

Universal warping machines

SMA21" + SMA800

for the warping of elastic and non-elastic yarns
on warp bobbins and beams



SMA21" + SMA800

Machine concept

SMA21" and SMA800 warping machines represent the systematic further development of the SMA535 and SMA800 models, which enjoyed long-term market success. The new machines not only answer the special demands made by highly elastic yarns (latex, synthetic elastomers and single- or double covered rubber threads), but also those of light elastic and non-elastic threads, whereby constant thread tension is achieved from the core to the periphery of the warp beam. The machines are ideal for non-elastic yarns in the fine to medium yarn count range up to 3000 dtex and at approximately 100 dtex, the minimum thread number amounts to 25. During the processing of elastic yarns, the warping machine is fitted with a positive drive roll-off creel and a preliminary drafter, which is located outside the warping machine.

Control system

Owing to a new, state-of-the-art machine control system, which makes the input, storage and reproduction of process parameters still more user-friendly, the retrofitting of subsequently purchased additional units is now no longer a problem.

Standard features

- Siemens S7 control system
- Powered lifting and lowering device for the insertion and removal of the warp beam
- Powered motion of the warp beam bearing
- Pneumatic warp beam clamping
- Expanding reed with a laying device and 9 segments in a zigzag pattern in the SMA21" and 11 segments in the case of the SMA800
- Adjustable reed traverse device with a stroke of up to 30 mm
- Leasing device
- Safety device



Control panel with touchscreen

Optional features

- Thread tension control device with negatively driven evener rollers for non-elastic yarns
- Preliminary feeder for elastic yarns
- Width-adjustable contact rollers for constant warping pressure; adjustments can be made during warping
- Antistatic device with 2 rods
- Wax or oil device
- Remote control
- Warping machine mounted on rollers
- Load measurement bar for the detection and regulation of thread tension (in combination with preliminary feeder)

Technical data for the SMA21"

	Warping of non-elastic threads	Warping of elastic threads
Max. flange diameter	535 mm	535 mm
Max. warp beam width	535 mm	535 mm
Max. warping speed	800 m/min	450 m/min
Compressed air unit	6 bar	6 bar
Compressed air consumption	5 l/min	5 l/min
Installed power	11 kW	Warping machine 11 kW Preliminary drafter 6 kW Roll-off creel 11kW or 22 kW
Thread tension moment	112 Nm	112 Nm

Preliminary pre-tensioner for elastic yarns

The electronically adjustable preliminary pre-tensioner is used to maintain constant thread tension between the warping machine and the positive roll-off creel in every movement phase. Two different tensions are programmed:

- Between the warping machine and the preliminary pre-tensioner
- Between the preliminary pre-tensioner and the creel

The rollers of the preliminary pre-tensioner are powered by a servomotor, which runs synchronously with the warping machine. The thread tension is maintained at a uniform level in every operating mode (acceleration, braking, emergency stop) and is entered directly via touch screen on the warping machine.

Machine mounted on rollers

This option allows the transfer of the warping machine from one creel to another, thus permit-



Preliminary pre-tensioner



Warp beam and expanding device

ting the coverage of both fields of application, i.e. the warping of elastic and non-elastic threads.

Roll-off creel for elastic yarns

The roll-off creel for the warping of high-elastic yarns, e.g. latex, synthetic elastomers, single- and double-covered rubber threads is characterised by constant, perfect thread tension, which prevents false draft that could lead to the finished product lacking the desired elasticity. In addition to the positive roll-off creel, the preliminary pre-tensioner is of fundamental importance to the provision of the warp yarn with homogeneous tension. The preliminary pre-tensioner, which is located upstream of the warping machine, has the task of equalising the thread tension in the warp threads coming from the creel. The drives of the warping machine, the preliminary feeder and the positive roll-off creel are very precisely synchronised, whereby the respective positions of the individual drives are subject to constant surveillance.

