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PNEUMATIC MASTS WITH LOCKING SYSTEMS

Whenever important payloads need to be elevated for extended periods, our pneumatic masts with locking systems are the perfect solution. Designed specifically for all kinds of industrial applications that require high lifting capacities to be combined with long-lasting deployment, Fireco's locking masts stand out for their high reliability and are easy to operate at the same time.

The pneumatic masts with locking systems can be kept extended for long periods without internal air pressure. The SUPER STEADY-FULL AUTOMATIC, SUPER STEADY SEMI-AUTOMATIC, SUPER STEADY and STEADY masts meet the most demanding requirements of mobile communications, intelligence, surveillance and security systems for military applications.





SUPER STEADY FULL AUTOMATIC

Super Steady in Full Automatic version is an innovative and patented telescopic mast with a locking system able to operate automatically and thus relieving the operator from the duty to manually unlock/lock each section. The operator can work at a safe distance and decide the height of the mast. The mechanical concept of the Full Automatic Super Steady has been paired to an electro-pneumatic driving system with integrated safety features, allowing operations via an electronic control box. Depending on needs or on situations, the mast can work in two modes:

Automatic: for complete extension and retraction

Manual: for a partial extension and retraction and as emergency backup mode.

The sections can be left in fully extended position without pressurised air inside the mast and the mast can support heavy payloads for long periods.

Backup: in the situation of a sudden power supply failure, the mast can be operated via an emergency backup mode, allowing trained personnel to retract the mast safely.



KEY FEATURES

- It removes the need to follow some of the most critical safety procedures for operating the mast, allowing faster operations in deployment and retraction
- It reduces training costs and improves the installation safety
- Maintenance can be performed by skilled personnel with minor and fast efforts as main components are easily accessible
- It can support heavy pay/loads up to 500kg



CONTROL BOX

The Full Automatic mast works with a control box that drives a set of electro-pneumatic valves installed in a box nearby the mast. The control box has an intuitive and simple interface, equipped with few clear commands.



ELECTRO-PNEUMATIC BOX

The electro-pneumatic box contains the core elements to drive the air in and out of the mast both during the regular operations and during the manual mode. It houses the delivery valves, all solenoids and the connections to feed both the current and the air to cylinders of the locking keys on the outer tube.

LOCKING SYSTEM

The automatic locking technology is based on a subsystem fully enclosed inside each ring, giving an external surface that is free from possible undesired catch points.

ACTUATORS

The two pneumatic actuators on the mast open the locking keys on the outer section. They communicate directly with the control box and are both necessary for safety and to allow the correct operation of the Full Automatic system.



PNEUMATIC FEED SPLITTER

MICRO SWITCH



SAFETY COLLAR



The bottom ring is equipped with pneumatic actuators which are directly driven by the control system. When the mast is extended, they automatically lock the section; when the mast has to be retracted, the section can't be unlocked if the air supply is missing or if the inner pressure has not reached the safety value. As soon as both conditions are met, the retraction sequence in both automatic and manual modes can be safely started.



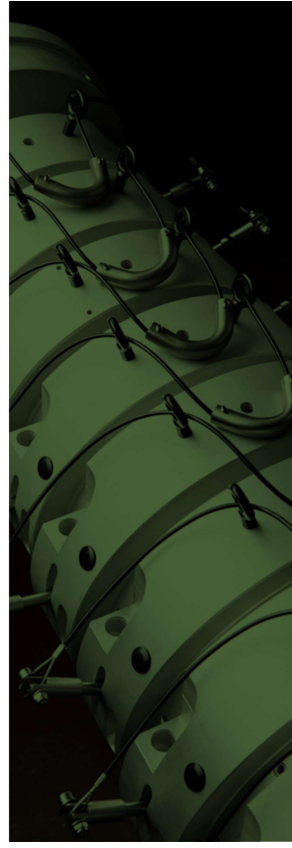
SUPER STEADY SEMI-AUTOMATIC

It is possible to provide the SUPER STEADY masts with a semi-automatic locking system, that allows to unlock both latches of each section by pulling a cord that moves both locking/unlocking levers.

It is not necessary for the operator to manually move the levers back into the locking position, as their movement is automatic; thus the operator can unlock the next stage more quickly.

KEY FEATURES

- Operating at a safe distance
- One single operator
- Automatic locking of each section by reaching the correct position
- Can be operated from the ground, without access platform





SUPER STEADY

The SUPER STEADY series is equipped with mechanical locking devices. Each section is provided with two lever handles which will insert two bullet latches into the corresponding slots on the mast tube.

- Super Steady masts available with base diameters from 115mm up to 340mm
- Solutions with external cables with different types of cable guides or with internal cabling on request
- Permits to mount Dyneema ropes, which grant a better wind speed resistance
- Sturdier lockings
- The Ø340mm mast permits to carry particularly huge top loads



PRESSURE GAUGE

On the collar of the main tube there is a pressure gauge that allows to control the internal air pressure on the mast. In order to permit to the user, before retracting the mast, to check and restore the correct internal pressure.



OPTIONAL PNEUMATIC LEVER LOCKING KIT

Its functioning principle is to impede the accidental opening of the locking levers when the air pressure on the mast is not sufficient. In this way one can avoid the risk of a sudden vertical descent of the mast sections. It is basically composed by two pneumatic cylinders installed in correspondence with the lowest locking ring (coupled with the last mobile tube). When there is no internal air pressure on the mast the cylinders are in an extended position thus impeding the opening of the locking levers of the last mobile tube.

KEY FEATURES FOR SUPER STEADY AND STEADY MASTS

- *Extended heights available up to 40m*
- *Great variety of "off-the-shelf" solutions as well as customised solutions*
- *Wide range of available mounting and guying accessories*
- *Optional special sand scraper rings for dusty and/or harsh environments*
- *Very low maintenance requirements*
- *Customised protection bellows*
- *Customised hole pattern for payload top plate*

STEADY

The STEADY series is equipped with metal bands which embrace each mast section. These bands can be tightened so to keep the sections locked by friction.

- Steady masts available with base diameters from 77mm up to 250mm
- Solutions with internal cable or with different types of external cable guides
- Can be locked at every intermediate height

