

PRO-SMH

WE INCREASE YOUR PROFIT



WARP PREPARATION

PRO-WARP

Urdiddor
Ourdissoir
Seri Çözgü Makinası
Direct Warping
Zettmaschine
Orodio
直接整经机



German technology

DIRECT WARPING PROCESS

Warp and weft are terms for the two basic components used in weaving to turn thread or yarn into fabric. Lengthwise or longitudinal warp yarns are held stationary in tension on a frame or loom while the transverse weft (sometimes woof) is drawn through and inserted over-and-under the warp. A single thread of the weft crossing the warp is called a pick. Inventions during the 18th century spurred the Industrial Revolution, with the "picking stick" and the "flying shuttle" (John Kay, 1733) speeding up production of cloth. The power loom patented by Edmund Cartwright in 1785 allowed sixty picks per minute.



DIRECT WARPING PROCESS

The warp is the set of yarns or other elements stretched in place on a loom before the weft is introduced during the weaving process. It is regarded as the longitudinal set in a finished fabric with two or more sets of elements.

The term is also used for a set of yarns established before the interworking of weft yarns by some other method, such as finger manipulation, yielding wrapped or twined structures.

PERFECT BEAMS FOR BETTER SIZING

Absolutely cylindrical yarn build-up and an even surface

The yarn build-up is determined by the tension of the warp threads and the press roller force.

Uniform thread tension from the middle of the beam to the outside, i.e. from the front to the rear ends in the creel, must be assured.

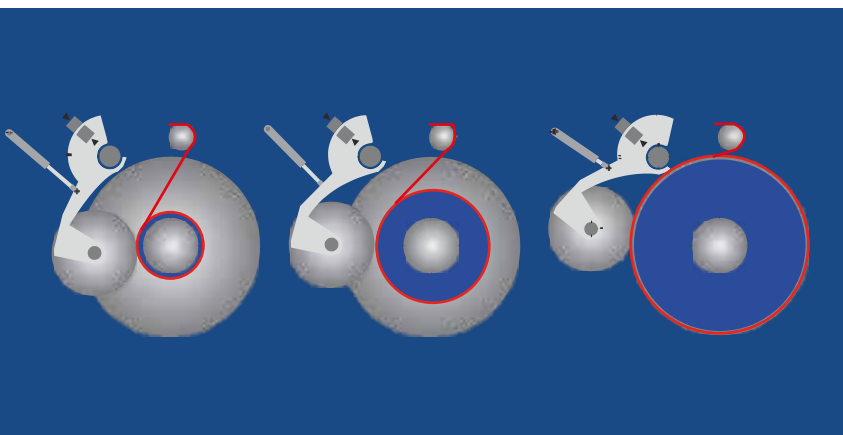


PRESS ROLL KICK BACK

The press roller must ensure compact winding and absolute cylindricity of the Beam press roll is made of composite paper based for longer life with Rings on both sides.

Increasing beam diameter presses back drum with preset beam pressure to get uniform density from start to finish the beam.

All friction between roll and yarn is avoided.



EXACT THREAD GUIDANCE

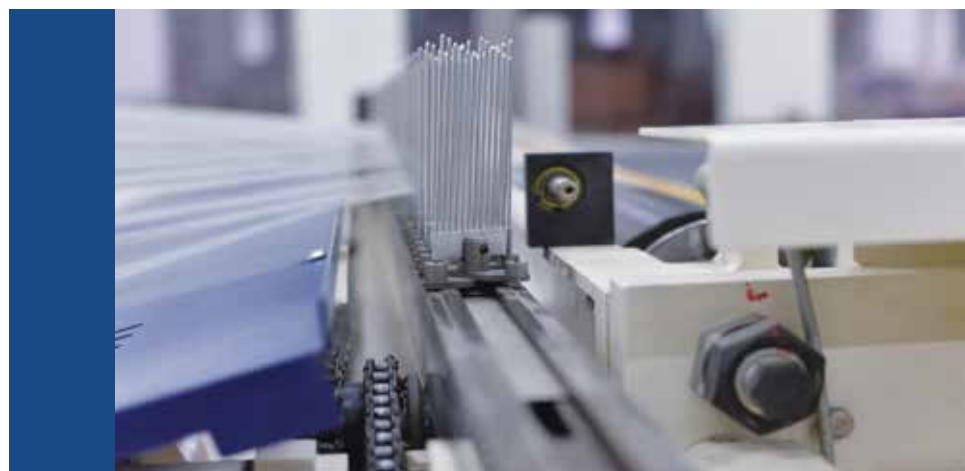
The first requirement for non-crossed ends is precision thread guidance with minimal free thread lengths from zig-zag comb to beam. It must be possible to match the width of the thread sheet exactly to the beam width to avoid errors at the flanges.

