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HYDAC COOLING GMBH  
HYDAC DRIVE CENTER GMBH  
HYDAC ELECTRONIC GMBH  
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## Special Terms and Conditions for Purchasing Machinery and Equipment

### I. Entering of contract – supplementary stipulations

The contract entered into between us and the supplier shall be subject to our General Terms and Conditions of Purchasing. The following Special Terms and Conditions for Purchasing Machinery and Equipment shall supplement our General Terms and Conditions of Purchasing and, in the event of any deviations, shall prevail over these. In addition, the supplier undertakes to observe the Technical Specifications attached hereto. Any deviating terms and conditions shall not be accepted.

### II. Offer phase

1. The supplier undertakes to familiarize itself with the purpose of the machinery and, where applicable, to communicate any concerns about our specifications with respect to the purpose, dimensions or materials.
2. Machinery elements and parts shall be designed and arranged in such a way that they can be inspected, maintained and replaced properly and swiftly.
3. The supplier undertakes to calculate the weight and dimensions of the delivery in the light of the construction situation prevailing at the site at which the machinery is to be assembled.
4. The supplier undertakes to enclose with the offer a list of replacements and parts subject to wear together with the current prices.

### III. Scope and execution of supply

1. The supplier shall deliver a complete machine/equipment encompassing all parts necessary to ensure proper operations — in compliance with the guaranteed qualities — even those not specified in detail in the order.
2. In particular, the supplier's attention is drawn to no. 5 (documents and circuit plans) of our Technical Specifications.
3. In the absence of any agreement to the contrary, the Supplier undertakes to assemble the machinery/equipment at its intended location, to connect it so that it is ready for use and to put it into operation subject to prior consultation with us.

### IV. Insurance

The supplier is advised to take out insurance to cover all transport risks up until the site at which the machinery/equipment is to be assembled including assembly cover.

### V. Prices and payments

1. The prices shall be fixed prices and constitute remuneration of all activities required to produce the ordered end product. Accordingly, the agreed price shall include everything which the supplier requires to perform its contractual duties at the intended site of the machinery/equipment including transportation, assembly, putting into operation, acceptance, insurance, protective measures at the construction site, training of the operating and maintenance staff, provision of the documentation and all ancillary costs.
2. Part payments shall only be made subject to full reclaim. We may retain a sum of 10 % of the total price as security to cover all claims until such time as they are barred by the expiry of the statute of limitation. In lieu of such security, the supplier may furnish a directly enforceable bank guarantee waiving the defence of unexhausted remedies.

### VI. Acceptance

After the machinery goes into operation, a joint testing report shall be established, which, upon being signed, shall constitute proof that the machinery/equipment has been duly tested and accepted. In the absence of any separate agreement, the Supplier shall furnish qualified technical staff at the site on which the machinery is assembled to provide technical

assistance and to instruct our personnel on the use of the machinery. In this case, the machinery/equipment shall not be deemed to have been accepted until the completion of such instruction. The risk attached to the machinery/equipment shall pass over to us upon acceptance.

### VII. Guarantee

The supplier guarantees and represents that the machinery/equipment is suitable for the purpose which we have specified and complies with all the written characteristics stated in our technical specifications or elsewhere. In the absence of any express agreement to the contrary, the supplier guarantees and represents that the machinery/equipment deliveries incorporate the latest technology.

### VIII. Extended statute of limitations for claims for defects

1. In the event of any down times caused by faults in the machinery/equipment, the time bar for claims on account of contractual non-compliance shall be extended as follows: If the machinery is out of operation for at least 5 % of the planned monthly running time, the time bar shall be extended by the number of months in which such down time of at least 5 % occurs.
2. For this purpose, the down time shall be deemed to commence upon the disruption being reported and end on the disruption being remedied. This shall include all reports received by the supplier between 7:00 am and 4:00 pm Mondays to Fridays. The disruption shall be deemed to have been remedied if the machinery/equipment is made available on site in fully functional form by the supplier or an authorized third party or — in the case of advice given over the telephone — our personnel determines that the machinery/equipment is fully operational and notifies the supplier accordingly.
3. The supplier undertakes to send a technician to the site within 24 hours of being notified of the disruption. This obligation shall also apply after the expiry of the statute of limitation.

