Product line

Linear winding machines

Machines and accessories











FW 022
FW 122
FW 222
FW 322
FW 422

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Wire diameter from 0.01 mm to 2.5 mm

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FW 022

Compact bench-top machine, single or twin spindle

Versions

FW 022 E
Single-spindle version (tailstock optional)

FW 022 Z
Twin-spindle version (tailstock optional)

Touchscreen

Network-capable

Wire diameter
0.01 – 1.0 / 0.01 – 0.6 mm

Traverse accuracy
0.004 mm

Stopping accuracy
1/100 rev.

Data sheet FW 022

Parameter	Unit	FW 022 E	FW 022 Z
Motor power	kVA	0.4	0.4
Wire range	mm	0.01 – 1.0	0.01 – 0.6
Profile wire/strip	mm²	–	–
Feed range	mm	0 – 60	0 – 60
Gearbox		–	–
Speed range	rpm		
0		0 – 750	–
1		0 – 1,500	0 – 1,500
2		0 – 3,000	0 – 3,000
3		0 – 6,000	0 – 6,000
4		0 – 12,000	0 – 12,000
Max. torque	Ncm		
0		520	–
1		260	260
2		130	130
3		65	65
4		32.5	32.5
Traverse width	mm	100	100
Clamping length	mm		
with tailstock		100	100
Centre height	mm	210	210/140
Winding diameter	mm	120	120
Winding spindles		1	2
Mains supply	V, Hz	1 x 230, 50/60	1 x 230, 50/60
Connected load	kVA	0.6	0.6
Footprint	(l × w [× h]) mm		
without tailstock		530 × 350	530 × 350
with tailstock		680 × 350	680 × 350
Connections		RJ45 network port, USB, VGA port, foot control device, digital inputs/outputs	
Display		21 cm TFT colour display with touchscreen	
Memory capacity		500,000 programs	
Traverse accuracy	mm	0.004	0.004
Stopping accuracy	rev.	1/100	1/100

Key features

- Compact PC-controlled winding machine
- Integrated PC with real-time/ multithreading system
- Freely programmable for maximum quality and flexibility
- Network capability for efficient program management and offline programming
- Tailstock optional
- High precision and long service life thanks to high-quality components and IWT quality standards

"–" = not applicable or not specified.
Subject to technical changes.



FW 122

Compact, traverse width 200 or 400 mm

Versions

FW 122-200
Traverse width 200 mm

FW 122-400
Traverse width 400 mm

Touchscreen

Network-capable

Wire diameter
0.01 – 2.5 mm

Traverse accuracy
0.004 mm

Stopping accuracy
1/100 rev.

Data sheet FW 122

Parameter	Unit	FW 122-200	FW 122-400
Motor power	kVA	0.75	0.75
Wire range	mm	0.01 – 2.5	0.01 – 2.5
Profile wire/strip	mm²	–	–
Feed range	mm	0 – 99	0 – 99
Gearbox		–	–
Speed range	rpm		
0		0 – 750	0 – 750
1		0 – 1,500	0 – 1,500
2		0 – 3,000	0 – 3,000
3		0 – 6,000	0 – 6,000
4		0 – 12,000	0 – 12,000
Max. torque	Ncm		
0		960	960
1		480	480
2		240	240
3		120	120
4		60	60
Traverse width	mm	200 *	400 *
Clamping length	mm		
with tailstock		300 *	500 *
Centre height	mm	140	140
Winding diameter	mm	250	250
Winding spindles		1	1
Mains supply	V, Hz	1 x 230, 50/60	1 x 230, 50/60
Connected load	kVA	1.0	1.0
Footprint	(l × w [× h]) mm	800 × 380	1,000 × 380
Connections		RJ45 network port, USB, VGA port, foot control device, digital inputs/outputs	
Display		21 cm TFT colour display with touchscreen	
Memory capacity		500,000 programs	
Traverse accuracy	mm	0.004	0.004
Stopping accuracy	rev.	1/100	1/100

Key features

- Compact PC-controlled winding machine
- Integrated PC
- Freely programmable for maximum quality and flexibility
- Network capability for efficient program management and offline programming – worldwide
- High precision and long service life thanks to high-quality components and IWT quality standards

* Other dimensions available: further traverse widths in 200 mm steps up to max. 2,000 mm; the clamping length increases by 200 mm accordingly.
"–" = not applicable or not specified.
Subject to technical changes.



