

# 3-way control valves type H3F

## Cast steel, PN 40, DN 25 – 50 mm $\varnothing$ , Flanged ends

2.4.07-E

GB-1

### Characteristics

- Nominal pressure PN 40
- Regulating capability  $\frac{k_{vs}}{k_{vr}} > 25$
- Same  $k_{vs}$ -value as mixing and diverting valve
- Quadratic/linear characteristic

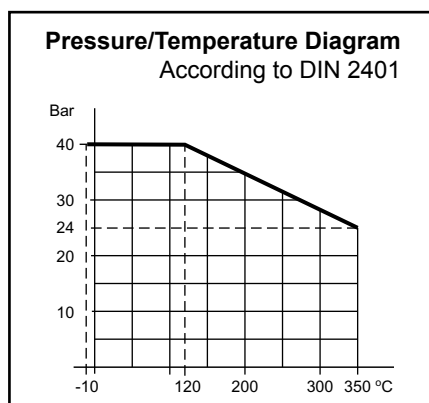
### Applications

Control valves type H3F are designed for control of hot oil, water and other liquids and can be installed in pipe systems as mixing or diverting valves.

The valves are used in conjunction with our temperature regulators for controlling industrial processes, district or central heating plants or marine installations.

### Dimensioning

For sizing of control valves and selection of actuators, please see "Quick Choice" leaflet No. 9.0.00.



### Design

The valve components - spindle, seats and cone - are made of stainless steel. The valve body is made of cast steel GS-C25 with flanges drilled according to DIN 2545.

The thread for the actuator connection is G1B ISO 228.

The valves have two balanced single seats and are designed for tight closure. The leakage rate is less than 0.5 % of the full flow (according to VDI/VDE 2174).

### Quality assurance

All valves are manufactured under an ISO 9001 certification and are pressure and leakage tested before shipment.

For marine applications the valves can be supplied with relevant test certificates from recognized classification societies.

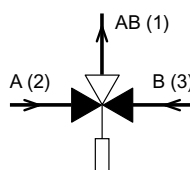
### Flange placing

Note that all flanges and the connecting boss for actuators are in the same plane for compact pipe mounting and that the mutual placing of the ports has been changed compared with our other 3-port valves.

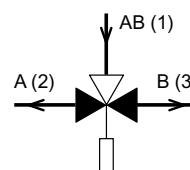
### Port numbering

Valves type H3F are marked with the internationally recognized port designations: A, B, AB.

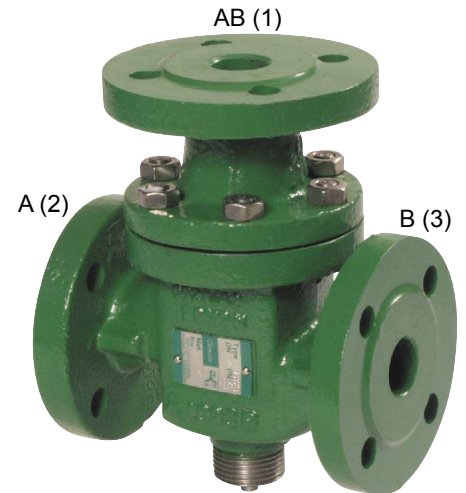
Mixing valve



Diverting valve



Port AB common port always open  
 Port A closes by activating the spindle  
 Port B opens by activating the spindle



### Function

Without an actuator being installed, connection A-AB is fully open and connection B-AB 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 B-AB is fully open and connection A-AB completely closed.

The valve characteristics are as follows:

Port A-AB and AB-A: quadratic

Port B-AB and AB-B: almost linear

These characteristics ensure constant total flow under almost all pressure conditions and optimum circulation in the individual circuits.

### Technical data

Materials:

- Valve body Cast steel GS-C25 (W. No. 1.0619)
- Trim Stainless steel (W. No. 1.4305)
- Bolts, nuts Steel (24 CrMo 5/A4)

Nominal pressure PN 40  
 Seating 2 balanced single seats

Valve characteristic Quadratic / linear

Regulating capability  $\frac{k_{vs}}{k_{vr}} > 25$

Seat leakage  $\leq 0.5\%$  of  $k_{vs}$

Temperature range See pressure/temperature diagram

Mounting See page 2

Flanges - drilled according to DIN 2545  
 Counter flanges DIN 2635  
 Colour Green

Subject to changes without notice.

Specification					
Type	Flange Connection	Opening DN in mm	$k_{vs}$ -value * $m^3/h$	Lifting height mm	Weight kg
25 H3F	25 mm	25	7.5	7	7
32 H3F	32 mm	32	12.5	8	10
40 H3F	40 mm	40	20	9	14
50 H3F	50 mm	50	30	10	18

\* Same  $k_{vs}$ -values for mixing and diverting valves

# 3-way control valves type H3F

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GB-2

### Definition of $k_{VS}$ -value

The  $k_{VS}$ -value is identical to the IEC flow coefficient  $k_V$  and defined as the water flow rate in m<sup>3</sup>/h through the fully open valve by a constant differential pressure,  $\Delta p_V$ , of 1 bar.

### Mounting

The valves can be installed with vertical as well as horizontal spindles. For valve temperatures of max. 150°C, the thermostat/actuator can be fitted below or above the valve. For valve temperatures above 150°C, a cooling unit of type KS has to be applied with connection downwards - according to the following instructions:

Valve temperature	Cooling unit	Suitable for
150°C - 250°C	KS-4	All actuators
250°C - 300°C	KS-5	Thermostats
250°C - 300°C	KS-6	Valve Motors

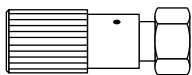
KS-5 or KS-6 must be applied to hot oil systems.

### Strainer

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

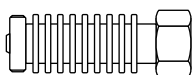
### Accessories

#### Manual adjusting device



The device has a built-in stuffing box. For sealing and manual operation of valves when an actuator has not been fitted, e.g. during periods of construction.

#### Cooling unit KS-4



Cooling unit protecting the stuffing box of the motor / thermostat. To be applied at valve temperatures between 150°C and 250°C.

#### Cooling unit KS-5



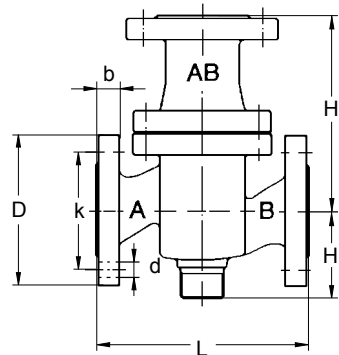
Cooling units with built-in bellow glands, replacing stuffing box of thermostat (KS-5) or valve motor (KS-6). Must be applied at valve temperatures above 250°C and in hot oil systems.

#### Cooling unit KS-6



Subject to changes without notice.

### Dimension sketch



### Dimensions

Type	L mm	H mm	H1 mm	D (dia.) mm	b mm	k (dia.) mm	d mm dia. (number)
25 H3F	160	130	70	115	18	85	14x(4)
32 H3F	180	150	75	140	18	100	18x(4)
40 H3F	200	160	85	150	18	110	18x(4)
50 H3F	230	190	95	165	20	125	18x(4)