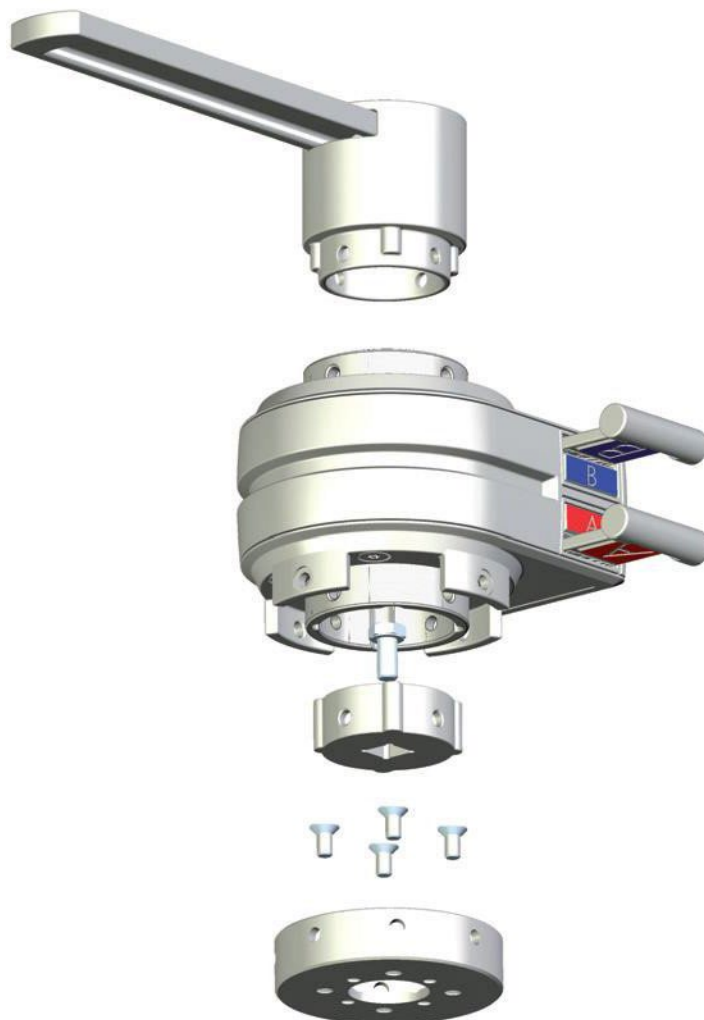


alnab

HAAKE[®]

**HIGH QUALITY VALVE INTERLOCKS
MADE IN GERMANY**



TECHNO-COMMERCIAL CONDITIONS

Table of Contents

Order Processing Procedure	3
Valve top works data	3
Sequence of operation.....	3
Price Variation based on Valve Data	4
Typical Manufacturing Schedule	4
Additional Information.....	5
Conditions of Sales.....	5
Technical Features of Interlocks	6

Order Processing Procedure

In case of order critical documents and information have to be submitted by the client to enable us to start the order processing. The following information has to be provided with order placement or shortly thereafter:

Valve top works data

Due to the customized engineering of the installation material like adapter and anchor, our engineers ensure the perfect fit of interlock and host valve. In order to engineer those customized parts we require the complete valve top works data, which can be gathered in different ways:

- a) Measurement by client/valve supplier
Our engineers have developed fill-in sheets for different valve types and designs. These fill-in sheets easily explain which measures are required and are issued as interactive PDF-files, where the data can be directly filled-in. The client/valve supplier may also provide the valves' GA drawings and/or Step-files. Based on these data our engineers will check the completeness and request further data if necessary.
- b) Measurement by Alnab employees at Alnab workshop
In case of new valves which are not build-in yet, the client may choose to send the valves to Alnab Armatur AB for measurement and installation. As soon as the valves are supplied, our engineers will gather the required data and Haake will prepare the engineering drawings. After production the interlocks are directly installed to the provided valves so that the complete set of interlock and valve will be supplied. Please contact Alnab for further information and prices in case of interest.
- c) Measurement by Alnab employees on site
In case on-site measurement of build-in valves is required, skilled Alnab employees will be able to provide this service. All on-site services have to be ordered separately according to our Service Rates. Please contact Alnab for further information and prices in case of interest.

