SINGLE SCREW EXTRUDER MTT HE 40.25F

I General description:

The combination of standard elements like screw, barrel, standard motor and gearbox with individual design elements allows optimal design of the equipment. The use of these standard elements, which are worldwide available are one of the feature of the extruder and ensures high safety in operation. Beside the standard screw diameter 25, 30, 45 and 60mm with L/D ratio of 25d other diameter and L/D ratios on request. Modern screw- and barrel design qualify this extruder for the use in a wide range of production in the plastic industry. For the easy link of the extruder to existing lines, multipurpose stands as well as stands made out of winding free aluminium profile are available. For electrical control of the extruder simple electro-mechanical systems up to complete visualisation of the equipment are available.

Extruder with aluminum profile frame

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II Mechanical part consist of:

Basic configuration

- Helical gear box with IEC flange
- AC main spindle motor 22 kW / 2000 rpm
- Direct coupling
- Barrel ø40 /25D, Bi-metal, smooth
- Screw ø4mm Hastelloy C 276
- 4 pcs. heating / cooling zones HK214 with electric fans for the barrel
- 1 water cooling zones with flow meters at feeding length
- Triple collar fixing clamp with thermo control
- Moveable support for the collar clamp
- Hooper funnel 40l made of PP
- Manual slide
- Screw removing tools

III Electrical part consist of:

Basic configuration:

- AC drive control
- Heating/cooling zones, temperature control (totally 10 zones for barrel, collar, connector and X-head, 2 extra spears
- Operating panel
- Separate electrical cabinet with PLC, Temperature control with individual thermo controllers.

IV Documentation

Two sets of electrical diagrams spare parts list and operating instruction in English.

V Technical characteristic

General

Extruder MTT 40.25 is designed as typical main extruder that can be used as well for insulation as for sheating of cables or wires. The machine can extrude fluoropolymeres of raw materials in current use in cable or tube industry

Expected production output (max) of the extruders for fluoropolymer with 150 rpm of the screw (kg/h): density 1,68 49 kg/h, density 2,15 67kg/h

Frame and drive

The extruder is mainly composed of a cylinder/screw assembly, gear box, triple clamp, hopper funnel and AC motor. AC main spindle type motor is directly coupled to the gearbox by IEC flange and elastic clutch. All these devices are mounted on a frame assembly.

Barrel assembly

The barrel typically is made of high quality bimetal design. Each of four heating/cooling zones of a barrel is equipped with ceramic heating bands, electrical fan and a temperature gauge. Feeding zone of the barrel is smooth and cooled down by two water circuits with flow meters and filters. Barrel is equipped with thermo-regulated, self-lifted manual operated triple collar fixing clamp. At the end of the barrel one hole ½" is prepared for melt pressure and temperature indicator installation.

Screw

The screw is made of high quality nickel based alloy (hastelloy), designed for fluoropolymer materials extrusion. The screw geometry guarantees a perfect melt homogeneity and temperature distribution.

Electrical equipment

The control unit may be connected to the overall line control, or can be synchronised with any other line control.

Control hardware is provided through a PLC or electro mechanically.

Technical data

screw diameter - 40 mm

screw length	- 25D
screw speed max	- 150 rpm
thermo control barrel	- 4 zones
cooling fans	- 430m³/h each
thermo control clamp	- 1 zone
water cooling zone	- 1 at feeding
max barrel pressure	- 700 bar
AC drive	- 22 kW/2000 rpm
installed heating power	- 19,2 kW
hopper capacity	- 40 l

Technical conditions:

Painting:

Machines	Blue according to RAL 5010
Control Cabinets	Grey according to RAL 7035

We reserve the right to deliver devices which are not part of the MTT manufacturing program in the original colour of the supplier.

