**Appendix 1. Technical characteristics and completeness of delivery of the extruder (analog)**

Technical specifications

1. Capacity of 10-11.5 t/h of polypropylene granulate, 50-100% capacity regulation.

| **№** | **Description** | **Data** |
| --- | --- | --- |
| 1 | Location: | In a heated building  +5ºС - +35ºС |
|  | average operating temperature |
| 5 | Category of premises for fire hazard |  |
|  | For the placement of the extruder | В 4, П II а |
|  | For the dosing system | Б, В II А - Т2 |
| 6 | Operating mode | continuous |
| 8 | Basic parameters: |  |
| 8.1 | Capacity t/h | 10-11,5 (for a melt index of 2-4 g/10 min) |
| 8.2 | Performance regulation, % | 50-100 |
| 8.3 | Flow rate of granulate melt, g/10 min | 0,2 - 50 |
| 8.4 | Granule size, mm | 2 - 5 |
| 8.5 | Built-in device for measuring the melt index | Yes |
| 8.6 | Raw materials | Polypropylene Powder |
| 8.7 | Flow rate of powder, g/10 min | 0,2 -25 |
| Granulometric distribution of powder particles:  less 0,063 мм  small 0,1-0,063 мм  middle-sized 0,2-0,4 мм  large 0,40-0,63 мм | 0,02 %  (1-5) %  (75-85) %  (10-15) % |
| 8.8 | Vacuum installation |  |
|  | Equipment application | Designed for vacuum degassing of polypropylene melt |
|  | Required flow rate, m3/h | 1500 |
|  | Required vacuum, mbar (abs) | 100 |
|  | Operating mode | continuous |
|  | Operating environment and its properties |  |
|  | 1. Nitrogen  2. Degassing products from polypropylene powder  3. Polypropylene degradation products | See App. 2 |
| 9 | Cooling medium  Pressure in the pressure manifold, kg/cm2 (abs.)  Pressure in the drain manifold, kg/cm2 (abs.)  Pressure collector temperature, 0C  Temperature in the drain manifold, 0C  Total hardness, mg/m3  Mass concentration of suspended solids, mg/dm3  рН | Recycled water  4,5-5,5  1,5-3,5  23  28  No more than 3,4  No more than 15  7 |
| 10 | Nitrogen Parameters  Pressure kg/cm2  Temperature, 0C  The presence of drip oil  The presence of mechanical impurities | 4,5-6,0  Ambient temperature (-40-+40)  no  no |
| 11 | Instrumentation and control system Air parameters  Pressure kg/cm2  Temperature, 0C  The presence of drip oil  The presence of mechanical impurities | 4,5-5,0  Ambient temperature (-40-+40)  no  no |
| 12 | Steam Parameters  Pressure, kgf/cm2  Temperature, °C | 4  152 |
| 13 | Control panel | Local and remote on the central control panel  Display language - Russian |
| 14 | Main drive power supply |  |
| -The category of power supply according to the Rules of electrical installations | 1 category |
| - Voltage, kV | 10 |
| - Frequency, Hz  - Degree of protection | 50  IP-45 |
| 15 | Power supply for auxiliary drives |  |
| - Category of electricity supply according to the Rules of electrical installations | 1 category |
| - Voltage, kV | 380 |
| - Frequency, Hz  - Degree of protection | 50  IP-45 |
| 16 | Power supply of auxiliary instrumentation and control systems: |  |
| - Category of electricity supply according to the Rules of electrical installations | 1 category |
| - Voltage, kV | 220 |
| - Frequency, Hz  - Degree of protection | 50  IP-45 |
|  |  |
|  |  |  |

Completeness of delivery

2.1 Technical documentation to the extent necessary for the construction, installation, commissioning and operation of the supplied complete extrusion line in Russian.

2.2 Equipment for a complete extrusion line with a capacity of 10-11.5 t/h of polypropylene granulate, including:

2.2.1 Equipment for drying and sieving PP granules. Sieving should be 2-step: for separation of agglomerates, large granules and small granules.

2.2.2 The melt filtration system is 150 microns.

2.2.3 Diathermic oil pumps and gearbox oil stations must have reserve positions.

2.3 A set of high-voltage and low-voltage equipment for powering high-voltage and low-voltage pantographs.

2.4 High-voltage and low-voltage cables within the installation. The scope of delivery is specified by the project.

2.5 An extrusion line control and monitoring system with the possibility of control from a local control panel located near the machine and from a central control panel.

The scheme and the list of equipment of the complete pelletizing line (analog) are given below.

Scheme and list of equipment for a complete pelletizing line (analog)



