

Product	Antisway (Trim – skew)
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**ANTISWAY DEVICE FOR CONTAINER
YARD CRANE**

ANTISWAY SYSTEMS

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ANTISWAY (TRIM – SKEW)

SYSTEM PERFORMANCES

TRIM, SKEW

It is made by nr.2 double piston rods hydraulic cylinder.

ANTI SWAY

It is achieved by nr. 4 winches with crossed ropes that give the pull force required in order to damp the spreader oscillations. The force is high when ropes are pulled, while it is small when ropes are released. In this way it occurs a force with an horizontal component which opposes the oscillation force. There is a prompt damping.

To avoid that with spreader without container or spreader with unloaded container, the antisway action is too high, generating movements of secondary oscillation (spreader movement around its axis), damping force is electronically regulated according to the load that weights on the spreader. Max force with max load, min. force with min. load, all that with continuity.



Crane main data:

Lifting height	15.27 m
Max container weight	40 ton
Weight of headblock + spreader	11.5 ton
Whole weight on the ropes	51.5 ton
Lifting speed	50 m/min
Lifting acceleration	0.27 m/s ²
Translation speed of trolley	70 m/min
Trolley acceleration/deceleration	0.3 m/s ²
Translation speed of gantry	130 m/min
Gantry acceleration	0.21 m/s ²
Crane weight(with trolley)without load	138 ton
Weight of trolley	25 ton
Lifting ropes	D=28mm; type WS216 with metallic centre
Resistance pull of ropes	adjust. in continuity from 250 to 1500 daN
Pull ropes motor	200 daN
Contemporaneity	a desultory contemporaneity between antisway phase and trim-skew phase is possible



ANTISWAY (TRIM – SKEW)

SUPPLY

The system is usually complete with:

N.1 Hydraulic unit composed of:

Tank made with suitable thickness welded carbon steel plate.

Capacity approx. 600 dm³, internal surface painted with suitable paint, complete with inspection door, filling up plug with breather filter, unload ball valve with closing plug, level and temperature oil monitor glass. With 2 heaters 1 kW each.

Controls:

- Thermostat max oil temperature
- Thermostat to connect / disconnect oil heater
- Thermostat to connect / disconnect the heat exchanger
- Thermostat min. oil temperature for working consent
- Oil level switch
- Electric indicator of filter obstructed

Three - phase, asynchronous electric motor according to UNEL - MEC. Power 15 kW - 400 V 50Hz, 4 poles protection IP55, marine environment, aluminium framework. With heater. Form V1.

The hydraulic unit is supplied with protection made with plate and complete with hinged inspection doors.

All the electrical users, unless the electric motors, can be connected in a connection box installed on the hydraulic unit. In the same connection box the electronic schedule antisway force control can be put in.

N.2 Double effect and double rod hydraulic cylinders for trim-skew:

$D=125$ $d=70$ stroke = $2 \times 420 = 840$ mm

Max pull force: 9173 daN (at 110 bar)

Max difference pull force: 5347 daN (at 70 bar)

Max stroke: 2×420 mm = 840 mm

Pressure test: 250 bar

Rod manufactured with carbon steel covered with NIKROM.

With over centre valve already connected to the cylinder.



N.4 Winches, each one composed of:

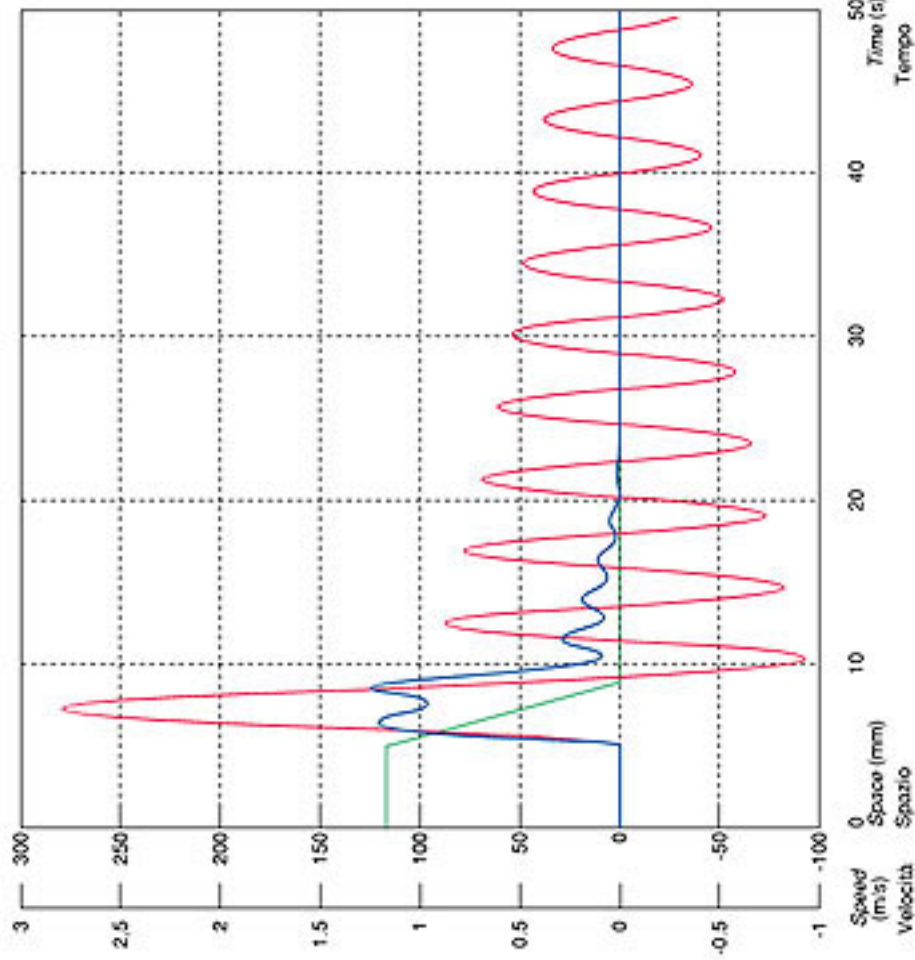
Frame in strong steel work with grooved drum, suitable for hanging arrangement.
Rope nominal power = 1500 daN.
With system to avoid the running on a pulley of the roped.

