

N IDS-HK

**HANK-TO-CONE WINDING
IN 10" TRAVERSE**



Modular construction of the machine :

Each machine can be built with the number of spindles in accordance to the production requirements, with a minimum of 4 and maximum 12 spindles per machine, and in function of the spindle gauge, which in turn is related to the type of Expander for yarn supply.

Gauge 800 mm – 3 spindle section

***with Mono-Expanders up to 1,83 m circumference
*with Duo-Expanders**

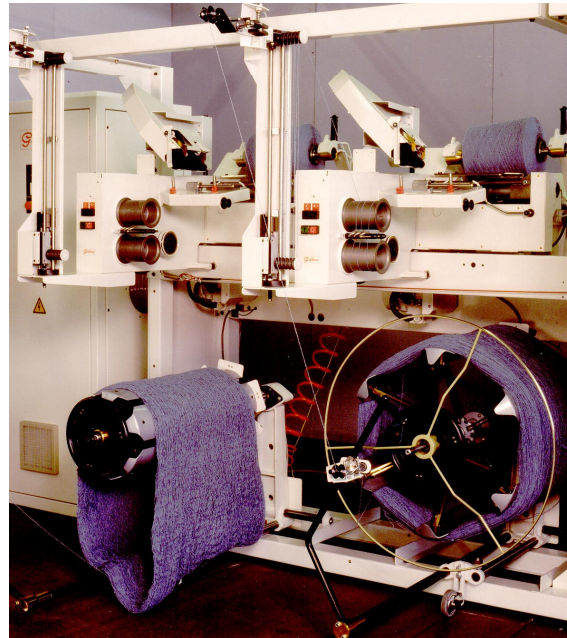
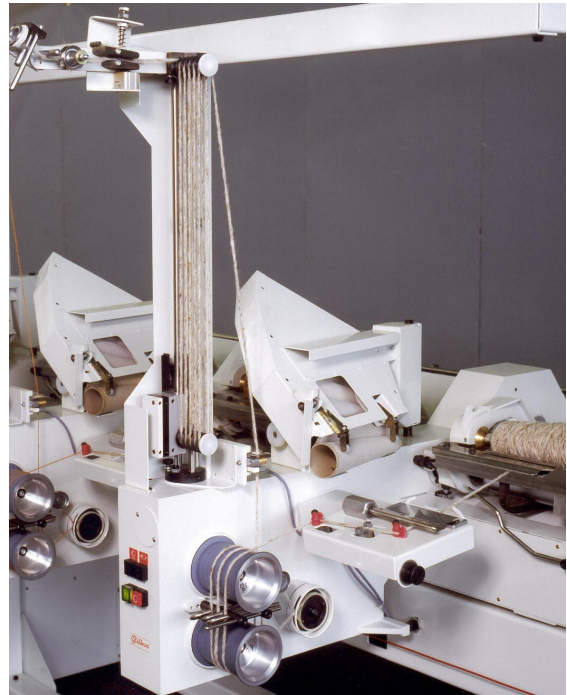
Gauge 1000 mm – 2 spindles section

*** with Mono-Expanders up to 2,40 m circumference**

Gilbos

The Winding Unit :

- 10" traverse, conical (up to 3°51') or cylindrical (up to diameter 105 mm)
- Yarn guiding by swivelling arm with positive yarn guide.
- Package rotation by driven contact roll, at constant winding speed.
- Standard random winding.
- Production of packages up to 400 mm.
- Very effective mechanical Anti-Patterning System by changing constantly the number of strokes of the swivelling arm, at constant winding speed.
- Individual Drive per spindle by motor with frequency inverter, at winding speeds between 350 and 850 m/min.
- Gradual start up after each winding stop. The ramp of speed increase is programmable.
- Yarn Tensioner with easy mechanical setting with a scale.
- Electronic broken end detector.
- Vibration suppresser to avoid cobwebbing at the sides or ovalisation of the package.
- Anti Wrap detector on the driving roll.
- Automatic Doffing per spindle.
- Transfer Tail Winding on an empty tube or cone, programmable in length.
- Special designed yarn cutter to ensure perfect cutting of all yarns, singles or twisted, up to Nm 0,2.
- Length Measurement by counting the number of revolutions of the driving roll. Length measurement with high precision available (see Options.)
- Mechanical Diameter Stop Motion.
- Push Buttons per spindle for manual intervention : start, stop, manual start of doffing cycle, opening of spindle heads.
- All the moving mechanical parts, which are not in contact with the yarn, are built in dust free casted housings.
- Speed Setting per spindle: to allow very flexible speed setting when different qualities are wound simultaneously on the same machine.



Special for Hank-to-Cone winding :

- Driven Capstan Feeders for elimination of yarn tension differences.
- Specially designed Compensator Bracket with vertical compensator, in combination with a Brake Plate, to prevent yarn breakage when an entanglement on the hank occurs.

