SAMPSISTEMI

80 1936 - 2016

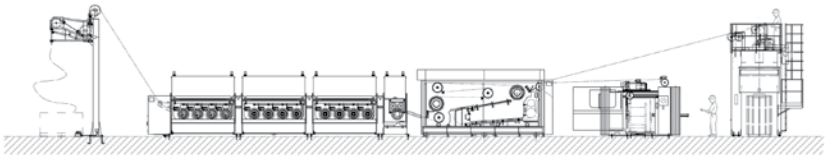
Wire drawing

SAMP SISTEMI

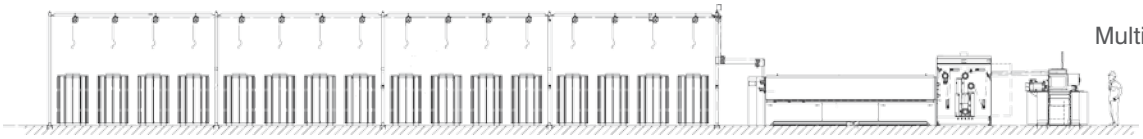
Two paths to your success

At Sampsistemi, we strive to understand our clients markets and be aware of their needs, and we have therefore concentrated our efforts on engineering technical solutions which minimise energy requirements along lines to give you a real competitive advantage, for our mutual benefit.
We pursue two parallel paths at Sampsistemi, on the one hand developing new cutting-edge products and, on the other, making improvements to existing products to ensure that you have the best always.

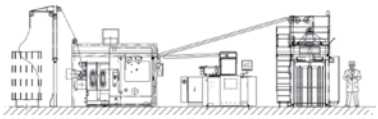
Drawing lines



Rod break-down
4



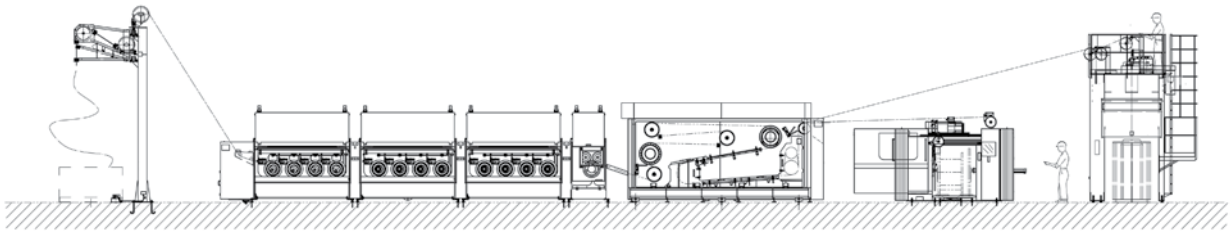
Multi-wire drawing
8



Single-wire drawing
14

Spooling & coilling solutions
16

Rod break-down line
for copper, aluminium and alloys



Pay-offs	Rod break-down machines	Annealers	Dynamic spoolers	Static spoolers	Coilers
SV M	MT 500	AN 600	DS 800/1000/1250	BS 800/1000	IN 800/1000
SV L	MT 500 SC	AN 450	DS 800/1000/1250 A		
SV RT	RB 450	RC 600	DS 800 DM/DA		
SV MO	RB 400 C	RC 500	BD 800/1000/1250		

Rod break-down machines		MT 500		MT 500 SC		RB 450		RB 400 C	
Max. capstan Ø	[mm]	500		500		450		400	
		Cu	Al/Alloys	Cu/Alloys	Al/Alloys	Cu/Alloys	Al/Alloys	Cu	Al/Alloys
Max Inlet Ø	[mm]	8.0	9.5 - 12.7	8.0	9.5 (12.7)	8.0	9.5 (12.7)	8.0	9.5
Outlet Ø range	[mm]	0.88 - 5.5	1.25 - 5.5	0.88 - 4.50	1.25 - 5.00	0.88 - 4.50	1.25 - 5.50	1.00 - 4.50	1.30 - 4.50
No. of wires		1 - 2		1 - 4	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2
No. of drafts		9 - 15		9 - 15	9 - 15	7 - 15	7 - 15	11 - 15	11 - 15
Max. speed*	[m/sec]	35		35		35		35	

* Cu & Al Alloys max speed depending on alloy type
Other machine configurations are available on request
All technical data are subject to change without prior notification.

