

**CLORIUS CONTROLS 3-WAY CONTROL VALVES**  
**TYPE H3F**  
CAST STEEL, DN 20 – 65 mm

Instructions for

- Installation
- Commissioning
- Operation and maintenance
- Transport and storage
- Spare parts



**General safety instructions**

The valves must be installed and serviced by fully trained and qualified personnel only, observing the accepted industry codes and practices. Make sure employees or third persons are not exposed to any danger.

## Design

The valve components - seats and cone and spindle - are made of stainless steel.

The valve body is made of cast steel GP240GH (GS-C25) with flanges drilled according to EN 1092-2 or ANSI B16.5 Class 150. The connection thread for the actuator is G1B ISO 228.

The leakage rate is less than 0.5% of the full flow (according to VDI/VDE 2174).

## Technical Data

- Valve body material: Cast steel GP240GH (GS-C25)
- Seat and cone material: Stainless steel (W. No. 1.4305)
- Spindle material: Stainless steel (W. No. 1.4305)
- Nominal pressure: PN 16
- Seating: Two balanced single seats
- Valve characteristic: Quadratic / linear
- Max Temperature range: Max. 350°C
- Flanges drilled according to: EN 1092-2 PN 16 or ANSI B16.5 Class 150
- Counter flanges: DIN 2633
- Colour: Green

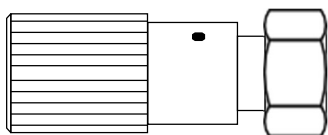
## Installation

It is recommended to use a strainer in front of the control valve if the liquid contains suspended particles.

The valves can be installed vertical as well as horizontal.

## Comissioning

### *Manual adjusting device*



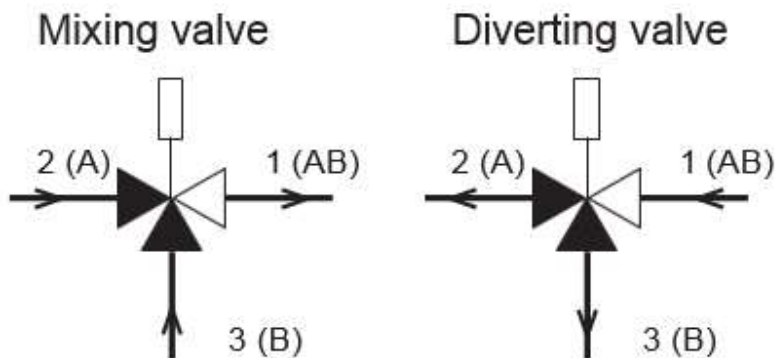
The device has a built-in stuffing box. For tightening and manual operation of valves when an actuator has not been fitted, e.g. during periods of construction (max. 170°C).

## Port markings

The ports are marked with the letters AB, A and B.

The letters in parentheses refer to the corresponding internationally adapted designations.

- Port AB (1) common port always open
- Port A (2) closes at load on spindle
- Port B (3) opens at load on spindle



## Operation

Without an actuator being installed, connection 2-1 is fully open and connection 3-1 completely closed, by means of a spring.

By increasing pressure on the spindle, the opening of the ports changes proportionally to the travel of the spindle, and when the spindle is pressed to the bottom, connection 3-1 is fully open and connection 2-1 completely closed.

## Maintenance schedule – age management.

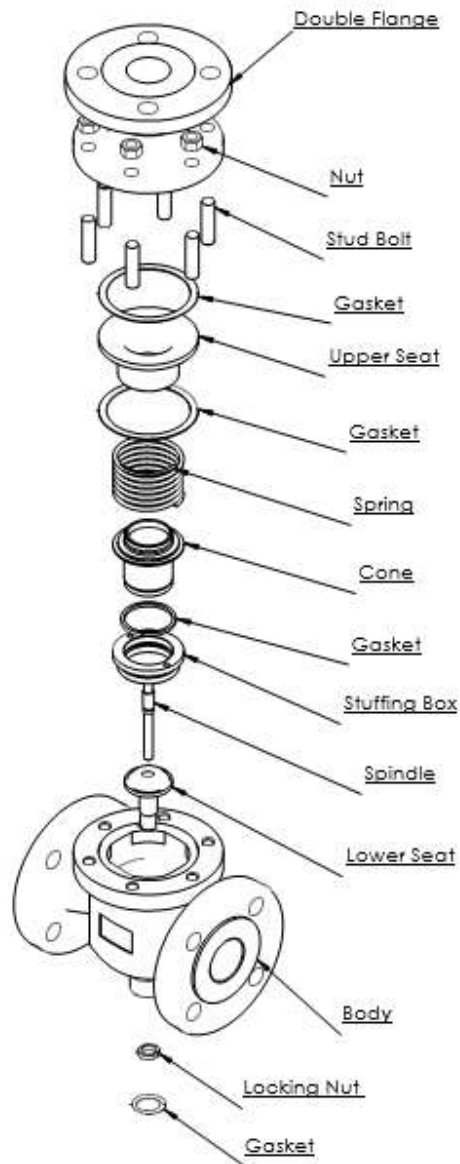
The gaskets have a durability of approximately 8 years at continuous use. However, it is recommended that the gaskets are inspected and changed every 4 years if possible.