Motorized comb ensures lateral alignment of comb to width of beam. Vertical movement of comb increases the life of comb and horizontal movement gives ridges free warper beam. Intermittent air blow system behind the comb assembly clears the fluff of comb.



PRECISE LENGTH MEASURING

The back beams of a batch must all be wound with absolutely the same length. Light weight measuring roll at the headstock ensures the warper beams Of predetermined length to ensure minimum waste of residual length on the warper beam Sizing



SHORT BRAKING DISTANCES

To avoid rolled-in threads, in the event of a thread break the direct warper must be able to be stopped in a short distance, even at the highest speeds and with a fully wound beam.

The Electro – hydraulic controlled disc brakes on both sides, ensure Brake for the high speed running beam rapidly. Brakes on guide roller and pressing roller ensure the synchronized braking.



THE VISUALIZATION CONCEPT SIMPLIFIES DATA INPUT AND OUTPUT, ALSO THE DISPLAY OF PROCESS INFORMATION. THE HMI OPERATED TOUCHSCREEN. SIMPLE ATTENDANCE IS RENDERED POSSIBLE BY:

- Realistic, coloured representations of the machine components
- Self-explanatory, language-independent graphic symbols
- Menu-driven data input
- Plausibility checks to avoid erroneous inputs
- Information on actual process data
- Error messages with explanation of cause and instructions for rectification
- Automatic service messages



DIFFERENT TYP OF CREELS TO ENSURE HIGH QUALITY OF WARPED BEAMS

PRO H-Creel is available with Swivel Frame also as truck trolley design. Both Creel designs are provided with optical warp stop motion in the front of the creel, with 2 rows for each row of cones to reduce the length of front thread guide strip.

This stop motion cuts the response time to 30 % of electrical stop motion leading to quick stop of the beam.

WARP PREPARATION

TYPE **PRO H-CREEL**

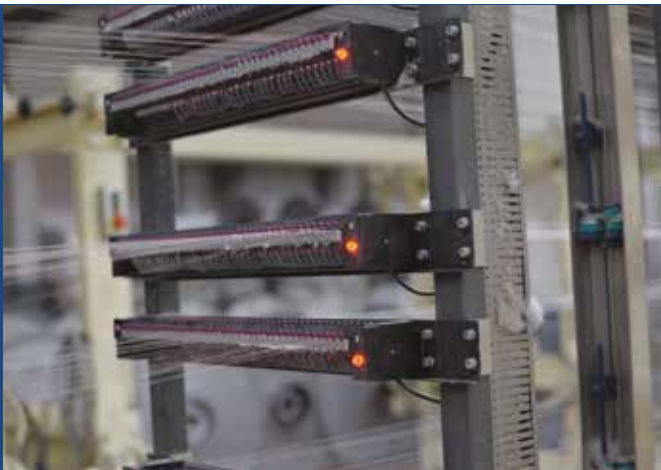


DESIGN OPTIONS

- Modular Constructions
- Different Models
- Swivel Frames Creel for Large and Heavy Packages
- Truck Trolley Creel with Reserve Truck for Higher Productivity
- Magazine Creel with Thread Transfer for Continuous Production
- Outside threading (spun Yarn)
- Inside Threading (filament Yarn)

MAIN FEATURES

- Movement of drop wire is sensed with optical infrared ray
- Very quick response time
- Not affected by fluff accumulation
- Minimizes missing ends in the beam due to quick stop
- Memory for broken end for easy location



TENSION UNITS

The basis of the outstanding warp quality is a low and uniform thread tensile force and the free yarn route.

