

Machines and services for
the wire industry

schmidt

Maschinenbau GmbH
Machines for the wire industry

TAKE UP SERIES

Advice

Engineering

Design work

Machinery delivery

Commissioning

Training

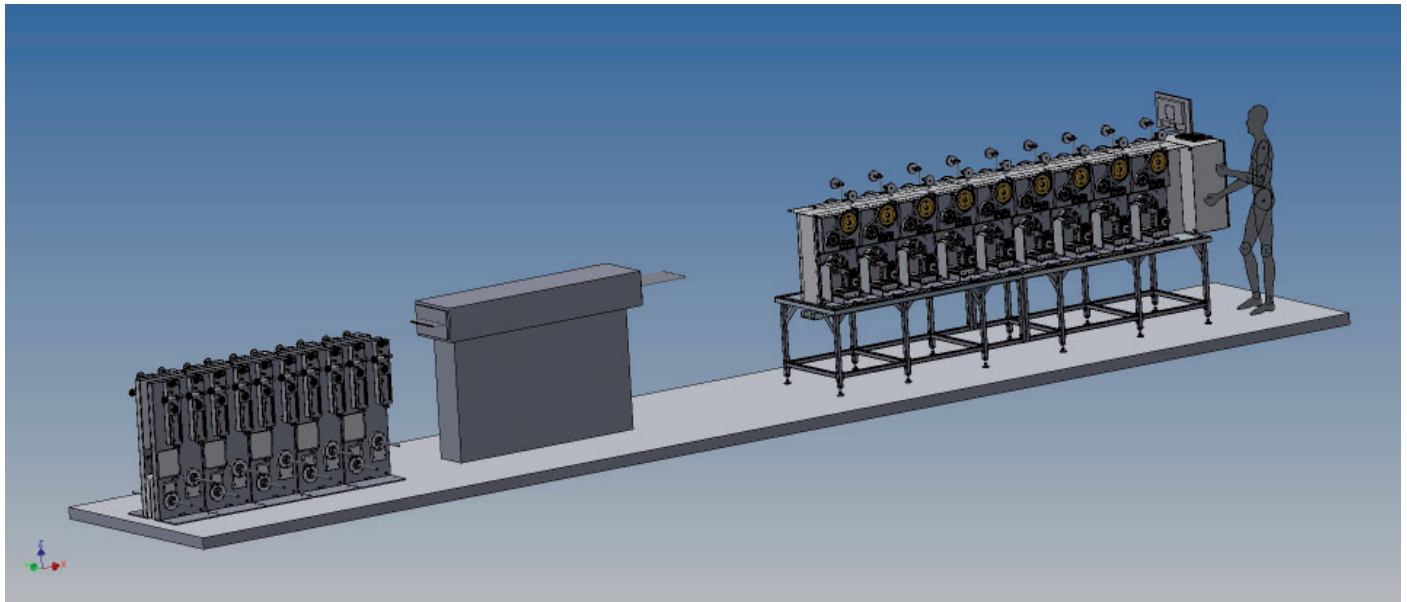


*specialized for
powerful solutions*

The logo for Schmidt Maschinenbau GmbH, featuring the word "schmidt" in a bold, lowercase, green sans-serif font.

Maschinenbau GmbH
Machines for the wire industry

After the drawing process, the wire often has to be annealed to obtain the necessary material properties. Schmidt has developed modern and efficient annealing take ups for this purpose that meet the highest standards of spooling quality. The modular concept with pay offs and take ups offers a completely new way of adapting to customer requirements.



APPLICATION

Depending on the wire diameter and application, two different designs of take ups can be used:

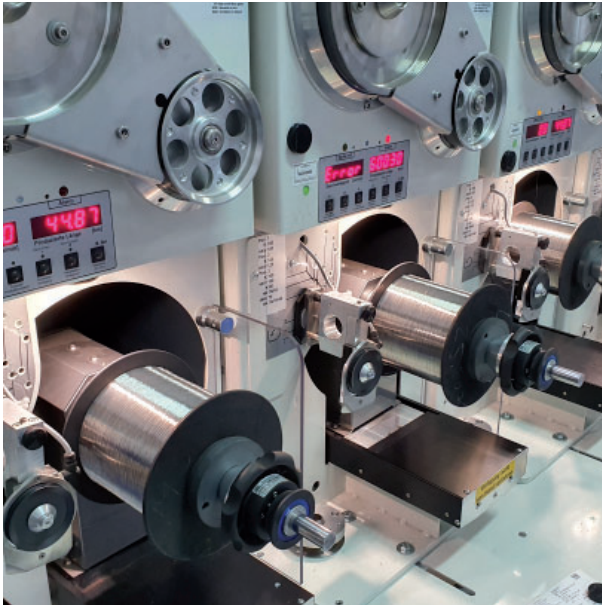
- **SM series** for fine and ultra-fine wires from 0.01 to 0.3 mm on spools up to 200 mm
Units specially developed for extremely fine and precise applications where highest quality spooling with the smallest footprint and minimal wire deflections.
Each line with its own microcontroller, drives with stepper motor technology for minimal power consumption.
- **SD series** for fine and coarse wires from 0.1 to 1.3 mm on spools up to 355 mm.
Devices designed for rugged industrial use, with spool load capacity of up to 50 kg.
Dancer-controlled spooling, wide dancer ranges for flexible adjustment to the wire diameter.
Control with Siemens PLC and touch panel for each spooler.



SM Series

KEY FEATURES OF THE SM SERIES

- Traversing spool for the best traverse quality (low-twist traverse)
- Spooling tensile force measurement and control for monitored product quality
- Monitoring of all control parameters, with the option of recording historical data for quality control
- Modular design, each line with its own control system and operation, for maximum plant reliability
- Optimized design with few wire deflections, no counter-bending
- Low energy consumption through the use of modern stepper motors with 24 V / 48 V technology
- Versions adapted to the respective wire diameter and spool range



Take Up Series SM

	Wire diameter range	Speed	Spool flange Ø max.	Spool weight max.	Spool shaft Ø	Traverse width	Spooling tension min.	Spooling tension max.
	mm	m/min	mm	kg	mm	mm	cN	cN
SM36	0,01 – 0,08	300	125	6	16	180	3	30
SM33w	0,03 – 0,1	200	160	14	16	180	40	400
SM33	0,05 – 0,3	180	200	25	16	180	90	900

