

Injection moulding instruction

EN 1.0

Following injection moulding suggestions apply to ZX-750V5T. Please note that these parameters may change depending on the component to be injected, the machine used etc.

1. Delivery form

ZX-750V5T granules are available in valve sacks (up to 25 kg) and BigBags (up to 1500 kg). Bulk density: 0.7 to 0.8 kg/dm³.

2. Pre-drying

The granules must be pre-dried before injection moulding. Insufficient pre-drying leads to operational and qualitative problems.

The drying should preferably take place in a dry air dryer with an air flow of about 3 m³/kg/h and a maximum dew point of -18°C. The drying time is inversely proportional to the temperature:

- at least 16 hours at 160°C
- at least 12 hours at 180°C
- at least 10 hours at 200°C
- at least 8 hours at 220°C

After drying, the residual moisture in the granules should be less than 0.01%.

3. Processing

3.1 Barrel

The volume of the barrel should preferably be less than five times the total size of the part to be injected plus the sprue. A typical temperature setting for the barrel would be:

- Hopper flange: 50°C to 80°C
- Feed zone: 385°C to 395°C
- Compression zone: 390°C to 400°C
- Metering zone: 395°C to 405°C
- Barrel head: 400°C to 410°C
- Nozzle: 405°C to 415°C

The temperature settings must lead to a melt temperature of 405°C to 420°C. The residence time of the material in the barrel should be less than 15 minutes.

3.2 Nozzle

Shut-off nozzles should not be used. For these types of nozzles, material tends to stay in dead spots for too long. Therefore, it is recommended to use only open nozzles. The nozzle temperature should always be kept above 390°C.

3.3 Injection conditions

The screw speed should be between 150 and 250 rpm. For thin (<4 mm) and long parts, medium speed and medium pressure are recommended. For thick parts (> 5 mm), slow speed and high pressure are recommended.

3.4 Mould

The mould temperature should be between 190°C and 230°C. The usage of hot oil is preferred over the electrical system. The mould should be isolated from the press and the mould frame.

3.5 Miscellaneous

The material has a high melt viscosity. At 435°C, the material begins to deteriorate, resulting in serious processing and quality issues. The material can be defined as an abrasive medium for screw, cylinder and mould. Good ventilation is required.

4. Purging

The following cleaning procedure should be followed after injection mould ZX-750V5T material:

- Empty the barrel of all material.
- Preferably purge the barrel with PEI material. PSU or PES can also be used as an alternative to PEI.
- Empty the barrel from the purge material.
- Reduce the temperature to 350°C.
- Once the temperature has stabilized, purge the barrel again with the purge material.
- Empty the barrel from the purge material.

Replace the purge material with your own purge material and clean it according to your own standard instructions. After the standard cleaning, barrel and screw should be thoroughly cleaned.

Material- / machine data ZX-750V5T

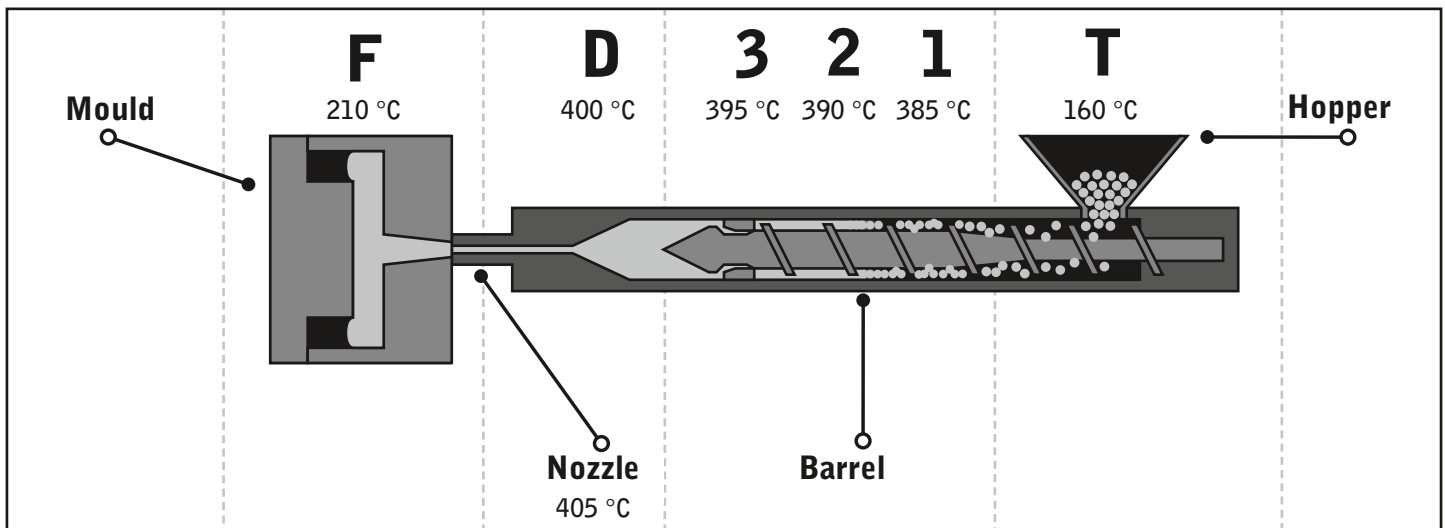
| Product characteristics | | | |
|-----------------------------------|--------------------------|-------------------|--------|
| Properties | Unit | Test method | Values |
| Material Code | - | - | A9T |
| Colour | - | - | Ochre |
| Density | kg / dm ³ | ISO 1183 | 1,44 |
| Bulk Density | kg / dm ³ | Internal Standard | 0,75 |
| Melt volume rate MVR 400°C/1,05kg | cm ³ / 10 min | ISO 1133 | 4-11 |

| Shrinkage | | | |
|------------------------------|---|-------------------|------|
| Molding shrinkage (parallel) | % | Internal Standard | 1,24 |
| Molding shrinkage (normal) | % | Internal Standard | 1,28 |

| Drying | | | |
|--|----|---|------|
| Moisture, max. | % | - | 0,01 |
| Dryer temperature T (Dry air dryer or vacuum dryer) | °C | - | 160 |
| Drying time | h | - | 16 |

| Injection molding | | | |
|-------------------------------------|----|---|---------|
| Melt temperature range | °C | - | 405-420 |
| Melt temperature (optimal) | °C | - | 413 |
| Mold temperature range F | °C | - | 190-230 |
| Mold temperature F (optimal) | °C | - | 210 |

| Machine Settings | | | |
|---|-----|---|---------|
| Temperature hopper feed throat | °C | - | 50-80 |
| Barrel Head temperature 1 (feed zone) | °C | - | 385-395 |
| Barrel Head temperature 2 (compression zone) | °C | - | 390-400 |
| Barrel Head temperature 3 (metering zone) | °C | - | 395-405 |
| Barrel Head temperature D | °C | - | 400-410 |
| Nozzle | °C | - | 405-415 |
| Screw speed | rpm | - | 150-250 |



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