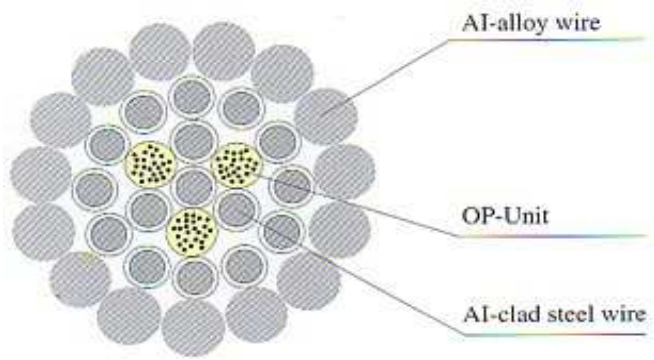
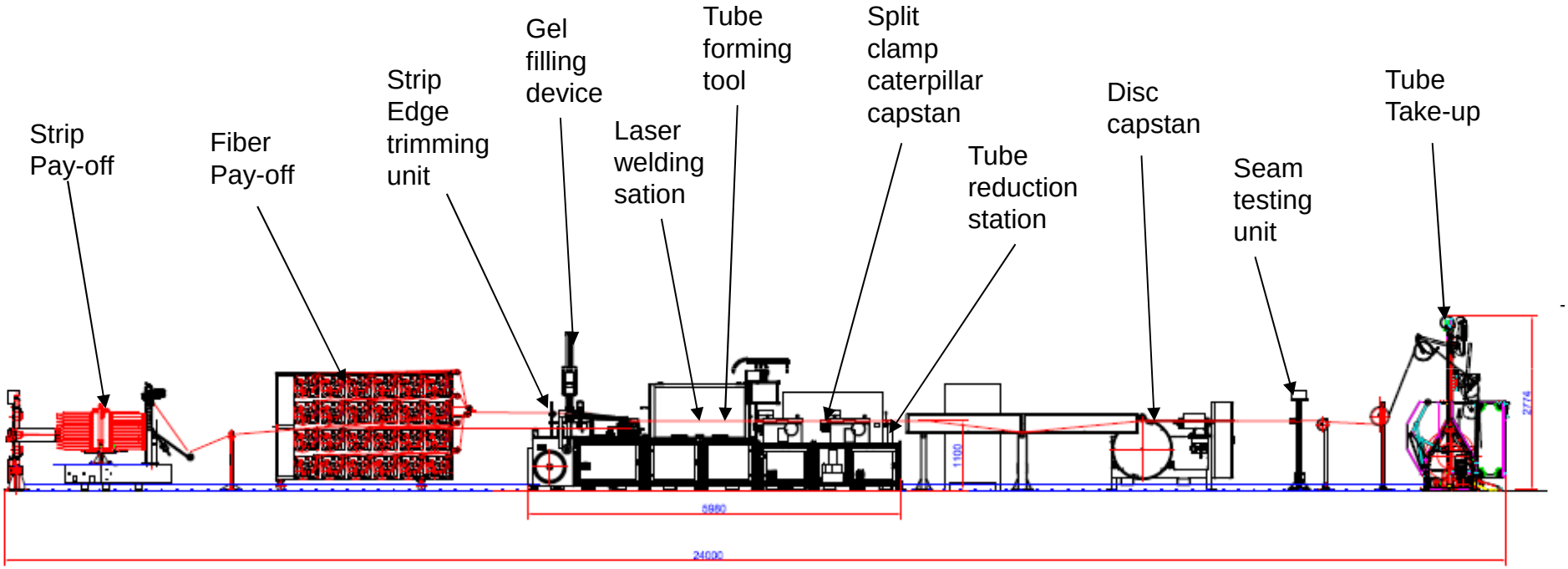
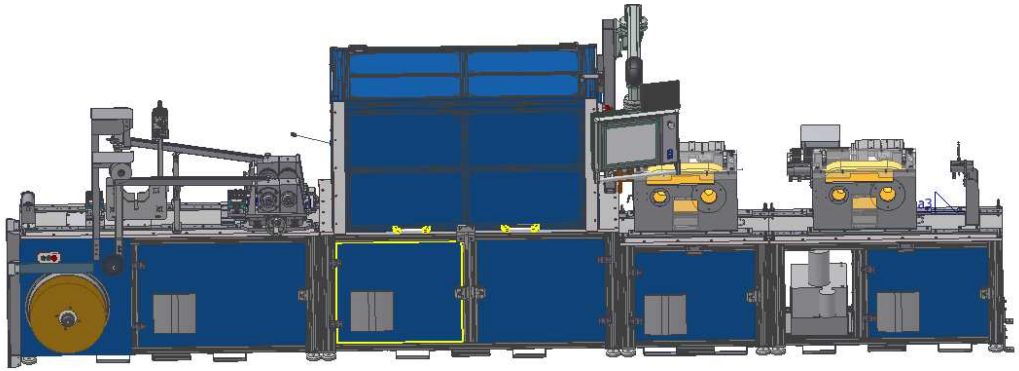
Design and characteristics of Fibres In Steel Tubes