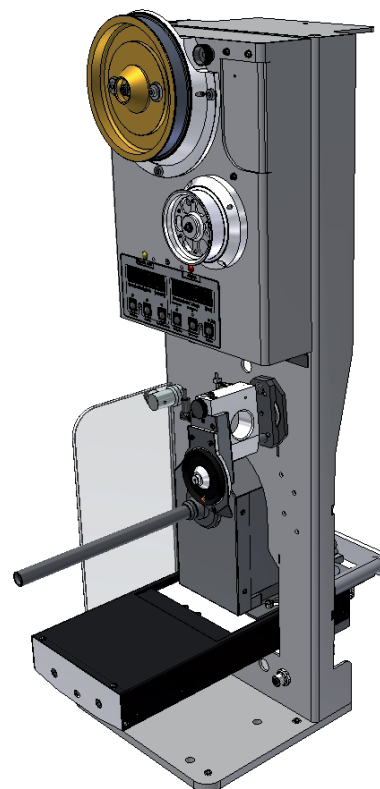
ULTRAFINE WIRE ANNEALING TAKE UP Type SM36

Wire diameter
from **0,01** to **0,08** mm (.0004" to .0031")

KEY FEATURES

Spooling unit designed for fine and ultra-fine wires from 10 µm to 80 µm
Production speeds up to 300 m/min (1000 fpm) can be achieved.

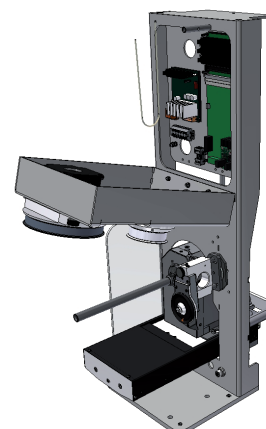
- Capstan and spreader discs with ceramic coating made of chromium oxide
- Traversing spool, traversing pulley manually adjustable to adapt to the spool
- Both spool edges are individually adjustable on the control panel
- Automatic traverse correction for best spooling results
- Spooler shaft Ø 16 mm, with spool adapters for spool types HK76, HK80, HK100 and HK130; max. spool diameter Ø 130 mm
- Controlled and monitored spooling tension by means of tension measurement device at guiding pulley
- Tension setting range by means of inductive clutch in the range of 3 to 30 cN
- Low power consumption, 48 V extra-low voltage
- Each module with its own microcontroller for control and monitoring, with 2 LED actual value displays and 6 operating buttons, 2 alarm LEDs



DESIGN

- All electronic components accessible via front flap
- Use of only maintenance-free components
- Demand-oriented combination of individual modules into groups
- Control bus-capable, connection to central operating PC possible

	Housing width	Capstan Ø	Spreader disc Ø
	mm	mm	mm
SM36	250	135	68





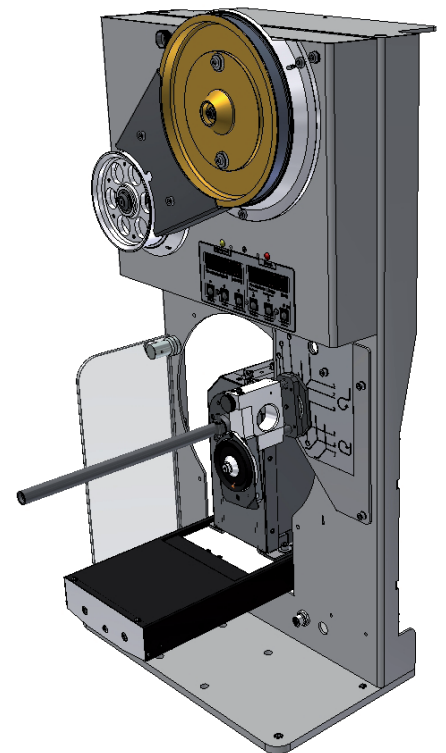
FINE WIRE ANNEALING TAKE UP Type SM33w

Wire diameter
from 0,03 to 0,10 mm (.0012" to .004")

KEY FEATURES

Take up designed for the finest wires from 30 µm to 100 µm.
Production speeds of up to 200 m/min (655 fpm) can be achieved.

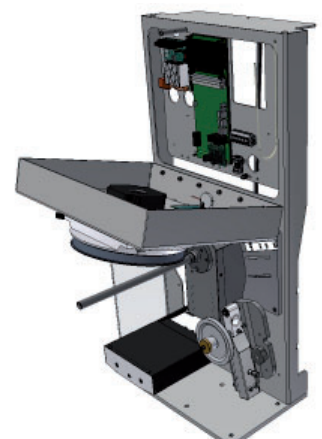
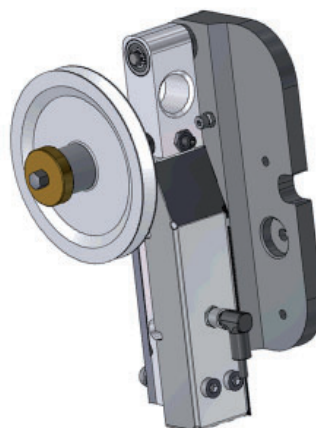
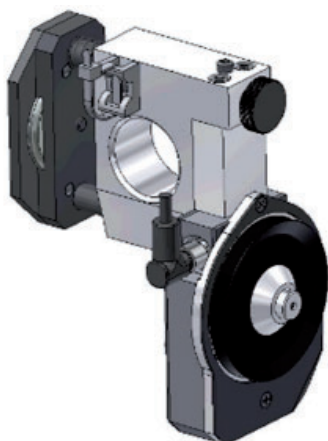
- Capstan and spreader discs with ceramic chromium oxide coating
- Traversing spool, traversing pulley manually adjustable to match the spool
- Both spool edges are individually adjustable on the control panel
- Automatic traverse correction for best spooling results
- Spooler shaft Ø 16 mm, with spool adapters for spool types from 76 mm up to 160 mm flange diameter
- Controlled and monitored spooling tension by means of tension measurement device at guiding pulley
- Tension adjustment range from 40 to 400 cN
- Low power consumption, extra-low voltage 48 V
- Each module with its own microcontroller for control and monitoring, with 2 LED actual value displays and 6 operating buttons, 2 alarm LEDs



DESIGN

- All electronic components accessible via front flap
- Use of only maintenance-free components
- Demand-oriented combination of individual modules into groups
- Control bus-capable, connection to central operating PC possible

