1.2		9580124A	1.2	
	9580125	1.4		9580125A	1.4	
	9580126	1.6		9580126A	1.6	
	9580123ZR	1.0	CuCr1Zr	9580122SS	0.8	
	9580124ZR	1.2	CuCr1Zr	9580121SS	0.9	
	9580125ZR	1.4	CuCr1Zr	9580123SS	1.0	
	9580123AG	1.0	CuAg	9580124SS	1.2	
	9580124AG	1.2	CuAg	9580126SS	1.6	
	Contact tip adapter	4294890	M6			
4295740		M8				
Gas diffuser	4294880					
	4294880CER					
Neck	3146780	50°				
Wire liner	4188573		ø 0.6–0.8 mm		3.5 m	
	W006453		0.9–1.2 mm		3.5 m	
	W006455		1.4–1.6 mm		3.5 m	
	W006457		0.8–1.0 mm	Al/Ss	3.5 m	
	W006459		1.0–1.6 mm	Al/Ss	3.5 m	
	4188576		0.6–0.8 mm		5 m	
	W006454		0.9–1.2 mm		5 m	
	W006456		1.4–1.6 mm		5 m	
	W006458		0.8–1.0 mm	Al/Ss	5 m	
	W006460		1.0–1.6 mm	Al/Ss	5 m	

FE 35: 6603503 (3.5 m), 6603504 (5.0 m)



Gas nozzle (A x B x C)	4300260	77 x 22 x 16 mm, standard				
	4300260L	80 x 22 x 16 mm, long				
	4300260C	77 x 22 x 13 mm, conical				
	4307050	77 x 22 x 16 mm, standard, spatter protection bush				
Insulating bush	4307020					
Contact tip (M8)	9580122	ø 0.8 mm	9580122A	ø 0.8 mm		
	9580121	0.9	9580121A	0.9		
	9580123	1.0	9580123A	1.0		
	9580124	1.2	9580124A	1.2		
	9580125	1.4	9580125A	1.4		
	9580126	1.6	9580126A	1.6		
	9580123ZR	1.0	CuCr1Zr	9580122SS	0.8	
	9580124ZR	1.2	CuCr1Zr	9580121SS	0.9	
	9580125ZR	1.4	CuCr1Zr	9580123SS	1.0	
	9580123AG	1.0	CuAg	9580124SS	1.2	
	9580124AG	1.2	CuAg	9580126SS	1.6	
	Contact tip adapter	4295740	M8			
Gas diffuser	W004390					
Insulator	W004165					
Neck	SP004585	50°				
	SP600317	50°, includes temperature protection spring as standard.				
Wire liner	4188573		ø 0.6–0.8 mm	3.5 m		
	W006453		0.9–1.2 mm	3.5 m		
	W006455		1.4–1.6 mm	3.5 m		
	W006457		0.8–1.0 mm	Al/Ss	3.5 m	
	W006459		1.0–1.6 mm	Al/Ss	3.5 m	
	4188576		0.6–0.8 mm		5 m	
	W006454		0.9–1.2 mm		5 m	
	W006456		1.4–1.6 mm		5 m	
	W006458		0.8–1.0 mm	Al/Ss	5 m	
	W006460		1.0–1.6 mm	Al/Ss	5 m	

FE 42: 6604203 (3.5 m), 6604204 (5.0 m)



SP004578

SP600316



Gas nozzle (A x B x C)	4300380	80 x 25 x 18 mm, standard				
	4300380L	83 x 25 x 18 mm, long				
	4300380C	80 x 25 x 14 mm, conical				
	4307070	80 x 25 x 18 mm, standard, spatter protection bush				
	4308190	89.5 x 25 x 18 mm, special long				
Insulating bush	4307030					
Contact tip (M8)	9580122	∅ 0.8 mm		9580122A	∅ 0.8 mm	
	9580121	0.9		9580121A	0.9	
	9580123	1.0		9580123A	1.0	
	9580124	1.2		9580124A	1.2	
	9580125	1.4		9580125A	1.4	
	9580126	1.6		9580126A	1.6	
	9580123ZR	1.0	CuCr1Zr	9580122SS	0.8	
	9580124ZR	1.2	CuCr1Zr	9580121SS	0.9	
	9580125ZR	1.4	CuCr1Zr	9580123SS	1.0	
	9580123AG	1.0	CuAg	9580124SS	1.2	
	9580124AG	1.2	CuAg	9580126SS	1.6	
	Contact tip adapter	4304600	M8			
Gas diffuser	W004505					
Insulator	W004579					
Neck	SP004578	50°				
	SP600316	50°, includes temperature protection spring as standard.				
Wire liner	4188573		∅ 0.6–0.8 mm		3.5 m	
	W006453		0.9–1.2 mm		3.5 m	
	W006455		1.4–1.6 mm		3.5 m	
	W006457		0.8–1.0 mm	Al/Ss	3.5 m	
	W006459		1.0–1.6 mm	Al/Ss	3.5 m	
	4188576		0.6–0.8 mm		5 m	
	W006454		0.9–1.2 mm		5 m	
	W006456		1.4–1.6 mm		5 m	
	W006458		0.8–1.0 mm	Al/Ss	5 m	
	W006460		1.0–1.6 mm	Al/Ss	5 m	

6. TECHNICAL DATA

Gun	Loading capacity Ar + CO ₂ (A)	Duty cycle (%)	Wire diameters (mm)	Type of cooling
FE 20	200	35	0.6–1.0	Air
FE 25	250	35	0.6–1.2	Air
FE 27	270	35	0.6–1.2	Air
FE 32	320	35	0.8–1.6	Air
FE 35	350	35	0.8–1.6	Air
FE 42	420	35	0.8–1.6	Air

Connection to MIG unit: Euro adapter

NOTE! Make sure that the gun selected is designed for the maximum welding current needed.

Kemppi welding guns meet construction and safety requirements according to the norm IEC / EN 60974-7.

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