Pesmel: worldwide leader in fully automatic coils packaging solutions

Pesmel's coils packing line is a great solution for efficient and flexible packing. This line is fully automatic and, thanks to its pre-scheduled packing codes (or manually processed), it can perform packaging of different type and size. This equipment can work in fact simultaneously on more production lines or cutters.

Coils packing line reduces costs

This line performs totally automatic operations, it is only when feeding the consumable that we have to operate manually. When operating in full capacity, the loading frequency of consumable does not exceed one time for equipment/shift; in this case only one operator for shift is needed for the whole line.

The equipment produces and maximises the packaging according to coils dimensions, therefore there is not need to purchase extra packing products but you can simply store them according to their shape avoiding engaged storing areas.

Coils packing line guarantees an excellent protection and control of the product, using modern yet economic technology.
Working process

1 loading station

Before packaging, each coil is checked and examined through measuring devices: outer diameter, width and inner core condition must respond to expected tolerances. Once the coil is weighted all data will be compared with the information received by the Company Computer System.

Other coils measurements allow you to manage different dimensions for automatic handling and packing operations.

2 wrapping station

Coils packing line starts with a stretch film wrapping station to guarantee a proper protection against moisture, dust and dirt. This station is provided with the following equipments: through-the-eye wrapping machine, rotating rolls.
features of the wrapping machine

Protection against moisture and dirt is the first and most important step of the packing process and it is made in complete safety. This particular wrapping makes sure that the coils is well protected and ready to be used even from the very beginning.

pesmel’s exclusive features

This wrapping machine is unique on the market since it can automatically change the stretch film once it is finished. Doing that, the equipment never stops working.

While the stretch film is changed automatically, the operator can do other skills since the equipment is perfectly capable of working through one shift without operators.

3 mechanic protection of coils body (“body wrap”)

After the stretch film wrapping station, the coil is shifted to the second working station for mechanic protection. This station is equipped with the following: “body wrap” machine, rotating rolls and protection film storing area. In this section the equipment performs cutting operations according to the size of the product. These measurements are given by previously remarked information. The protection film is hot-glued on the back side of the coil.

Protection can be made of plastic or metallic material.
main features of mechanic protection equipment

This equipment maximises the product used for coil protection using big coils rather than pre-cut plastic material. This system eases packing operations and reduces costs.

4 “robo packing” station

After wrapping operations on the surface, the coil is shifted to another working station “Robo packing” for the next mechanic protection. The station is equipped of the following devices: ABB robot with linear movement, material storage, edge protectors-maker for inner and outer edges protection, rotating rolls.

The packing operation is made through the application of edge protectors supplied by a robot. Both outer and inner edge protectors are made according to previously taken measurements.
main features of the “robo packing” station

This station maximises edge protectors consumption reducing costs of the raw material.

Steel edge protectors are made according to dimensions given by the computerised system. Protections around the edges are normally used to preserve coils better. This operation can be integrated to Pesmel’s Robo Pack station in order to be completely automated. In order to get started, this equipment has to receive details about the coil’s hole, these information can be given either manually or automatically by operators. These equipments have been designed to be working 24 hours a day non-stop.

The Robo Packing station only needs one operator to be run.
5 axial wrapping station

After Robo Pack packing, the coil is sent to the axial wrapping station. This equipment consists of the following devices: axial strapping machine and coil support. Number and place of strapping are automatically made according to previous data input. The axial wrapping station is completely automated.

6 radial wrapping station

After the axial wrapping the coils shifts to the radial wrapping station made of the following devices: radial strapping machine and rotating rolls. Number and place of strapping are automatically made according to previous data input.

7 automatic labelling

The wrapped coil is labelled from ABB robots between strapping and unloading stations. The standard procedure consists in labelling the outer surface. As an option, we can stick a label on the inside of the hole or print the coil with inkjet.

After labelling operations the automated packing cycle is finished.
8 unloading station

The labelled and wrapped coil can be taken and shifted to the unloading support through cranes, lifters or others. Now the coil is ready to be picked up.

logistic and storage

From now on the coil can be handled by the logistic and storage system (vertical storage)

application areas

Cold rolled coils packing: zinc coated, painted, in stainless steel, aluminium, copper and others.

line main features

Transmission: frequency transmission, servo-transmissions in wrapping; interface: pes interface, connected to computer system; tracking: pestrack; measurement: automatic inspection with pesprofile; weighting: perweighting; wrapping: automatic according to dimension and code; film changing: 12 completely automatic coils in stock; body wrap: automatic according to dimension and code; max capacity: up to 30 coils/hour
**electric equipment and automation**

Management: pesmonitoring, wincc system, pesoperator; **inspection system**: simatic s7 as per standards, transport with et200s; **positioning**: laser measurement (absolute value); **communication**: sensor in charts, different wiring; **operator inspection**: control panels (hmi) engine **voltage**: tba, **main fuse**: 160a; **consumption**: 40 kw/hour.

**hydraulic system**

**Pressure**: max 160 bars

**Pneumatic system**

**Pressure**: min pressure 5 bar; **air consumption**: 1200nl/min

**packing material**

**Through-the-eye wrapping**: stretch film, vci film, raffia; **body wrapping**: plastic tube, solid plastic, cardboard, steel; “robo packing” **packing station**: plastic tube for hole protection, solid plastic, cardboard, steel; **edge protection**: steel; **axial wrapping**: plastic, steel; **radial wrapping**: (through-the-eye) plastic and steel;

**optional**

Identification system pesid (bcr or rfid) / recorded quality control / peswireless hmi (remote pda for management) / edge protection feeder integrated into the through-the-eye wrapping station / integrated radial wrapping, for extra protection covering / mixed wrapping in the through-the-eye wrapping station / spooling in the through-the-eye wrapping station / palletising / upper lid feeding

Other options and specific devices are available

**Required area**: 40mt length x 20mt width