	Housing width	Capstan Ø	Spreader disc Ø
	mm	mm	mm
SM33w	400	191	110



FINE WIRE ANNEALING TAKE UP

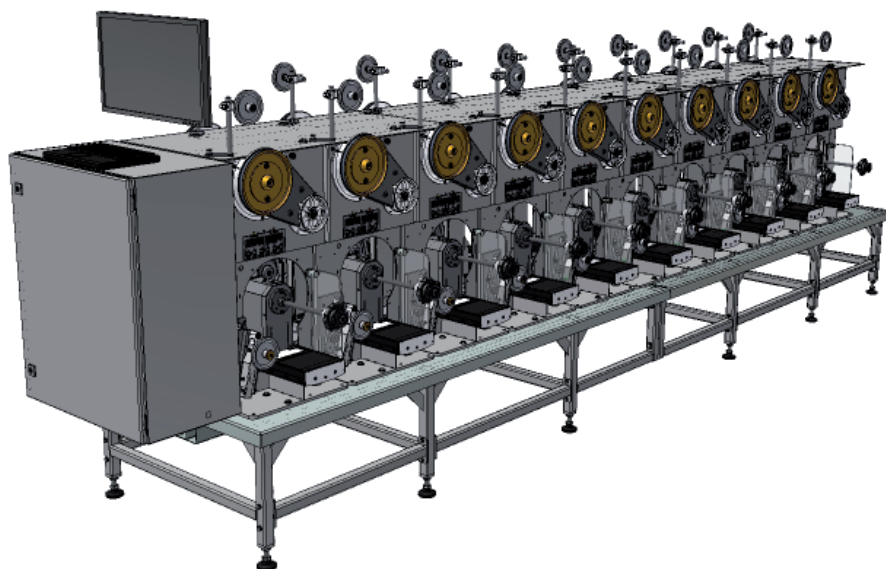
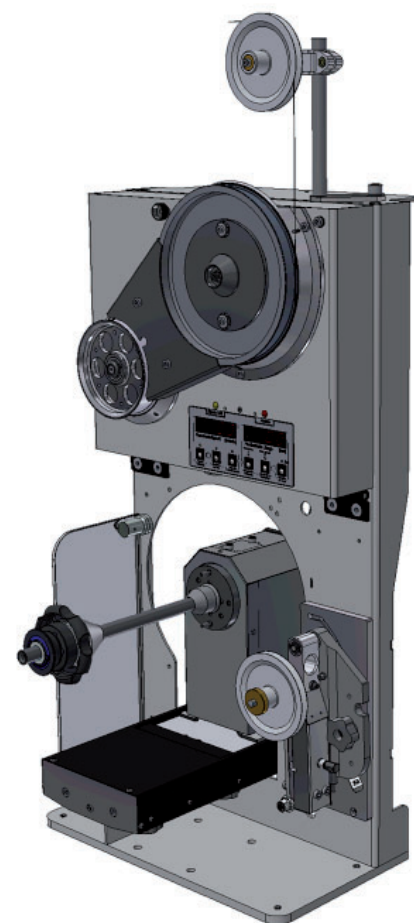
Type SM33

Wire diameter
from **0,05** to **0,3** mm (.002" to .012")

KEY FEATURES

Take-up spooler designed for fine wires from 0.05 to 0.3 mm.
Production speeds of up to 150 m/min (500 fpm) can be achieved.

- Capstan and spreader discs with ceramic chromium oxide coating
- Traversing spool, traversing pulley manually adjustable to match the spool
- Both spool edges are individually adjustable on the control panel
- Automatic traverse correction for best spooling results
- Spooler shaft \varnothing 16 mm, with spool adapters for spool types from 76 mm up to 200 mm flange diameter
- Controlled and monitored spooling tension by means of tension measurement device at guiding pulley
- Adjustment range from 90 to 900 cN
- Low power consumption, 48 V extra-low voltage
- Each module with its own microcontroller for control and monitoring, with 2 LED actual value displays and 6 control buttons, 2 alarm LEDs



	Housing width	Capstan \varnothing	Spreader disc \varnothing
	mm	mm	mm
SM33	400	191	110



ULTRA FINE WIRE
TAKE UP

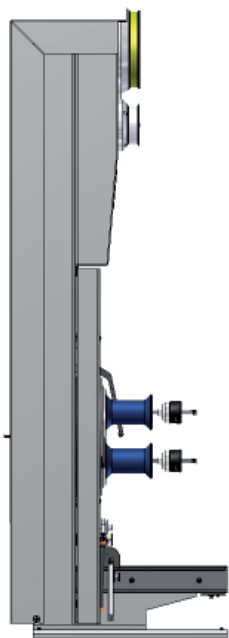
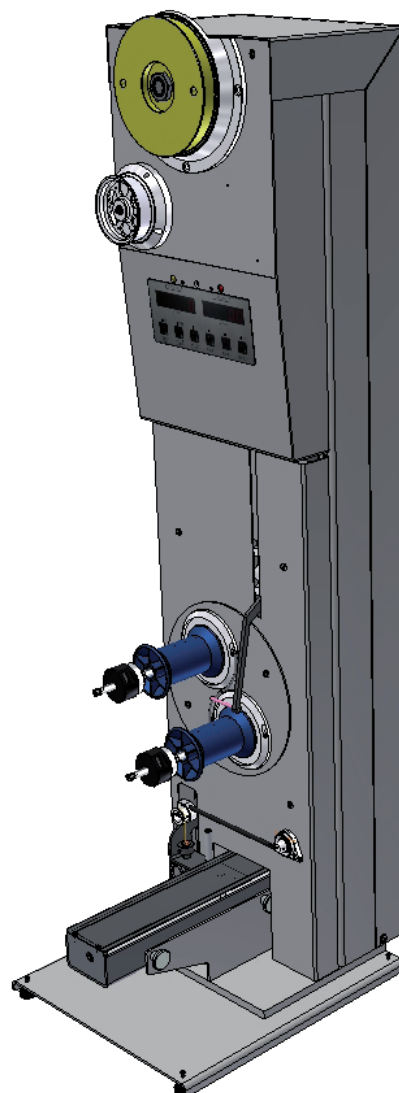
Double spooler

