



SOLUTIONS FOR SPECIAL CABLES

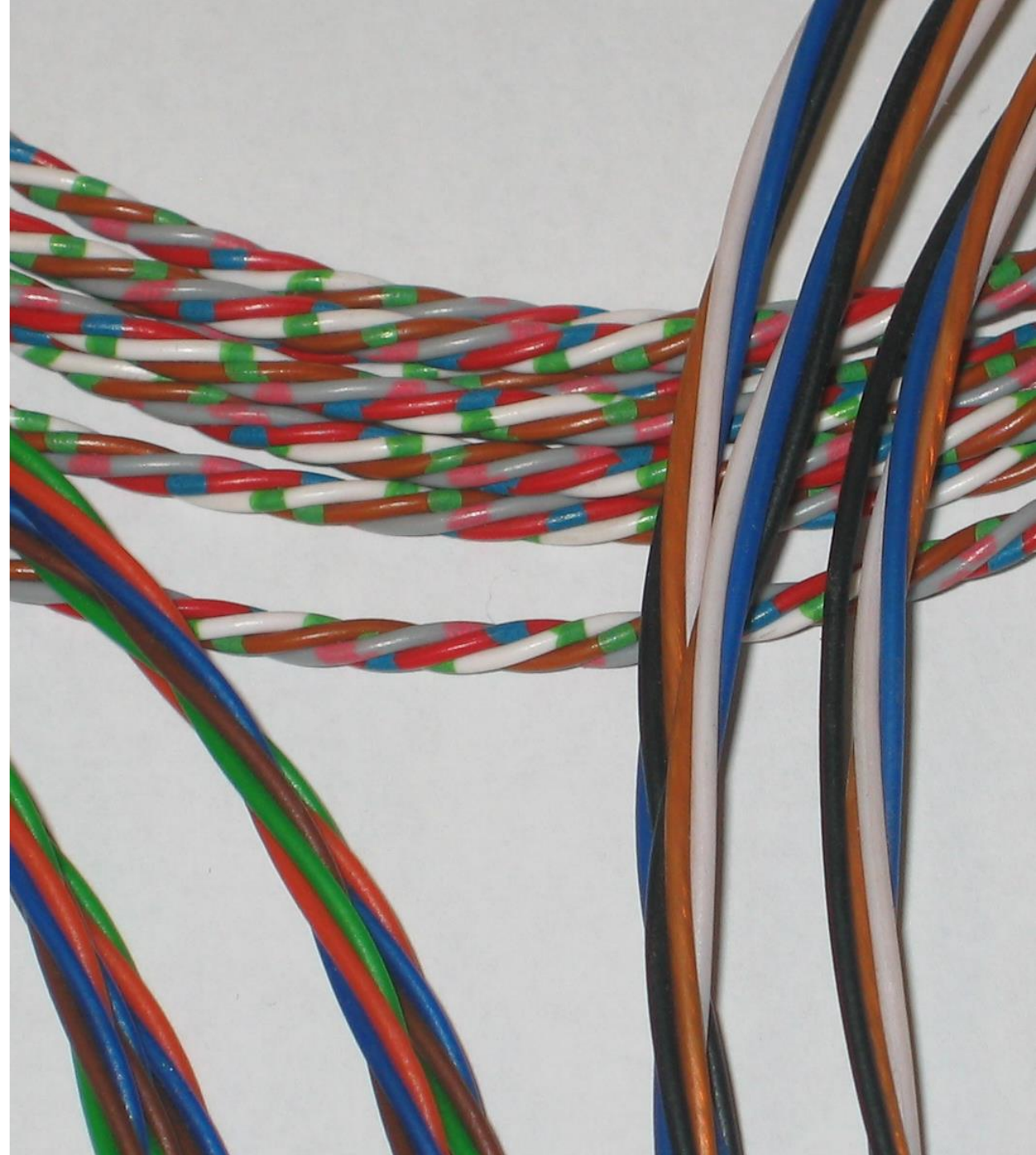
CABLE STRANDING TECHNOLOGY

Single-twist stranding solutions

SINGLE-TWIST STRANDING MACHINES

Since **2005** WTM manufactures COMPLETE CABLE STRANDING LINES, always with attention to the innovating features that differentiate our solutions from the market alternatives.