FW 222

Sturdy table frame, wide traverse width

Versions

FW 222-250
Traverse width 250 mm

FW 222-450
Traverse width 450 mm

Touchscreen

Network-capable

Wire diameter
0.01 – 3.5 mm

Traverse accuracy
0.004 mm

Stopping accuracy
1/100 rev.

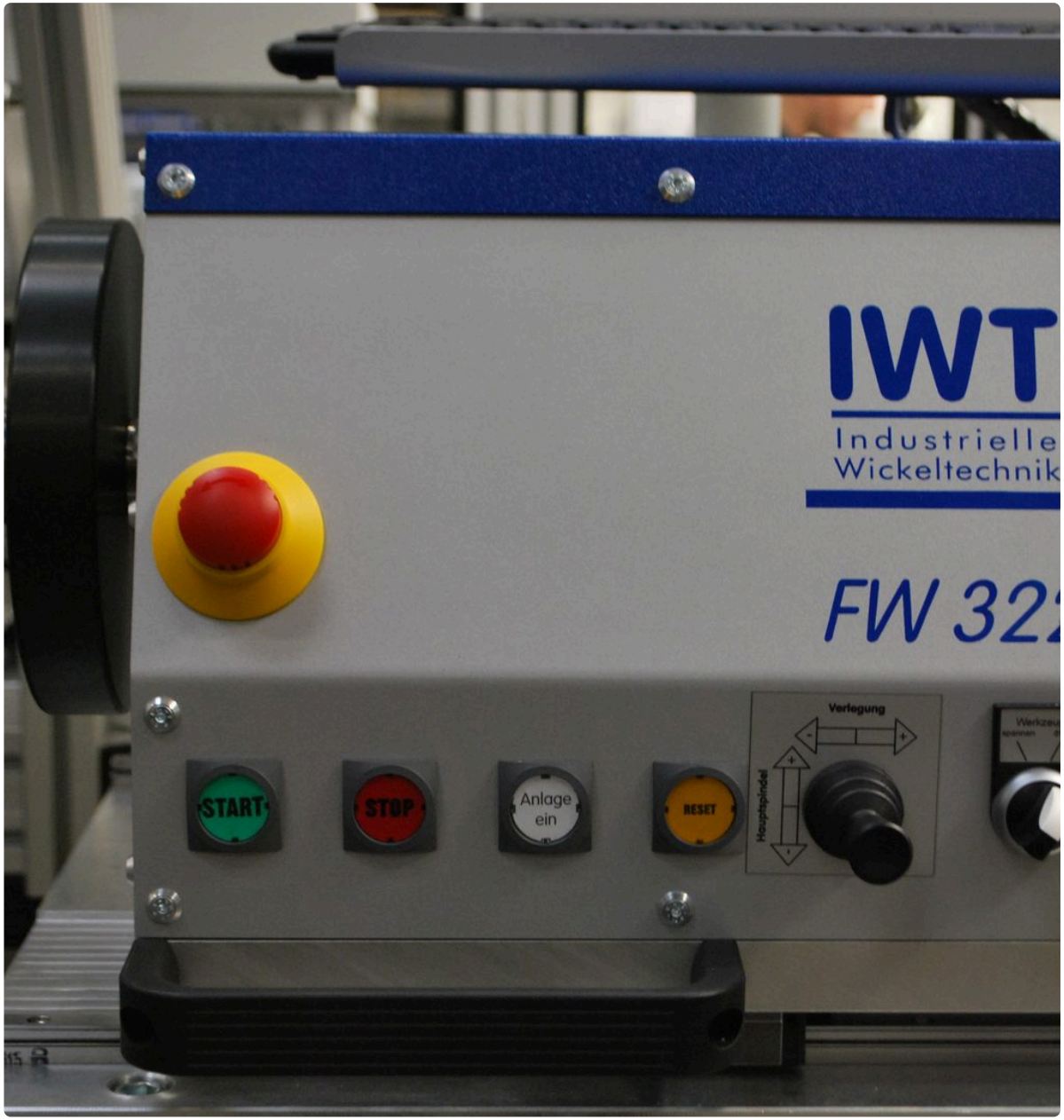
Data sheet FW 222

Parameter	Unit	FW 222-250	FW 222-450
Motor power	kVA	1.5	1.5
Wire range	mm	0.01 – 3.5	0.01 – 3.5
Profile wire/strip	mm²	–	–
Feed range	mm	0 – 99	0 – 99
Gearbox		–	–
Speed range	rpm		
0		0 – 500	0 – 500
1		0 – 1,000	0 – 1,000
2		0 – 1,500	0 – 1,500
3		0 – 3,000	0 – 3,000
4		0 – 6,000	0 – 6,000
Max. torque	Ncm		
0		28	28
1		14	14
2		9.5	9.5
3		4.7	4.7
4		2.3	2.3
Traverse width	mm	250 *	450 *
Clamping length	mm		
with tailstock		400 *	600 *
Centre height	mm	140	140
Winding diameter	mm	270	270
Winding spindles		1	1
Mains supply	V, Hz	1 x 230, 50/60	1 x 230, 50/60
Connected load	kVA	2.0	2.0
Footprint	(l × w [× h]) mm	950 × 480	1,150 × 480
Connections		RJ45 network port, USB, VGA port, foot control device, digital inputs/outputs	
Display		30 cm TFT colour display with touchscreen	
Memory capacity		500,000 programs	
Traverse accuracy	mm	0.004	0.004
Stopping accuracy	rev.	1/100	1/100

Key features

- Integrated PC
- Freely programmable for maximum flexibility
- Network capability for efficient program management and offline programming – worldwide
- 30 cm TFT display with touch interface
- High precision and long service life thanks to high-quality components and IWT quality standards

* Other dimensions available: further traverse widths in 200 mm steps up to max. 2,000 mm; the clamping length increases by 200 mm accordingly.
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FW 322

The big brother with a sturdy table frame

Versions

FW 322 standard
Standard version, traverse width 400 – 800 mm