Breaking-down 4 wires at the same time

Optimised energy consumption and production processes mean unrivalled levels of productivity (it is possible to manufacture 9 tons/hour with 4 annealed wires of 1.80 mm).

Rod break-down machines

RB 450

+ Multimotor technology with slip control technology
+ Programmable wire elongation on each draft
+ 15% more energy-efficient than state-of-the-art technology
+ User-friendly design and full access to the work area for easy string-up
+ Fully submerged process with additional spray lubrication on each die (inlet and outlet die cone) and capstan (for string-up process)
+ High performance gear transmission
+ Anti-backlash capstans to prevent wire breakage during machine stop
+ Quick change dies
+ Electrical architecture and equipment based on AC Siemens Drive
+ Wire path suitable for shaped wire
+ No soundproof cabinet needed
+ Low preventive maintenance
+ Optional first module with 600 mm dia. capstan for special applications
+ Optional final rotating die

RB 400 C

+ Compact design and reduced footprint
+ Multimotor technology with intermediate slip recovery for energy saving and better wire quality
+ User-friendly design and full access to the work area for easy string-up
+ Partially submerged process with additional spray lubrication on each die (inlet and outlet die cone) and capstan (for string-up process)
+ High performance gear transmission
+ Anti-backlash devices to prevent wire breakage during machine stop
+ Quick change dies
+ Electrical architecture and equipment based on AC Siemens Drive

MT 500 Series

+ Fully submerged process with additional spray lubrication on each die (inlet and outlet die cone)
+ High performance gear transmission (MT 500)
+ Multimotor technology with slip control technology and programmable wire elongation on each draft (MT 500 SC)
+ Anti-backlash capstans to prevent wire breakage during machine stop
+ Quick change dies
+ Available also in right to left working direction
+ Optional first module with 600 mm dia. capstan for special applications
+ Optional final rotating die

MT 500 SC

500-400 mm conical-profile capstans. In the first module dies work under more than 500 mm of emulsion oil. Programmable wire elongation. Independent, identical and inter-changeable AC motors (DC motors also available) on each shaft.

MT 500

500-400-300 mm diameter conical-profile capstans. In the first module dies work under more than 500 mm of emulsion oil.

Horizontal annealer close control with maximum power factor

The AN series feature an especially long pre-heating path for copper and aluminum wire treatment. Separate drives on each axis avoid any interference with the annealing process.

Three large 600 mm diameter rings increase the contact surface with the wire, eliminating potential power sparks to increase the life of the contact bands.
Annealing rings are easily replaced with convenient access for maintenance. All electro-valves are directly controlled by the line supervision system.

AN series

+ Horizontal design for easy access
+ Reduced set-up time
+ 5% annealing accuracy during ramps
+ High efficiency architecture
+ Multimotor Technology
+ High-precision annealing operation with independently driven axes controlled by precise motion control
+ Optional electronic annealing equipment with cos $\Phi > 0.9$ and low THD-I
+ Optional upgrade for aluminium wire

Annealers	AN 600	AN 450	RC 600	RC 500
Contact rings Ø [mm]	600	450	600	500
Transfer pulley Ø [mm]	400	318	400	318
Max. annealing current [A]	10000	8000	8000	6000
Max number of wires	2 / 4	2	2	2