Design of the Tension units, results in a gentle yarn draw-off and minimal end break frequency, positively influencing the subsequent sizing and weaving operations

WARP PREPARATION

TYPE **PRO TT-DiSC**



RELIABLE TENSION APPLYING

Tension is achieved by applying pressure on the upper disc of the second set of discs. The first set of braking discs ensures stable movement of yarns and makes it possible to apply proper tension afterwards

YARN TENSIONER WITH CENTRAL ADJUSTING/REGULATING

With central controlling table, the pressure parts of tensioners on one side or the whole creel are moved to the proper place. The value is displayed on the screen.

SYNCHRONIZE THE STATUS OF DISC DRIVING BY DUST-PROOF DEVICE

Dust-proof design for pressure-applying parts and disc-driving devices ensures its proper function even when processing stable yarns.

ADVANTAGES

- Suitable for all types of yarns
- Suitable for wide range of yarn counts
- Central adjustment on yarn tension
- Automatic tension adjustment
- High speed yarn drawing
- Clean disc surface by electrical disc driving
- Internal individual blowing device
- Simplified and convenient operation

PRO V-CREEL

V-Shaped recirculated bobbin creel is assorted with direct warping Machine For stable fiber and blends. There advantages are shorter creel body, no Carrier between frame and creel, especially adapted for some staple fibers which are sensitive friction. Working under low tension and high speed. The inter lay- out yarn bobbin on creel optimizes the space utilization. the inner side of V- shaped creel should store, which is convenient for operation. The bobbin changing time is short. V- Creel is especially suitable for high speed warping.

WARP PREPARATION

TYPE **PRO V-Creel**



HIGHEST QUALITY

- Little stress on threads
- Low thread tension
- Uniform thread from back to front
- No snarling

HIGH PRODUCTIVITY

- Speed up to 1200 m /min
- Free yarn route
- No knotting when changing package or lot
- Reduce cleaning and maintenance otlay
- Simple package loading
- Automatic rotation of package frames
- Simple placing of the threads in the stop tensioner



PRO OPTOSTOP

Optostop motion bracket is developed for the direct warping of threads at very high speed ranging for wide range of yarn counts. The design of the bracket is such to treat the yarn surface smoothly to avoid twisting and push-back which results in snarling.

WARP PREPARATION

TYPE **PRO OPTOSTOP**

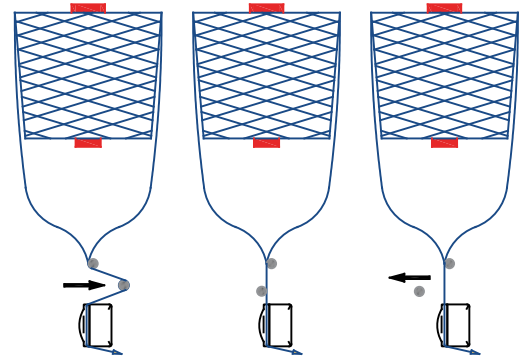


NO SNARLING

An auto pretensioner prevents snarling which can occur on stopping the machine. The pretensioner Auto takes up the correct position depending on the phase in the warping process.

EQUALIZED THREAD TENSION

The pretensioners automatically compensate the thread tension differences occurring due to the variation in thread length from the rearmost to the foremost package. The automatic pretensioner is set so that a corresponding wrap compensates the differences in tension between the front and rear threads.