### IX. Liability for replacement parts

1. The supplier guarantees and represents that all necessary replacement parts shall be supplied without any delays at market prices and that revisions to plans and updates shall be made available free of charge for a period of at least ten years starting with the date of acceptance of the machinery/equipment.
2. Delivery shall be executed immediately upon receipt of a request. The supplier undertakes to ensure that replacement parts for which an order is received prior to 2:00 pm are dispatched to us using the quickest mode of transport on the same day. In the event of any delay in delivery for which the supplier is responsible, it undertakes to reimburse us for the costs resulting from the inability to use the machinery/equipment for the duration of such delay.
3. If the supplier is unable to supply replacement parts immediately, it shall immediately supply plans of the parts free of charge including all details required to produce the parts in question.

### X. Third-party property rights

The supplier guarantees and represents that the use of the machinery/equipment for its intended purpose does not infringe any third-party copyrights, intellectual property rights or other rights. In the event that the supplier becomes aware that the machinery/equipment or its use may result in the breach of third-party copyrights, intellectual property rights or other rights, it shall notify us immediately. The supplier agrees to hold us fully harmless against all third-party claims arising from the alleged or actual breach of copyrights, intellectual property rights or other rights and to reimburse us for all damages, expenses and costs arising in this connection.

### Appendix: Technical Specifications



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**Technical Specifications**

**Preamble**

Machinery and equipment must be fitted with Hydac systems provided that these are available within the companies associated to Hydac and other manufactures are not stated below. The supplier undertakes to obtain information on the product line of the companies associated to Hydac.

**1. Electrical equipment**

1.1 General rules (each in the current prevailing version)

1.1.1 VDE directives

1.1.2 DIN standards, particularly relating to electrical engineering, EMC directives

1.1.3 VDI directives

1.1.4 Accident prevention regulations issued by the German industrial compensation societies; German and European statutes, ordinances and rules particularly the machinery directives, German Act on Occupational Safety and Health and the German Ordinance on Industrial Safety and Health

1.2 Electricity supply network

Rotary current 400 V, 50 Hz, TN grid

All motors and equipment with a connected load > 5 KW must be equipped with an electronic three-phase meter with a display, and an S0 pulse output for connection to an energy management system and displaying the energy consumption on control monitors.

1.3 Gate voltage

1.3.1 AC 230 V, 50 Hz via gate voltage transformer with separate coils, primary +/- 5%, taken from low-voltage grid in accordance with section 1.2 or 24 V DC, +/- 5 % residual ripple.

1.3.2 Secondary grounding

1.3.3 Primary fuse protection, all-pole via motor protection switch, adjusted to transformer electricity; secondary by means of two-pole automatic switches.

1.4 Illumination

1.4.1 230 V AC

1.4.2 The individual circuits must be protected by automatic switches.

1.4.3 Machinery illumination 24 V, 50 Hz via separate transformer or 230 V safety lights

1.5 Switch cabinet and switch boards

1.5.1 IP 54 design, doors opening to the side, max. door width 600 mm

1.5.2 Metal doors must be earthed with Cu flexi-tape or flexible wires

1.5.3 Door lock 8 mm square or two-way key, with rod assembly in the case of cabinets 800 mm or taller

1.5.4 The equipment must be arranged according to parts with spare space of 10 % on the assembly board.

1.5.5 Main and ancillary switches must be accessible from the outside for manual operations. They must switch the entire line.

1.5.6 All devices must be designated permanently and indelibly in accordance with the switch boards. The designation must be placed on the device and on the assembly board or door (e.g. plastic signs).

1.5.7 Devices outside the controlling area shall also be designated.

1.5.8 Wiring must be accessible without dismantling the devices and should be laid at the front in channels, minimum cross section 1.0 mm<sup>2</sup>, connections up to 6 mm<sup>2</sup> ideally via end sleeves pin-type and cable sockets with insulation support are also permissible. In the case of larger cross sections, notch-type cable sockets as defined in DIN 46325 may also be used.