Sequence of operation

Our interlock systems are intended to be used to ensure the adherence to pre-defined sequences of operating various valves. In order to produce our interlocks to fit these specific operating instructions, we require detailed information on the opening and/or closing sequence of the valves involved. Based on this information we will prepare a key logic diagram for each system, showing the key sequence as well as the required tagging of keys and interlock bodies. These key logic diagrams have to be checked and approved by stamp and sign by the client and/or end user.

The completeness of the valve data and the approved key logic diagrams are crucial to start the production process. Without the clarification of these documents, the order cannot be processed and the delivery will be delayed beyond Haake Technik GmbH's and Alnab Armatur AB's control.

Price Variation based on Valve Data

Normally, the valve data provided for the preparation of our Sales Quotes are limited. Thus, assumptions based on our experiences have to be made in regards to the required interlock type and size as well as the specific design. Following assumptions might have been made for price calculation:

- Interlock size required: Small, medium large
- Interlock type required: Single-key or dual-key
- Installation accessories required: Standard ISO bowl or customized torque bracket
- Size of operating devices: Lever or handwheel

In case of order, detailed valve topworks will have to be provided to enable our engineers to design the interlock for perfect fit to the host valve. In case the actual valve design is different to the assumptions made, we will have the right to amend our prices accordingly. Please note that the price change will be done in both directions no matter if the design will be less or more expensive for the client. Actual costs based on the final design will be invoiced.

Typical Manufacturing Schedule

Week									
<i>Order Submission incl. all technical data</i>									
Order preparation									
Submission of Key Logic Diagrams for review									
<i>Feedback on Key Logic Diagrams</i>									
Submission of final Key Logic Diagrams for approval (if changes are required)									
<i>Written approval of Key Logic Diagrams</i>									
Engineering									
Submission of Engineering Queries (if required)									
<i>Clarification of Engineering Queries / Taking further measurements</i>									
Completion of Engineering Drawings									
Submission of Engineering Drawings (if required)									
<i>Written Approval of Engineering Drawings (if required)</i>									
Procurement of valve specific mounting material									
Production									
Final Inspection									
<i>Ready for third-party inspection (if required)</i>									
<i>Submission of Inspection Release Note (if required)</i>									
Packing									
Dispatch									

Activities in **BOLD** are Supplier’s responsibility, while activities in *ITALIC* are Client’s responsibility.

NOTE: THIS SCHEDULE PROVIDES AN OVERVIEW OF THE TYPICAL ORDER PROCESSING OF INTERLOCKING ORDERS AND ALL THE STEPS REQUIRED UNTIL DISPATCH OF MATERIAL. FOR SPECIFIC INFORMATION ON THE DELIVERY LEAD TIME OF YOUR PROJECT PLEASE REFER TO THE DELIVERY TIME QUOTED IN OUR SALES QUOTE. PLEASE NOTE THAT THIS DELIVERY TIME STARTS AT TIME OF WRITTEN APPROVAL OF KEY LOGIC DIAGRAM AND SUBMISSION OF COMPLETE VALVE DATA.

Additional Information

All orders are supplied with documentation required for easy handling of material. Crucial documentation (Installation and Operating Manual) will be supplied in hard copy with the material. The following documents are included:

- Key Logic Diagrams (one for each system) – this key logic diagram shows the sequence of operation and the tagging of interlock bodies and keys. The final version containing information about the article number, variant code and corresponding assembly drawing number for each valve will be submitted together with the official order confirmation electronically and as hard copy with the material.
- Assembly Drawings – one assembly drawing for each valve type included in the order will be prepared and submitted together with the official order confirmation electronically and as hard copy with the material.
- Installation and Operating Manual for the System – one system specific Installation and Operating Manual for each system will be provided as hard copy with the material. Please contact us in case an electronic version is required in addition.
- Installation and Operating Manual for the component – one Manual for each type of interlock supplied will be provided as hard copy with the material. Please contact us in case an electronic version is required in addition.
- Packing List – one packing list showing the article number, the variant code and the serial number for each interlock will be provided as hard copy with the material. Please contact us in case an electronic version is required in addition.

In case additional documentation is required, please contact us for project specific agreement and prices. Please note that only documents applicable to our processes, products and standard can be considered.

