



Wire Guidance

Feed | Check | Monitor



Wire Guidance



Frontpull 8 torch system

Requirement

The wire guidance is an essential factor for influencing weld seam quality and lifetime.

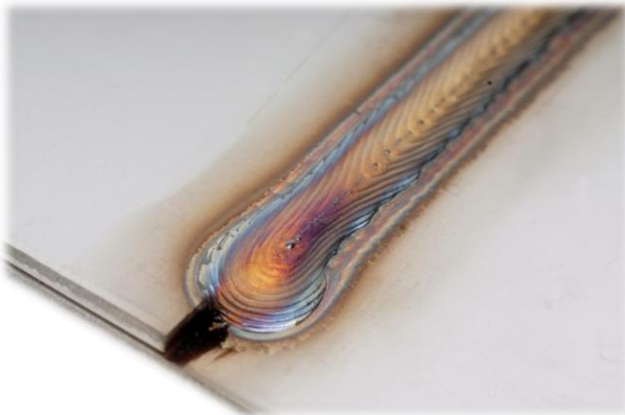
The requirements of a wire guidance are:

- Highest gliding capability
- Low wire abrasion
- Low maintenance requirement
- Minimization of disturbances

Modular connection possibilities will minimize stockage and ordering effort.

Different circumstances at production side, different wire thicknesses, use of soft and hard wire materials will affect the wire guidance.

Concerning these criteria different wire guidance systems has been designed and tested. On the following pages the experiences has been carried together as recommendations for optimized wire guidance.



Many factors will affect the welding result. So does a optimized und smooth running wire guidance.

Option: Ferrite Sensor – FS-01



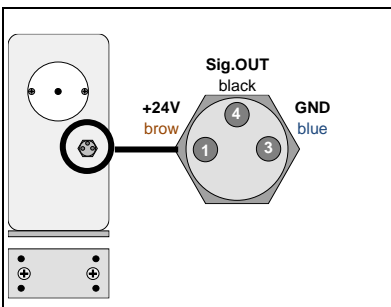
Ferrite Sensor – FS-01
including connection cable

Requirement

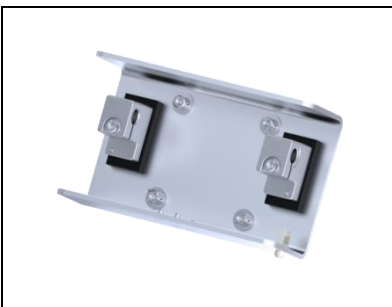
In the course of the growing significance of quality assurance, it becomes more and more eminent to eliminate possible failure sources. The choice of a wrong wire material by the operator due to pressure of time or missing labels of basic material, is a source of failure, that has to be minimized just as problems of the process itself. The unintentional usage of a wrong steel material is more likely than the unintentional choice of a wrong wire diameter. Austenitic and ferritic wires are optically indistinguishable and therefore a potential source of failure.

Solution

The Ferrite Sensor – FS-1 offers the possibility to safely discern ferritic and nonferritic (e.g. austenitic) steel wire, because of their different magnetic attributes. The sensor is attached between the wire spool holder and wire feeder and the wire is lead through the hole of the FS-1. The sensor gives a signal output of +24V if the wire is ferritic. By assigning a Type of wire (ferritic / non-ferritic) to each part in the PLC and connecting the signal output of the FS1 to an input of the PLC, a wrong usage can be prevented. If ferritic wire is to be used, this allows you to check if a wire is inserted in addition.



Connections Ferrite Sensor – FS-01
(P/N 541029500)



Mounting bracket Ferrite Sensor – FS-01
(P/N 93-7-2-1)

Connection

The Ferrite Sensor – FS-01 is mounted by 4 screws M4 (measurement: 25x50mm) and connected through a 3-pin M8 screw on socket cable. A mounting bracket and a connection cable with 10m length are included in the complete package (P/N 93-7-2).

Mounting

For independent mounting of the Ferrite Sensor – FS-01 a mounting bracket is available.