1.5.9 The switching cabins should be lit and include a 230 V AC socket with an automatic fuse of at least 2.0 A

1.6 Motor protection

1.6.1 Via motor protection switch or thermal monitoring

1.6.2 Excess voltage or temperature should be displayed via a warning light or on the screen.

1.7 Equipment

1.7.1 Ancillary protection, motor protection, motor protection relay, cam controller, power switch: made by Moeller or Siemens  
Automatic fuses: made by Siemens, BBC, Moeller

1.7.2 Limit, final switch (mechanical or contact-free) made by Siemens, Moeller, Balluf, Euchner

1.7.3 Time relay: made by Dold, Siemens, Moeller

1.7.4 Timer switches: made by Siemens

1.7.5 Command or alert equipment: made by Moeller, Siemens, Telemecanique

1.7.6 Memory-programmable controls: made by Siemens, Simatic S7

1.7.7 Advance drives, spindle drive, servo and other controlled drives (ideally free of any brushes using rotary current): made by Indramat, Siemens, Baumüller

1.7.8 Connector blocks: Legend in the same direction, numbered in ascending order

1.7.9 Only one lead may emerge from the top or the bottom of each connector. All wires connected to a block must be designated permanently using identifying sleeves.

1.7.10 The power part and the controlling part must be kept separate visibly and in accordance with EMC directives.

1.7.11 All connections which are still live when the main switch is deactivated must be covered and designated.

1.7.12 Connectors: made by Harting, Wieland

1.7.13 All devices inside and outside the switching cabinet must be designated using permanent and indelible plastic or metal signs in accordance with the circuit diagrams.

1.7.14 Measuring system:  
All gauges, counters and measuring instruments must be in metric units. Display precision must be  $\pm 2\%$ .



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**2. Hydraulic equipment**

**2.1 Components**

The hydraulic equipment must be as follows:

- Valves: ideally made by Hydac or alternatively Atos, Eaton
- Piston pumps: made by Hydac
- Vane and gear pumps: made by Hydac
- Complete hydraulic aggregates including accessories such as accumulator, filter, circuit control and blocking faucets, multi-way faucets, pressure-limiting valves, liquid level indicators, oil cooler and all other hydraulic components: made by Hydac

2.2 All components including hose and pipe links must be designated permanently in accordance with the circuit plan.

2.3 Lube: In accordance with applicable standards; recommendation: made by ARAL

**3. Pneumatic equipment**

3.1 All components made by Festo or Atlas Copco

3.2 All components including hose and pipe links must be designated permanently in accordance with the circuit plan.

**4. Fastening elements**

All pipe, hose and cable links and other fastening systems: made by HYDAC

**5. Documents and circuit plans**

5.1 The following documents shall be furnished after the order has been placed but prior to the commencement of production:

- Machinery/equipment layout on a 1:25 scale
- General plans with location of components
- Main electricity plans in a DIN A3/A4 format
- Flow plans in a DIN A3/A4 format
- Program description in AWL, KOP or FUP
- Connection plans
- List of parts in DIN A4 format
- Internal circuit boards DIN A3 or A4 format
- Hydraulic circuit plans
- as well as all documentation included in the delivery particularly lubrication and maintenance instructions, lists and diagrams of spare parts, construction plans

in German for approval or, in the case of series machinery, for information purposes.

**5.2 Upon delivery**

All the final versions of the lists and plans referred to in 5.1 must be submitted in triplicates in copyable form in the formats specified. We are authorized to use these diagrams to execute modification and repairs and to produce spare parts.

In the case of memory-programmable control units made by Siemens, all management software on CD or DVD shall also be supplied.

If approval has been granted to use the programmable controlling systems of other manufacturers, the entire system and control software required for loading, modifying and copying shall be supplied.

Operating and instruction manual: triplicate

AWF machinery card: duplicate

**6. Coating**

Visible surfaces shall be painted in RAL 7032 (pebble gray) or RAL 7035 (light gray) subject to prior consultation with us. Visible surfaces of powered movable parts with a safety or protection function shall be painted in RAL 2000 yellow-orange

Covered or concealed surfaces and interior parts shall not be subject to any painting requirements. However, the relevant standards and rules (e.g. DIN 43656) shall apply.

**7. Motors**

Only motors with an energy efficiency class of IE 2 or IE 3 may be installed.

**8.** Any specifications not stated may only be applied subject to prior written approval.