

General Conditions for Erection and Start-up

1. Scope

These General Conditions for Erection and Start-up shall apply in addition to our General Terms & Conditions of Sale to all contracts comprising not only the supply of machine/equipment but also erection, start-up or trial (hereinafter generally referred to as „Work “); they form an integral part of the contract.

2. Obligations of ENGEL

We commit ourselves to carry out the Work by qualified personnel or by sub-contractors in professional manner.

3. Prerequisites to be created by Customer

3.1 Installation site:

The machine is designed for operations in a closed room. The following values to be considered not also in case of long-term storage and for operation.

3.1.1 Ambient air temperature

Minimum +10 °C (50 °F).

Maximum: +40 °C (104 °F).

3.1.2 Atmospheric humidity (non-condensing!)

Minimum: 20%.

Maximum: 80%.

3.1.3 Altitude

A performance loss of 1% per 100m (330 ft) above sea level must be included with installation locations that are higher than 1000m (3300 ft) above sea level.

3.1.4 Electromagnetic compatibility

Must correspond to the EC EMC directive (2004/108/EC)!

Must comply with the North American Standard NFPA79 2007!

3.1.5 Cooling water

Maximum: 28 to max. 33°C (82 - 91°F)

Use clean cooling water only. -> Details acc. operator manual.

3.2 Production hall:

It is imperative that the following points are checked and complied with before delivery and unloading of individual assemblies (stationary platen, moving platen, clamping frame, etc.):

- 3.2.1 Load-bearing access route to production hall as well as until the foundation of the Injection Moulding Machine.
- 3.2.2 Production hall fully completed. (Roof, sidewalls, gates, windows, hall lighting, heating)
- 3.2.3 Width and height of production hall gate for trucks.
- 3.2.4 Instruction of our personnel by the Customer.
- 3.2.5 Sufficient space for the assemblies being delivered.
- 3.2.6 In order to carry out assembly activities on the machine, you must ensure that access is possible from all sides!
- 3.2.7 Availability of suitable cranes and lifting gear (hall crane, truck crane, lifting frame, ...) and lifting cables with sufficient load-bearing capacity present.
- 3.2.8 Electrical supply present.
- 3.2.9 Connected load in accordance with circuit diagram must be available.
- 3.2.10 Cooling water connections/compressed air supply present.
- 3.2.11 Forklifts (also for use by our personnel).
- 3.2.12 Availability of Internet and phone line in the immediate vicinity.
- 3.2.13 Provision of main connections on the injection molding machine.
- 3.2.14 Pump for filling the oil container with a filter of maximum 10 micron.

3.3 Foundations:

- 3.3.1 The appropriate load-bearing capacity of the existing hall floor/foundation as per the ENGEL foundation plan must be checked by a competent firm (e.g. by a structural engineer).
- 3.3.2 Clean foundation (clear of dust, oil and greases) as well as flatness acc. ENGEL foundation plan.
- 3.3.3 The floor anchors and safety guardings must be bolted to the ground by the Customer.
- 3.3.4 Customer must define and mark the detailed installation position onto the foundation, before the Injection Moulding Machine will be placed.

4. General obligations of Customer to cooperate

- 4.1 Customer shall undertake all that is deemed necessary to ensure that the Work is started on time and performed without hindrance or interruption.
- 4.2 Customer shall be responsible for performing any site and other preparatory work in a workmanlike manner at its own cost in accordance with the conditions as set forth in Item 3 above.
- 4.3 Our personnel shall not be called upon until all the preparatory work has been completed.