FW 322 reinforced
Reinforced version, traverse width 400 – 800 mm

Touchscreen

Network-capable

Wire diameter
0.01 – 4.0 / 0.01 – 5.0 mm

Traverse accuracy
0.004 mm

Stopping accuracy
1/100 rev.

Data sheet FW 322

Parameter	Unit	FW 322 standard	FW 322 reinforced
Motor power	kVA	4.0	4.0
Wire range	mm	0.01 – 4.0	0.01 – 5.0
Profile wire/strip	mm²	–	–
Feed range	mm	0 – 99	0 – 99
Gearbox			
Automatic gearbox, version		GS	GV
Change gears		RS	RV
Speed range	rpm		
1		0 – 1,500	0 – 750
2		0 – 6,000	0 – 3,000
Max. torque	Ncm		
1		25.2	50.4
2		6.3	12.6
Traverse width	mm	400/600/800 *	400/600/800 *
Clamping length	mm	600/800/1,000 *	600/800/1,000 *
Centre height	mm	180/240	180/240
Winding diameter	mm	350/470	350/470
Winding spindles		1	1
Mains supply	V, Hz	3 x 400/50	3 x 400/50
Connected load	kVA	4.5	4.5
Footprint	(l × w [× h]) mm		
traverse width 400 mm		1,700 × 900 × 1,800	1,700 × 900 × 1,800
traverse width 600 mm		1,900 × 900 × 1,800	1,900 × 900 × 1,800
traverse width 800 mm		2,100 × 900 × 1,800	2,100 × 900 × 1,800
Connections		RJ45 network port, USB, VGA port, foot control device, digital inputs/outputs	
Display		30 cm TFT colour display with touchscreen	
Memory capacity		500,000 programs	
Traverse accuracy	mm	0.004	0.004
Stopping accuracy	rev.	1/100	1/100

Key features

- Integrated PC
- Freely programmable for maximum flexibility
- Network capability for efficient program management and offline programming

* Other dimensions available: further traverse widths in 200 mm steps up to max. 2,000 mm; the clamping length increases by 200 mm accordingly.
Gearbox: GS/GV = gearbox standard/reinforced, shifts automatically to the required gear stage; RS/RV = belt-driven machine standard/ reinforced, other speeds and torques by changing the gears.
"–" = not applicable or not specified.
Subject to technical changes.