Measurements including bracket:

L x W x H: 200mm x 70mm x 120mm

Mounting pattern: 80 x 80mm (4x M6x16 are included)

Option: Wire End Sensor – WES-01

Technical data

Part No.: 44-50-1 for SKS Wire Guidance
44-50-6 for Rolliner 3G Wire Guidance

Function: Detects presence of wire

Mounting: At drum connector

Signal Type: 24V DC high active
(Output high if wire is present)

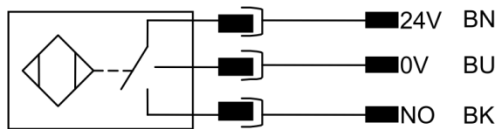
Sensor: Inductive proximity sensor

Supply: 24V DC



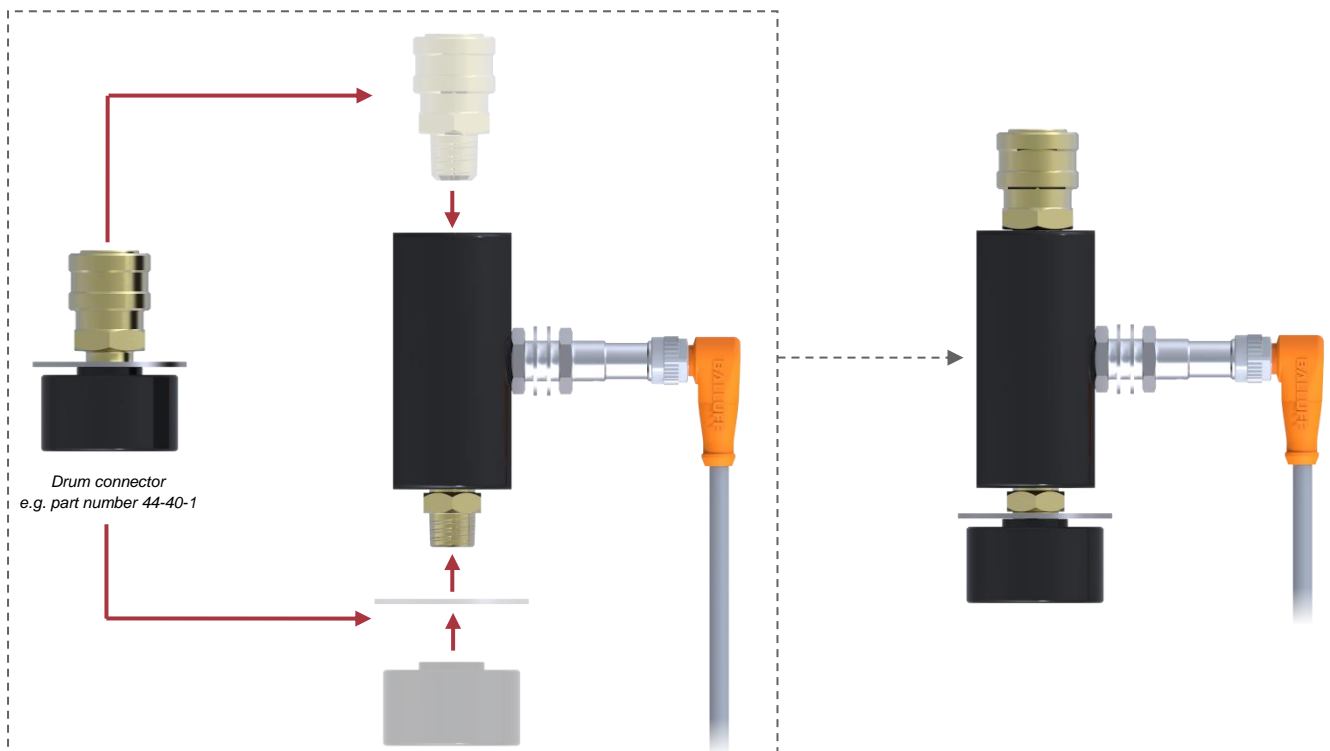
Connection

Electricity: 4x0.34mm², l=3m, Plug M12, 5-pin

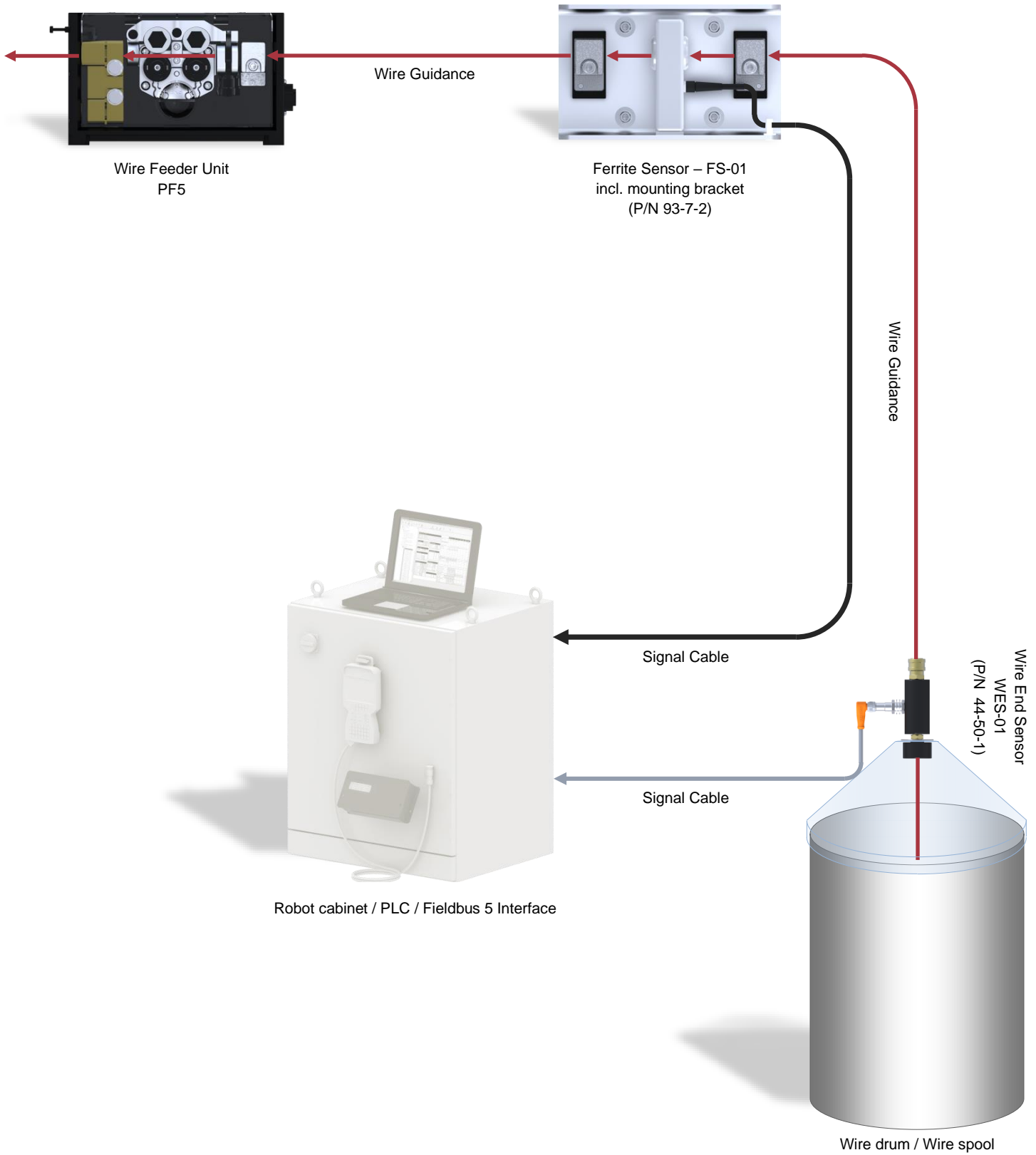


Mechanical
(w/o adapters): top: 1/4" NPTF inner thread | bottom: 1/4" NPTF outer thread