Nowadays, WTM offers a large portfolio of **stranding equipment for special cables**, developed focusing the Customer process in order to ensure precision in tension control, accuracy on lay length and quality of the final product.



SINGLE-TWIST STRANDING MACHINES

WTM single-twist stranding machines are designed to produce a wide range of cables for high-tech sectors of application, such as:

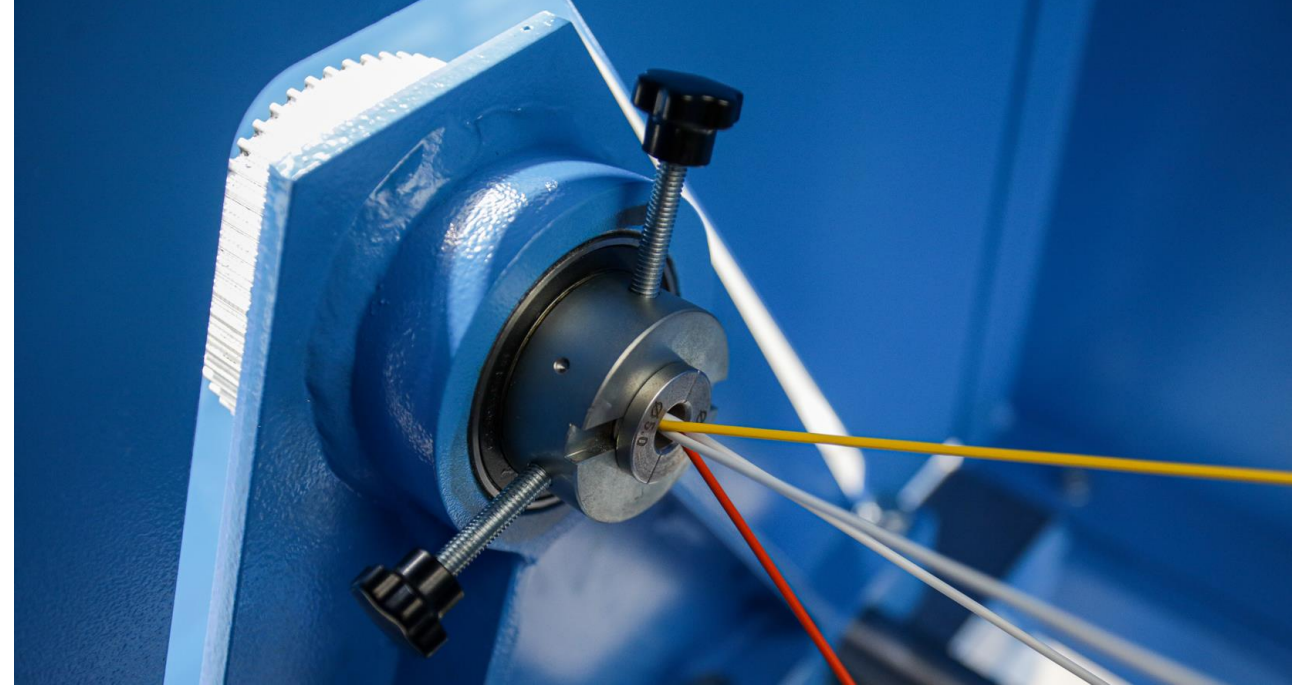
AUTOMOTIVE, ROBOTICS, TELECOMMUNICATION, INSTRUMENTS, DATA TRANSMISSION, INDUSTRIAL CONTROL, AND OTHERS.

The machines are characterized by:

- extreme flexibility of configuration according with the cable design, by combining different processes like : pre-stranding, longitudinal taping, helical taping, final calibrating;
- high accuracy on the lay-length;
- high precision of cable tension control (on both pay-off and take-up side).

We can supply TWO main configurations on the take-up unit, to be chosen according with the characteristics on the final product :

- **SINGLE-SHAFT design** : the take-up reel is suspended on the rotating shaft that traverses horizontally during the collection of the cable.
- **DOUBLE-PINTLES design** : the reel is clamped by two opposite pintles while the cables traverses horizontally during the rotation of the reel.



