

BundleIN XT60

Automatic hydraulic tube bundle inserter
for heat exchangers

Automation

Tube bundle insertion



A winning story since 1961

The Beginning

At the end of the 1950s, Domenico Franco Agostino became the Italian representative of Albert Otto, a German manufacturer of tube expanders. In 1961 Franco Agostino's Albert Otto Italiana was founded and in 1972, after purchasing an area of 10,000 square metres in the municipality of Bagnolo Cremasco, Maus Italia Sas was established.

The Growth

In 1976 his son Stefano, a mechanical engineer, joined the company. Together with his father, he studied products, introduced new machinery onto the market and filed the first patents by Maus Italia. Above all, Stefano was firmly convinced that people are the very heart of a company's success. Therefore, he invested in human capital by valuing people and roles, and he surrounded himself with skilled operators as well as technical, commercial and administrative collaborators. The result was a winning, competent and proactive team.

His daughter Anna - also a mechanical engineer - has been working in the company since 2016, giving new impetus and energy to the business her father and grandfather had built.

Father and daughter work together side by side every day to guarantee the excellence of Maus Italia and support all customers worldwide with competence and passion: the company's distinctive traits.



Stefano Agostino

CEO - Mechanical Engineer

Anna Agostino

COO - Mechanical and Management Engineer



In-house production of each component ***Workshop 4.0 and 24/7 production control***

The production of Maus Italia branded items is entirely carried out in Bagnolo Cremasco, in the heart of an Italian industrial area 30 km southeast of Milan.

The company boasts a 4.0 workshop equipped with state-of-the-art machinery, an in-house heat treatment room and a final inspection department that allow Maus Italia to independently manage every phase of the manufacturing process of its wide range of products whilst maintaining high quality standards.



Quality first. ***Design and development***

One of Maus Italia's strengths is its willingness to understand its customers' needs.

Our technical department is always ready to find operational solutions to the most complex applications, even via feasibility studies. We develop accurate work processes, draw with FEM analyses to verify our mechanical-structural performance and optimise the manufacturing process of each component.

Ready To Deliver

A well-stocked and complete warehouse of finished products enables Maus Italia ship quickly to customers all over the world according to a ready-to-deliver logic.

The warehouse is fully located within our premises in Bagnolo Cremasco at controlled temperatures and conditions to guarantee the maximum safety and quality of Maus Italia products for all our customers.

Quality, environment and safety policy

Research, quality and safety are the watchwords of Maus Italia Spa.

Maus Italia has several projects underway aimed at increasingly sustainable development and integrates environmental concerns into its business model. The company's actions, behaviour and development choices are focused not only on the short run but rather mainly on a medium and long-term horizon.



Every day in over ***80 country*** ***worldwide***

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in your country



BundleIN XT60

Automatic hydraulic tube bundle inserter for heat exchangers with patented **COS** system to compensate for crane oscillations on the Y axis

For heat exchanger manufacturers, the insertion of long and heavy floating tube bundles inside the shell is one of the most problematic steps in the assembly production cycle. With the BundleIN XT60, Maus Italia offers an which, when used in combination with a bridge crane, solves this problem quickly, correctly and safely.

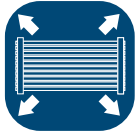
The unique operation of the BundleIN XT60, based on the pulling of two steel ropes by two synchronised hydraulic jacks, allows the tube bundles to be inserted without length and weight limitations. Once the ropes have been attached to the shell, the BundleIN XT60 inserts the tube bundle at a speed of 2m/min (6.5 Ft/min).

The considerable adjustable coaxial strength of up to 60 T (132200 Lb) push the tube bundle inside the shell without shocks or dangerous impediments.

Pushing force up to 60 T (132200 Lb)



Features of the BundleIN XT60



Can be used on bundle of any size

Innovative insertion operation that makes the dimensions of the tube bundle non-binding (length, diameter, tubesheet thickness and weight).



High safety

Control system that limits the pulling force based on the diameter of the ropes used.



Advanced "display" functionality

The SIEMENS® LOGO! TDE control panel guarantees user-friendly access to all work parameters.



