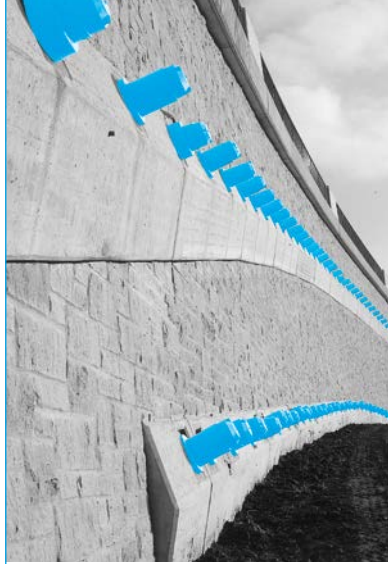
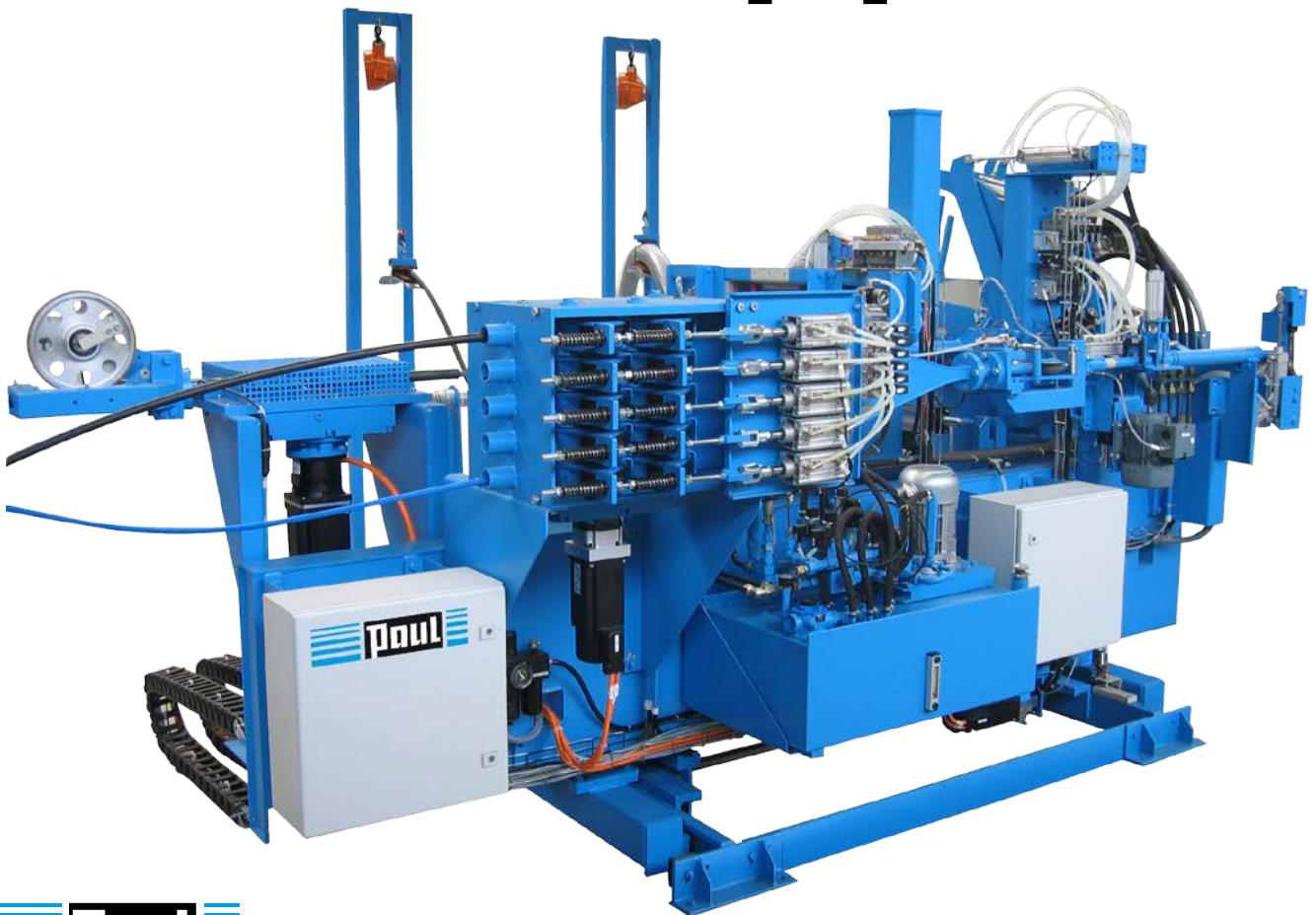