ADVANTAGES

- No loose ends shooting forwards when stopping
- Stop motions are self-activated by pushbutton
- Warning display after repeated breaks on the same end
- Continuous display of number of running ends
- No threads lost at the end break
- Wide application range
- Low thread tensions for high speeds
- End breaks are rapidly located

TECHNICAL SPECIFICATIONS FOR DIRECT WARPING AND CREEL

PRO V-CREEL PITCH PROGRAM WITH NUMBER OF RUNNING THREADS

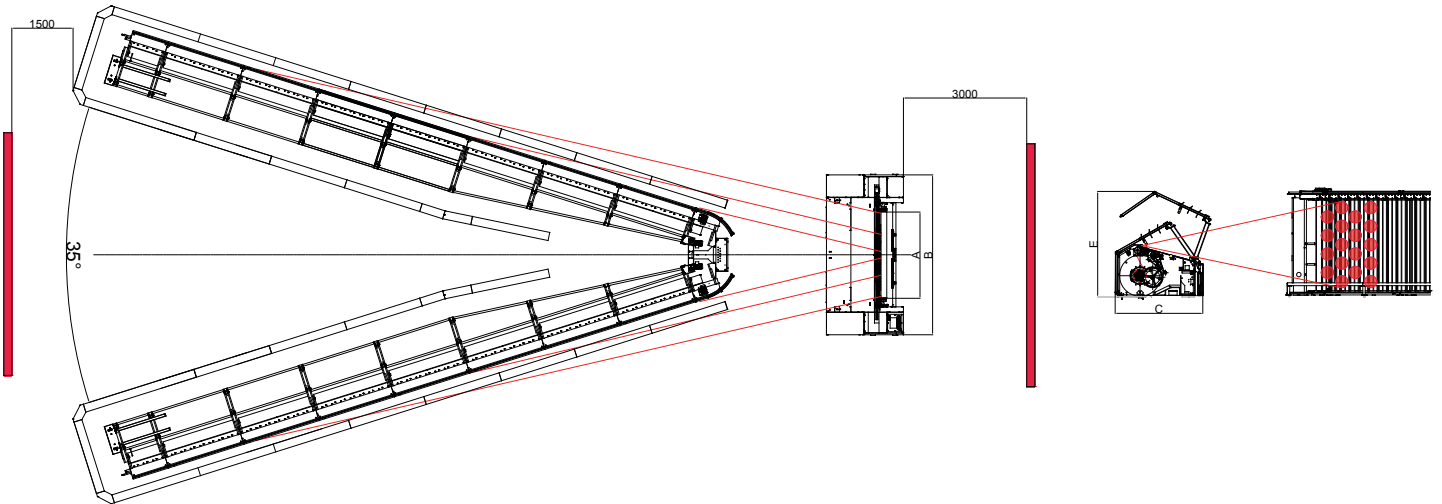
horiz. pitch	vertical pitch	max. packages \varnothing	number of tiers	running threads											
240	240	230	9	504	576	648	720	792	864	936	1008	1080	1152	1224	1296
	270	255	8	448	512	576	640	704	768	832	896	960	1024	1088	1152
	305	265	7	392	448	504	560	616	672	728	784	840	896	952	1008
	350	278	6		384	432	480	528	576	624	672	720	768	816	864
	435	305	5		320	360	400	440	480	520	560	600	640	680	720

horiz. pitch	vertical pitch	max. packages \varnothing	number of tiers	running threads											
320	240	230	9	378	432	486	540	594	648	702	756	810	864	918	972
	270		8	336	384	432	480	528	576	624	672	720	768	816	864
	305	295	7		336	378	420	462	504	546	588	630	672	714	756
	350	340	6			324	360	396	432	468	504	540	576	612	648
	435	365	5				300	330	360	390	420	450	480	510	540

PRO H-CREEL PITCH PROGRAM WITH NUMBER OF RUNNING THREADS

PITCH DISTANCE HORIZONTAL & VERTICAL	270MM	280MM	320MM	360MM	360MM	400MM	450MM
NO. OF ROWS	8	7	6	5	6	5	5
NO. OF PEGS IN EACH TROLLY / MODULE	96	84	60	40	48	40	30
RANGE OF ENDS	96 - 864	84 - 756	60 - 660	40 - 520	48 - 720	40 - 440	30 - 480
CREEL HEIGHT	2790MM	2560MM	2560MM	2560MM	2760MM	2600MM	2930MM
HIGHT OF TOP TIER FROM FLOOR	2190MM	1960MM	1960MM	1960MM	2160MM	2000MM	2221MM
HIGHT OF BOTTOM TIRE FROM FLOOR	300MM	280MM	360MM	360MM	360MM	400MM	421MM
MODULE LENGHT	1620MM	1680MM	1600MM	1440MM	1440MM	1600MM	1350MM