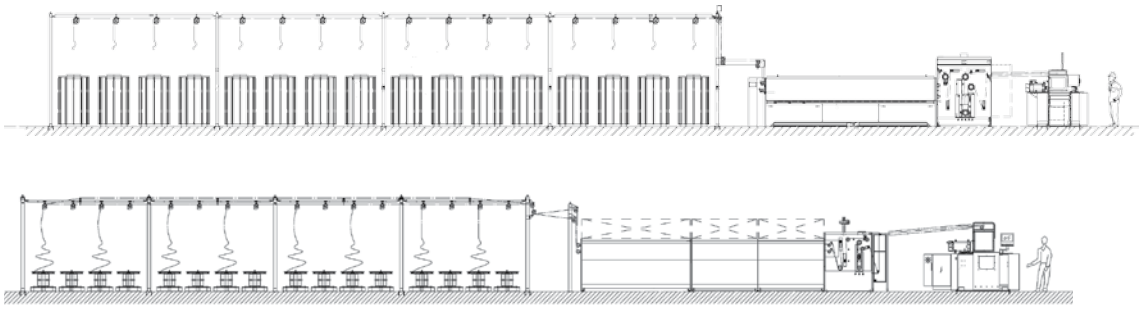
Annealers at a glance

+ Easy string-up ensured by simple wire path
+ Consolidated DC annealing technology for:
  1. lower consumption
  2. annealing from zero speed
  3. excellent re-crystallisation
  4. constant wire elongation
+ Axes and contact rings internally liquid-cooled
+ Wire walker device to increase the life of annealing rings
+ Long-lasting annealing rings
+ Annealing process in auto-generating steam atmosphere
+ Ceramic-coated wire transfer pulleys
+ Air drying by pressure blower and moisture suction device

RC series

Multi-wire drawing line

for bare and electroplated
copper, copper alloys,
aluminium and aluminium alloys



Pay-offs	Drawing machines	Annealers	Dynamic Spoolers	Static Spoolers
SV F	DM 105	AN 350	DS 1000 / A	BS 1000
SV R	DM 105-80	AN 250	DS 800 / A	BS 800
SV L	DM 80	AN 200	DS 630 C	
	DM 60	AN 160	BD 800	
		AN 135	BD 630	
		AN 120	BD 450	

High speed drawing of multiple wires with a wide range of configurations to fit your requirements in the best possible way

DM Series

Drawing machines		DM 105	DM 105-80	DM 80	DM 60
Drawing rings Ø	[mm]	105	105 - 80	80	80 - 60
Max inlet Ø	[mm]	2.60	2.60	2.05	1.60
Outlet Ø range	[mm]	0.25 - 1.35	0.13 - 0.60	0.08 - 0.50	0.05 - 0.20
Max no. of wires		56	40	24	16
Max no. of drafts		25	29	29	37
Max speed	[m/sec]	40	35	35	35

Other machine configurations are available on request. All technical data are subject to change without prior notification.

Multi-wire drawing machines
High quality, maximum flexibility

Sampsistemi multiwire drawing lines guarantee first-class quality manufacture, which is why our products are valued by customers all over the world.

Our transmission system significantly reduces the number of gears required and therefore minimises friction. Furthermore, our design ensures safer and more reliable drawing operations.

DM 105

+ up to 16 wires per row
+ up to 25 drafts
+ max. inlet wire: 2.60 mm

DM 105-80

+ up to 16 wires per row
+ up to 29 drafts
+ max. inlet wire: 2.60 mm

at a glance

+ Extremely flexible solutions with a wide range of possible configurations depending on the customer's requirements
+ Multi-motor technology with intermediate slip recovery for energy saving and better wire quality
+ User-friendly design and full access to the work area for easy string-up
+ High-speed drawing (up to 40 m/sec)
+ Helical gears
+ No soundproof cabinet needed
+ Easy installation
+ Optimised energy consumption and production processes
+ Wide range of annealers with annealing current from 500 to 7000 A
+ Wide range of dynamic (manual and automatic) and static spooling systems
+ Profibus interconnection: less cabling required

