TYING OPTIMIZATION

Tying area control system

BENEFITS

Minimum human intervention for adjusting the tying pattern

Automatic tying pattern set-up, avoiding stops in production when a machine goes out of order

Real-time setup of tying area, preventing human errors

ROI: immediate, thanks to the small investment needed to install the SW package into existing Danieli automation system

1 Bundle tying area generic layout.
2 Automation system.
3 Tying machine.
4 Tying machines in operation.
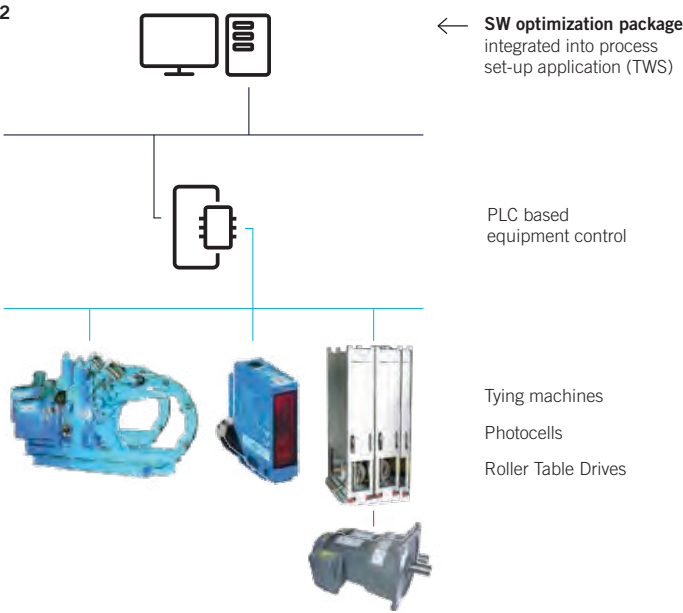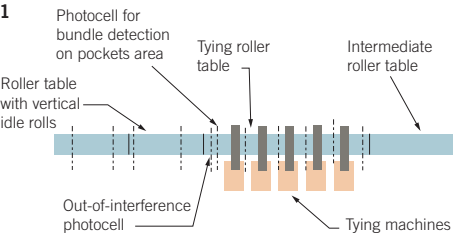5 Control pulpit operator HMIs.

3

4

5

PROCESS

The tying area is normally equipped with a set of movable machines that tie the bundle in different positions with loose, tight and/or double bindings. An automatic sequence moves the bundle across tying area and triggers the tying machines to achieve the proper bundle tying.

Tying optimization system is incorporated into tying lines with more than one tying machine, and in conjunction with Danieli Automation control equipment.

EQUIPMENT

The package consists of a SW tool installed/integrated with the Danieli Automation plant set-up technological workstation.

Tying area configuration: first, the physical parameters of the tying area, like tying machines distance, constraints, type of bindings, have to be defined.

The system suggests the best binding configuration according to the position of the machines and also suggests if a binding can be made in first phase, or in which phase it has to be made. A phase is the period during which the bundle stops as the machines perform the tying.

1

Photocell for bundle detection on pockets area
Tying roller table
Intermediate roller table
Roller table with vertical idle rolls
Out-of-interference photocell
Tying machines

2

SW optimization package integrated into process set-up application (TWS)

PLC based equipment control

Tying machines
Photocells
Roller Table Drives

PERFORMANCE ACHIEVEMENTS

> Simplified and optimal set-up of the tying area.
> Automatically re-schedule the tying sequence when a machine is out of order.
> Easier management of automatic tagging.

Long Products