

## General Technical Conditions of Purchase No. 10 (GTCP No. 10)

for the supply of new or used machines, devices including tools,  
and for general overhauls, rebuildings, etc.

### 1. Workplace immissions protection, accident prevention

- 1.1 The delivery must comply with work protection and accident prevention rules, as well as the generally established regulations governing the technology, e.g. EU Guideline 89/392/EEC of 22 July 1993, EU Guideline 73/23/EEC of 22 July 1993, EU Guideline 89/336/EEC in the version of Amendment 92/31/EEC, and their harmonized standards or national technical specifications, e.g. DIN EN, VDE, or DIN standards, specifications of professional or trade associations, VDI Guidelines, etc., and the 9th Ordinance of the Equipment Safety Law [9. Verordnung zum Gerätesicherheitsgesetz, GSGV] – Machines Ordinance, 9th Ordinance of the Equipment Safety Law of 12 May 1993, version of 2 August 1994. A Declaration of Conformity must be enclosed with all machines in accordance with EU Guideline 89/392/EEC ff., Appendix 2; all machines must be provided with CE conformity identification per Appendix 3 (CE Labeling). All machines must comply with EMC rules.
- 1.2 Machines/devices must be so configured such that no environmental impacts within the meaning of the Federal Immissions Protection Law [Bundesimmissionsschutzgesetz] (a law to protect against harmful environmental effects due to air pollution, noise, shocks, and similar processes) can occur.
- 1.3 The continuous sound level (leq) in the operating location must not exceed 80 dB (A) at ear level and at 1 to 1.5 m above the factory floor at a distance of 1 m from the machine, and should contain no dominant individual frequencies. During functional testing (checkout) in the supplier's factory and after startup in our own plant, the machine is checked by us for compliance with the required values. According to Section 1, Noise Information, of the 3rd ordinance of the Equipment Safety Law of 1 January 1993, the manufacturer is obliged to specify the noise level in the instruction manual and also in the offer.
- 1.4 If machines/devices are provided with a noise protection enclosure, it must conform to VDI Guidelines (VDI-2711). Before fabrication of the noise protection enclosure, the drawings must be submitted to us for comment. For ventilators installed in noise protection enclosures, the operating voltage of 230/400 V must be coordinated with us. The interior of the noise protection enclosure must be provided with illumination.
- 1.5 For ventilators and machines with ventilators, the dB (A) level at a distance of 1 m from the exit opening above the canopy must be 55 dB (A) or less, and in the low frequency range, from 31.5 to 500 Hz.
- 1.6 Machines/devices are tested and accepted after startup by the relevant professional or trade association or an equivalently qualified agency. All defects so identified, and if necessary even those leading to rejection, must be immediately corrected by the supplier at its own expense.

### 2. Completion, acceptance

- 2.1 If sample materials/parts are required for the production or checkout of a machine, device, or tool, the supplier must order these sufficiently ahead of time in order that completion is not delayed.
- 2.2 We reserve the right to conduct a functional test (workplace checkout) at the supplier's plant.

### 3. Outfitting/equipping

#### 3.1 Electrical

The machine/device is to be manufactured according to the recommendations of VDE0113 or EN60204. The operating voltage of the electrical equipment is 230/400 V at 50 Hz, and the control voltage is 24 VDC. The following brands are to be used for sensory and actuation elements: (i) actuation elements, auxiliary or power contacts, and main switches: Möller brand; (ii) inductive proximity switches: Turck, IFM, or Pepperl & Fuchs brands; 3-wire configuration, PNP, with plug, preferably into M12; (iii) optical sensors and photocells: Sick brand; 3-wire configuration, PNP, with plug, preferably into M12; (iv) safety switches and door latches: Euchner brand; configured as contactless switches, e.g. type CES-A-C5E-01; if necessary, a magnetic tumbler is to be provided, e.g. type CEM-A-LE05K-S2. (v) adjustable 3-phase asynchronous motors with thermistor protection and a separate fan as necessary: Küenle, SEW, Lenze, or Siemens brands; (vi) frequency converters: Vectron brand, Type ACT400; (vii) emergency and cutoff switches: Pilz brand. Apparatus must be virtually maintenance-free (direct current drives are to be avoided, except for forklifts).

Switch cabinets, terminal boxes, etc. should be accessible and easy to install, and access doors must not be obstructed by machine parts (minimum distance 0.9 m).