DM 80

+ up to 12 wires per row
+ up to 29 drafts
+ max. inlet wire: 2.05 mm

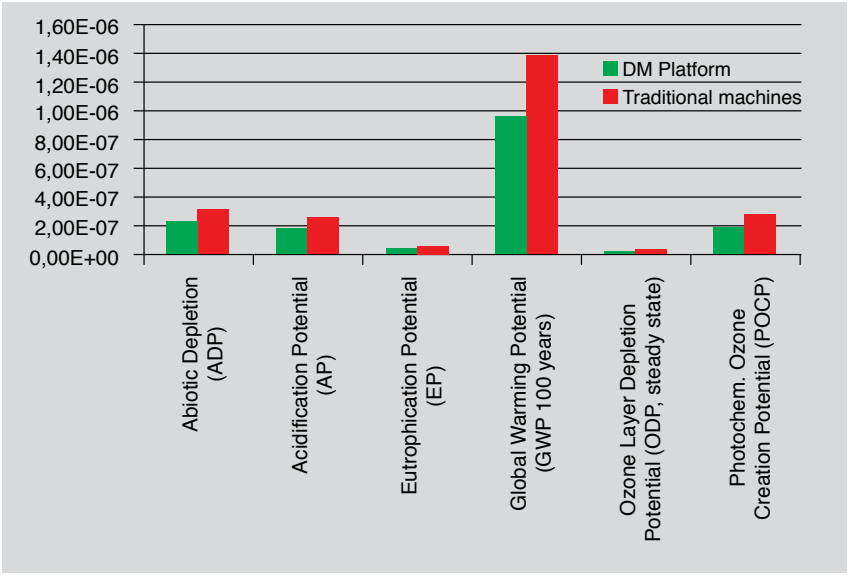
DM 60

+ up to 8 wires per row
+ up to 37 drafts
+ max. inlet wire: 1.60 mm

80 and 60 mm drawing cones on DM 60

Multi-motor technology

Environmental Impact Assessment (EU-25 electricity mix)



According to the LCA, Life Cycle Assessment (ISO 14040:2006 and ISO 14044:2006 standards), the obtained results show that:
in one working year, DM machine platorm enable a reduction of greenhouse gas emissions by over 200 tons CO_{2eq} compared to traditional machines.

Close-ups of a 56 wire machine in operation

Special care paid to lubrication (aluminium wire)

Close-up of the drawing area with 80 mm diameter drawing rings

Sampsistemi annealers for multiwire lines

AN 350

at a glance

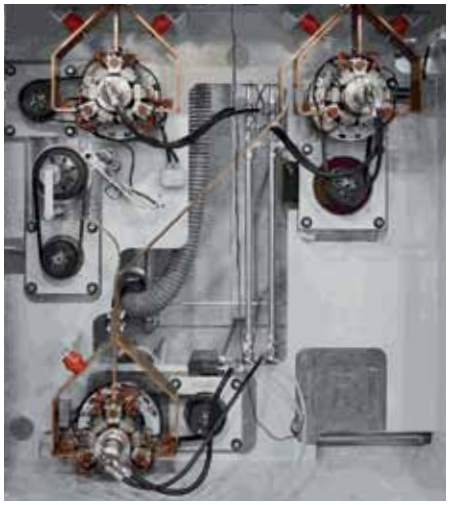
+ Designed for copper and aluminium wires
+ 5% annealing accuracy during ramps
+ Easy string-up: reduced set-up time
+ Continuous annealing from 0 m/s
+ Excellent wire drying system
+ Ceramic-plated wire transfer pulleys
+ Wire walker device to increase the life of annealing rings
+ Optional electronic annealing equipment with cos $\Phi > 0.9$ and low THD-I
+ No drying dies required