TECHNICAL SPECIFICATIONS FOR WARPING AND CREEL

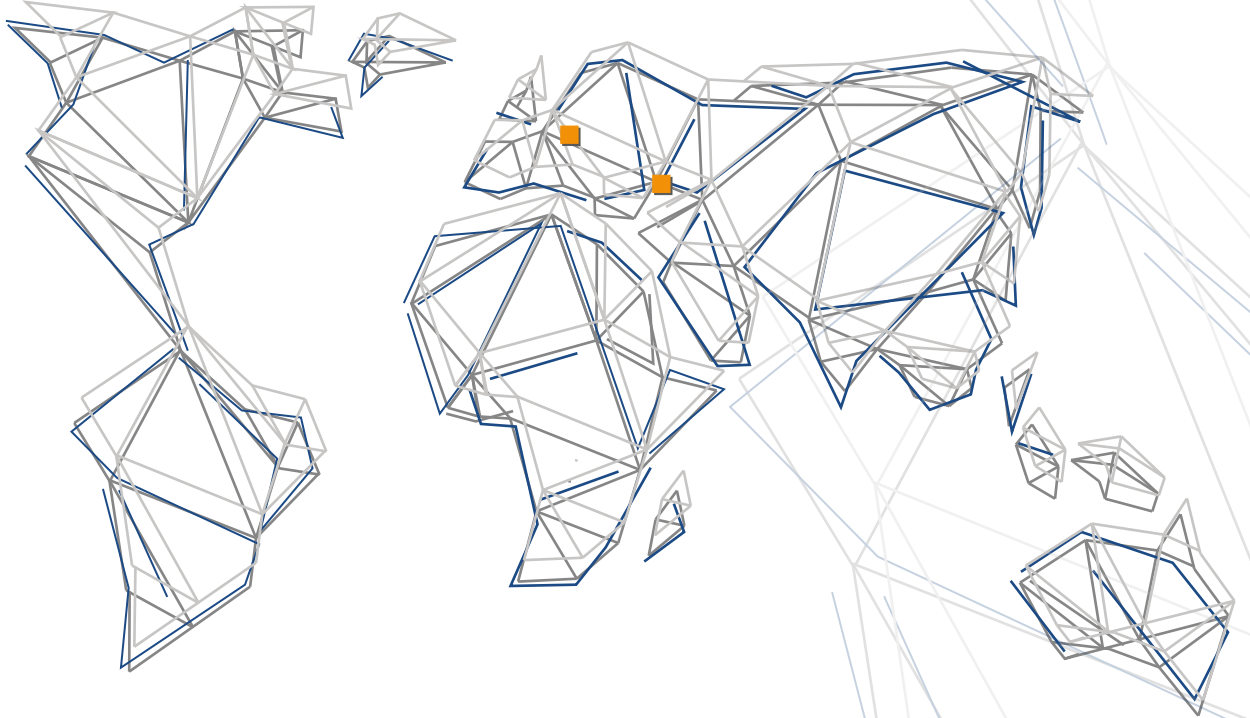


TECHNICAL DATA

MACHINE	
Beam Dia	800 1000 1250 1400
Max. Speed	1200m/min
Inching Speed	<20m/min
Max. Tension	450N
Max. Braking Torque	16000Nm
Motor Power	15Kw. 22Kw
Work Width (mm)	1400 1600 1800 2000 2200 2400

TECHNICAL DATA

MACHINE DIMENSION	
Width (mm)B	Work Width(A)+1900
Depth (mm)C	2120
Height (mm)E	1800(Including wind shield)



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