SINGLE-SHAFT DESIGN

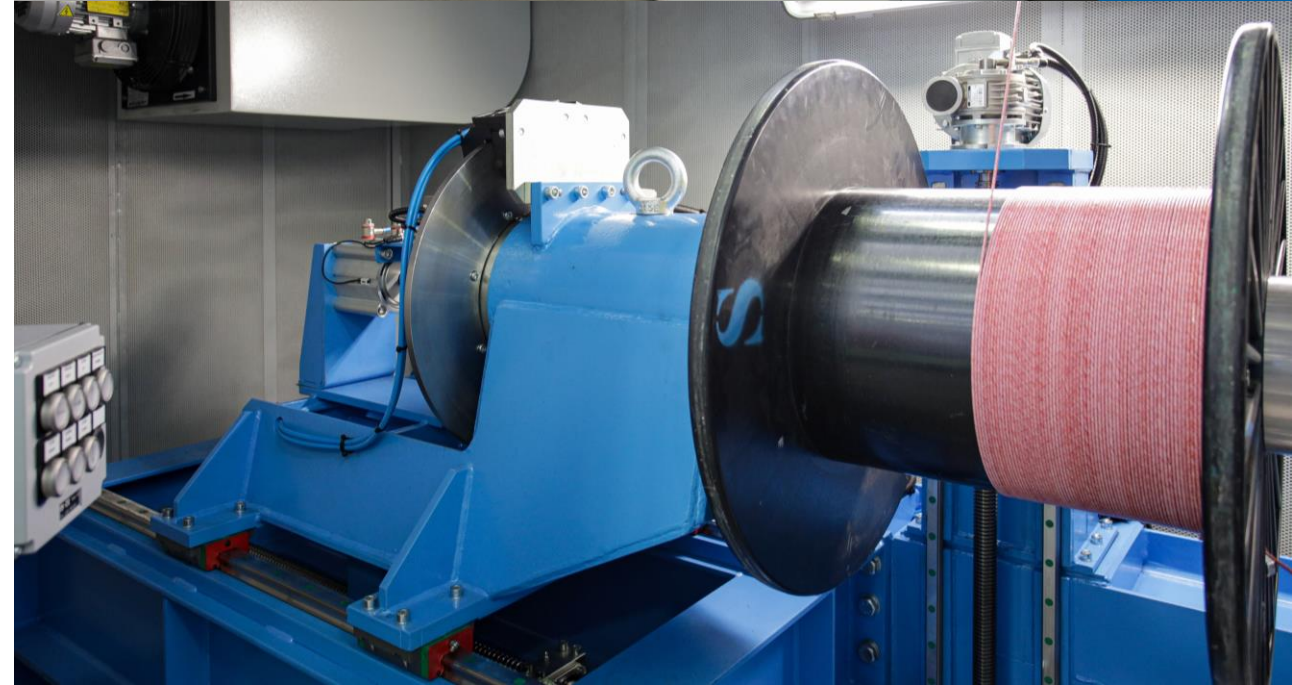
The **SINGLE SHAFT** design of the take-up is more suitable for complex cables very sensitive to bending (rigid cables, combination of taped bundles, screened cables, pairs, quad, multi-conductor assemblies of different insulated wires, etc.).

STRENGTHS:

- smooth deposition path to reduce the bending of the final cable;
- high speed due to low inertia rotating cage;
- simple mechanical design.

LIMITS:

- limited choice of the reels (reel holes not less than 80mm of diameter);
- occasional vibration due to of unbalanced reels;
- wide footprint.