Technical data for the SMA800

	Warping of non-elastic threads	Warping of elastic threads
Max. flange diameter	800 mm	800 mm
Max. warp beam width	1000 mm	1000 mm
Max. warping speed	800 m/min	450 m/min
Compressed air unit	6 bar	6 bar
Compressed air consumption	5 l/min	5 l/min
Installed power	30 kW	Warping machine 30 kW Preliminary drafter 6 kW Roll-off creel 22 kW
Thread tension moment	600 Nm	600 Nm

SMA21" + SMA800

This guarantees that yarn tension remains constant during acceleration, machine operations at production speed and braking.

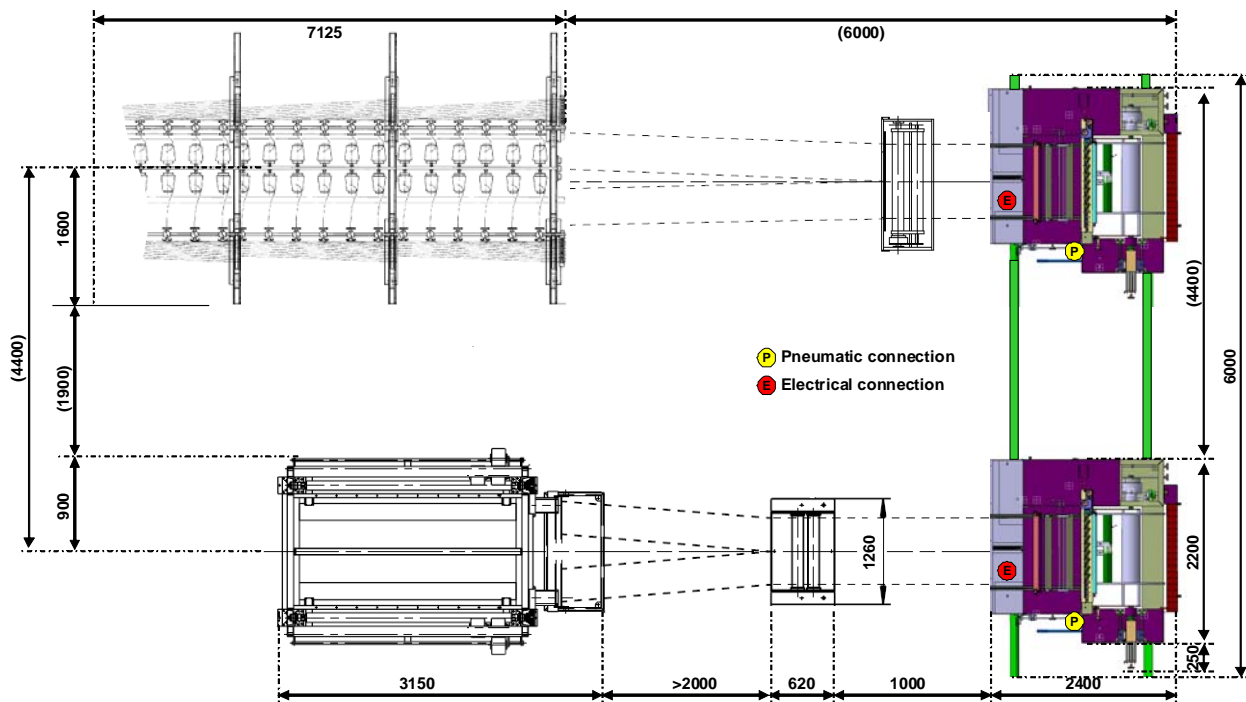
Due to the extremely efficient drives, should thread breakage occur, the equipment comes to an immediate stop. This prevents the broken thread end from wrapping itself around the warp beam. The braking sequence is initiated by a stop motion mounted on the creel exit, which indicates the location of the broken warp thread by means of an optical display, thus guaranteeing that the thread breakage can be corrected immediately without a long search and reducing the machine standstill to a minimum. The especially robust design of the creel permits working speeds of up to 450m^{-1} , whereby the precise con-centricity of the powered drive shafts ensures smooth thread running. Feeding takes place in comfort from the outside of the creel, the bobbins being creeled on slewable holders, which further minimises set-up times.



Slewable bobbin holder

Thanks to the thread take-off on the inside of the machine, the respective space available can be used in optimum fashion and the gap between the creel and the warping machine considerably reduced.

Space requirement for SMA800 as an example



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