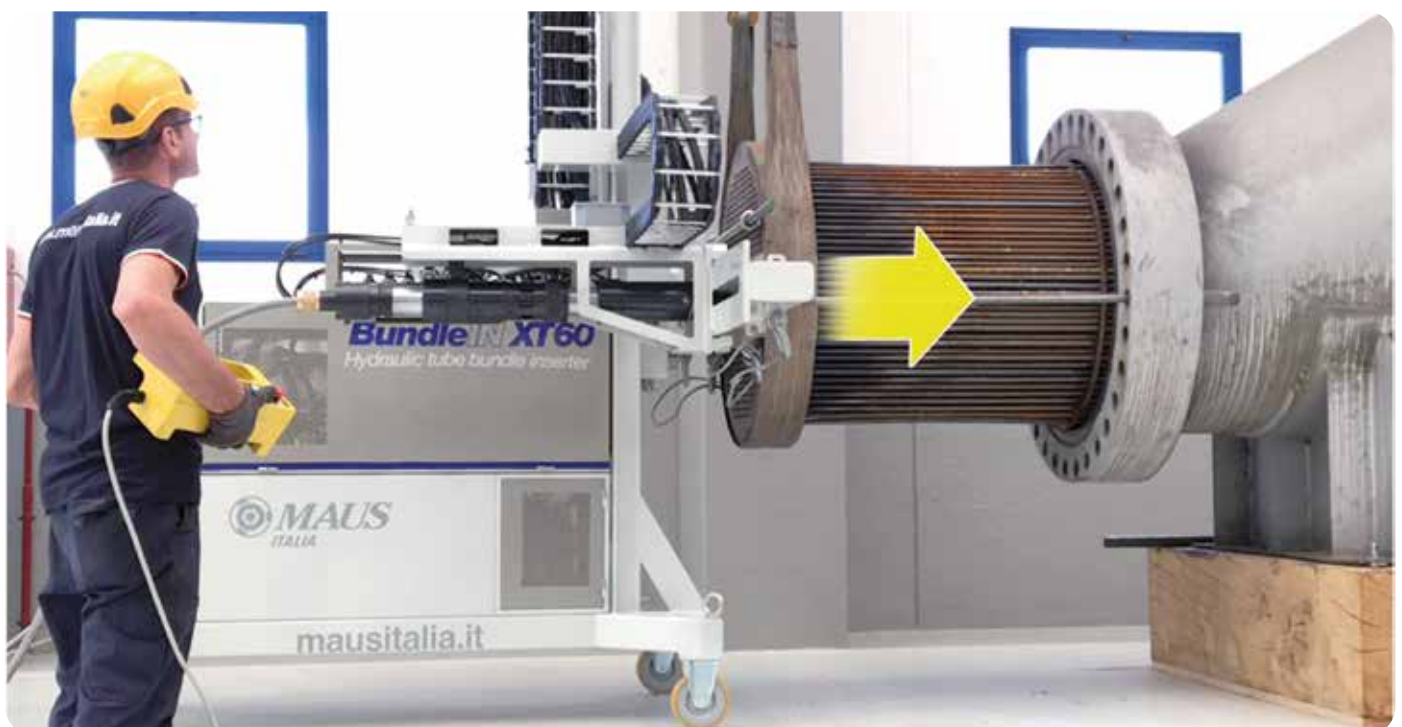
High strenght

Great pulling force up to 60T (132200 Lb) (adjustable) able to push the tube bundle inside the shell without shocks or dangerous impediments.



High speed

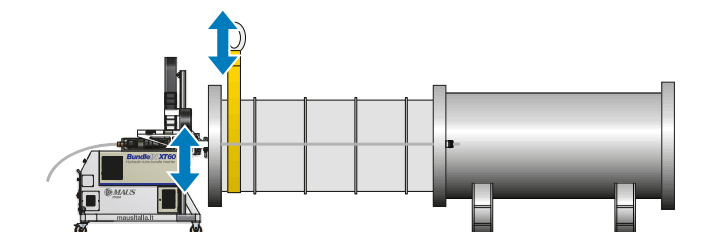
Complete management of tube bundle insertion parameters to allow a constant no-load speed of up to 2 m/min (6.5 Ft/Lb).