DOUBLE-PINTLE DESIGN

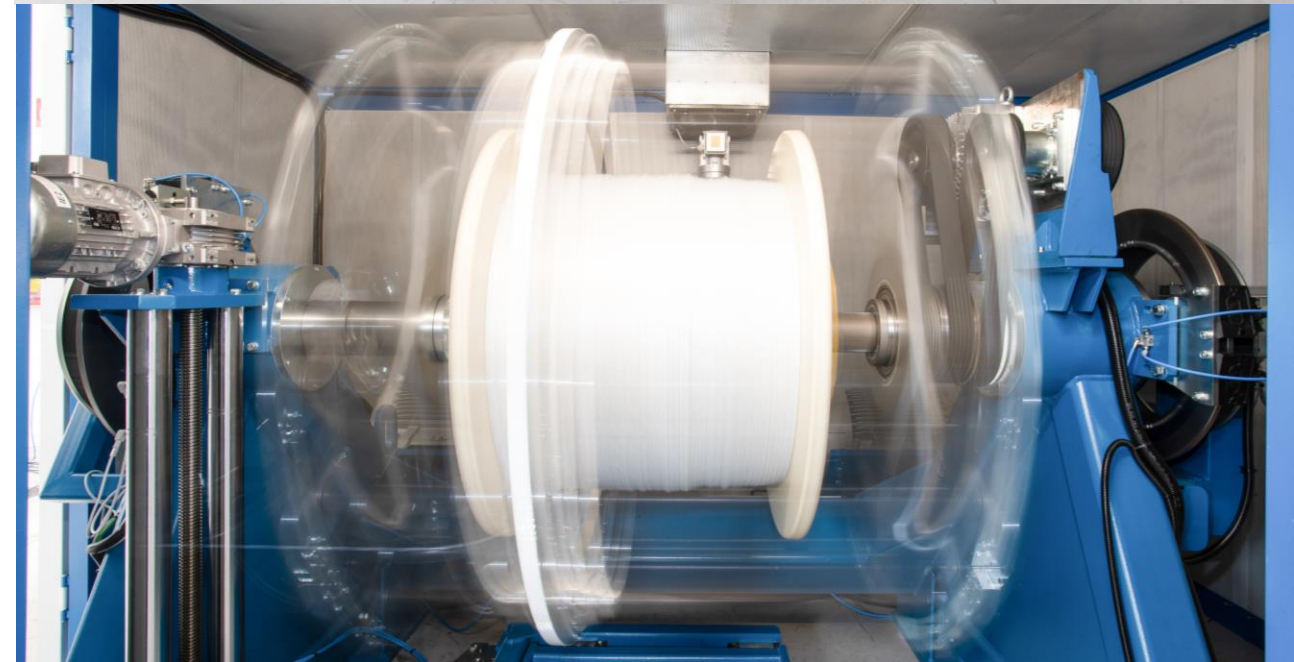
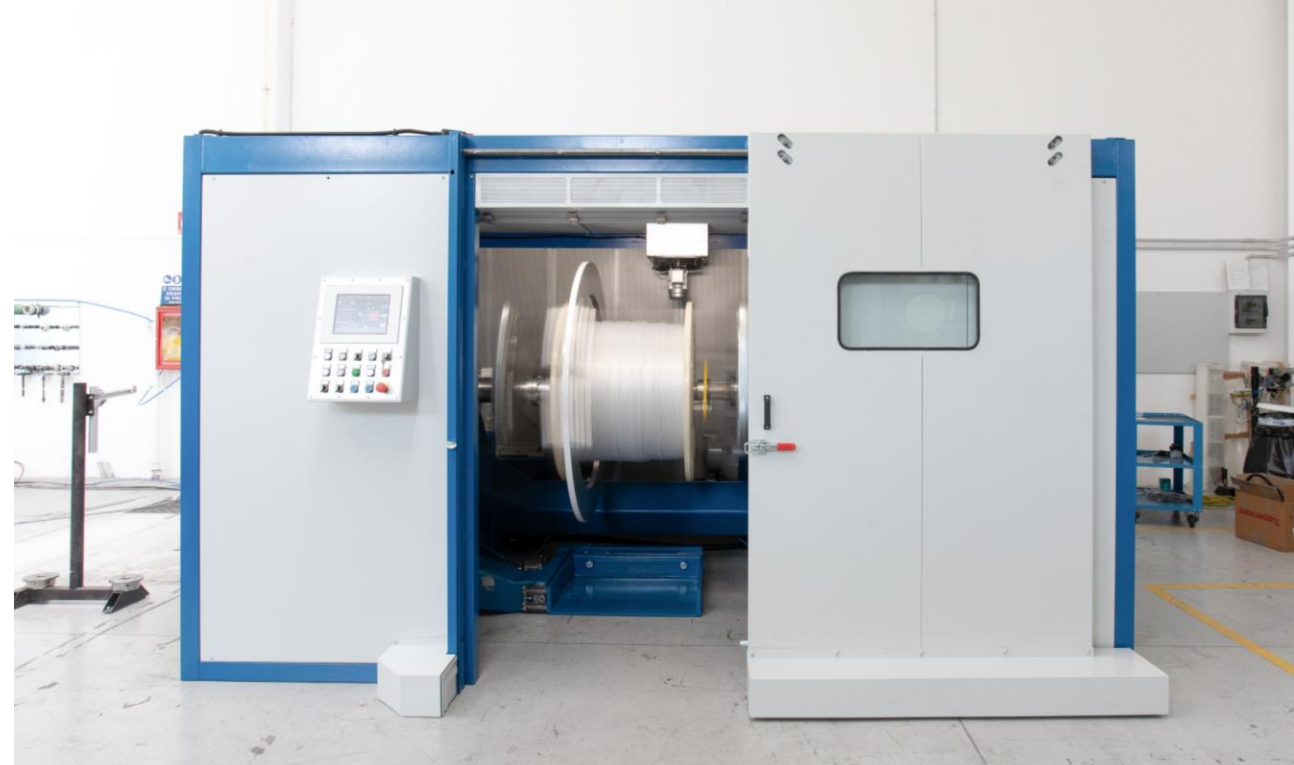
The **DOUBLE PINTLES** design is suitable for simpler cables design, which are less sensitive to bending and with a lower specific weight.