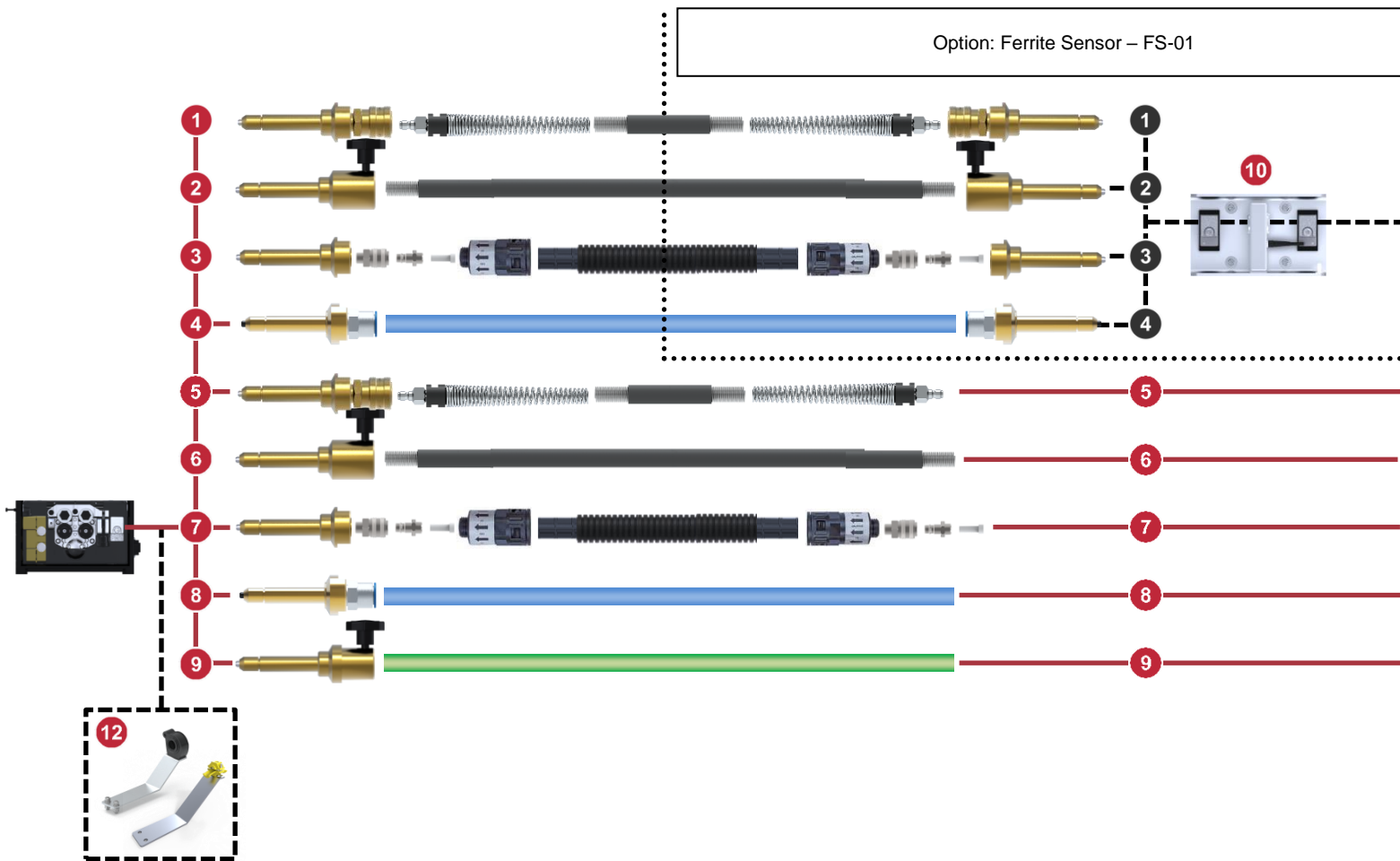
Example: Integration in a wire guidance system



