DIFA

AIR-JET WEAVING MACHINE
PREDICTED FOR INDUSTRIAL
WEAVING OF 3D DISTANCE
FABRICS (HIGH-TENACITY
POLYESTER FIBERS).
New development of automatized air-jet weaving machine “DIFA” predicted for industrial weaving of 3D distance fabrics (high-tenacity polyester fibers).

ADVANTAGES OF DIFA AIR-JET WEAVING MACHINE
- Simple MACHINE CONCEPT
- Weaving GAUGELESS TECHNOLOGY
- User friendly - CONTROL TOUCH PANEL
- Standard SPACE DEMANDS

ADVANTAGES OF 3D FABRIC PRODUCED BY DIFA
- HIGH QUALITY of raw fabric
- VARIABLE DISTANCE 12 up to 50 cm
- Fast (operative) CHANGE OF DISTANCE
- HIGH DENSITY of pile threads
TECHNICAL SPECIFICATION

MACHINE DRIVE, BEAT-UP AND SHEDDING MECHANISMS
- Individual drives of the mechanisms, with synchronous servomotors controlled in the electronic cam mode
- Cam beat-up mechanism with a profile slay made of C/E composite material
- Shedding mechanism with the Stäubli S3060 electronic rotary dobby (12 heald shafts 13”)

PNEUMATIC WEFT PICKING
- 2x ROJ Super Elf G2 weft feeders
- Automatic braking system (ABS) of weft
- Tandem nozzles (two color change)
- Main nozzles (two color change)
- Left (input) weft cutting, with diamond blades, with an electronically controlled step motor
- Profiled reed
- Relay nozzles
- Stretch nozzle
- Opto-electric weft stop motion
- Right (arrival) weft cutting, with diamond blades, with an electronically controlled step motor
- Automatic air pressure control of main and tandem nozzles
- Automatic timing of relay nozzles
- Automatic filling repair

LET-OFF MOTION AND BACK RESTS
- 2x electronic let-off motion, 1x high-speed, electronically controlled unwinding system
- Bottom warp beam (binder warp thread system): warp beam face diameter max. 1000 mm
- Upper warp beam (ground warp thread system): warp beam face diameter max. 700 mm
- Fixed back rest system with three rotary rollers
- Overall width strain gauge sensing, independent for both warping systems

TAKE-UP AND PACKAGING
- Electronic take-up motion, machine control system

WARP STOP MOTION
- Optic laser warp stop motion LASERSTOP 4082, Protechna

SELVEDGE MOTIONS
- Rotary Selvage Entangling Devices Propeller Leno, Gebr. Klöcker

MACHINE CONTROL
- Machine drive control and distance fabric weaving technology system control, large and variable distances
- Drive control ACOPOSmulti system and control system unit APC2100, central processing unit, B&R Automation
- Color LCD touch communication terminal in a size of 15.6”
- Weaving technology continuous monitoring and machine operational diagnostics
- External communication via VNC Client and Ethernet

DISTANCE FABRIC FORMATION MECHANISM
- Electronically controlled inserting mechanism
- Electronically controlled distance mechanism

PRODUCTION OUTPUT
- Automatic discontinuous process of distance fabric production
- Weaving mode: operational speed 400 rpm (max. 500 rpm)
- Distance mode: approx. 20 s

WIDTH
- Nominal reed width 190 cm I Minimum reed width 160 cm I Maximum reed width 220 cm
- Distance fabric width in the reed - nominal 150 cm I minimum 120 cm I Maximum 180 cm

DISTANCE
- Constant minimum 12 cm
- Constant maximum 50 cm
- Variable from 12 up to 50 cm (maximum “theoretical” angle of inclination ±45°)

PROCESSED FIBERS
- High-tenacity polyester fibers (multifilament): 250 up to 1000 den,
- High-tenacity polyamide fibers (multifilament): 250 up to 1000 den