Annealing channel, cooling zone and drying zone

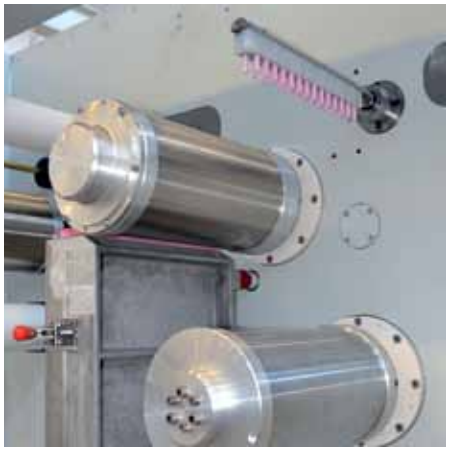
Continuous annealing for excellent results

The AN series features a range of annealers which can easily be adapted to your exact requirements. Sampsistemi annealers stand out thanks to our consolidated DC annealing technology for lower consumption and annealing from zero speed. Versions with electronic unit with high cos Φ and low THD-I are availble, too. Ceramic-coated wire transfer pulleys and wire walkers increase wire surface quality and annealing ring life span resulting in a decrease of service and spare part costs while raising the overall machine productivity.

Cleaning device for aluminium wire drawing and electroplated wire



Multi-motor technology



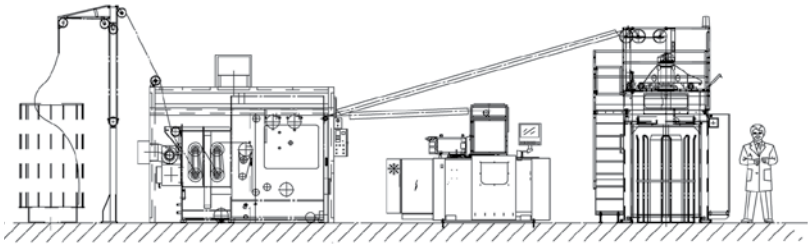
Wire walker device to increase life of annealing rings

Annealers

Annealer	Contact rings [mm]	Max. annealing current [A]	Outlet Ø range [mm]
AN 350	350	7000	0.25 – 1.35
AN 250	250	5200	0.150 – 1.024
AN 200	200	3500	0.150 – 1.024
AN 160	160	1500	0.10 – 0.51
AN 135	135	1000	0.08 – 0.32
AN 120	120	700	0.05 – 0.200

Other machine configurations are available on request.
All technical data are subject to change without prior notification.

Single-wire drawing/annealing line for plain and electroplated wire



at a glance

+ Intermediate and fine wire production range
+ Easy string-up and maintenance operations thanks to full front access and ergonomic design
+ Fully submerged drawing sections
+ Additional spray lubrication available
+ Excellent wire surface quality
+ Great energy savings
+ Annealing performed in a self-generating steam atmosphere
+ Compact design
+ Large diameter annealing rings and long wire path
+ Also suitable for data and communication cables extrusion lines
+ Optional final preheater when in tandem with extrusion line
+ Optional wire temperature control

Pay-offs	Drawing machines with integrated annealers	Skin-pass	Dynamic spoolers	Static spoolers	Coiler
SV F	MT 250 RC 4A	SP 250*	DS 800	BS 800	IN 800
SV R	MT 250 RC 4AP*		BD 800 / 630		
	MT 250 RC 6A		DS 630 C		
	MT 250 RC 6AP*		BD 250 / A		
	MT 220 RC				

* Suitable for tandem extrusion line

Drawing machines		MT 250 RC 4A / 4AP	MT 250 RC 6A / 6AP	MT 220 RC
Max drawing cone Ø	[mm]	250	250	220
Max inlet Ø (hard copper)	[mm]	3.20	3.20	1.65
Max inlet Ø (soft copper)	[mm]	3.50	3.50	1.80
Outlet Ø range	[mm]	0.32 - 1.40	0.15 - 1.40	0.08 - 0.30
No. of drafts		17	23	31
Max speed	[m/sec]	50	50	50
No. of horizontal shafts		4	6	6
Annealing rings Ø	[mm]	250	250	160

Other machine configurations are available on request. All technical data are subject to change without prior notification.