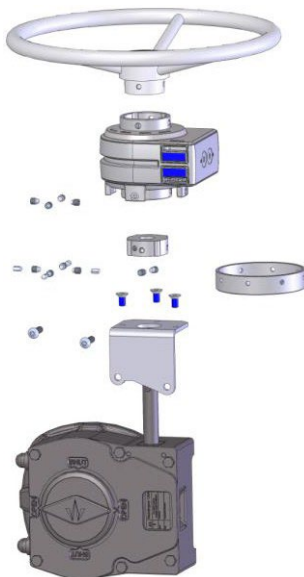
Conditions of Sales

- Prices are excluding VAT and fixed for the duration of the order. The prices have been calculated based on the current prices for raw materials (stainless steel). We reserve the right to change the price due to significant changes in raw material prices at time of order.
- Warranty period is 12 months after start-up or 18 months after delivery, whatever comes first
- Delivery time as specified in our Sales Quote starts **after receipt of written P.O. and all technical details**
- **Responsibility for correctness and accuracy of valve topworks data:**
 - 1) Valve Measurement done by Alnab at project site/Valve Vendor: 100% responsibility Alnab Armatur AB
 - 2) Valve Measurement done by Alnab at Alnab premises: 100% responsibility Alnab Armatur AB
 - 3) Valve Measurement done by Valve Vendor: 100% CLIENT responsibility
 - 4) Valve Measurement done by Client / Client representative: 100% CLIENT responsibility
 - 5) Data sheets submitted by Valve Vendor / Client: 100% CLIENT responsibility
- Release for Shipment from client (*if required*) has to be issued within 4 weeks after production completion. For periods extending these 4 weeks a storage fee will be considered.
- Validity of this quotation is 90 days.
- **No spares required.**
- **Country of Origin: Germany**
- Haake-Technik GmbH will deliver exclusive according to our delivery terms and conditions.

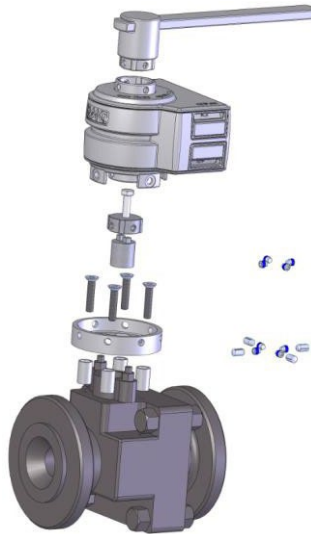
Technical Features of Interlocks

For all the quoted interlock devices, the following specifications are applicable:

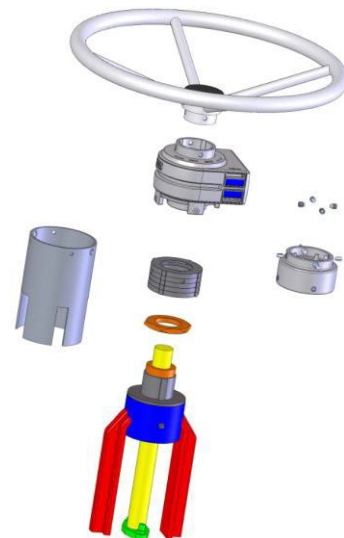
- All components are made of stainless steel AISI 316L.
- Our interlocks are protected against unauthorized operation by the use of uniquely coded, bidirectional linear keys.
- Suitable for extreme ambient temperatures + 80°C down to - 40°C. If the Interlocks are used in higher ambient temperatures please contact us for a revised quotation.
- Stainless steel levers or handwheels are provided in approximately the same size as the original without any alteration to the operation of the host valve.
- Robust, reliable and simple design with a minimal amount of moving parts.
- Maintenance free, so there is no need for spare parts, operational spare parts, insurance spare parts.
- Our Interlocks can be fitted to every kind of valve without modifications to the valve without any hot work.
- Customized mounting materials are supplied to ensure the perfect fit of interlock and host valve.
- Resistant for ingress of sand, dirt, snow, ice and moist due to our closed key recognition system (patent pending) which is at the entrance of the key slot.



**HSV-M-R for
Gearbox operated
valves**



**HSV-M-Q for
Lever operated
valves**



**HSV-M-R for
Handwheel operated
valves**