FW 422

Sturdy table frame for large cross-sections

Versions

FW 422 standard
Standard version, traverse width 600 – 800 mm

FW 422 reinforced
Reinforced version, traverse width 600 – 800 mm

Touchscreen

Network-capable

Wire diameter
ab 0.01 mm

Traverse accuracy
0.004 mm

Stopping accuracy
1/100 rev.

Data sheet FW 422

Parameter	Unit	FW 422 standard	FW 422 reinforced
Motor power	kVA	4.0	4.0
Wire range	mm	ab 0.01	ab 0.01
Profile wire/strip	mm²	bis 120	bis 300
Feed range	mm	0 – 99	0 – 99
Gearbox			
Automatic gearbox, version		GS	GV
Change gears		RS	RV
Speed range	rpm		
1		0 – 300	0 – 100
2		0 – 1,500	0 – 500
Max. torque	Ncm		
1		126.0	378.0
2		25.2	75.6
Traverse width	mm	600/800 *	600/800 *
Clamping length	mm	800/1,000 *	800/1,000 *
Centre height	mm	300 *	300 *
Winding diameter	mm	600 *	600 *
Winding spindles		1	1
Mains supply	V, Hz	3 x 400/50	3 x 400/50
Connected load	kVA	4.5	4.5
Footprint	(l × w [× h]) mm		
traverse width 600 mm		2,000 × 900 × 1,800	2,000 × 900 × 1,800
traverse width 800 mm		2,200 × 900 × 1,800	2,200 × 900 × 1,800
Connections		RJ45 network port, USB, VGA port, foot control device, digital inputs/outputs	
Display		30 cm TFT colour display with touchscreen	
Memory capacity		500,000 programs	
Traverse accuracy	mm	0.004	0.004
Stopping accuracy	rev.	1/100	1/100

Key features

- Integrated PC
- Freely programmable for maximum quality and flexibility
- Network capability for efficient program management and offline programming
- High precision and long service life thanks to high-quality components and IWT quality standards

* Other dimensions available: further traverse widths in 200 mm steps up to max. 2,000 mm; the clamping length increases by 200 mm accordingly.
Gearbox: GS/GV = gearbox standard/reinforced, shifts automatically to the required gear stage; RS/RV = belt-driven machine standard/ reinforced, other speeds and torques by changing the gears.
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IWT winding software

Powerful in its capabilities. Simple to operate.

The IWT winding software was developed by users for users. Decades of practical experience in winding technology have gone directly into the operation and programming of our machines.

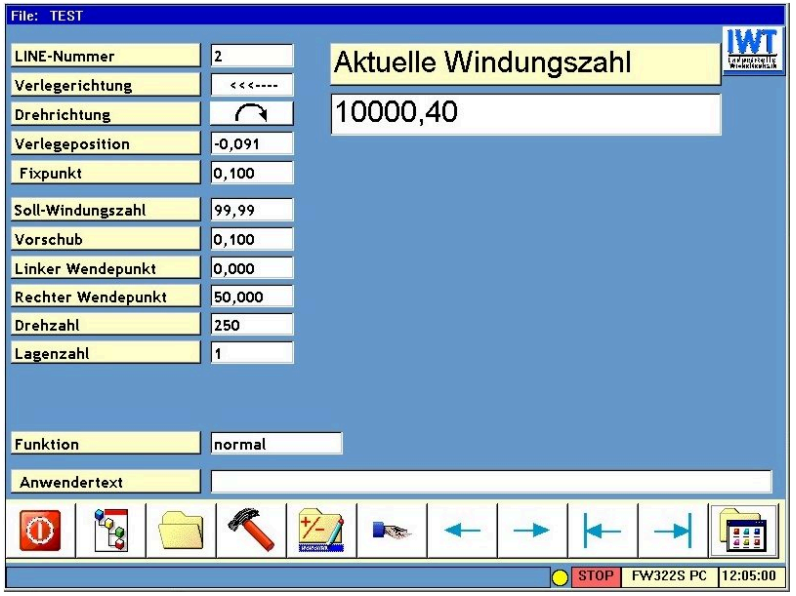
Our basic idea is simple: a high-performance winding machine does not need complicated operation. That is why the IWT software works with clear, easy-to-understand parameters. Operators do not need to master a programming language and do not need any special PLC or CNC knowledge. After a short familiarisation period, they can create, modify, save and recall winding programs on their own.