Wire Guidance – Schematically Setup



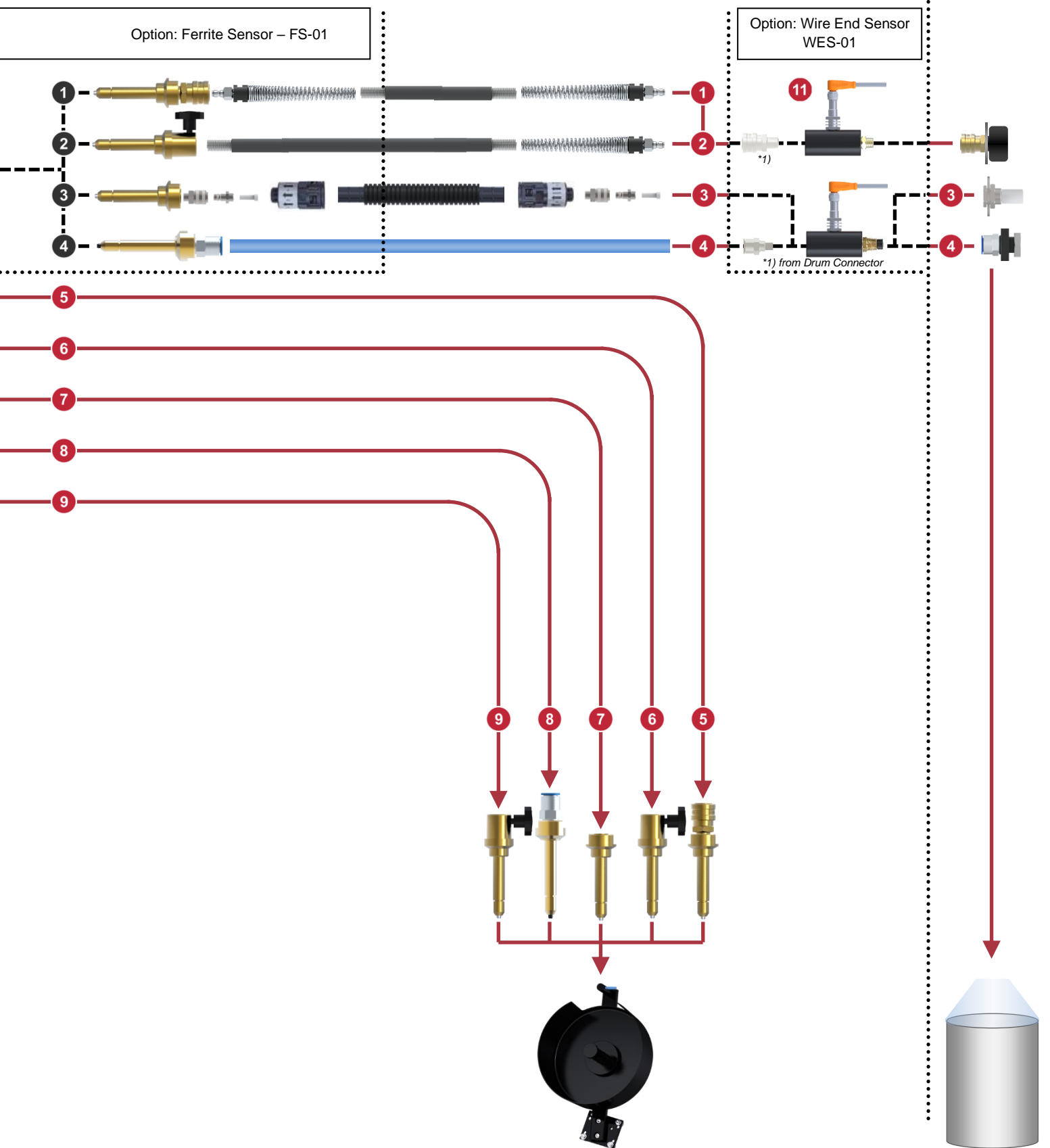
Wire Guidance - Overview



Overview Wire Guidances

Pos.	Description	Suitable Wire	Inherent stability	Environment	Connection Wire Drum	Connection Spool Holder	Ferrite Sensor	Wire End Sensor	Min. Bend. Radius
1	FlexiGlide Type A Quick	St	Medium	Normal	✓	✗	✓	✓	200mm
	FlexiGlide Type B Quick	CrNi							
2	FlexiGlide Type A Clamp	St	Medium	Normal	✓	✗	✓	✓	200mm
	FlexiGlide Type B Clamp	CrNi							
3	Rolliner 3G Quick	Al / St / CrNi	Low	Very Rough	✓	✗	✓	✓	70mm
4	Polymere „L“ Push	Al	Medium	Normal	✓	✗	✓	✓	400mm
5	FlexiGlide Type A Quick	St	Medium	Normal	✗	✓	✗	✗	200mm
	FlexiGlide Type B Quick	CrNi							
6	FlexiGlide Type A Clamp	St	Medium	Normal	✗	✓	✗	✗	200mm
	FlexiGlide Type B Clamp	CrNi							
7	Rolliner 3G Quick	Al / St / CrNi	Low	Very Rough	✗	✓	✗	✗	70mm
8	Polymere „L“ Push	Al	Medium	Normal	✗	✓	✗	✗	400mm
9	Polymere „S“ Clamp	Al / St / CrNi	Medium	Normal	✗	✓	✗	✗	300mm







Wire Guidance - Overview







Further Information on wire guidances 1 to 9, Ferrite Sensor FS-01 system 10, Wire End Sensor WES-01 11 and Strain Relief for wire guidance 12 please refer to the tables on the following pages.