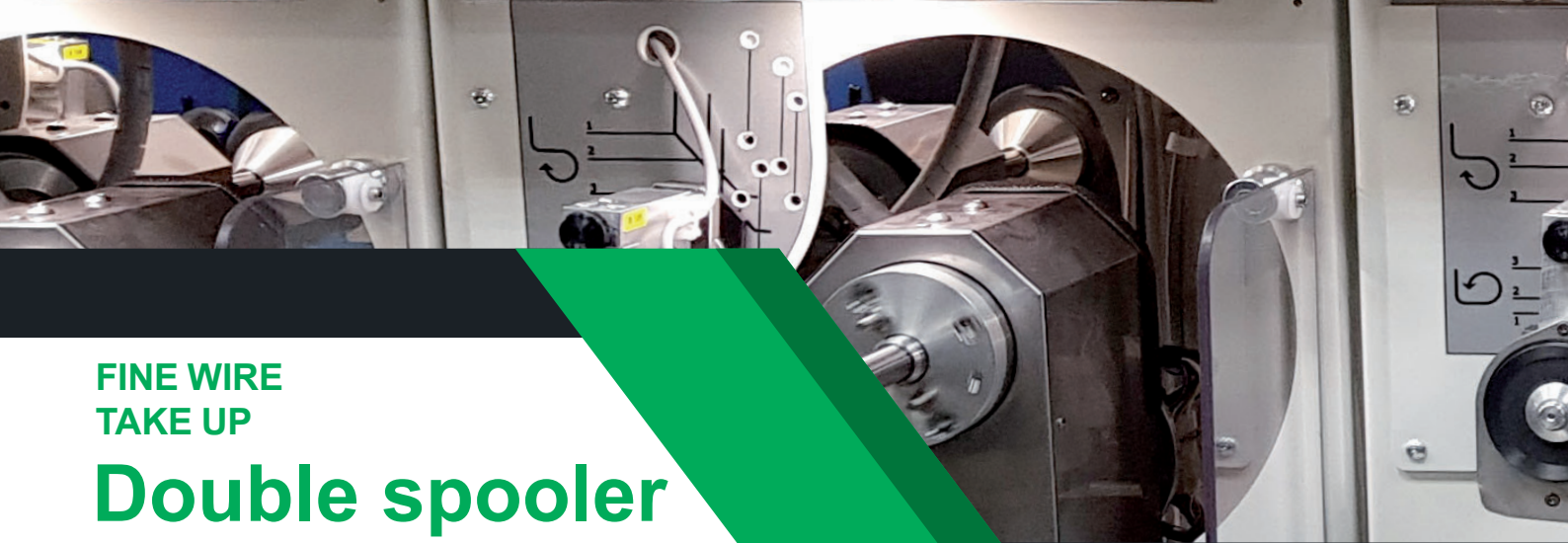
Wire diameter
From **0.01** to **0.08** mm (.0004" to .003")

TYPE SM36-DS

Annealing take-up with automatic spool changer, designed for ultra-fine wire 10 μm to 80 μm . Production speed up to 300 m/min (1000 fpm). Spool change will take place automatically when spool is full. Spool must take off by hand.

- Capstan and spreader disc with ceramic layer from Chrome Oxide
- Traversing, guiding pulley
- Both spool rims adjustable by operation panel buttons
- Spooler shaft \varnothing 10 mm (.4"), spool adapter for spool type up to 100 mm, cylindrical and biconical
- Spooling tension controlled and supervised via spring actuated dancer, range 5 - 30 cN
- Automatic spool change-over when spool is full
- Spool take-out by hand
- Low energy consumption, safety voltage 48 V only
- Single-line microcontroller card; local operation by built-in panel with 2 digital displays and 6 buttons, 2 Alarm LED





**FINE WIRE
TAKE UP**

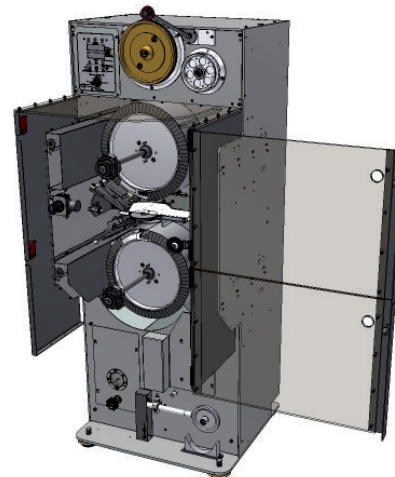
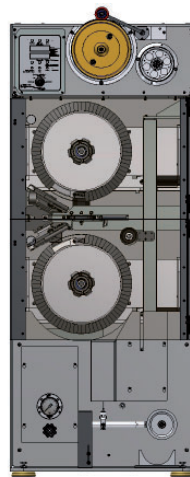
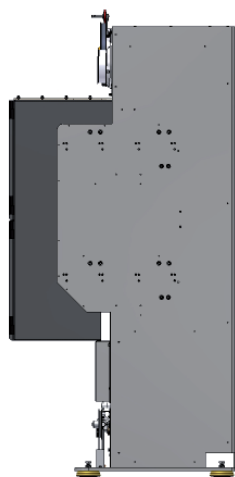
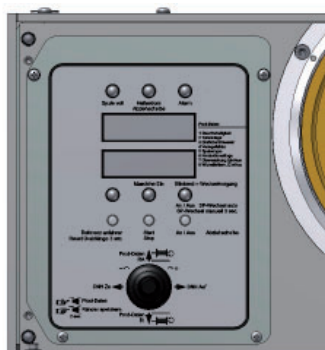
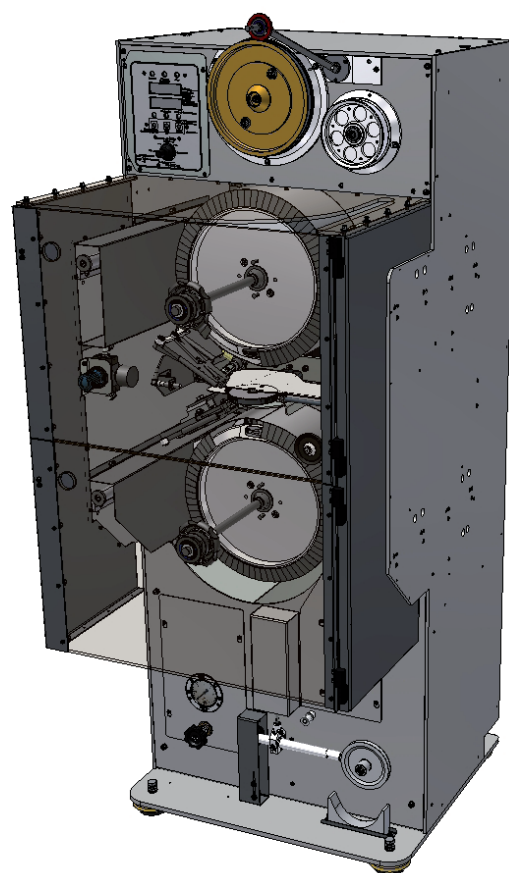
Double spooler

Wire diameter
From **0.08 to 0,12 mm** (.0031" to .0047")

TYPE SM33-DS

Annealing take-up with automatic spool changer, designed for fine wire 0.08 mm to 0.12 mm. Production speed up to 180 m/min (590 fpm). Spool change will take place automatically when spool is full. Spool must take off by hand.