Leading companies worldwide from a wide range of industries rely on IWT winding machines and our software.

Clear user interface

The user interface shows the machine operator exactly the information needed for the current winding process. Key values such as the current number of turns, target number of turns, traverse position, traverse direction, direction of rotation, feed, reversal points, speed and number of layers are immediately visible.

Even with extensive winding programs, it is always clear what the machine is doing at any moment and which parameters it is working with.

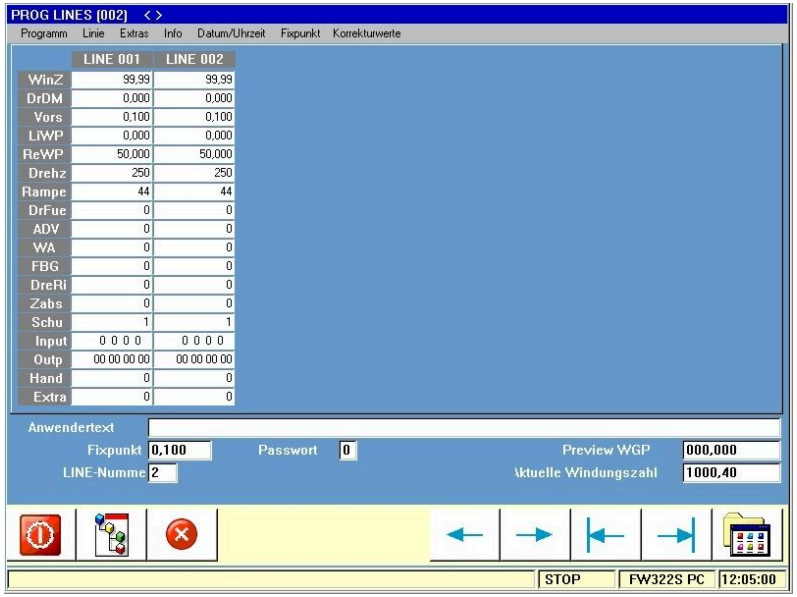


Everything at a glance: the user interface clearly shows the essential parameters and the current winding process on a single screen.

Creating winding programs without programming skills

Programming is carried out directly via the graphical user interface. Instead of program code, the technological values of the winding are entered. A winding program can consist of several consecutive LINEs, so that different work steps can be combined into a complete winding sequence.

The required parameters can be set individually for each LINE. Within one program, the machine can, for example, work with different numbers of turns, feeds, reversal points or speeds. This makes the software suitable both for simple standard windings and for complex, multi-stage winding processes.



Complex sequences, simply programmed: several LINEs with individual winding parameters make extensive winding programs possible – without conventional programming skills.

The key benefits

- Developed by users for users
- No PLC, CNC or conventional programming skills required
- Short familiarisation time and easy-to-understand operation
- Clear graphical user and programming interface
- 14 languages available
- Saving and reusing winding programs
- Multi-stage programs via individual LINEs
- Individual parameters for different program steps
- Different winding types and special functions
- Extensive correction options
- Integration of machine functions as well as inputs and outputs
- Password-protected access levels
- Network-capable with an easy-to-set-up FTP server
- Central program transfer and data backup possible
- Suitable for development, one-off parts, small batches and series production
- Reproducible winding sequences
- In worldwide industrial use for many years

Extensive winding functions

Depending on the machine, equipment and application, numerous winding functions are available. These include, among others:

- Standard winding
- Total number of turns
- Unwinding
- Layer stop
- Chamber winding
- Trapezoidal winding
- Orthocyclic winding
- Spreading

Multi-stage winding programs

A winding does not have to consist of a single, uniform operation. Different winding sections can be defined and combined within one program. This allows parameters such as number of turns, speed, feed or reversal points to be set specifically for individual work steps.

Corrections directly at the machine

Wire, coil former, wire tension and mechanical tolerances can influence the actual winding pattern. The IWT software therefore offers extensive correction functions. Settings can be adapted to the actual winding process directly at the machine, without having to change the basic machine control.