COS

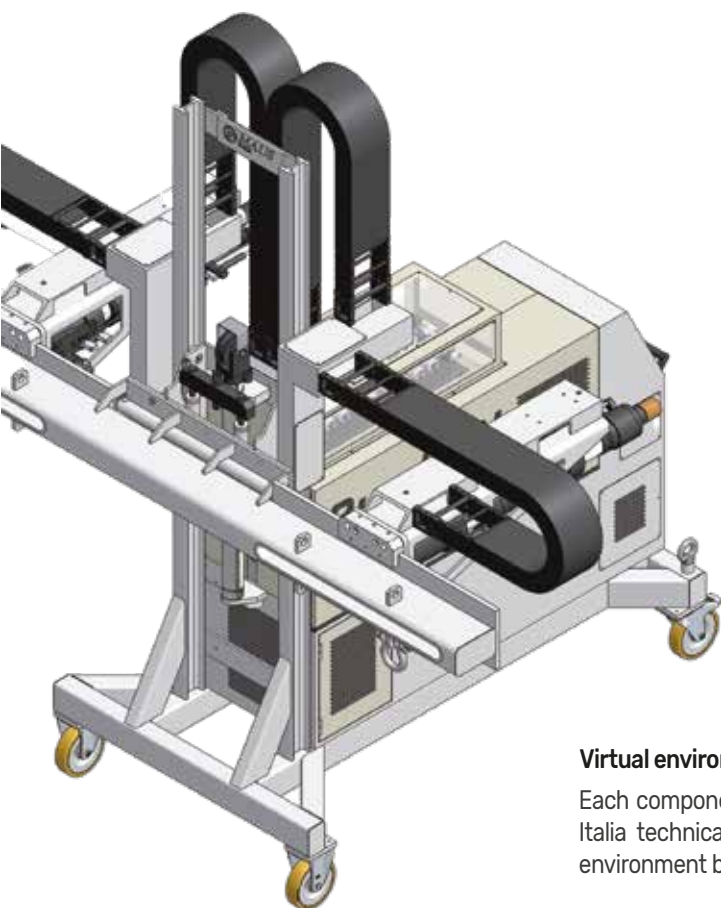
The patented COS system to compensate the oscillations from the crane on the Y axis

The patented COS system enables the Bundle XT60 to carry out a rapid, safe and quality insertion, compensating for inevitable oscillations due to the movement of the crane during the insertion manoeuvre. With the patented COS system, the loads generated by the oscillations of the tube bundle generated during the crane movement, are absorbed by the Bundle XT60, safeguarding the integrity of the wheels and enabling easy sliding over the floor.



The positioner

System with two servo-assisted hydraulic axes, Fitted with the COS system to compensate the oscillations from the bridge crane.



Virtual environment

Each component is wholly designed by Maus Italia technical staff and tested in a virtual environment before manufacture.