STRENGTHS:

- wide choice of the reels, not depending from hole dimensions;
- high stability even using unbalanced reels;
- high performance due the **high-tech flyer cage** able to compensate the centrifugal forces at high speed and reduce the friction on the traversing trolley;
- compact footprint.

LIMITS:

- longer path on the take-up of the final cable;
- More bending guiding wheels on the take-up.



TAKE-UP MAIN CHARACTERISTICS

4 sizes that cover the reels range from **Ø400** to **Ø1250 mm**, available in both configurations except the DIN1250 size, available only with double-pintles version.

Reel		DIN630	DIN800	DIN1000	DIN1250
Reel flange Ø	mm	400-630	400-800	500-1000	500-1250
Max twisting	u/min	1000	800	600	450
Stranding pitch range	mm	10÷150	10÷200	25÷250	25÷350
Max liner speed	m/min	150	150	150	150
Max cable Ø	mm	15	15	20	30
Pulling tension	N	100÷500	200÷800	300÷1500	500÷1500
Twisting direction		S-Z			

Reference values to be confirmed



BACKTWIST PAY-OFFS

The **backtwist pay-offs** can individually unwind each primaries giving a suitable pre-torsion. Thanks to the concentric design by double pintles system, they can fit a wide range of reel dimensions with high rotational speed.

They are suitable for reels from DIN 250 to DIN 1000 and supplied in single or multiple overlaying configurations (1, 2, 3, or 4 positions).

The cable **tension control** can be controlled in two different ways:

- by a **ROTATING DANCER** with higher accuracy, for small and delicate cables;
- by **DIRECT TENSION CONTROL** through torque modulation for bigger and stronger cables.

They are provided with **loading/unloading motorized platform**, to speed up the machine preparation.

Model		SV4/BTx-OB	SV6/BTx-OB	SV8/BT1-OB	SV10/BT1-OB
Reel type		DIN400	DIN630	DIN800	DIN1000
Reel flange Ø	mm	250-400	400-630	500-800	500-1000
Max reel weight	kg	200	350	550	1500
Max twisting	U/min	1000	600	500	400
Pulling tension	N	3÷30	5÷100	10÷150	50÷250
Max cable Ø	mm	10	12	12	15
Backtwist pitch	mm	10÷300	10÷300	10÷300	10÷300
Twisting direction		S-Z			

Reference values to be confirmed



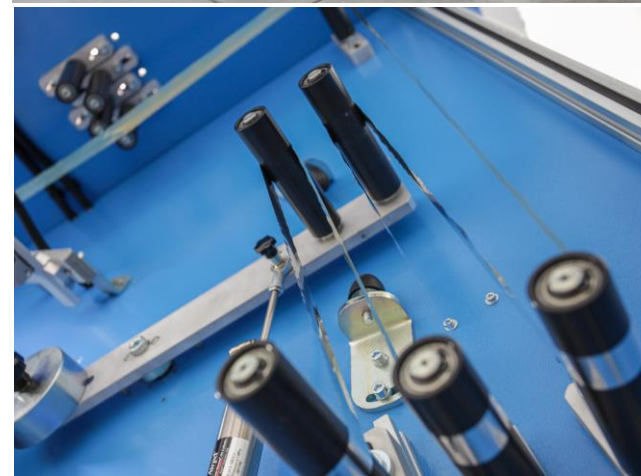
LONGITUDINAL TAPING UNITS

The **longitudinal tapers**, with single or multiple (up to four) tape design, is suitable for wrapping the stranded cables with tapes packed in jumbo spools or pads.