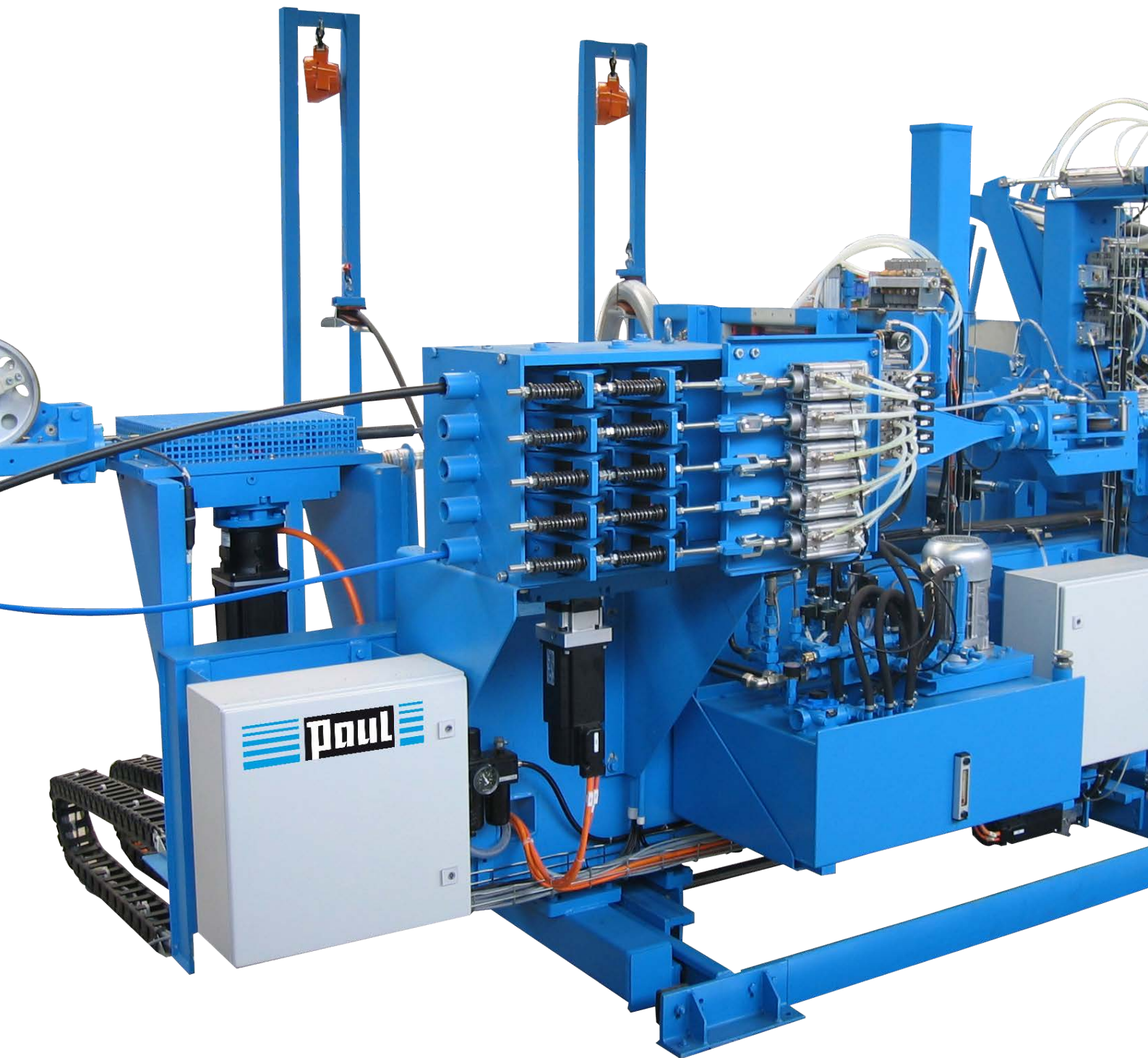