14 languages – ready for use worldwide

For international use, the IWT user interface is available in 14 languages. Machines at international production sites can therefore be operated in the most suitable language. This considerably simplifies training, operation and worldwide use.

Saving and reusing programs

Once set up, a winding program can be saved and recalled later. For recurring products, the machine therefore does not have to be completely set up again each time. Existing programs can be loaded and adapted as required. This supports development, one-off production, small batches and series production alike.

Network-capable with an easy-to-set-up FTP server

The IWT winding software is network-capable. Via an easy-to-set-up FTP server, winding programs can be transferred between the machine and the company network, stored centrally or backed up. Setup is deliberately kept simple and does not require any complex additional software.

- Transfer of winding programs via the company network
- Central storage and data backup
- Easy exchange of programs
- No additional storage medium required for the day-to-day exchange of programs

User and password protection

Not every machine operator needs access to all settings. The software therefore has password and authorisation levels. Functions for normal production can remain accessible, while advanced machine and system settings are protected.

Flexible machine configuration

Machine-specific settings can be managed in the setup area. These include, among others, controller parameters, language, belt stage, network, direction of rotation, pulse counter, pay-off unit and touch calibration. Inputs and outputs as well as machine and additional functions can also be integrated into the control sequences.

For simple and demanding winding tasks

The strength of the IWT software lies in the combination of simple operation, high flexibility and extensive programming options. Using easy-to-understand parameters, the user describes how the winding is to be carried out – the software converts these specifications into the corresponding machine sequence.

Accessories

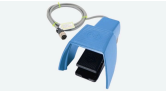
Tailstocks



Illustration	Description	Machine types	Order no.
	**Tailstock with axial tension** Centre height 140 mm	FW 122, FW 222	**80202/05**
	**Tailstock with radial tension** Centre height 140 mm	FW 122, FW 222	**80202/07**
	**Tailstock with radial tension** Centre height 180 mm	FW 322	**80202/41**
–	**Tailstock with radial tension** Centre height 240 mm No illustration, similar to 80202/41	FW 322	**80202/45**
–	**Tailstock with radial tension** Centre height 300 mm No illustration, similar to 80202/41	FW 422	**80202/42**

All tailstocks are also available in a pneumatic version.

Foot control devices

Illustration	Description	Machine types	Order no.
	**Foot control device, 1 pedal with speed control**	FW 022, FW 122, FW 222, FW 322, FW 422	**80181/20**
	**Foot control device, 3 pedals with speed control** Pedals: start, stop, speed control	FW 022, FW 122, FW 222, FW 322, FW 422	**80179/20**