MT RC Series

MT 250 RC 4A / 4AP

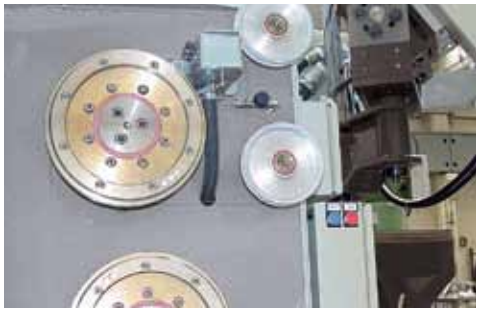
at a glance

+ Monolithic structure including drawing and annealing sections
+ Horizontal shafts with tungsten carbide or solid ceramic drawing cones
+ Annealing current from 175A DC to 1200A DC
+ Integrated thermoregulation system for coolant refrigeration and circulation
+ Skin-pass module available for data cables applications
+ Final pre-heater when working in tandem with extrusion line

MT 250 RC 6A / 6AP

MT 220 RC

Skin-pass module



Spray or spray + submerged type lubrication can be provided

Self-aligning vertical dies

Spooling & Coiling solutions

Winding solutions designed for copper, aluminium and alloys wires are ideal for Sampsistemi drawing lines and for enhancing drawing systems of other manufacturers. Wire winding quality is excellent and cycle times are reduced in down stream processes.

Coilers

		IN 1100	IN 800
Ø range (soft Cu)	[mm]	1.00 - 4.50	0.80 - 3.00
Ø range (hard Cu)	[mm]	1.10 - 4.50	0.80 - 3.00
Ø range (tinned)	[mm]	1.10 - 4.50	0.80 - 3.00
Ø range (Al)	[mm]	1.20 - 4.75	-
Coiling head Ø	[mm]	650 - 1070	570 - 800
Max overall width	[mm]	1450	1100
Outlet filling Ø	[mm]	1400	1000
Overall height	[mm]	1790	1750
Full basket max weight	[kg]	3500	1800

at a glance

+ Equipped with an integrated dancer for space reduction
+ For winding wire in metallic or cardboard baskets
+ Automatic full/empty basket change-over without operator intervention at full speed
+ Wide range of conveyors available
+ Optional: wire cooling and drying system for hard wire production
+ Easy integration with existing lines

IN 1100

IN 1100
Close-up of the built-in dancer and cooling system for the hard wire and aluminium production

IN 800

Static spoolers

at a glance

+ Ideal for high-speed spooling; no reel balancing required
+ All rotating parts are balanced to maximise stability
+ Automatic reel change without operator intervention
+ Wide range of straight-line or “U” shaped conveyors available
+ Spooling onto cylindrical and/or cone-shaped barrel reels
+ Conical spooling onto cylindrical barrel reels available
+ Max. spooling speed of 40 m/s
+ Easy integration with existing lines

BS 1000

BS 800

		BS 1000	BS 800
Flange Ø range	[mm]	1000 - 630	800 - 560
Max overall width	[mm]	750	600
Max traverse width	[mm]	630	500
Central bore Ø range	[mm]	200 - 121	200 - 121
Full reel max weight	[kg]	2300	1300

Reel change on a 56-wires line

Dynamic Spoolers

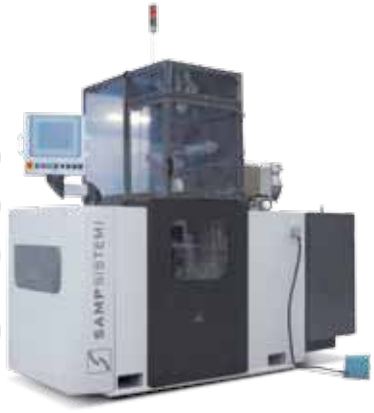
Single manual dynamic spoolers

		DS 1250	DS 1000	DS 800 / BD 800	BD 630/DS 630 C	BD 450	BD 250
Flange Ø range	[mm]	1250 - 800	1000 - 630	800 - 500	630 - 400	460 - 235	254 - 100
Max overall width	[mm]	900	750	600	475	340	235
Max traverse width	[mm]	800	630	550	400	320	230
Full reel max weight	[kg]	4800	2300	1300	750	250	50
Built-in dancer		No	No	Yes	Yes	Yes	Yes