It grants a very precise tension control thanks to the **integrated dancer**, equipped with **low-friction pneumatic cylinder** and **proportional valve** for an easy management during the stranding process.

Model		NLB/400		NLB/400-D		NLB/400-2D	
		P	S	P	S	P	S
Pad (P) and/or Spool (S)		P	S	P	S	P	S
Tape number	q.ty	1		2		4	
Outer diameter	mm	400		400		400	
Max. core height	mm	310		310		310	
Max tape width	mm	40	40	40	40	40	40
Taping pitch range	mm	20÷100		20÷100		20÷100	
Pulling tension	N	2÷40		2÷40		2÷40	
Cable passage Ø	mm	25		25		25	
Twisting direction				S-Z			

Reference values to be confirmed

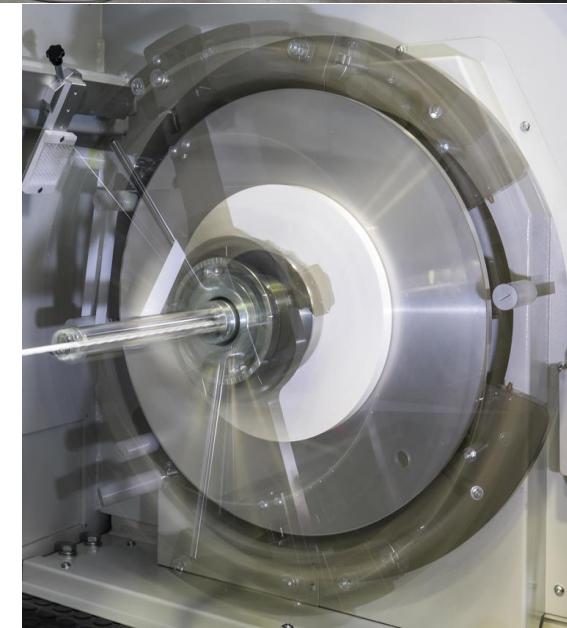


CONCENTRIC TAPING

This unit can be equipped with **different types of concentric taping heads** for tapes taken from both pads and spools, even jumbo type.

The **tension control** is electronically controlled in two ways:

- by WTM dynamic dancer
- through direct torque control



Model		THM/400		TWM/300		TWM/300-230		TWM/400-100	
		P	-	P	S	P	S	P	S
Pad (P) and/or Spool (S)		P	-	P	S	P	S	P	S
Outer diameter	mm	400		300		300		100	
Max. core height	mm	40		110		240		110	
Max tape width	mm	40	NA	25	15	25	15	30	15
Taping pitch range	mm	5÷50		5÷50		5÷50		5÷50	
Pulling tension by dancer	N	3÷25		3÷30		3÷30		5÷20	
Pulling tension by torque	N	15÷40		15÷40		15÷40		15÷40	
Max mechanical rotation	rpm	2.000		2.500		1.800		1.800	
Cable passage Ø	mm	25		25		25		25	
Twisting direction		S-Z							

