

Motor driven Unwinding Station LW 400

with integrated protection liner unwinding, for 3M tape on cross wound roles

General Information

Efforts to achieve ever greater working lengths for rolls of selfadhesive tape, continuously rising expectations in terms of product quality, as well as new materials and production processes make necessary exact monitoring of the tension forces for selfadhesive tapes.

The feeder unit LW 400 is the logical, modular combination of modern regulation drive electronics, innovative sensors and dependable mechanical design.

• Use

The dispenser unit LW 400 is used to drive cross wound **3M** pressure sensitive tape rolls with full tension control and to deliver the tape to the production line

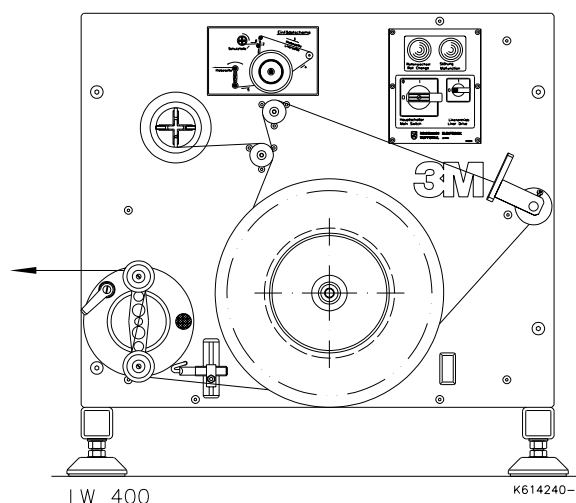
- gently
- at constant line tension (free of transients and without tension peaks)
- **unidirectionally** (version LW ... **U**) or
- **bidirectionally** (version LW ... **B**)

regardless of the line speed while at the same time

- peeling off and rolling up the liner.

The desired line tension can be adjusted for anywhere within a range of 50 to 170 cN, even **online** during operations are in progress.

A linear scale with direct indication is provided to read and set the running line tension.



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- **Basic functions in tension force control**

The roll of pressure sensitive tape is mounted on an expansion chuck and driven by an electric motor.

The tape is fed to the production line via an integral idler roller compensating arm.

The material is passed through this idler roller in an „S“ pattern.

The compensating arm is made up of a low mass lever rotating around its center; easy running reversing rollers are mounted at either of its ends.

Adjustable torque is applied to the arm at a defined level to generate the desired line tension.

Electronics continuously evaluate the angular position of the lever and use the output to regulate the reel drive (spindle mount).

The line tension is **always** regulated precisely to the setpoint value and **without** persistent regulation deviations, regardless of the

- line speed,
- diameter or weight of the pressure sensitive tape roll
- tape type and width.

- **Versions**

- As a stand alone, table top unit or
- prepared for direct integration into a machine and
- in an **unidirectional** or **bidirectional** version

- **Design and description**

- Solid, anodized aluminum front panel as the module carrier
- Closed, stable switchgear cabinet for the electronics and the drive equipment
- Low mass reversing rollers and dancer
- Line tension infinitely adjustable from 50 to 170 cN
- Integrated control panel (power switch, malfunction reporting, reel change alert)
- Trouble reporting which is resistant to open circuits, compensator arm at limit position, malfunction at the electronics (lamp and floating contacts)

- **Reversing rollers**

- Made of aluminum, with a cylindrical running surface
- Running surface provided with a non stick finish
- Very low mass
- With precision bearings for easy running

- **Tape reel mount**

- Manually actuated expansion chuck
- Convenient quick mount function
Chucking free of play, with tactile tension feedback
- Electric motor driven

- **Maintenance**

Longlife, high quality and essentially maintenance free design for all the components used here.

- **Line power connection**

Single phase, 230 V, 50 Hz (optional 115 V, 50/60 Hz)

- using an appliance type plug
- via a terminal switch in the junction box

- **Commissioning**

- „Plug and play“ technology
- Very easy to operate

- **Summary**

Using the LW 400 guarantees an enormous competitive advantage for the user and for the mechanical engineer;
the compact and attractively priced unit offers, for the first time, the basis for:

- Maximum utilization of the 3M pressure sensitive tape features
- Gentle product handling in a reliable process
- Specification of tape tension force in accordance with the formula for the adhesive
- Quick changeover from one type of tape to another with minimum downtimes
- Controlled, reliable processing of cross wound, high capacity rolls of 3M adhesive tape.

Technical specifications LW 400

Available Design	desk top unit or module compact
Construction	stable metal casing solid aluminum front panel as basic carrier non slip positioning feet with slope correction
Housing color	RAL 7032
Dimensions (w x h x d)	600 x 550 x 760 mm
Weight	approx. 45 kg
Mains connection	230 V AC / 45-60 Hz / 3 A single phase
Self adhesive tape types	3M - self adhesive tapes - single / double side adhesive - cold bonding / heat activated - with / without protection liner
Tape width	4 to 15 mm (special width possible)
Take off speed range	0 to 30 m/min nominal
Max. ramp on material takeoff	0,5 $\frac{m}{s^2}$ (acceleration and braking ramp)
Max. frequency of ramps	6 ramps per minute (at max. line speed 30m/min)
Versions:	
- LW 400 U : working direction	unidirectionally (only supply)
- LW 400 B : working direction (switchable)	unidirectionally (only supply) or bidirectionally (supply and rewinding)
Line tension, tape unreeling	adjustable in a range from 50 to 170 cN
Mount for the tape roll	core diameter 6 inches manually actuated expansion chuck, with tactile tension feedback
Tape roll outer diameter	up to 300 mm
max. length of tape	depending on tape thickness
Tape roll width	up to 400 mm
Protection liner unwinding	switchable on / off low mass takeup reel for protection liner, torque controlled
Tension force on liner peeling	approx. 250 cN
Removal of peeled protection liner	very easily, by axial pulling, offering the option for direct disposal of the liner, sorted by type
Protection	IP 50
Operational temperature range	+ 10°C to + 35°C

Design and description

- High quality components and longlife, low maintenance technology
- Modular concept with enclosed switchgear cabinet for the electronics and drive components
- Separator reel for the liner, with electronic torque control
Convenient removal of the protective liner from the reel by simply lifting the roll off the reel, offering the option for direct disposal of the liner, sorted by type
- Low mass dancer with easy running reversing rollers coated with a non stick finish
- Control panel integrated into the front panel
- Optoelectronic tape roll diameter sensing
- Roll change alert (lamp and floating contact)
- Malfunction alert for the idler arm (lamp and floating contact)
- Detailed operating instructions in German, English or French
- CE test and certification, including EMC* test

* Electromagnetic compatibility

This information describes the unit only in general and not in reference to specific applications. Please always consult with our applications engineers regarding your particular requirements.

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