Autodoffing

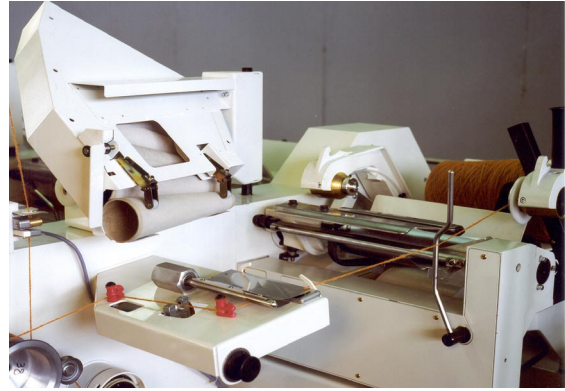
Automatic replacement of packages at length or diameter is standard on N IDS-HK. The magazine for tubes or cones is located just above the Capstan Feeder box, square to the spindle.

Capacity of magazine :

Tubes dia. 73 mm 5 pcs.

Cones 3°30' dia. 63 mm 7 pcs.

During a doffing cycle the magazine is turned 90° to present an empty cone or tube to the winding head. Doffing time is only 20 seconds.



Control Box

The Control Box is only connected to the machine by wires and flexibles, in order to prevent damages by machine vibrations.

Houses all the electronic elements on the machine. Full PLC control of all machine functions, located in a separate control box, with operator friendly communication screen for parameter settings and read-out of production data. Almost all electrical and electronic components are worldwide off-the-shelf available parts, with the exception of interchangeable communication parts.



Yarn Supply on Jumbo Hanks

Hanks are always unwound overhead.

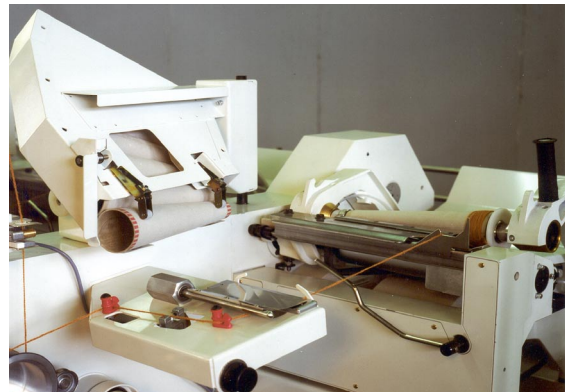
Two kinds of expanders can be offered, each with air cylinders to hold constant tension on the yarn layers.

- Mono Expanders, one set per spindle, underneath in the machine, holding one hank with circular expansion,
 - with spindle gauge 800 mm for hanks up to 1,83 m circumference
 - with spindle gauge 1000 mm for hanks up to 2,40 m circumference

On the Mono-Expanders the yarn is guided over an unwinding ring with a diameter in accordance to the circumference of the hanks (600 mm to 900 mm).

- Duo Expanders in front of the machine, with one set holding the hank in operation, and a second set in tag-ending. Depending on the type of yarn and the size of the hanks two kinds of Duo-Expanders can be offered :
 - Type 1C-SB : with one air cylinder downwards;
 - Type 3C-HM : to reach larger maximum hank diameters, with one air cylinder downwards, followed by two cylinders upwards.

Duo-Expanders are available in sets per three spindles.