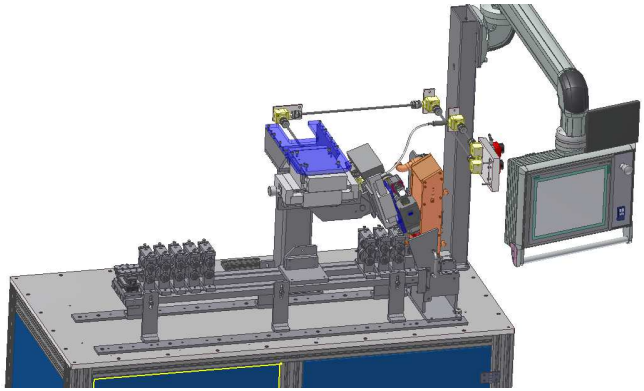


- High mechanical strength, mainly determined by the number of steel wires used
- Short-circuit current capacity, mainly determined by the amount of aluminium wires
- Number of optical fibres

Overview complete production line







Scope of Supply

Peripheral equipment

- Strip pay-off (Driven turn table)
- Fiber pay-off (2 units for each 24 fibers)
- Tube take-up

Strip preparation equipment

- Strip cleaning
- Strip edge trimming unit
- Waste strip take-up

Base machine module

- Machine frame
- Material feeding and guiding
- Forming and welding support
- Gel filling device
- Electric control cabinet & PLC
- Operator panel
- Video microscope

LASER equipment

- LASER (1/2/3 kW; CO2/Disc/Fiber)
- LASER optics
- LASER beam trap
- LASER cover hood

Tooling equipment

- Forming roller stages in two groups
- Filling needle
- Split clamp inserts (2*28 pairs)
- Drawing dies (2 pcs)

Transport and drawing equipment

- Split clamp caterpillar (2 units)
- Drawing die holder (2 units)
- Lubrication pump and tubing

Fiber excess and quality control

- Disc capstan
- Belt capstan
- Seam testing unit

Strip splicing equipment

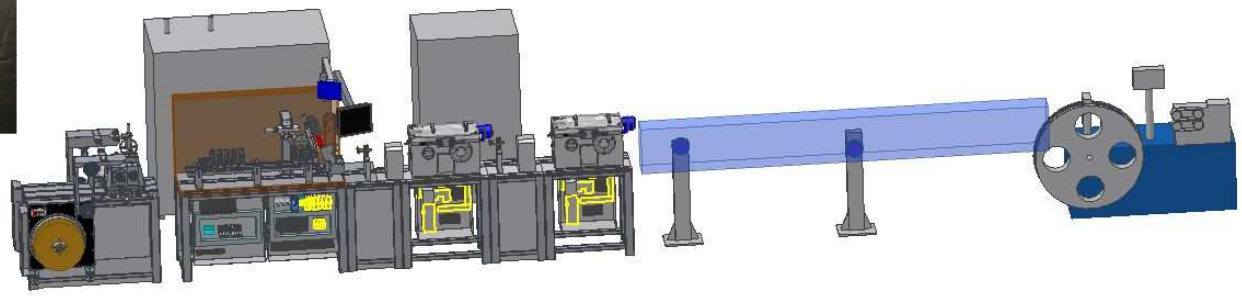
- LASER Cross welder UNICROSS
- Roll-off stand for one tape pad
- Turn table for tape pad magazine
- Tape pad magazine