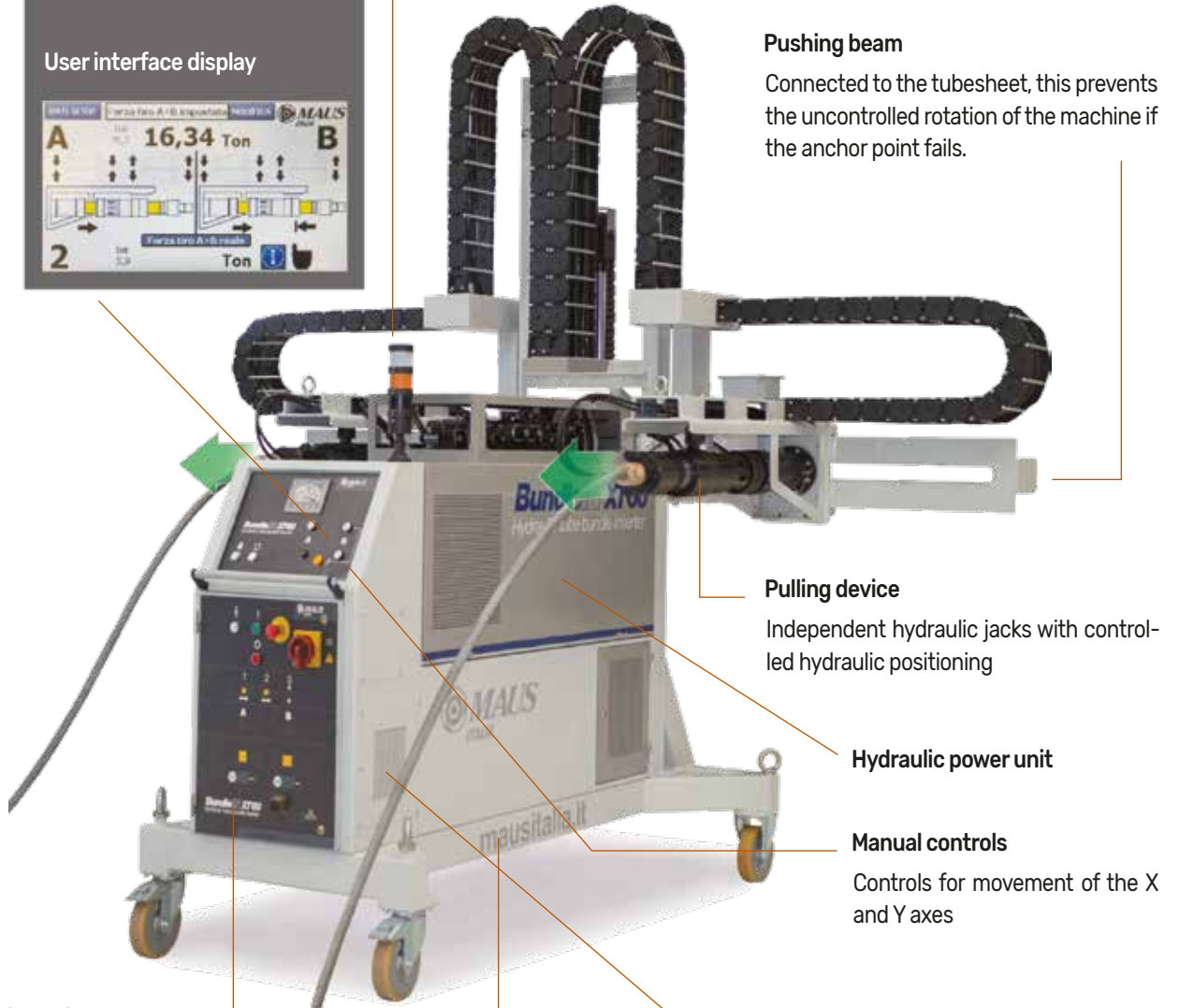
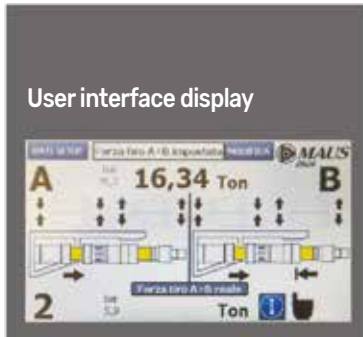
Remote control

Allows the operator to carry out the principal manoeuvres in either manual or automatic mode, remaining close to the operating area whilst in total safety.



Machine status signalling

Complete range of signals and alarms to inform the operator about the status of the machine



Pushing beam

Connected to the tubesheet, this prevents the uncontrolled rotation of the machine if the anchor point fails.

Pulling device

Independent hydraulic jacks with controlled hydraulic positioning

Hydraulic power unit

Manual controls

Controls for movement of the X and Y axes

Electric control panel

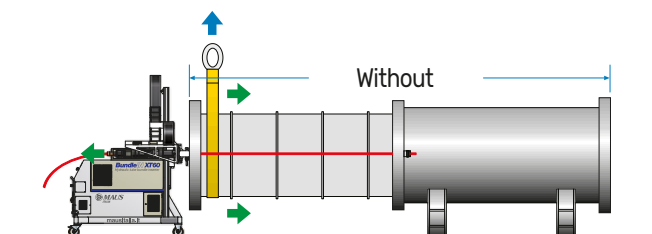
Selectors and indicator lights/alarms unit for monitoring of insertion process

Frame

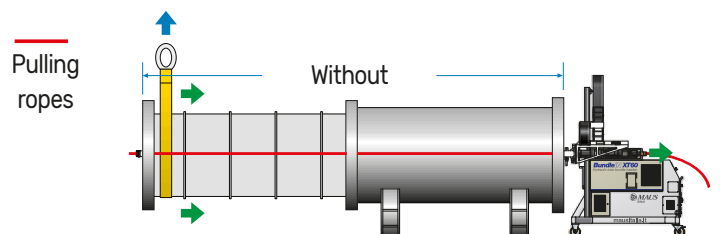
Electrowelded steel structure with high rigidity and vibration absorption characteristics