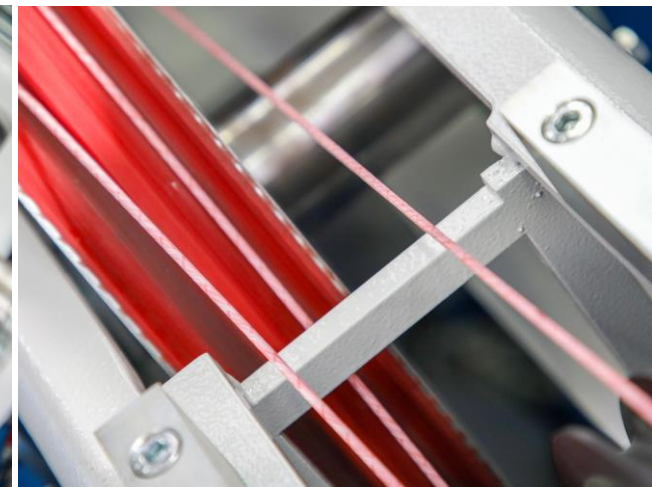
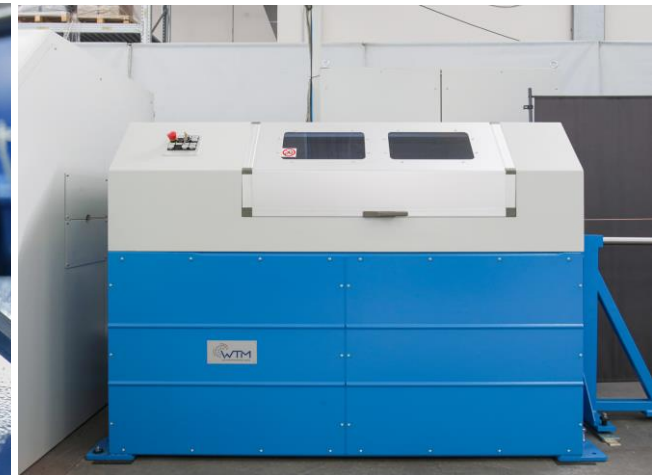
Reference values to be confirmed

ROTATING CAPSTAN

The **rotating capstan**, with the integrated **dancer**, is suggested for small and sensitive cables, and it is required when a more precise control of the cable tension and the lay-length is necessary. It can be provided on rails so to be put off-line when no necessary.

Model		CBR300
Capstan diameter	mm	300
Idle pulley diameter	mm	300
Max. traction force	N	800
Rotation speed	rpm	600
Cable passage hole	mm	25