Cooling water:

Operation pressure:	min. 2 bar
Temperature:	max. 18° C
Cooling water for the extruder:	
Decalcified	
Overall hardness:	max. 5° dH
Cooling water in general:	
Overall hardness:	max 12° dH
Non-carbonated hardness:	max. 5° dH
pH-value:	7.8

The cooling water must be free from suspended matter, grained mineral and metallic impurities, algae and disolved substances with a corrosive effect.

Compressed air supply:

Operation pressure:	4 - 6 bar
Dew point:	-25° C

The air should be free from oil and dust.

Oil filling of gearbox:

The gearboxes of our machines are delivered without oil. Supply and filling is to be effected by the client. The appropriate kind of oil is specified in the operating instructions.

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Connecting voltage:

Balanced threephase current supply	3 x 380V (-5% / +10%) 50 Hz (+/- 2% momentary) mains with chargeable neutral conductor
Control voltage	220V, 50Hz

or

Balanced threephase current supply	3 x 400V (+5% / -10%) 50Hz (+/- 2% momentary) mains with chargeable neutral conductor
Control voltage	230V, 50 Hz
Voltage of main contactor	24 V, 50 Hz
Voltage of solenoid valve	24 V , DC
Input / output of free-programmable controls	24 V , DC

Electrical Equipment:
The electrical equipment is designed and manufactured according to regulations DIN/VDE and EN and corresponds to VDE no. 0100, 0160, 0530, 0532 as well as EN 60 204-1.
Permissible ambient temperatures during operation:

Switchboard and cabinets	+10 to +35°C
Motors	+10 to +40°C

Installation level max. 1000m above M.S.L.
Humidity of air according to DIN 40040 class F.

Machine must not be connected to mains with FI protective switches (VDE 160, chapter 6.5).

The identification of the cores (wiring within the cabinets) is carried out according to EN 60204-1, part 15.2, as follows:

Main circuit	black
Neutral conductor	blue
Protective conductor	yellow/green
Control voltage 230V, 50Hz without transformer	black - blue
Control voltage 230V, 50Hz with transformer	red / red
Control voltage 24 V DC, 24 V, 50 Hz	violet
Ground	pink

Right of modification:
The seller reserves the right to modify or improve the design or manufacture of the machine and equipment described herein and to alter specifications accordingly without prior notice.

Grade of Protection:

Cabinets	acc. To DIN VDE 0470 part 1
D.C. motors	IP23 acc. To DIN VDE 0470 part 1
Three phase A.C. motors	IP 54 acc. To DIN VDE 0470 part 1 as far as not otherwise described.

Climatic protection:
Measures to ensure the observance of the guaranteed values under special climatic circumstances are possible against extra charge.

Inspection of installation and commissioning:
Date of arrival of MTT staff:
MTT must be informed in written form 4 weeks prior to the date of arrival.
Additional work (to be paid):
If delays during erection or commissioning are caused by the customer, the additional time will be invoiced at the current hourly rates. The delays have to be recorded in a protocol.

Mechanical erection:
Erection by the customer.
Erection and piping is carried out by the customer. The following work has to be carried out by the customer before arrival of the MTT staff:
Installation of the machines/equipment according to the installation plan.
Wiring in customer-prepared cable trays/channels and connection according to the electrical wiring diagram.
Installation of compressed air and water fittings.

Electrical installation:
Electrical installation by the customer.
The cabling of the line will be done by the customer before arrival of the MTT staff.

Electrical commissioning
Electrical commissioning mainly consists of:
Checking the entire wiring
Fine adjustment of drives
Checking of all electrical functions and measuring devices
Optimisation of the software
Training of the customers staff

Process commissioning
During process commissioning only the guaranteed product/products agreed upon in order acknowledgement is/are produced.
Our staff will instruct your technicians on the functioning and handling of the equipment.

System application:
The service includes:
- Technical co-ordination and planning of the line
- Co-ordination of services by sub-suppliers
- Machines and equipment supplied by the customer are integrated into the overall concept if they are specified within the order acknowledgement
- Technical documentation is supplied
- Equipment ready for plug in
- Recommendation of spare parts or wearing parts to be stored