PRESTRESSED CONCRETE
TECHNOLOGY



Anchor Manufacturing Equipment





Example of a fully automatic system for use in geotechnical engineering.

Anchor manufacturing equipment for numerous applications

Paul has been supplying solutions for a wide range of anchor manufacturing applications for decades.

■ Typical applications

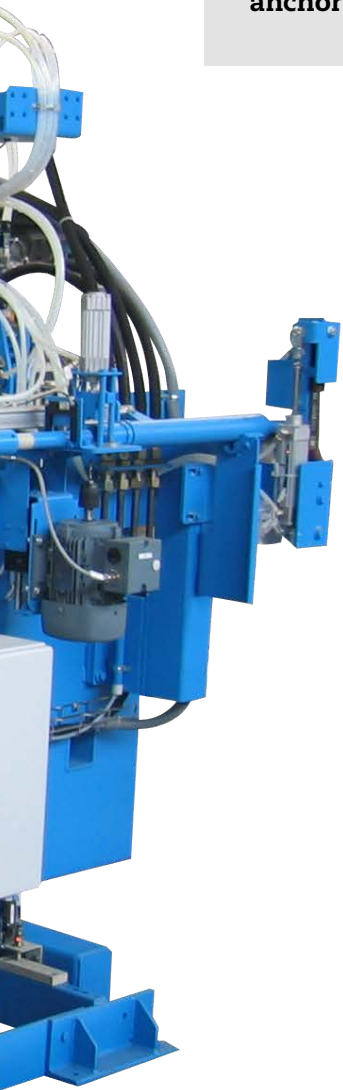
- Tendons for wind power plants
- Tendons for bridges
- Ground anchors in geotechnical engineering
- Stressing anchors for sleeper production

■ Task

Fabrication of prestressing steel strands or wires to length, usually with additional, special applications. A common component of all anchor manufacturing systems is a closed pushing channel with automatic ejection. The systems are usually built according to special customer requirements.

■ Degree of automation

From semi-automatic systems with a high proportion of manual work to fully automatic systems, depending on customer requirements.



Application examples



Fully automatic anchor manufacturing with PE-coated strands

SPECIAL FEATURES	stripping, degreasing, buffering
PUSHING LENGTH	115 m, extendable to 150 m
PRODUCTION CAPACITY	approx. 90 -120 s with 115 m strand length
BUFFERING	3 anchors, workplaces at 2 anchors
AUTOMATION	fully automatic

Fully automatic production of PE-coated strands

SPECIAL FEATURES	fully automatic steps: Greasing the strand and pushing it into a PE tube, additional processing of up to 5 plastic tubes
PUSHING LENGTH	max. 40 m
PRODUCTION CAPACITY	60 - 80 pcs per day, 4-5-strand anchors 15 - 20 m long in 8 h
BUFFERING	one tendon per side, ejection possible on both sides
AUTOMATION	6 persons for further fabrication of the anchor
FILLING DEGREE	varying, approx. 25 - 35 g /m with Nontribos MP-2 after 4 - 6 m and with 0.6" strand



Semiautomatic production of PE-coated strands

SPECIAL FEATURES	greasing the strand and pushing it into a PE tube
PUSHING LENGTH	40 m
PRODUCTION CAPACITY	approx. 180 s with 25 m strand
BUFFERING	on a worktable
AUTOMATION	semi-automatic (pushing, greasing / ejection)
FILLING DEGREE	varying, approx. 25 - 35 g /m with Nontribos MP-2 after 4 - 6 m and with 0.6" strand