Reference values to be confirmed

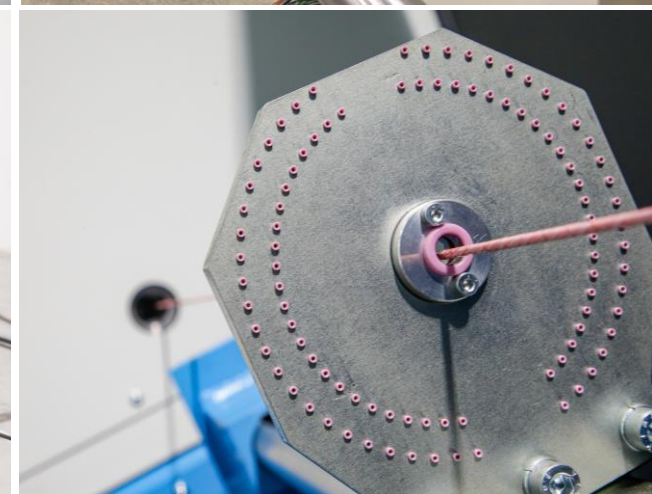
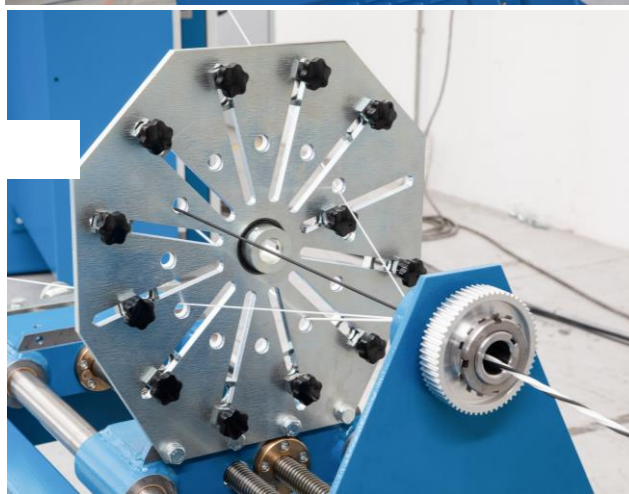
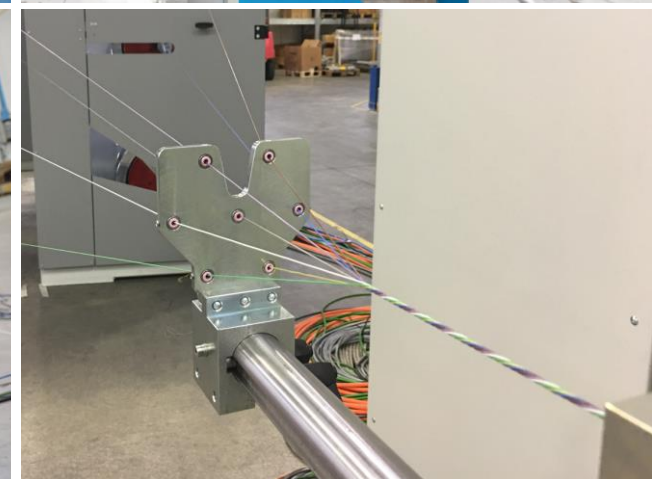
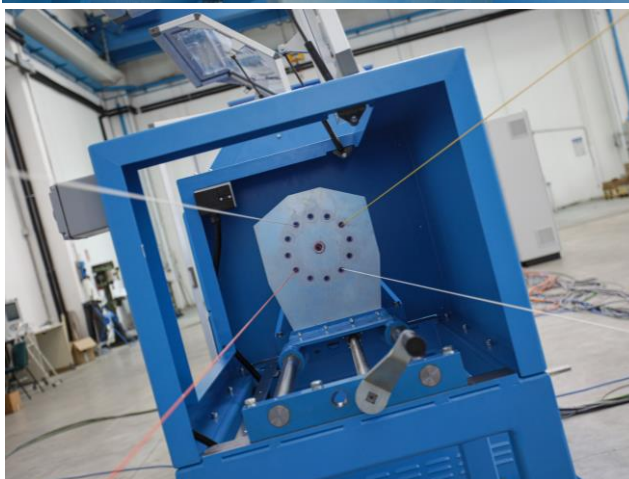
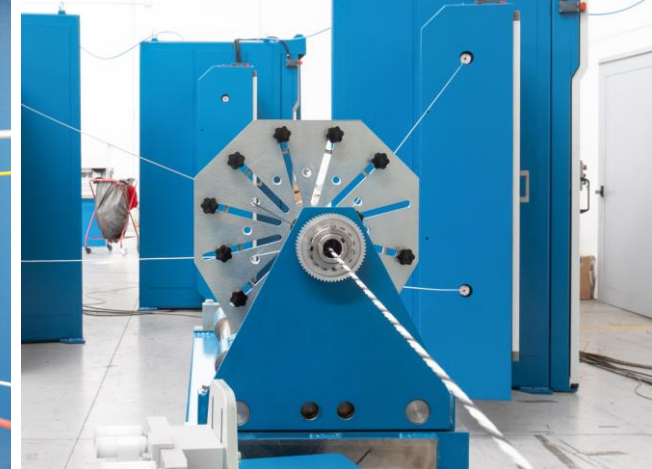
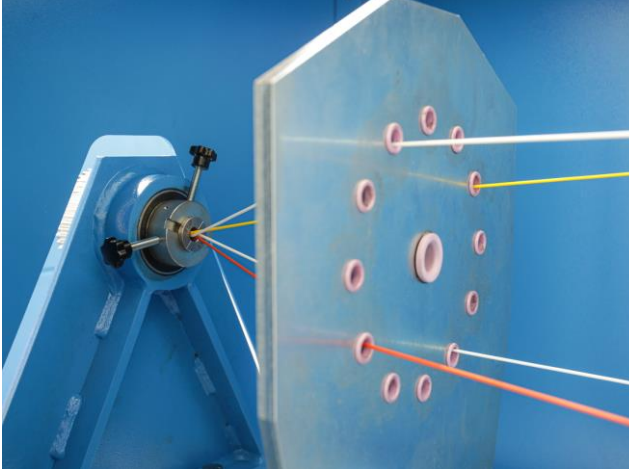


STRANDING STAR

The **laying plate** (stranding star) allows the correct arrangement of the elements to be stranded before entering the stranding die.

The die holder and the distribution plate can be moved axially, in order to center the natural stranding point.

The bushing system and the die holder are customizable, that could be rotating on request.



Model		SS-24F	SS-24M	SS-W
Rotating		No	Yes	No
Central hole Ø	mm	25	25	25
External holes number	q.ty	24	24	200

Reference values to be confirmed



SOLUTIONS FOR SPECIAL CABLES

www.wtmachinery.com