Electrical cabinet

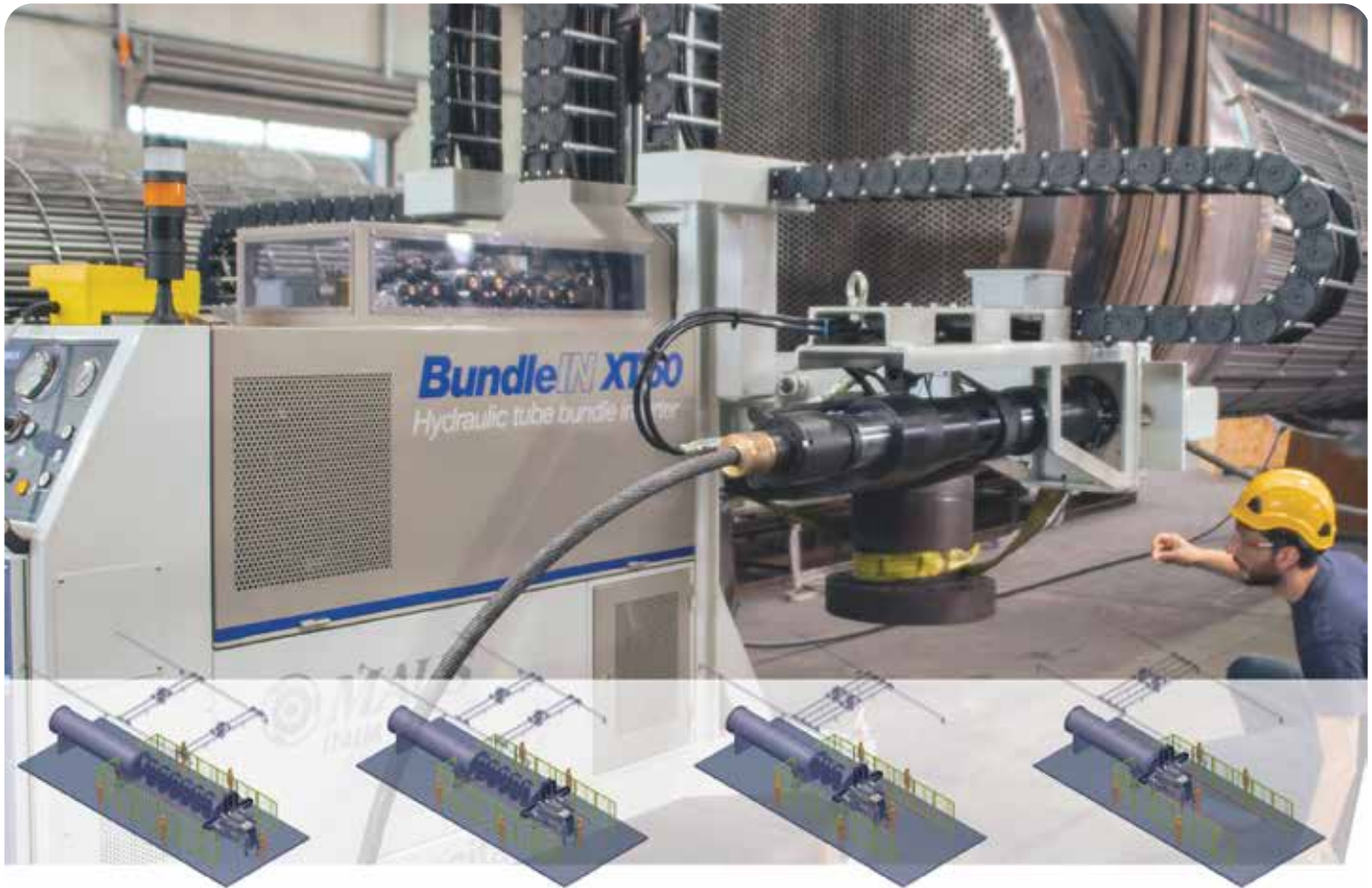
Installed on the machine and with integrated ventilation system



Example of insertion where the machine follows the tube bundle



Example of insertion with support to the shell



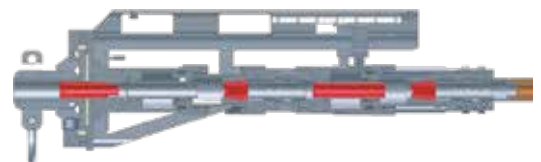
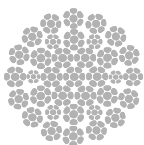
The delimitation of the working zone shown in the diagram is purely for illustrative purposes. It's at customer charge define and limit the working area according to internal company safety requirements.