Suitable for rope $D = 14$ mm.

Axial piston motor Rexroth A2FM.

Epicycloidal reducer at 2 stages.

PENDOLAZIONI DOPO FRENATA DEL CARRELLO - PENDULAR MOVEMENT AFTER TROLLEY BRAKING



DATI CARATTERISTICI

Velocità iniziale: 1.17 m/s
 Decelerazione: 0.3 m/s²
 Altezza pendolazione: 12m

LEGENDA

- █ Velocità
- █ Pendolazione senza Antisway
- █ Pendolazione con Antisway

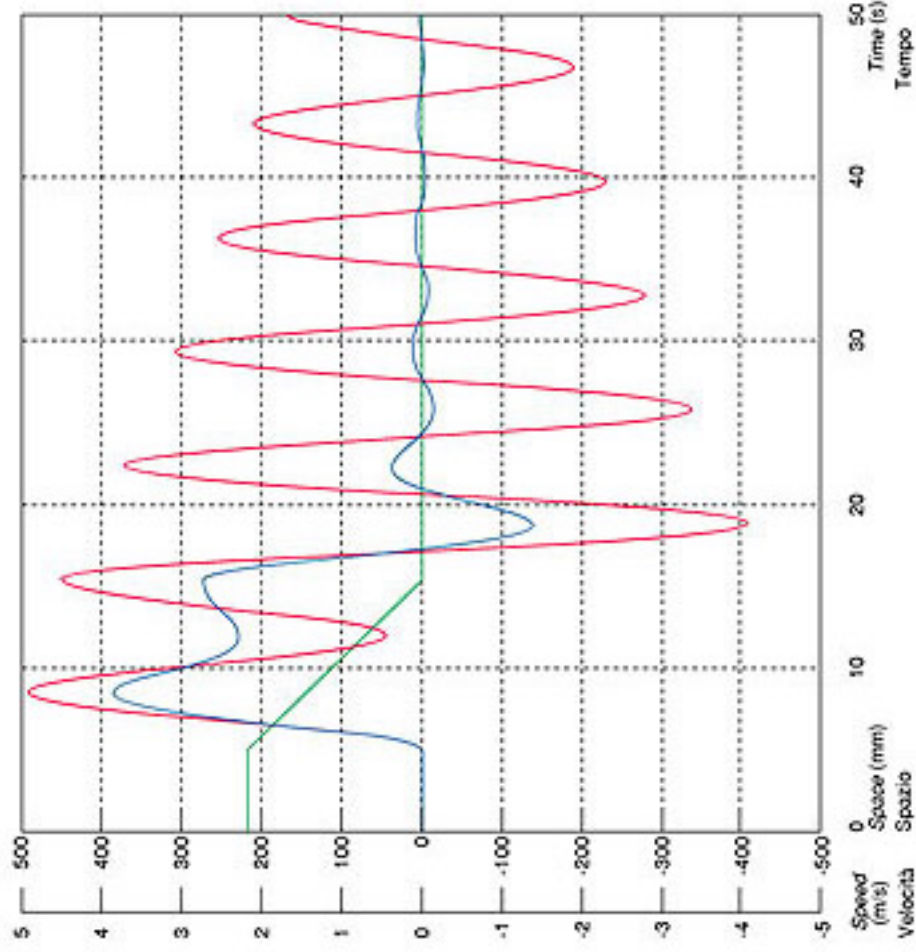
DATA

Starting speed: 1.17 m/s
 Deceleration: 0.3 m/s²
 Pendular mov. amplitude: 12m

LEGEND

- █ Speed
- █ Pendular movement without Antisway
- █ Pendular movement with Antisway

PENDOLAZIONI DOPO FRENATA DEL CAVALETTO - PENDULAR MOVEMENT AFTER GANTRY BRAKING



DATI CARATTERISTICI

Velocità iniziale: 2.17 m/s

Decelerazione: 0.21 m/s²

Altezza pendolazione: 12m

LEGENDA

- █ Velocità
- █ Pendolazione senza Antisway
- █ Pendolazione con Antisway

DATA

Starting speed: 2.17 m/s

Deceleration: 0.21 m/s²

Pendular mov. amplitude: 12m

LEGEND

- █ Speed
- █ Pendular movement without Antisway
- █ Pendular movement with Antisway