Wire guide carriers

Fig. 1

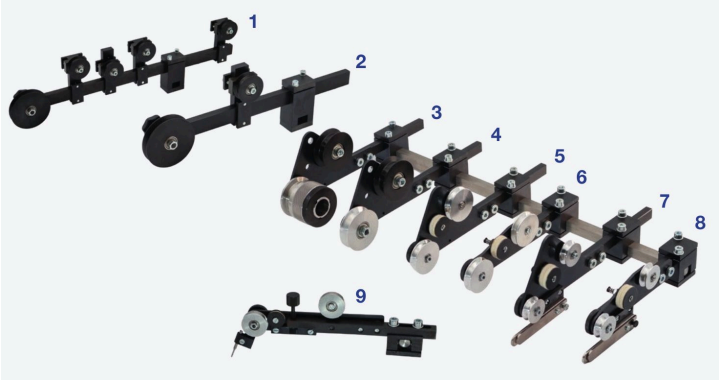


Fig. 2

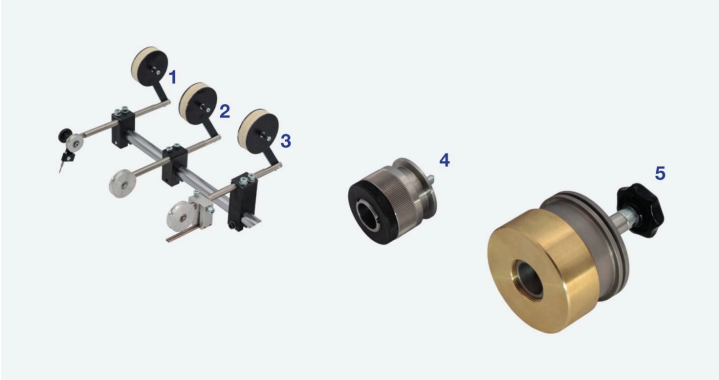


Illustration	Description	Machine types	Order no.
Fig. 1, no. 1	**Roller wire guide with wire tensioning**	FW 322, FW 422	**80172/14**
Fig. 1, no. 2	**Roller wire guide**	FW 322, FW 422	**80178/12**
Fig. 1, no. 3	**HD roller wire guide with adjustable guide roller**	FW 122, FW 222	**80181/59**
Fig. 1, no. 4	**HD roller wire guide, rigid**	FW 122, FW 222	**80181/58**
Fig. 1, no. 5	**Roller wire guide, normal**	FW 122	**80175/12**
Fig. 1, no. 5	**Roller wire guide, normal**	FW 222	**80181/55**
Fig. 1, no. 6	**Roller wire guide, narrow**	FW 122	**80175/18**
Fig. 1, no. 7	**Slide wire guide, normal**	FW 122	**80175/13**
Fig. 1, no. 7	**Slide wire guide, normal**	FW 222	**80181/56**
Fig. 1, no. 8	**Slide wire guide, narrow**	FW 122	**80175/15**
Fig. 1, no. 9	**Tube wire guide**	FW 122, FW 222	**80179/12**
Fig. 2, no. 1	**Tube wire guide** FW 022 E only	FW 022	**80201/44**
Fig. 2, no. 2	**Roller wire guide** FW 022 E only	FW 022	**80201/43**
Fig. 2, no. 3	**Slide wire guide** FW 022 E only	FW 022	**80201/41**
–	**Slide wire guide** FW 022 Z only	FW 022	**80201/46**
–	**Roller wire guide** FW 022 Z only	FW 022	**80201/47**
Fig. 2, no. 4	**Adjustable guide roller** 0 – 8 mm (0 – 0.31 in)	FW 122, FW 222, FW 322, FW 422	**80173/12**
Fig. 2, no. 5	**Adjustable guide roller** 0 – 14 mm (0 – 0.55 in)	FW 322, FW 422	**80181/80**

Wire brake · wire tensioning devices · wire tension regulator · withdrawal devices for CuL wires

Illustration	Description	Machine types	Order no.
	**Withdrawal device type 1** Wire range Ø 0.01 – 0.05 mm Winding tension 1.50 – 25.00 cN	FW 022, FW 122, FW 222, FW 322, FW 422	**80153/01**
	**Withdrawal device type 2** Wire range Ø 0.04 – 0.24 mm Winding tension 0.17 – 3.80 N AWG 46 – 30 (0.00125 – 0.051 mm²)	FW 022, FW 122, FW 222, FW 322, FW 422	**80153/52**
	**Withdrawal device type 3** Wire range Ø 0.15 – 0.75 mm Winding tension 2.00 – 28.00 N AWG 34 – 21 (0.0201 – 0.41 mm²)	FW 022, FW 122, FW 222, FW 322, FW 422	**80153/53**
	**Withdrawal device type 4** Wire range Ø 0.40 – 2.00 mm Winding tension 10.00 – 140.00 N AWG 26 – 12 (0.129 – 3.31 mm²)	FW 022, FW 122, FW 222, FW 322, FW 422	**80153/54**

Spool containers

Illustration	Description	Machine types	Order no.
	**Spool container for fixing to the support rod** Max. spool Ø 125 mm (4.92 in)	FW 022, FW 122, FW 222, FW 322, FW 422	**80153/12**
	**Spool container for fixing to the support rod** Max. spool Ø 160 mm	FW 022, FW 122, FW 222, FW 322, FW 422	**80153/13**
	**Floor-standing spool container with felt brake** Max. spool Ø 160 mm For placing behind the machine	FW 022, FW 122, FW 222, FW 322, FW 422	**80131/82**
	**Floor-standing spool container with felt brake** Max. spool Ø 250 mm For placing behind the machine	FW 022, FW 122, FW 222, FW 322, FW 422	**80131/83**
	**Draw-off funnel for container with felt brake** Max. spool Ø 250 mm	FW 022, FW 122, FW 222, FW 322, FW 422	**80131/84**

Contact

Advice, quotations and spare parts – get in touch with us.

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