1 FlexiGlide Quick



Basic Components – FlexiGlide Quick Wire Guidance

Picture	Part Number	Amount	Description
	10-2-0-61	1	Wire Inlet Body for PF5 with Quick Coupling
	44-3-11	2	Quick Connector insulated incl. strain relief for Wire Guidance FlexiGlide
	44-3-4	(2)	Quick Connector for Wire Guidance FlexiGlide alternative to 44-3-11
	44-3-2	Per Meter	Wire Guidance FlexiGlide Type A
	44-3-1	Per Meter	Wire Guidance FlexiGlide Type B
	44-40-1	1	Wire drum connection with ceramic inlet





Option: Ferrite Sensor – FS-01 FlexiGlide Quick Wire Guidance

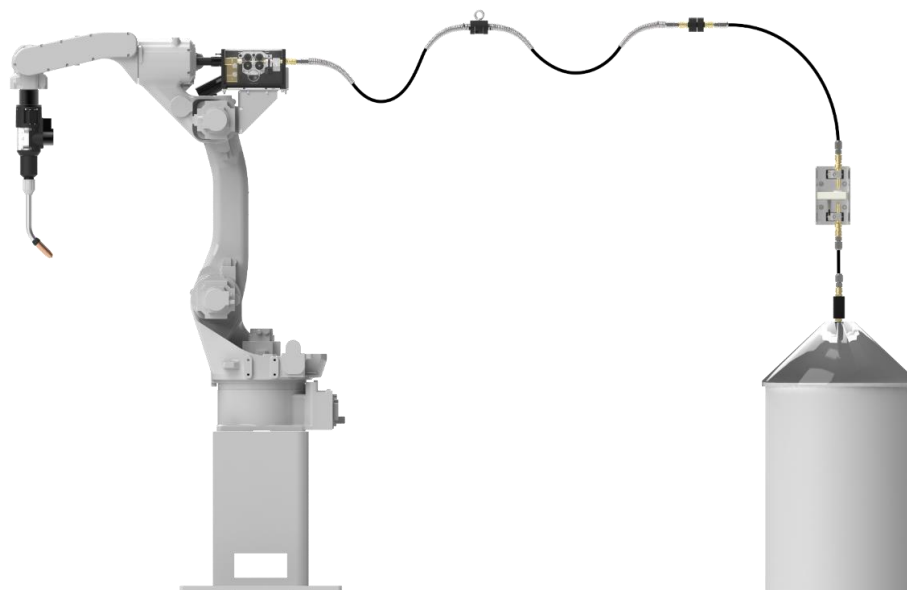
Picture	Part Number	Amount	Description
	93-7-2	1	Ferrite Sensor – FS-01 System consisting of: Ferrite Sensor – FS-01, connection cable 10m, 3x0.25mm² with M8 socket and open ends, mounting bracket
	10-2-0-61	2	Wire Inlet Body for PF5 with Quick Coupling
	44-3-11	2	Quick Connector insulated incl. strain relief for Wire Guidance FlexiGlide
	44-3-4	(2)	Quick Connector for Wire Guidance FlexiGlide alternative to 44-3-11

Option: Wire End Sensor – WES-01 FlexiGlide Quick Wire Guidance

Picture	Part Number	Amount	Description
	44-50-1	1	Wire end sensor WES-01 for SKS wire guidance
	44-50-2	1	Dustcover for Wire End Sensor - WES-01




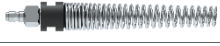


Option: Strain Relief / Suspension Wire Guidance

Picture	Part Number	Amount	Description
	14-10-6	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable - (only in combination with 44-3-4)
	14-10-7	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable - (only in combination with 44-3-4)
	44-3-8	1	Through-Wall Mount for Wire Guidance FlexiGlide
	44-3-9	1	Wall Duct for Wire Guidance FlexiGlide





2 FlexiGlide Clamp



Basic Components – FlexiGlide Clamp

Picture	Part Number	Amount	Description
	10-2-0-53	1	Wire Inlet Body for PF5 with 13mm bore hole
	44-3-2	Per Meter	Wire Guidance FlexiGlide Type A
	44-3-1	Per Meter	Wire Guidance FlexiGlide Type B
	44-3-11	1	Quick Connector insulated incl. strain relief for Wire Guidance FlexiGlide
	44-3-4	(1)	Quick Connector for Wire Guidance FlexiGlide alternative to 44-3-11
	44-40-1	1	Wire drum connection with ceramic inlet





Option: Ferrite Sensor – FS-01 FlexiGlide Clamp

Picture	Part Number	Amount	Description
	93-7-2	1	Ferrite Sensor – FS-01 System consisting of: Ferrite Sensor – FS-01, connection cable 10m, 3x0.25mm² with M8 socket and open ends, mounting bracket
	10-2-0-53	2	Wire Inlet Body for PF5 with 13mm bore hole