High safety - Pulling force configuration

The BundleIN XT60 can be configured to develop a maximum pulling force of up to 30 T or 60 T. Configuration is based on a kit comprising a pair of jaws and guide tubes installed inside the pulling assembly and, a pair of ropes of the appropriate length supplied by Maus Italia. The BundleIN XT60, via a control system, limits the pulling force according to the diameter of the ropes used, always permitting the maximum possible strength to be reached in accordance with safety regulations.

For correct use of the machine, use only ropes supplied by Maus Italia



Traction ropes

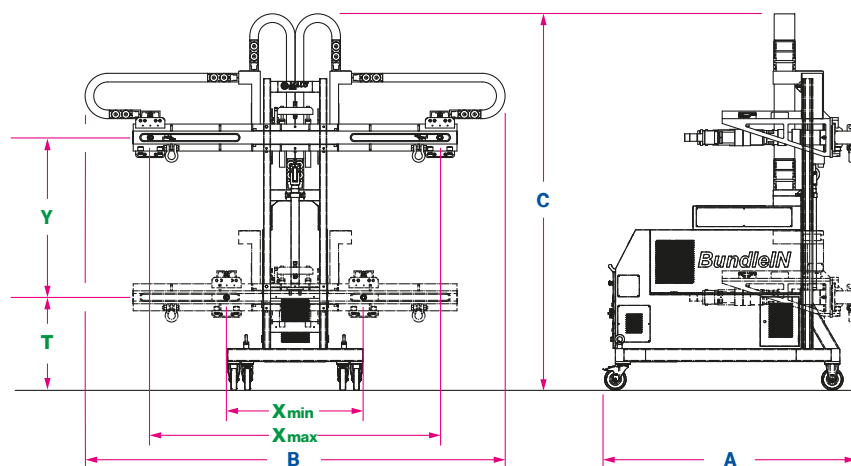
Maus Italia supplies the special ropes specifically designed to work with

Configurations

		30T	60T
Cable diameter	mm (inches)	28 (1.102)	38 (1.496)
Pressure (max)	bar (psi)	140 (2030)	280 (4060)
Pushing force (max)	T (lb)	30 (66100)	60 (132200)
* Standard supplied ropes lenght	m (ft)	15 (49.21)	15 (49.21)
Weight of rope per metre	kg (lb)	3,87 (6.62)	7,13 (15.44)

* Customised ropes are available as needed.

Technical features



Capacity

Pushing force (up to)	<i>T</i> (lb)	60 (132200)
No-load speed (max)	<i>m/min</i> (ft/min)	2,0 (6.5)
Pressure (max)	<i>bar / psi</i>	280 (4060)
Pump capacity	<i>l/min</i> (US <i>gpm</i>)	60 (15.8)
Tank capacity	<i>l</i> (GalUS)	200 (52.8)
Hydraulic oil		Esso Nuto H 68
Stroke (closing/opening of jacks)	<i>X</i> mm (inches)	1270÷2684 (50÷105.6)
Stroke	<i>Y</i> mm (inches)	1480 (58)
Stroke	<i>Z</i>	without limits *
Minimum height	<i>T</i> mm (inches)	860 (34)

Variable flow pump

* Depends upon the length of the ropes


Power supply

Voltage	<i>V - ph</i>	380 - 3
Frequency	<i>Hz</i>	50
Installed power	<i>kW</i>	7,5
Absorbtion	<i>A</i>	20

Dimensions

Length	<i>A</i> mm (ft)	2347 (7.70)
Width (min÷max)	<i>B</i> mm (ft)	3000÷3892 (9.85÷12.77)
Height (max)	<i>C</i> mm (ft)	3486 (11.44)
Height for transportation (min)	mm (ft)	2885 (9.47)
Weight (no load)	<i>kg</i> (lb)	1800 (3870)
Protection level	<i>IP</i>	55
Principal colours	<i>RAL</i>	7030-7035-7031-9005

Shipping (crate)

Size	 <i>L x l x H</i> cm (ft)	329x252x327 (10.79x8.27x10.73)
Weight of crate	<i>kg</i> (lb)	750 (1630)

Heat exchanger's world

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