

Specifications for Bench Top Twin Screw Extruder

The Buyer has a right to reject the tender if there are any deviations from these quality standards but may accept deviations if the overall tender is deemed responsive. Performance beyond the required quality standards will be awarded a higher score.

The performance of the equipment system under “Technical solution” will form a significant part of the evaluation of the tenders under the Quality award criterion.

The tender should include answers/comments to all the requirements, and a further description where appropriate – highlighting the functionality of the system and its user friendliness. The description should also include any additional functionality or other options that adds value for the Buyer.

The technical solution shall:

We are seeking a bench top twin screw extruder for research and development purpose. The main task performed on this extruder is to achieve homogeneous mixture/compounding of different ingredients as for example different polymers, additives, fillers, and liquids. The machine should be able to be fed with powders, pellets, liquids and gasses.

General requirements:

- User interface that enables easy operation and control of machine settings; easy to change machine setup (special equipment and software) and easy to clean.
- Training in use of the machine
- Possibility for instrument control and guidance over internet will be valued (by e.g. TeamViewer or other means)
- Support available on phone and e-mail (answer within 48 hours)

Specific requirements

Equipment required (for research purposes):

- Bench top twin screw extruder (fits in fume hood or isolator).
- Possibility to run in Hot Melt Extrusion mode and Twin Screw Granulation mode.
- Possibility to make films with adjustable sheet die and with sheet take off unit (the film width should be 10 cm or more).
- Throughput from 20g/h to 2.5 kg/h.
- Low sample requirement.
- Volumetric and gravimetric feeders.
- Operational temperature 350 to 400°C.
- Multiple temperature-controlled zones (heating and cooling).
- Can be fed with powders, pellets, liquids and gasses (with possibility to feed commercial pellet up to 4 mm in diameter and liquids with high pressures).
- Multiple inlet points.

- Corrosion and abrasion resistant steel body.
- Horizontally split barrel for inspection of the compounding process and easy cleaning.
- Closed circuit.
- Fanless motor cooling.
- Fully segmented screw.
- Changeable screw elements.
- Range of screw speed 10-1000 rpm.
- Fully ported barrel.
- Screw length flexibility for variation of processing length 10-40LOD.
- Cables for heating cartridges and thermocouples embedded in housing.
- Monoque dust free housing.
- Pelletizer.
- Air cooled conveyor belt.

Transport, installation, service, training

- Description of costs for transport, installation, service agreement (maintenance, 3 years from expiration machine warranty)
- Description of feasible training program for staff at Nofima and additional assistance during experimental run of challenging packaging materials

Optional requirements

- Small scale injection molding (Offline)
- Cleaning tools

Timeline: The equipment should be delivered as soon as possible. Please describe the estimate for delivery date.