- Capstan and spreader disc with ceramic layer from Chrome Oxide
- Traversing spool, guiding pulley adjustable for easy centring of the spooling
- Both spool rims adjustable by operation panel buttons
- Spooler shaft Ø 22 mm (.86"), spool adapter for spool type from DIN 160 up to DIN 250
- Spooling tension controlled and supervised via pneumatic dancer
- Adjustment of spooling tension by torque-controlled servo drive, range 30 - 2500 cN
- Automatic spool change-over when spool is full
- Spool take-out by hand, single protection flaps to spooler bay
- Low energy consumption, safety voltage 48 V only
- Single-line microcontroller card; local operation by built-in panel with 2 digital displays and 6 buttons, 2 Alarm LED





SM SERIES

Central user interface

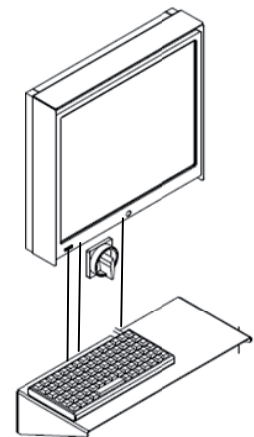
Flat screen 19"

Network bus cable connection to all take-ups

Data storage on hard disc

Ethernet connection to factory LAN

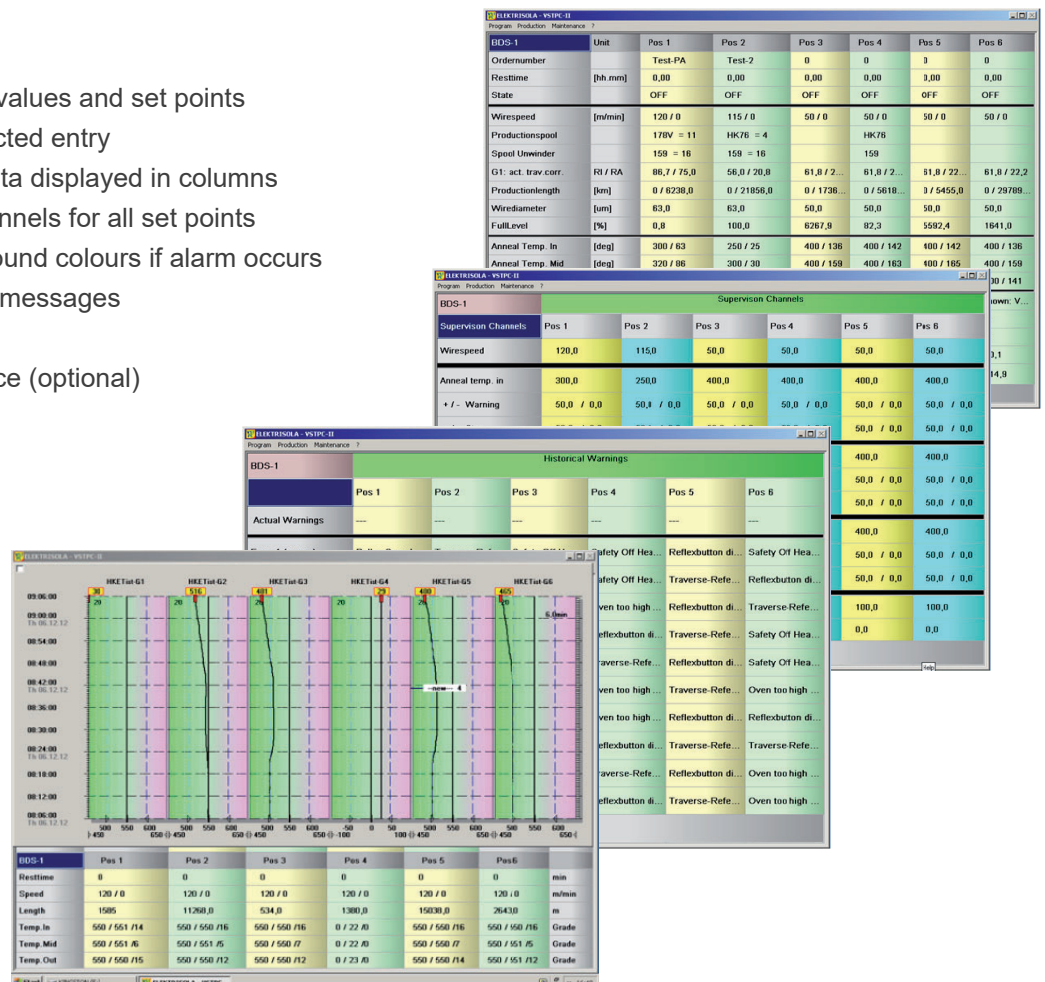
Software can be customized to any take-up configuration



FEATURES AND BENEFITS

Operator screen

- Show all actual values and set points
- Password protected entry
- Each take up data displayed in columns
- Supervision channels for all set points
- Change background colours if alarm occurs
- Historical alarm messages
- Trend feature
- OPC-UA Interface (optional)



ANNEALING TAKE-UP SD Series

The SD series take-up reel is characterized by its particularly robust design and high operational reliability, even in harsh environments.

We use the proven Siemens SPS S7-1200 industry standard for controlling and monitoring the lines. The performance characteristics are comparable to those of the SM series.

