

# Nextrom Group Twinner



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This machine is an integral part of the manufacturing cell specifically designed to produce digital communication cables using traditional solid and strand copper conductors.

The Group Twinner is an inside-out Double Twist machine suitable to produce high quality paired conductors using solid and cellular insulated wires between 0.4 mm (AWG 26) and 0.65 mm (AWG 22) at high speed with minimum running tension using back twist.

The machine is capable to manufacture the following LAN category cables:

- CAT 3
- CAT 5
- CAT 5e
- CAT 6

Following you will find pictures and specification of the machine.

## Specifications

Pay-off reel dimensions: To Hearl Heaton Drawing # Q3125 H.H. Plastic Reel

Flange diameter	up to 510 mm (20 in)
Traverse width	315 mm (12.4 in)
Overall width	375 mm (14.75 in)
Drum diameter	250 mm (10 in)
Bore diameter	minimum 56 mm (2.2 in)

Other characteristics:

Number of twinning heads	4
Diameter of solid conductors	0.4-0.65 mm (AWG 26-22)
Max. Rotating Speed	Max. 1800 RPM (3600 TPM)
Rotating speed: (for patch cord)	max. 1600 RPM (3200 TPM)
Lay range	8-50 mm (0.3-2 in)
Line speed	up to 75 m/min (250 ft/min)
Maximum noise level	82±2 dB(A)
Back twist ratio	up to 40 %

\* Please consult Nextrom Toronto for specification and speed.

Main drive system motor:

Power	50 HP
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Back twist motor (1/head):

Power	5 HP
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Rotating take-up reel drive motor:

Power	2 HP
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# Specifications

## **Capstan - Belt Wrap #410-460**

The belt-wrap capstan is designed to operate the production of high quality data communication cables. The purpose of this machine is to haul off the paired conductors of solid and cellular insulated wires between 0.4 mm (AWG 26) and 0.65 mm (AWG 22) from the group twinner. The belt-wrap capstan ensures constant line speed and provides a steady feedback signal to ensure the best possible lay length control.

Highlights of this machine are:

- sturdy, fabricated steel, vibration resistant stand
- separately guided pairs
- low inertia rubber coated wheel for optimum traction, conductor protection and to avoid distortion of the individual pair lay lengths
- line shaft driven from Group Twinner motor.
- precise and positive lay control capable left or right hand lay reversal and adjustment
- pneumatically preloaded dancer which accurately controls take-up tension while providing sufficient accumulation

The capstan incorporates pair guide system, belt wrap capstan, length measuring unit, take-up tension control dancer, layplate and closing die.

## **Length Measuring Unit**

The unit is incorporated in the belt wrap capstan structure and measuring is directly from capstan by means of digital feedback signal.

## **Digital Counter & Console Display**

The encoder is mounted on the measuring machine. A prescaling function for calibration is included. The display is incorporated in the touch screen console.





# Specifications

## Extra Set of Gears

The three position change gear arrangement allows the entire lay range and lay direction to be shifted to suit the product design. An extra set of gears further increases the lay range and the product design flexibility.

## Layplate & Closing Die

Layplate with ceramic eyelets and a longitudinally adjustable closing die may be mounted directly on the capstan frame. Low deviation angles and ceramic eyelets ensure the lowest possible stress on the pairs.

## Specification

Conductor diameter	0.4mm (AWG 26) - 0.65mm (AWG 22)
Wheel diameter	460mm (18")
Wrap angle	180
Haul off force	15 kg (33 lb)
Line speed, max. (product dependent)	75 m/min (245 ft/min)

## Rotating-Closed Cradle-Take-up #065-900

This take-up is designed to operate in conjunction with other cable manufacturing equipment and machinery.

The closed cradle rotating take-up is used for cabling precision pairs of data communication cables from stationary or rotating pay-offs. The precise closing point of the cables unit with the rotating take-up provides accurate cabling lays necessary for the cables' optimum performance.





# Specifications

## **Rotating-Closed Cradle-Take-up #065-900**

The 1000 mm rotating closed cradle take-up is suitable for reels up to 1000 mm (39 in) flange diameter.

Other essential characteristics are:

- closed cradle design, horizontally arranged
- welded, stress relieved and sandblasted structure
- both sides supported by encircling bearings
- reel is located between pintles whose closure is electrically interlocked
- motorized loading platform
- fully enclosed sound-proof housing with sliding door access
- ergonomically designed for ease of operation

The frame is a reinforced fabricated steel housing that supports the main rotating spindle powered by Group Twinner line shaft and houses the drive train and auxiliary components.

The main spindle is running in grease lubricated high capacity non-friction bearings and driven the line shaft through timing belt. Lay change can be effected by means of change gears.

This take-up utilizes one fixed pintle and one pintle which is moved by means of a screw thread operated manually. The pintle position will be monitored by an electrical limit switch interlocked into the drive circuit. The fixed pintle will be the driving pintle, fitted with spring loaded drive pin to facilitate loading and drive pin location.

The cradle is driven from the main drive through a line shaft and timing belt system. Guards are provided over all exposed transmission components. A disk brake is provided for stopping and is fail safe in case of power failure.

Loading and unloading is motorized with reel discharge at floor level.

The take-up reel is independently driven from a 2 HP (1.5 kW) regenerative DC drive.

Take-up tension is preset by means of pneumatically preloading the dancer at the exit of the belt wrap capstan. Tension is kept constant during the filling of the reel by means of an electronic feedback system.



# Specifications

## Guarding Cradle - Rotating Take-up

A full acoustical guard system ensures a noise level not to exceed  $82\pm 2$  db(A) at rated operating speed.

The safety interlocked front cover provides complete operator access for loading and string-up of the machine.

A heavy lexan window will provide view of each twinner head while the machine is running.

## Loading Platform

To facilitate loading/unloading a gear motor driven screw type reel lifting platform built into the take-up unit. The lifting platform swivels in and out from under the cradle to facilitate the reel loading operation.

All reel loading functions are safety interlocked with the line run circuit.

## Specification

Reel dimensions: Take-up reels to Hearl Heaton Drawing # JJL997 DTD 25-8-94

Flange diameter	900 mm
Traverse width	620 mm
O.A.W. at flange	670mm
O.A.W. at bore	670mm
Drum diameter	450 mm

Note that 15 of the above reels are included in Nextrom's scope of supply, Item 1.4



# Specifications

## Other characteristics:

Reel capacity	500 kg (1100 lb)
Rotating speed	max. 300 RPM
Line speed (product dependent)	max. 75 m/min (250 ft/min)
Take-up tension	4 - 30 kg (9 - 65 lb)
Cable lay	63 - 150 mm (2.5 - 6 in)
Cable diameter	max. 10 mm

## Cradle drive motor:

Power	By line-shaft from main motor.
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## Reel drive motor:

Power	2 HP
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