at a glance

+ Open frame structure allows for loading on one side and unloading on the opposite side
+ Automatic adjustment of traverse
+ Reels accommodated between pintles
+ Max. spooling speed 40 m/s
+ Easy integration with existing lines

DS 800



BD 630

Single automatic dynamic spoolers

		DS 1250 A	DS 1000 A	DS 800 A	BD 250 A
Flange Ø range	[mm]	1250 - 800	1000 - 630	800 - 560	254 - 100
Max overall width	[mm]	900	750	600	235
Max traverse width	[mm]	800	630	550	230
Full reel max weight	[kg]	4800	2300	1300	50

at a glance

+ Open frame structure allows for loading on one side and unloading on the opposite side
+ Suitable for cylindrical, conical and collapsible reels for “Tight Pack” coils
+ Automatic adjustment of traverse
+ Automatic full/empty reel change-over without operator intervention
+ External conveyor for empty reel loading and full reel unloading
+ Possible integration into automatic reel handling systems
+ Reels accommodated between pintles
+ Easy integration with existing lines

DS 1250 A

BD 250 A

Dual automatic dynamic spoolers

DS 800 DM / DA

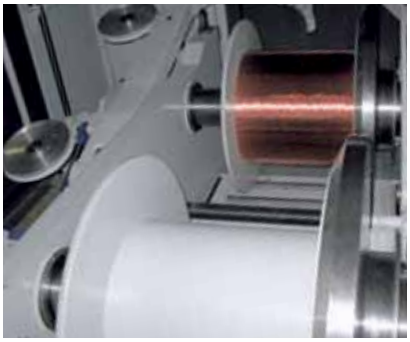
+ For copper and aluminum/ alloys wires
+ High-precision spooling operation
+ Improved production time
+ Reliable and fast reel change-over
+ Tail device for enhanced system speed
+ Reduced distance between reel and wire traverse
+ Hydraulic self-centering pintles
+ Manual, semi-automatic, fully automatic or robotized loading/unloading
+ Easy integration with existing lines

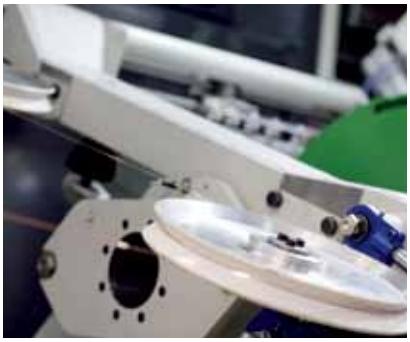
		DS 800 DM / DA
Flange Ø range	[mm]	800 - 500
Max overall width	[mm]	600
Max traverse width	[mm]	550
Full reel max weight	[kg]	1300

The DS 800 DM / DA series offers wire and cable manufacturers a reliable and productive way to collect their finished product.

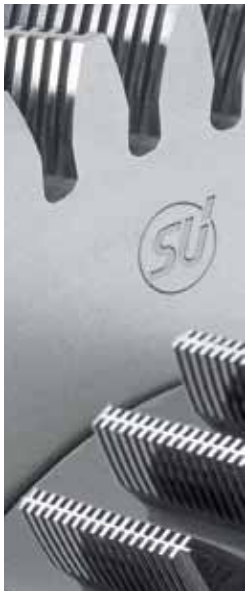
Features like self-centering pintles, a shortened distance between reel and wire traverse as well as the new tail device, result in an flawless change-over.

The whole process is controlled by precise motion control, consequently guaranteeing a very accurate pattern on the reel.







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