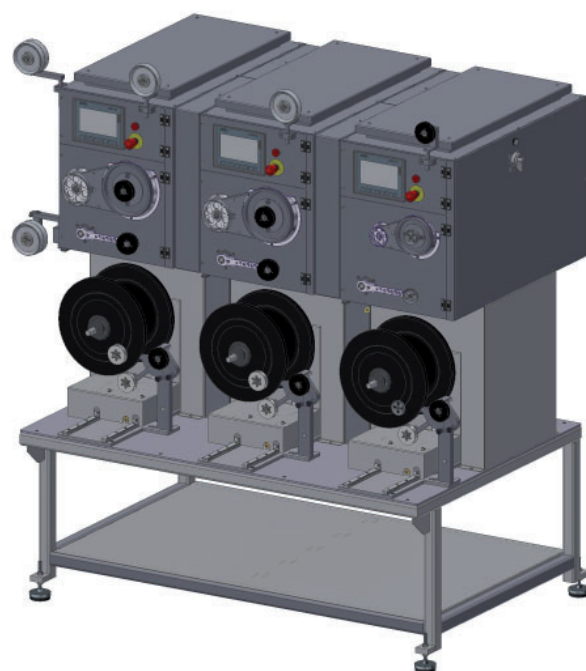
Important feature is the wire guiding and bending in one direction only, no counter bending appears for best wire quality.

KEY FEATURES

- Modular design, with a separate PLC control for each line
- Any number of spooling modules can be put together
- Two spooling units per module, arranged back-to-back
- Spooling modules adapted to three wire diameter ranges
- Arranged on tables for ergonomic operation
- Drive technology with stepper motors, very low energy consumption
- Traversing spool for twist-free wire spooling
- Monitoring of all control parameters and functions
- Optional OPC-UA interface on each PLC

Take Up Series SD

	Wire diameter range	Speed	Spool flange Ø max.	Spool flange Ø min.	Spool shaft Ø	Traverse width max.	Spooling tension min.	Spooling tension max.
	mm	m/min	mm	mm	mm	mm	cN	cN
SD20/S	0,1 – 0,35	100	200	76	15	180	10	250
SD20/M	0,2 – 0,65	100	250	100	20	180	40	1500
SD20/L	0,3 – 1,30	60	355	100	20/35	250	100	5000





ANNEALING TAKE-UP Type SD20/S/M/L

Wire diameter
From 0,1 to 1,3 mm (.004" to .051")

KEY FEATURES

Take ups available in three different sizes (S/M/L), designed for wires between 0.1 and 1.3 mm.
Production speeds of up to 100 m/min (590 fpm) can be achieved.

- Capstan and spreader disc with ceramic coating made of chromium oxide
- Traversing pulley, traversing pulley manually adjustable to adapt to the spool
- Both spool edges individually adjustable, with automatic edge correction
- Automatic traverse correction for best spooling results
- Spool size up to 355 mm flange diameter, and 260 mm traverse width
- Tension adjustment via electronically adjustable spring-loaded dancer
- Optional tension measurement and monitoring using a load cell in the guiding pulley
- Control system integrated in the module housing, no separate control cabinet required
- Siemens S7-1200 PLC control for each line, for high plant reliability



Take Up Series SD

	Housing width	Capstan Ø	Spreader disc Ø
	mm	mm	mm
SD20/S	475	135	68
SD20/M	475	191	110
SD20/L	475	191	110



ULTRAFINE WIRE

PAY OFF

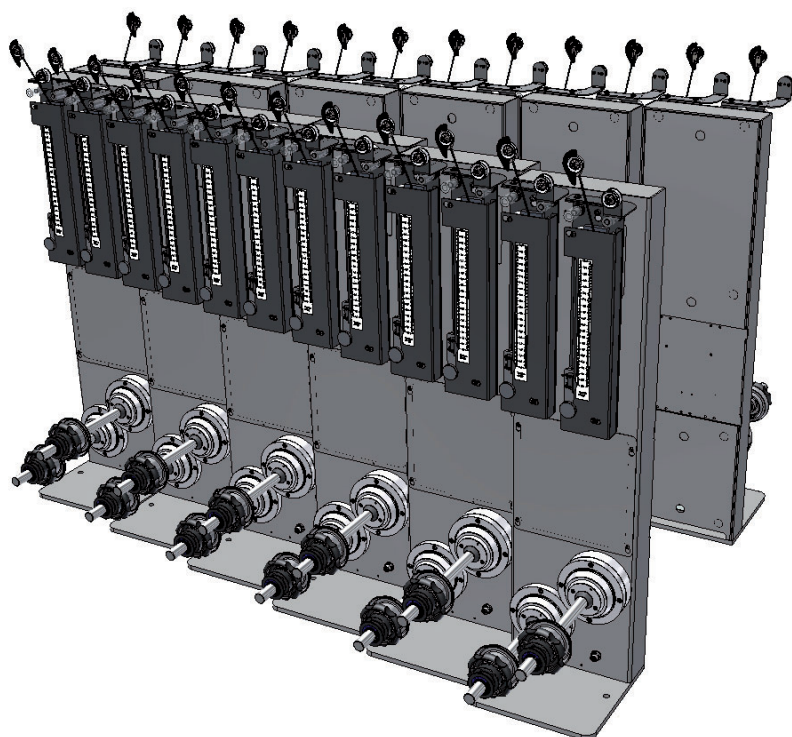
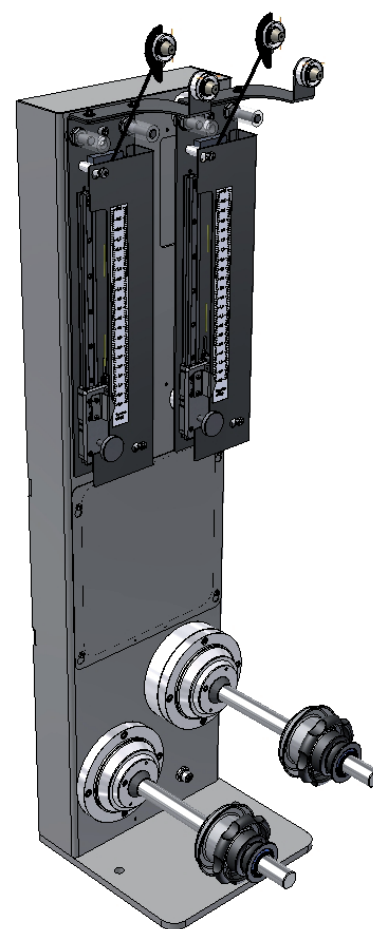
Wire diameter

From **0.01** to **0.08** mm (.0004" to .003")

DOUBLE PAY OFF TYPE UW210, FOR TAKE UP SM36

Controlled pay off, designed for ultra-fine wire 10 μ m to 80 μ m.
Production speed up to 300 m/min. Fixed offset to apply the
annealing tubes distances. Twist-free reel off.