Option: Wire End Sensor – WES-01 FlexiGlide Clamp









Picture	Part Number	Amount	Description
	44-50-1	1	Wire end sensor WES-01 for SKS wire guidance
	44-50-2	1	Dustcover for Wire End Sensor - WES-01

Option: Strain Relief / Suspension Wire Guidance







Picture	Part Number	Amount	Description
	14-10-6	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable - (only in combination with 44-3-4)
	14-10-7	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable - (only in combination with 44-3-4)
	44-3-8	1	Through-Wall Mount for Wire Guidance FlexiGlide
	44-3-9	1	Wall Duct for Wire Guidance FlexiGlide

3 Rolliner 3G Quick



Basic Components – Rolliner 3G Quick Wire Guidance

Picture	Part Number	Amount	Description
	10-2-0-60	1	Wire inlet body for PF5 with 1/4" NPTF inner thread
	10-2-0-57-3	(1)	Insert for wire inlet body PF5 for ø1,2-1,6mm, 62,5mm (AL-wire)
	44-60-21	2	Connection set Rolliner NG for drum or wire feeder
	44-60-42	1	Connector wire outlet for Rolliner 3G
	44-60-40	Per Meter	Wire feed hose Rolliner 3G sold by meter
	91-3-2	Per Meter	Corrugated tube PUR black NW23 per meter
	44-60-41	1	Connector wire inlet for Rolliner 3G
	44-60-30	1	Wire drum connector for Rolliner NG



Option: Ferrite Sensor – FS-01 Rolliner 3G Quick Wire Guidance

Picture	Part Number	Amount	Description
	93-7-2	1	Ferrite Sensor – FS-01 System consisting of: Ferrite Sensor – FS-01, connection cable 10m, 3x0.25mm² with M8 socket and open ends, mounting bracket
	10-2-0-60	2	Wire inlet body for PF5 with 1/4" NPTF inner thread
	10-2-0-57-3	(2)	Insert for wire inlet body PF5 for ø1,2-1,6mm, 62,5mm (AL-wire)
	44-60-42	1	Connector wire outlet for Rolliner 3G
	44-60-41	1	Connector wire inlet for Rolliner 3G
	44-60-21	2	Connection set Rolliner NG for drum or wire feeder









Option: Wire End Sensor – WES-01 Rolliner 3G Quick Wire Guidance

Picture	Part Number	Amount	Description
	44-50-6	1	Wire end sensor WES-01 for Rolliner 3G
	44-50-3	1	Dustcover for Wire End Sensor - WES-01

Option: Strain Relief / Suspension Wire Guidance





Picture	Part Number	Amount	Description
	14-10-8	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable -
	14-10-9	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable -

Accessories: Rolliner 3G Quick Wire Guidance




Picture	Part Number	Amount	Description
	44-60-44	1	Separating tool for Rolliner 3G
	44-60-43	1	Connector protective hose PA12 for Rolliner 3G
	44-60-45	1	Mounting clip for Rolliner 3G
	91-3-0-83	1	Clamping piece NW 23mm
	91-3-0-80	1	Clamping piece NW 29mm
	91-3-0-82	1	Center Clamps NW 23mm
	44-60-48	1	Clamping Piece Rolliner 3G on Cable Bundle -A-
	44-60-49	1	Clamping Piece Rolliner 3G on Cable Bundle -W-

4 Polymere „L“ Push



Basic Components – Polymer „L“ Push Wire Guidance

Picture	Part Number	Amount	Description
	10-2-0-63	1	Wire Inlet Body PF5 with G1/4" and Polymeric Inlet
	10-2-0-57-3	(1)	Insert for wire inlet body PF5 for ø1.2-1.6mm, 62.5mm
	44-9-1	Per Meter	Polymer conduit endless/mtr., version L, blue
	44-40-9	1	Wire drum connection with ceramic inlet



Option: Ferrite Sensor – FS-01 Polymer „L“ Push Wire Guidance

Picture	Part Number	Amount	Description
	93-7-2	1	Ferrite Sensor – FS-01 System consisting of: Ferrite Sensor – FS-01, connection cable 10m, 3x0.25mm² with M8 socket and open ends, mounting bracket
	10-2-0-63	2	Wire Inlet Body PF5 with G1/4" and Polymeric Inlet
	10-2-0-57-3	(2)	Insert for wire inlet body PF5 for ø1.2-1.6mm, 62.5mm