Fully automatic anchor manufacturing with round wire

SPECIAL FEATURES	Button heading, waste optimization, very accurate length measurement
PUSHING LENGTH	95 m
PRODUCTION CAPACITY	approx. 60 s with 95 m wire length
BUFFERING	11 anchors, (daily production)
AUTOMATION	fully automatic

Button heading equipment for sleeper anchors

SPECIAL FEATURES	Button heading on both ends of a prestressing wire
PRODUCTION CAPACITY	approx. 4.5 s per head, approx. 18 s per set of 4 prestressing wires
AUTOMATION	fully automatic, wire and plates are inserted manually



Pushing and cutting equipment for prestressing wire

SPECIAL FEATURES	Stressing reinforcement for railway sleepers
PUSHING LENGTH	2 - 3 m
PRODUCTION CAPACITY	ca. 1000 bars/h bei 2,8 m length
BUFFERING	3,4 m/sec.
SCHNITT-GENAUIGKEIT	+/- 0,4 mm/m
AUTOMATION	fully automatic

Available process steps

Pushing

Strand and wire:

- Pushing bright or PE-covered strand into a pushing channel, up to 150 m, pushing speed up to 5 m/s
- Pushing wire without button head, up to 250 m, pushing speed up to 3 m/s
- Pushing wire with button head, up to 250 m, pushing speed up to 5 m/s, with optimum wire guidance up to 10 m/s

Plastic tube:

- Pushing of plastic tubes up to 50 m
- Magazine for 5 different plastic tubes (PE sheath, grouting hose, ...)

Length measurement:

- Length measuring system for strands: +/- 15 mm at 100 m
- Length measuring system for prestressing steel: Standard: +/- 3 cm at 100 m
Best realized accuracy: +/- 3 mm at 100 m

Processing

Plastic tube:

- Cutting the PE tube with hose cutter
- Drilling the plastic tube (e.g. grouting hose)
- Production of insertion cone for PE tube
- Printing the PE tube
- Mounting the marking rings

Strand:

- Cutting the strand by means of abrasive cutting-off machine or steel cutter
- Deburring the strand by means of an embossing unit
- Threading and pushing the strand into PE tube

Prestressing steel processing:

- Wire cutting with steel cutter
- Button heading
- Waste optimization: head control with image processing system
- Automatic cutting and ejection of faulty heads

Greasing:

- Fanning out and greasing the strand
- Pushing the greased strand into PE tube

Degreasing:

- Separating the PE tube all around
- Removing and ejecting the PE tube
- Degreasing the strands in the stripping area, grease disposal
- Possible on both the anchor and tensioning side

■ Output

Ejection:

- Ejection on one or both sides
- Ejection onto worktable or cross conveyor

Buffering with cross conveyor:

- Sorted ejection into forks
- Ejection into conveyor trays
- Buffer capacity 3 - 15 anchors, depending on space requirements
- Ejection of the finished anchors into the outfeed channel

2 pushing channels, processing table on both sides and outfeed channel



Pushing channel with table and V-channel for discharge



Pushing channel with 3 trays on the right, 3 trays on the left



Anchor manufacturing with strand tray arranged in 4 rakes by pneumatic actuating cylinders for 3 anchors, cross transport with chain

Available accessories

- Uncoiling reel for strand
- Uncoiling reel for plastic hose
- Horizontal coiling reel for anchors with up to 9 strands and 40 m of length
- Drum coiling machine for anchors up to 150 m
- Grease supply for anti-corrosion agent
- Wedge-seating device for wedges
- Spiral coiling machine
- Tool slide on worktable
- Mobile button heading machine

Horizontal coiling reel



Wedge-seating device



Wound up coils



Strand reel and reel for PE tube

Subject to errors and changes.

Find your contact person and further information at
stressing.paul.eu