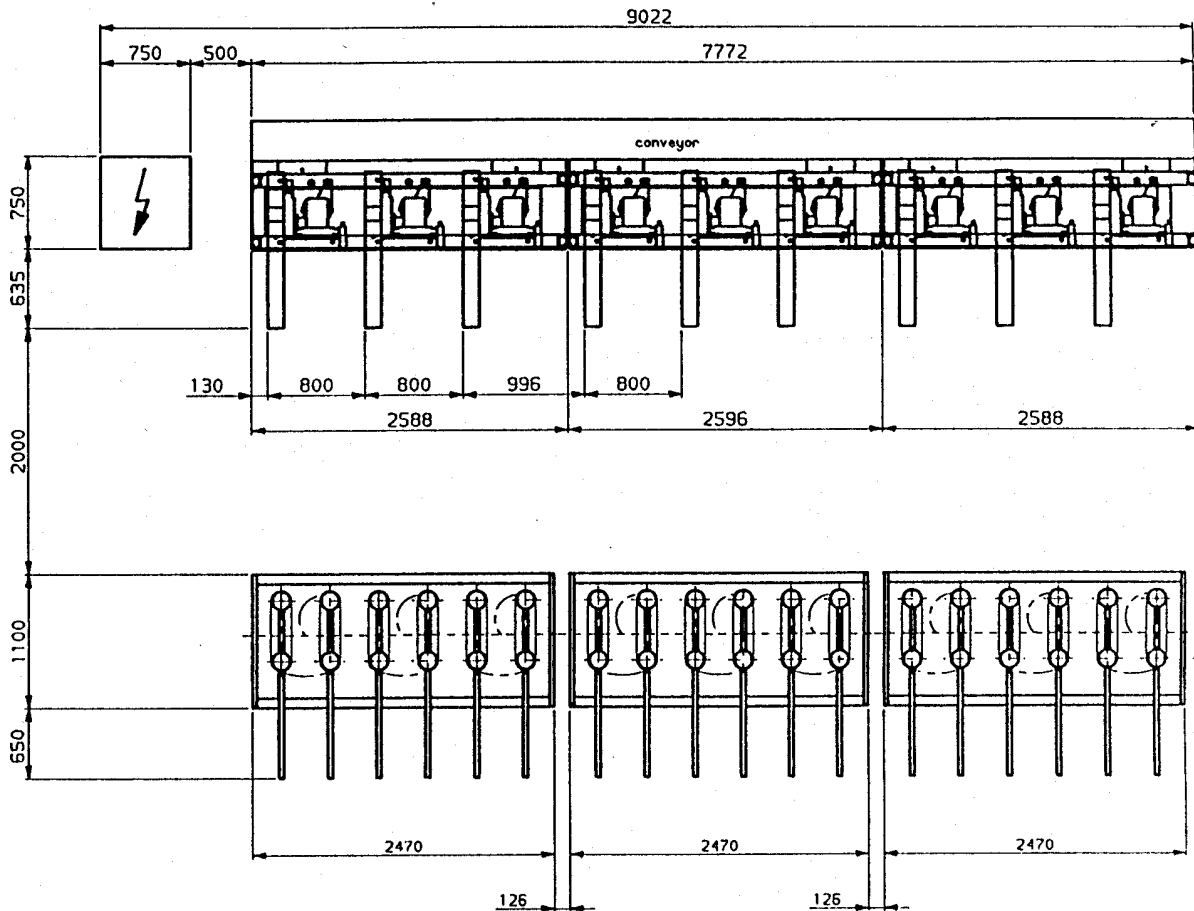


Optional Equipment :

Every optional equipment must be chosen before starting the construction of the machine, with regard to its influence from technical point of view.

- Length Measurement with high precision : by using a measuring wheel with hysteresis per spindle. Maximum accuracy attainable up to +/- 0,5 %, depending on production factors.
- Mechanical Knotcatcher.
- Electronic Clearer : at the choice of the customer. When applied, the clearer also acts as broken end detector.
- Conveyor Belt : to guide full packages to a side of the machine. The direction of the belt should be chosen at the moment of ordering a machine.
- Position of the Control Box : left or right side of the machine.
- Electronic setting of the Angle of Winding : By the introduction of a second motor with frequency inverter, the angle of winding can be changed without mechanical intervention between 12° and 22°, through the communication screen on the control box.
- Programmable Step-Precision Winding : to produce packages with increased package weight compared to random winding, at the same package diameter. Precision winding technically always involves reduction of the angle of winding, in function of the increase of diameter. By the Step-Precision Winding this angle of winding can be automatically altered during the winding to limit its variations within preset margins, thus to produce perfectly straight packages with every type of yarn. For instance the angle of winding is requested to be limited between 17° and 19°. The system continuously calculates the angle through data collected from the driving motor, the package diameter and the number of revolutions of the package, and resultant instructions are electronically given to the motor driving the swivelling arm.

1 x 9 spindles N IDS-HK + Duo Expanders



Technical Data :

- Winding material : spun and filament yarns, natural or man-made
- Yarn counts : generally between Nm 0,2 and Nm 5, not restricted to these counts only
- Winding speed : steplessly adjustable between 350 and 850 m/min., depending on the winding angle
- Traverse : 10" or 254 mm
- Packages produced :
 - Cylindrical : tubes with outer diameter 65 mm minimum
 - Conical : up to 3°51'
- Maximum package diameter : up to 400 mm
- Type of winding: standard random winding
Step-precision winding in option
- Motor per spindle :
 - Random winding : 1 x 0,75 kW
 - Programmable angle of winding : 1 x 0,75 kW + 1 x 0,25 kW
 - Step-precision : 1 x 0,75 kW + 1 x Servo motor 0,25 kW
- Inverter per spindle : Lenze
- Motor conveyor belt : 0,15 kW
- Electric supply : 3 x 400 V + N or 3 x 230 V – 50/60 Hz
Transformer is needed for other supplies
- PLC : Mitsubishi
- Compressed air : 6 bars pressure for machine functions
- Air consumption per doffing : 3 litres free air
- Air consumption Expander :
 - Mono Expander : 20 litres free air
 - Duo Expander : 15 litres free air
- Capacity magazine box :
 - Tubes diameter 73 mm : 5 pcs
 - Cones 3°30' diameter 63 mm : 7 pcs.
- Hanks dimensions :
 - Mono Expander : up to 2,40 m circumference
 - Duo Expander: up to 2,65 m circumference
 - Parallel or cross wound
- Main colour of machine : White RAL 9002

All technical details, descriptions, illustrations, dimensions an other particulars in this pamphlet are given in good fait, and can be subject to change without notice