- Two pay off units combined in one housing
- Spool shaft diameter 16 or 22 mm, direct driven by stepping motor
- Spool flange diameter up to 130 mm
- Pay off spooling force adjustable by spring actuated dancer to 0.5 – 12 cN
- Low energy consumption, safety voltage 48 V only
- Each spooler with own microcontroller
- Stop button to shut down the line
- Housing can be grouped to desired number of lines
- Module width 250 mm, wire running height 1041 mm





FINE WIRE

PAY OFF

Wire diameter

From **0.03** to **0.6** mm (.0012" to .023")

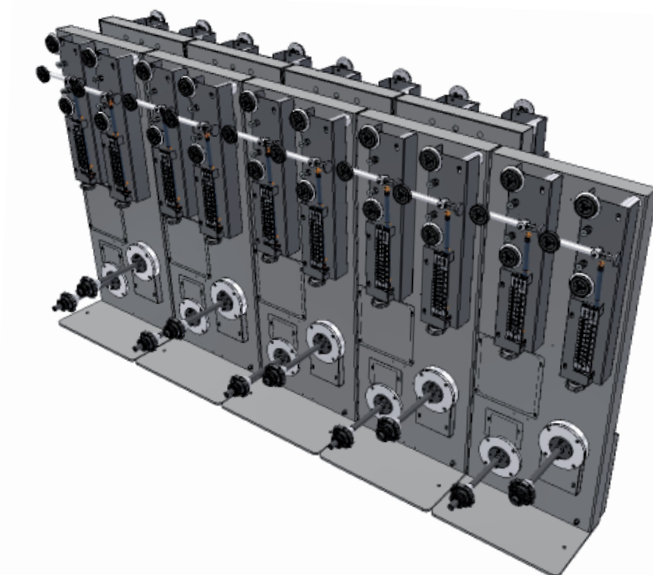
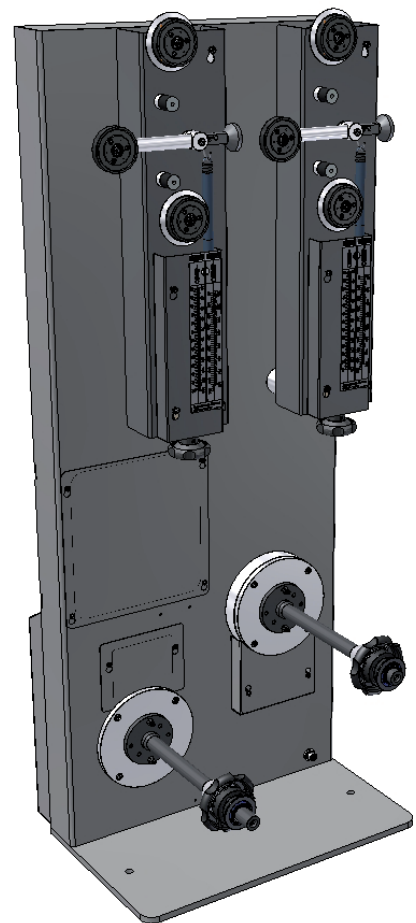
DOUBLE PAY OFF TYPE UW2-800, FOR TAKE UP SM33

Controlled pay off, designed for fine wire 0.03 mm to 0.6 mm. Production speed up to 200 m/min. Fixed offset to apply the annealing tubes distances. Twist-free reel off.

- Two pay off units combined in one housing
- Spool shaft diameter 16 or 22 mm, direct driven by stepping motor
- Spool flange diameter up to 250 mm
- Pay off spooling force adjustable by spring actuated dancer

Tension ranges:

- range #1: 30 – 90 cN
 - range #2: 50 – 150 cN
 - range #3: 50 – 500 cN
 - range #4: 80 – 800 cN
- Low energy consumption, safety voltage 48 V only
 - Each spooler with own microcontroller
 - Stop button to shut down each single line
 - Housing can be grouped to desired number of lines
 - Module width 480 mm, wire running height 1220 mm



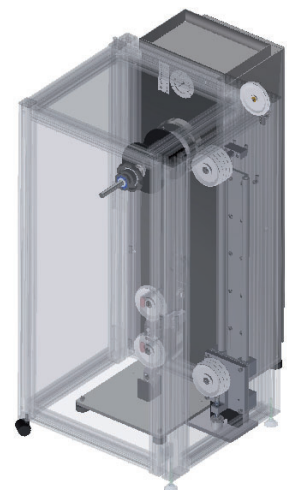
STAND-ALONE
PAY OFF

UW Series

FEATURES

These pay offs are designed for re-reeling of single spools.

- Compact design
- Two models for different spool range and wire tension
- Adjustable spooling tension due to pneumatic dancer
- Selectable rotation sense and pay off direction
- Control gain adjustable by manual knob
- Voltage 110-270 V, 50/60 Hz
- Pressurized air connection 6 bar
- In version UW1/850/DAS, also available with wire accumulator and protection cage
- Spool shaft \varnothing 16 or 22 mm / 315 mm long
- Module width 300 mm, wire run height 1000 - 1200 mm



Pay Off Series UW

	Wire diameter range	Speed	Spool flange \varnothing max.	Spool flange max.	Spool shaft \varnothing	Spooling tension min.	Spooling tension max.	Housing width
	mm	UpM	mm	kg	mm	cN	cN	mm
UW1/165	0,05 – 0,20	550	250	15	16	10	140	300
UW1/850	0,17 – 0,50	550	355	35	35	50	850	300
UW1/1700	0,17 – 0,50	550	355	35	35	100	1700	300
UW1/850/DAS	0,17 – 0,50	550	355	35	35	50	850	600