Technical Data FIST

Fibres in steel tube application

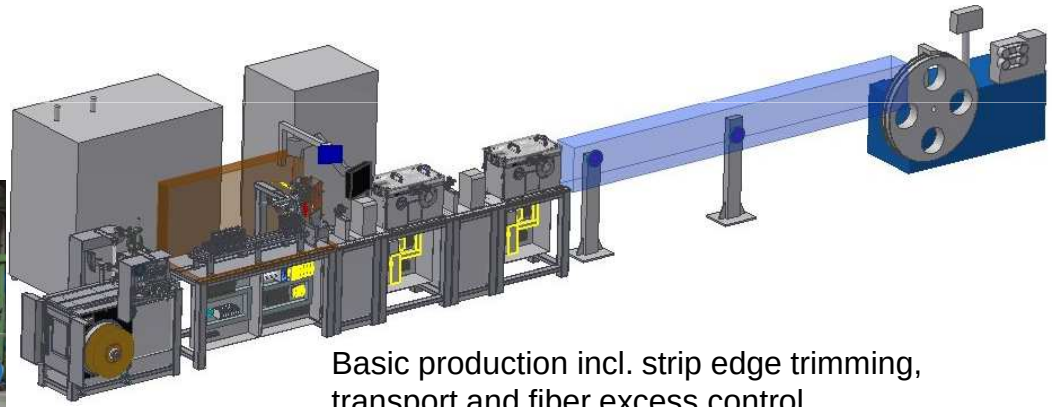
• Type of metal:	Stainless steel 1.4301; soft, blank annealed
• Welded Outer diameter:	2.0 mm … 6 mm
• Wall thickness:	0.15 mm … 0.3 mm
• Welding speed:	15 m/min at 0,2mm/2kW LASER power
• Amount of fibres:	48 fibres, using two fibre pay-off
• Fibre excess lengths:	0.2% ... 0.6 % ± 0.1%
• Supply voltage :	3 x 400V 50Hz
• Welding Inert gas:	Argon / Helium
• Gel:	Hydrogen-blocker and for ensuring water tightness
• Compressed air:	6 bar

Production line (new modular concept) equipped with 2 KW Disc Laser



Complete production line with 2 KW Disc Laser

Strip pay-off / Fiber pay-off



Basic production incl. strip edge trimming, transport and fiber excess control

Tube take - up

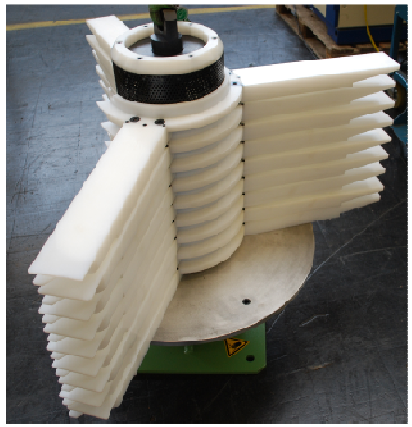
Strip splicing equipment

Consist of

- Roll-off stand for one tape pad
- Turntable for tape pad magazine
- Laser cross welding equipment
- Tape pad magazine

Benefit

- Preparation of long length muti-coils
- Applicable for different strip widths and different strip thickness
- Offline use of operator
- Reliable and continuous production



Expected welding speeds 2KW 3KW