

Scope of Supply

Item / ZE	Pcs	Description
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1	1	Dry side
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SFT MX600T Mould Carrier Installed in the Composites Demonstration Facility, Munich, Germany

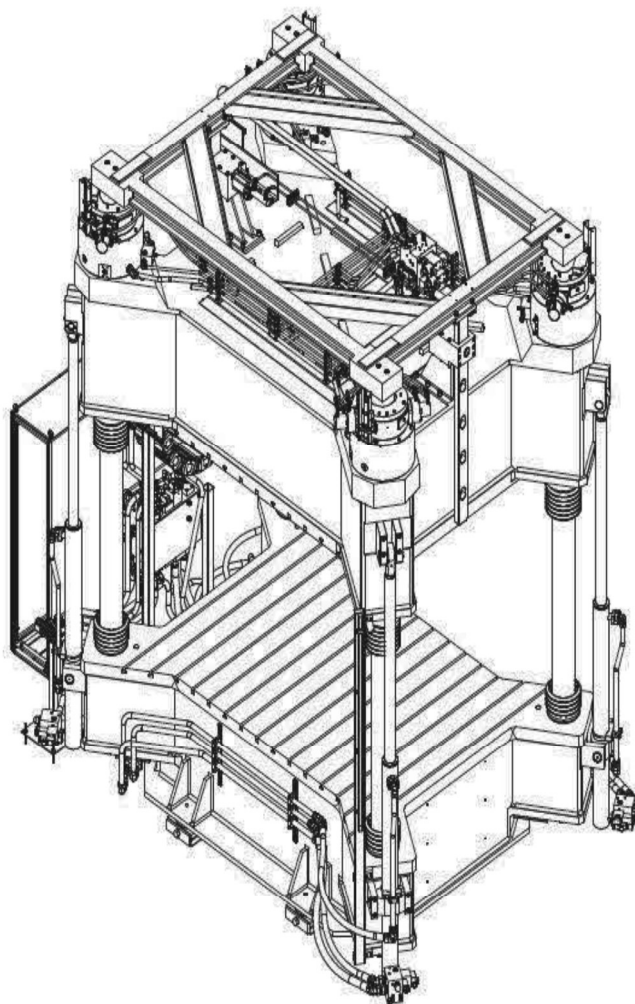
1.1 1 Mould Carrier Type: SFT MX 600T**64.300-001 1 MX mould carrier
mould carrier SFT MX**

The mould carrier is a 4 column design.

The base frame and the mould platen are from welded profiles as a rigid construction.

The columns are equipped with ring grooves to fit the movable platen just above the tool. The movable platen will be form locking to the ring grooves.

The pressure cushions are located over the tool area to distribute the clamping force best possible to the tool. The parallel stroke will be driven by hydraulic cylinders, located on each column; the tear open force will be established by the 4 cylinders.



Depiction is without obligation and for illustration purposes only

The mould carrier will be supplied with a fully encapsulated hydraulic unit for best possible noise reduction. The hydraulic unit will be installed close to the carrier on the back side.

64.300-001
(s)**Technical Data:**Tool dimensions weight:

length max.	3000	mm
width max.	2000	mm
height min.	500	mm
weight upper tool max.	10000	kg
weight total tool	20000	kg
max. tool temperature	120	°C
tool isolation on the carrier	none	

Dimensions of carrier:

tool platen length	3000	mm
tool platen width	2000	mm
lower platen above the floor	1100	mm
Min. daylight for tool	500	mm
parallel stroke (in upper platen)	1500	mm
total height of carrier	5100	mm
weight of carrier (without tool)	57800	kg
max. static floor pressure	20	kg/cm ²

Force of carrier:

max. clamping force	6000	kN
max. tear open force	800	kN

Speed:

max. closing speed	400	mm/sec
max. clamping force speed	10	mm/sec
max opening speed	300	mm/sec
min. punching (with opening cylinders)	0,5	mm/sec

64.300-005 1

RTM Compression Mould

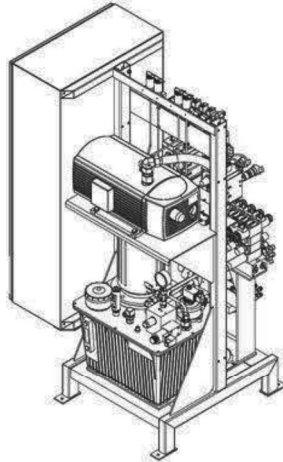
In order for the mould carrier to carry out RTM compression moulding the additional optional package is required.