## Maintenance: disassembly actuator from the valve:

- a. Follow the separate instructions manual according to the actuator type which is installed on the valve.

## Maintenance of H3F valves DN20-65mm

### H3F DN20-65



*Clorius*

- Remove positioner and actuator following separate actuator instructions – Note: When the actuator is removed the valve will no longer be tight.
- Remove The double flange. Replace gasket -See Appendix of spare part list for correct item
- Remove locking nut before removing and replacing the other internal parts.
- Mount all parts in reverse action. Loctite must be added on all bolts.

- e. Replace gasket before mounting the actuator. A new gasket must be installed after each time the gasket has been tightened and loosened again otherwise it will leak.
- f. Follow separate instructions for the actuator how to calibrate and install the actuator. If the actuator will not be mounted, it is possible to install a manual adjusting device in order to secure no external leakage from the valve.

**Important! Use Loctite for all screw connections that were disassembled.**

## **Transport and storage**

The valve must be transported and stored dry and clean. In humid rooms, a drying material or heating must be used to avoid condensation.

During transport and intermediate storage the valve should not be exposed to temperatures lower than -10°C.

The valves are painted (top coated) on the outside. This coating must remain without damage, otherwise the faulty spots must be repaired immediately.

The standard packaging protects valves and equipment against rain and snow during trucking.

For critical transports, such as sea freight, equipment will be protected by VCI (Volatile Corrosion Inhibitor) material.

If protected by VCI do not remove the packaging until the equipment is going to be installed.

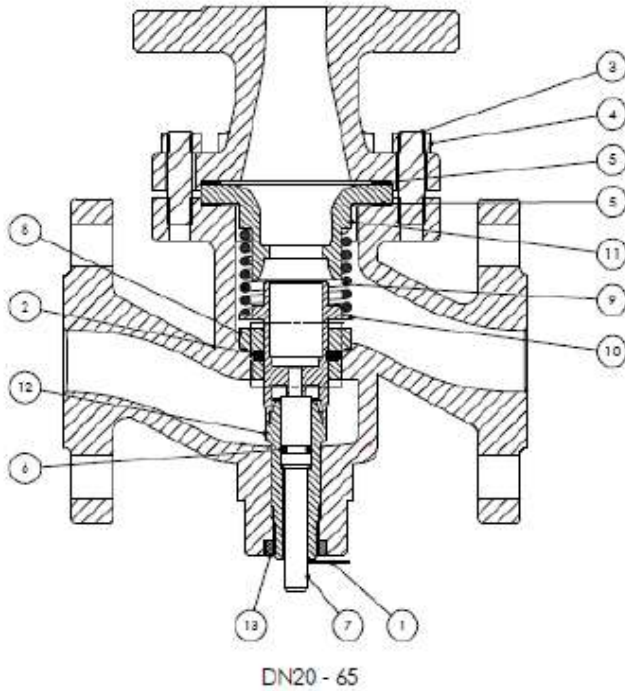
## APPENDIX - Spare part manual

### H3F SPARE PARTS

3-way Control Valves

Cast steel, PN 40, DN 20-65 mm, Flanged ends

S-2.4.07-A



| Pos. | Component  |
|------|------------|
| 1    | Gasket     |
| 2    | Gasket     |
| 3    | Stud bolt  |
| 4    | Nut        |
| 5    | Gasket     |
| 6    | O-ring     |
| 7    | Spindel    |
| 8    | Seat seal  |
| 9    | Spring     |
| 10   | Cone       |
| 11   | Seat       |
| 12   | Lower seat |
| 13   | Locknut    |

### Order Information:

| Packing set        | Pos.   | Valve  | Item No.  | Trim set           | Pos.             | Valve  | Item No.  |
|--------------------|--------|--------|-----------|--------------------|------------------|--------|-----------|
| components<br>pos. | 1 to 6 | 20 H3F | 1-2990710 | components<br>pos. | 1 to 13          | 20 H3F | 1-2990744 |
|                    | 1 to 5 | 25 H3F | 1-2990712 |                    | 1 to 5 ; 7 to 13 | 25 H3F | 1-2990746 |
|                    | 1 to 5 | 32 H3F | 1-2990715 |                    | 1 to 5 ; 7 to 13 | 32 H3F | 1-2990750 |
|                    | 1 to 5 | 40 H3F | 1-2990717 |                    | 1 to 5 ; 7 to 13 | 40 H3F | 1-2990752 |
|                    | 1 to 5 | 50 H3F | 1-2990719 |                    | 1 to 5 ; 7 to 13 | 50 H3F | 1-2990755 |
|                    | 1 to 5 | 65 H3F | 1-2990721 |                    | 1 to 5 ; 7 to 13 | 65 H3F | 1-2990758 |