ULTRA FINE WIRE RE-SPOOLER Type SM02

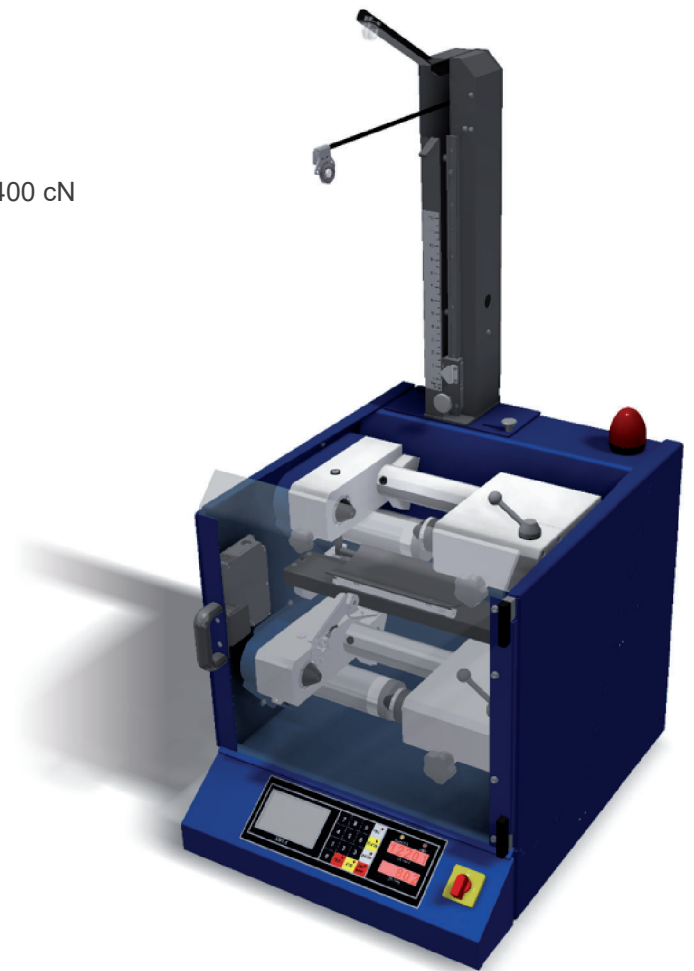
Wire diameter
From 10 μm to 50 μm

TABLE-TOP RE-SPOOLING DEVICE

- Spool types up to flange diameter 160 mm and overall width 160 mm, cylindrical and biconical
- Quick and easy manual spool change
- Fully automated traverse correction
- Spooling tension applied by spring actuated dancer
- Three dancer arms selectable: 1-10 cN; 10-100 cN; 40-400 cN
- Re-spooling speed up to 20 m/s
- Spooler revolution max. 6750 rpm
- Set points for spool filling level, wire length, and number of revolutions

SPOOL RANGE SAMPLE

DIN 160 (160K)	DIN 125 (125K)	DIN 100 (100K)	HKV 160 (159 45 R)	HKV 125 (124 45 R)
Abspulen / pay off	Abspulen / pay off	Abspulen / pay off	Abspulen / pay off	Abspulen / pay off
HK76/45	HK100-65-100	HK130-82-176	HK76	HK76/16-60
Aufspulen / take-up	Abspulen / pay off	Abspulen / pay off	Aufspulen / take-up	Aufspulen / take-up
HK80	SONOCO CRELLIN $\phi 2,25" \times 1" \times \phi 1,76"$	SONOCO CRELLIN $\phi 2,5" \times 3" \times \phi 1,76"$	Elmet Tungsten Spool FWM	Wardwell
Aufspulen / take-up	Aufspulen / take-up	Aufspulen / take-up	Abspulen / pay off	Aufspulen / take-up
SONOCO CRELLIN $\phi 4,5" \times 3" \times \phi 2,5"$	$\phi 4,86" \times 3,5" \times 3"$ Pittsfield 4-7/8" STD	$\phi 6" \times 3,5" \times \phi 3,5"$ th in flange ABC Plastics FA-060	SONOCO CRELLIN $\phi 6" \times 3,5" \times \phi 3,5"$	$\phi 160\text{mm} \times 90\text{mm} \times \phi 90\text{mm}$
Abspulen / pay off	Abspulen / pay off	Abspulen / pay off	Abspulen / pay off	Abspulen / pay off
Endura Braider Bobbin	Medium Hub Braider Bobbin	Large Hub Braider Bobbin Steeger 30mm	$\phi 164 \times 38,9 \times \phi 87,6$ ABC Plastics UA-060	Bonding Wire Spool Z"
Aufspulen / take-up	Aufspulen / take-up	Aufspulen / take-up	Abspulen / pay off	Aufspulen / take-up





schmidt Maschinenbau GmbH

Machines for the wire industry

Your competent partner for a broad range of equipment

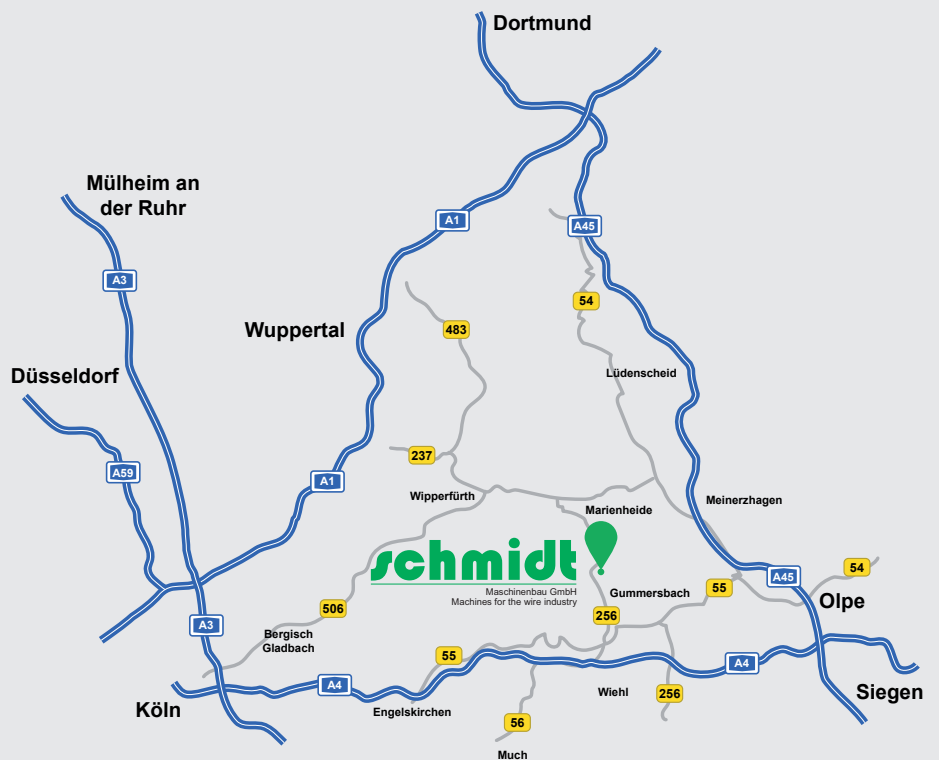
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