Option: Wire End Sensor – WES-01 Polymer „L“ Push Wire Guidance






Picture	Part Number	Amount	Description
	44-50-6	1	Wire end sensor WES-01 for Rolliner 3G
	44-50-3	1	Dustcover for Wire End Sensor - WES-01

Option: Strain Relief / Suspension Wire Guidance



Picture	Part Number	Amount	Description
	14-10-6	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable -
	14-10-7	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable -

5 FlexiGlide Quick

Basic Components – FlexiGlide Quick Wire Guidance




Picture	Part Number	Amount	Description
	10-2-0-61	2	Wire Inlet Body for PF5 with Quick Coupling
	44-3-11	2	Quick Connector insulated incl. strain relief for Wire Guidance FlexiGlide
	44-3-4	(2)	Quick Connector for Wire Guidance FlexiGlide alternative to 44-3-11
	44-3-2	Per Meter	Wire Guidance FlexiGlide Type A
	44-3-1	Per Meter	Wire Guidance FlexiGlide Type B

Option: Strain Relief Wire Guidance



Picture	Part Number	Amount	Description
	14-10-6	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable - (only in combination with 44-3-4)
	14-10-7	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable - (only in combination with 44-3-4)

6 FlexiGlide Clamp

Basic Components – FlexiGlide Clamp Wire Guidance








Picture	Part Number	Amount	Description
	10-2-0-53	2	Wire Inlet Body for PF5 with 13mm bore hole
	44-3-2	Per Meter	Wire Guidance FlexiGlide Type A
	44-3-1	Per Meter	Wire Guidance FlexiGlide Type B



Option: Strain Relief Wire Guidance









Picture	Part Number	Amount	Description
	14-10-6	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable -
	14-10-7	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable -

7 Rolliner 3G Quick




Basic Components – Rolliner 3G Quick Wire Guidance



Picture	Part Number	Amount	Description
	10-2-0-60	2	Wire inlet body for PF5 with 1/4" NPTF inner thread
	10-2-0-57-3	(2)	Insert for wire inlet body PF5 for ø1,2-1,6mm, 62,5mm (AL-wire)
	44-60-21	2	Connection set Rolliner NG for drum or wire feeder
	44-60-42	1	Connector wire outlet for Rolliner 3G
	44-60-40	Meterware	Wire feed hose Rolliner 3G sold by meter
	91-3-2	Meterware	Corrugated tube PUR black NW23 per meter
	44-60-41	1	Connector wire inlet for Rolliner 3G

Option: Strain Relief Wire Guidance			
Picture	Part Number	Amount	Description
	14-10-8	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable -
	14-10-9	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable -



Accessoires: Rolliner 3G Quick Wire Guidance			
Picture	Part Number	Amount	Description
	44-60-44	1	Separating tool for Rolliner 3G
	44-60-43	1	Connector protective hose PA12 for Rolliner 3G
	44-60-45	1	Mounting clip for Rolliner 3G
	91-3-0-83	1	Clamping piece NW 23mm
	91-3-0-80	1	Clamping piece NW 29mm
	91-3-0-82	1	Center Clamps NW 23mm
	44-60-48	1	Clamping Piece Rolliner 3G on Cable Bundle -A-
	44-60-49	1	Clamping Piece Rolliner 3G on Cable Bundle -W-



8 Polymere „L“ Push

Basic Components – Polymer „L“ Push Wire Guidance			
Picture	Part Number	Amount	Description
	10-2-0-63	2	Wire Inlet Body PF5 with G1/4" and Polymeric Inlet
	10-2-0-57-3	(2)	Insert for wire inlet body PF5 for ø1.2-1.6mm, 62.5mm
	44-9-1	Per Meter	Polymer conduit endless/mtr., version L, blue

Option: Strain Relief Wire Guidance			
Picture	Part Number	Amount	Description
	14-10-6	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable -
	14-10-7	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable -

9 Polymer „S“ Clamp

Basic Components – Polymer „S“ Clamp Wire Guidance			
Picture	Part Number	Amount	Description
	10-2-0-52	2	Wire Inlet Body for PF5 with 9.6mm bore hole
	44-8-1	Per Meter	Polymer conduit endless/mtr., version S, green

Option: Strain Relief Wire Guidance			
Picture	Part Number	Amount	Description
	14-10-6	1	Strain-relief wire guidance for wire feeder bracket PF5 - external routed cable -
	14-10-7	1	Strain-relief wire guidance for wire feeder bracket PF5 - internal routed cable -



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Subject to Change.