All 4 drive cylinders are controlled separately to obtain a parallelism of $\pm 0,2$ mm. With this technology the closing speed of the mould carrier can be reduced to a defined speed down to 1,0 mm/sec after material injection of the resin system.

The maximum closing force obtainable from the drive cylinders during this closing operation is approximately 500 kN.

1.1.1.2.1 1 Tool Functions**64.320-010 1 Hydraulic for core functions**

Power unit with all necessary fittings to operate tool functions.
For ease of maintenance all equipment is installed close to the mould carrier.



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All tool functions will be displayed on the operator panel of the carrier in the tool menu.

Non safety relevant functions can also be activated with a foot switch

4 pcs pneumatic valve (3/1) 5/2 valve, bipolar, G1/4"

4 pcs vacuum valve (2/2) 3/2 valve, G3/4", vacuum switch PN 7009

6 pcs hydraulic valve (3/1) 4/3 valve, G3/8", reducer, non return valve

All hoses between bulk head and tool and fast couplings are not included in this position!

1 piece vacuum pump

Type: Becker VX 4.40

Air throughput at 50 Hz: 40 m³/h

Pressure: 150 mbar

Motor output: 1.25 kW

1 pcs hydraulic pump 5,8 l/min

max. pressure 200 bar

tank volume 40 l

power 3,0 kW

air-oil cooler, fault warning of filter, pressure, temperature

1 pcs wiring box

connection cable with plug to the main cabinet

24 VDC, 24 pin Harting plug to upper tool

24 VDC, 64 pin Harting plug to lower tool

plug for foot switch

1.1.2 1 Electrical Control**1 Electrical Control**

Each control cabinet essentially consists of:

- Main switch
- EMERGENCY-STOP
- Transformer
- Fuses
- Installation channels, terminal blocks and wiring

All control cabinets are equipped with the required hardware components, complying with VDE in order to ensure safe and reliable production sequences.

Please note:

If plant additions require their own software for their function this not included; unless described in the offer.

An interface to the plant additions is included if the functionality as described in the offer is shown.

General notes regarding the electrical control system

Interference with the software and hardware of our control systems during the warranty period by persons not authorized by us or without our prior express authorization in writing annuls all warranty claims.

Fault warnings

These are displayed in plain language on the control desk. For specific faults an audible/optical warning will also be given

Modes of operation

The "Automatic" and "Manual" modes of operation will be provided

62.003-000

1 Control Desk

for one mould carrier type MX. Siemens control with control panel, incl. control of one light curtain

62.003-001

1 Control, Electrical

Synchronization control for mould carrier from the series MX

1.1.3**1 Manual Mold Exchange (traverse with roller bar)****2 Tool carrying console**

Tool carrying console for docking at the mould carrier.

- Console can be demounted at the mould carrier.
- Designed for a max tool weight of: 200 kN
- Length 1600 mm

2 Lifting rails

Transport rails for tool change – in the mould carrier

- roller ball
- hydraulic
- length 1500 mm
- For a max tool weight with 2 roller balls: 200 kN
- stroke 2 mm

1.1.4	1	Working Platform
1.4	1	Safety System
TT-SI	1	Light guard 1 off safety light curtain 1650 mm length, 30 mm pitch complete
1.4.1.2	1	Safety Door
TT-SI	1	Safety door Safety Door TF1 - grid 200x20x4 mm 2060 height 1000 mm width
1.4.1.4	1	Safety Fence
64.790-001	1	Safety fence consisting of:
64.790-001 (s)		Safety fence RFS (Integral Standard) - with welded wire gratings 200 x 20 x 4 mm height of 1830 mm - total length of fence: 21,25 m pole type: Aluminium-2060