The dimensions of switch cabinets / terminal boxes, etc. must be designed with a 30% margin and configured with protective system IP 55. If the service cabinet is not mounted directly onto the machine/device, the control circuits must be pluggable as per DIN 43652 (line lengths to be coordinated with us). Equipment installed in the service cabinet must be easily accessible.

If the switch cabinet has to be cooled, a circulating air cooler or an air/air heat exchanger should be used.

Water and air circuits used for cooling and control purposes must be actuated automatically by controllers with electromechanical valves.

#### 3.2 Electronics

Programmable controllers SPS (PLC) Siemens S 7.300 or C7, in each case

from CPU 315 DP. Visualization (operating and reporting terminals) OP7 or larger or a TP from Siemens. Design to take place with Pro-Tool or WinCC flexible. For bus systems, field-level AS interface with master and slaves from Siemens, IFM, or Pepperl & Fuchs. Valves ASI pneumatic boxes. If controllers are connected (SPS → NC or FUs, etc.), this should be accomplished via a DP Profibus (Siemens Simovert VC or Hauser Compax 3). Adjustable main drive frequency converters from Siemens Simovert VC or Vectron, and motors with thermistor protection, built-in impulse transducers 1xP 8001-1, and separate fans. Tape drives, etc. Siemens Mikromaster or Vectron, and motors with thermistor protection. NC drives by Parker Hannifin EMD-Hauser, Offenburg. Axis controller Compax 3 (perhaps with F3 Profibus connection), or S7 T-CPU (from 315T) with Sinamics, as three-phase brushless motor with synchro resolver. DC drives should be avoided. Digitronic camshaft controllers, as plug-in circuit boards (Type DC300) into the SPS S7. Cam settings via OP or TP of the SPS. Rotary encoder preferably with a resolution of one degree. Central lubrication to be determined depending on the stroke count via the SPS. Switch cabinet with 220-V receptacles ahead of the main switch. Vacuum is preferably generated by means of a controlled venturi injector. Sensors preferably 3-conductor type, 24 VDC, positively switched, with Lumberg connectors (preferably M12). Switch cabinets and control panels, Rittal brand.

Complete project documentation in German (SPS, visualization, NC, converters, etc.) is provided on CD or on 3½" disks as well as in hard copy upon delivery of the machine/device. CAD circuit diagrams are available in EL-CAD (Aucotec), latest version, or alternatively as DXF files.

#### 3.3 Pneumatics

If the machine/device, including tools, is to be equipped with pneumatic components, the Festo brand or a part as per ISO standards should be used. The compressed air supply is to be controlled by a Festo FRC-...D-...KF service device combination via the main switch. The machine/device must be supplied at an assured air pressure of 6 bars.

#### 3.4 Miscellaneous, color design

Transportation straps/belts, Siegling brand (product, quality, and dimensions to be found in spare parts list). Vibration isolation elements, Effbe brand: preferably levelable, bracing-free elements, alternatively with floor mounting plates. The color of the machine is "light gray" as per RAL 7035, or in accordance with the color determination rules, if nothing to the contrary is mentioned in the performance specification.

### 4. Offer, documentation

- 4.1 During the development of the offer for a machine, device, or tool, this GTCP No. 10 is fundamentally to be taken into account. Deviations from this must be mentioned explicitly in the offer.  
A detailed spare parts price list is to be enclosed with the offer.
- 4.2 Two copies, in German, of the latest versions of the operating and maintenance instructions, Declaration of Conformity, spare parts list as per DIN 24420 with drawings of the individual wear parts, and a list of the designations of the original manufacturers, and also the HUBER-O machine card, are included with the delivered equipment.
- 4.3 A manufacturer's endorsement according to Section 5, par. 4 of the accident prevention regulation "Electrical facilities and operating devices" (VBG 4) is included with each machine/device delivered by us upon inspection according to Section 5, par. 1, No. 1 VBG 4.

### 5. General

- 5.1 If we have assumed the production costs, the original drawings made available by us revert to our property after delivery. If parts are fabricated according to our drawings, any changes must be recorded on the drawings. The drawings must be returned in each and every case when the parts are delivered.
- 5.2 The aforesaid conditions are not valid if we establish other terms in writing at the time of the order.
- 5.3 Our consent must always be obtained in the event of unavoidable exceptions to the above-named conditions.
- 5.4 "General overhaul" means, for used machines, that all moving, and therefore particularly susceptible to wear and tear, machine parts are replaced or reworked such that their life expectancy is the same as that of new parts, or at least approximates it very closely.

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