- 4.4 Customer shall ensure that all the entry, exit, residential, work or any other permits necessary for our personnel or the personnel of our subcontractors are obtained in due time.
- 4.5 At its own cost, Customer shall make the necessary arrangements for accident prevention. In particular, it shall bring to our attention any matter which has to be observed in our interest or that of our subcontractors, or where local regulations have to be complied with.
- 4.6 We shall be entitled to refuse or stop to work if safety is not assured.
- 4.7 The material to be erected shall be stored in such a way that it is properly protected against any damage or deterioration. Before the commencement of Work, Customer shall check whether the material is complete and free from damage, in the presence of the our personnel. Should any items be lost or damaged during the storage period they shall be replaced or repaired at Customer's cost.
- 4.8 Customer shall ensure that the access facilities to the site are in a usable state and the place of erection in such a condition that Work may be started at any time. Furthermore, he shall ensure free access to the place of erection and arrange for the provision of all necessary rights of way.
- 4.9 Customer shall arrange for heated or air-conditioned, lockable rooms, equipped with adequate sanitary installations, for our personnel and personnel of our subcontractors free of charge. Furthermore, Customer shall place lockable dry rooms for the storage of material, tools etc. at our disposal. All these rooms shall be located within the immediate vicinity of the place of work.

5. Special obligations of Customer to cooperate

5.1 Delimitation of scope of supply

The services as demonstratively enumerated in the following sub-items shall not be within our scope of supply, but shall be rendered by Customer at its own risk and cost.

5.2 Energy and operating equipment

- 5.2.1 All power supply lines and safety equipment (fixtures, filters, valves, etc.) in feed and return lines for electrical energy, compressed air, steam, water and heat carriers from the Customer central supply to the main connections of the injection molding machine and equipment being installed.
- 5.2.2 All electric power stations and substations for high and low voltage supply.
- 5.2.3 All aggregates and equipment for emergency power supply.
- 5.2.4 All auxiliary equipment for production, preparation, cleaning or heating of operating media, as well as all equipment for maintaining constant supply of the required power.
- 5.2.5 All oil filling, as well as all initial filling of special cooling and heating media in separate cooling circuits of the barrel, screw, etc.

5.3 Installation and foundations

- 5.3.1 The provision of all foundations.
- 5.3.2 Attachment to the hall floor of the machine, safety guarding of peripheral units or guide rails for mold changer.

- 5.3.3 All supports and frames for holding containers, piping, service platforms, steel frames, platforms, stairs, ladders, railings, covers for stationary and mobile system components, platform, wall and ceiling apertures.
- 5.3.4 All surface and underground cables and cable ducts, tracks and relative fastenings.
- 5.3.5 All systems for air conditioning, ventilation, extraction, room heating and lighting.
- 5.4 Assembly and start-up
- 5.4.1 Unloading and bringing in.
- 5.4.2 Surveillance of the construction site and all components on site, as well as insurance against theft or destruction.
- 5.4.3 Conservation of all components stored on the construction site against climatic and mechanical influences.
- 5.4.4 Workshop equipment such as, but not limited to forklift, hall crane, welding and auxiliary equipment.
- 5.4.5 All internal transport and packaging materials for intermediate and final products.
- 5.4.6 Equipment for the removal or recycling of waste.
- 5.4.7 Process engineering commissioning.
- 5.4.8 All costs for instruction and training of operating personnel by the supplier.
- 5.4.9 Test injections and production of sample components are not included in our offer.
- 5.4.10 Provision of suitable test chocks or tools for calibration of clamping force.
- 5.5 Local safety regulations
- 5.5.1 All protective and safety equipment in compliance with local regulations for grounding, lighting protection, safety guarding and fire-fighting.

6. Breach of obligations to cooperate

- 6.1 The obligations to cooperate stated herein shall ensure the contractual performance, security and the Customer satisfaction as well.
- 6.2 Any breach of these obligations to cooperate may affect, delay or frustrate the performance of the contract. As a rule extra costs incur thereby, which do not incur if the obligations to cooperate are complied with; thus, these extra costs to be beard by Customer.
- 6.3 In case that Customer is in default with any obligation to cooperate, we reserve the right to demand proper performance of Customer´s obligation(s) and, if Customer fails to comply within a period of reasonable length, either to declare the contract avoided and claim for damages or to carry out the required cooperation by ourselves at Customer´s risk and expense resp. to have it carried out by a third party in the name and for account of Customer.