

**Works with**

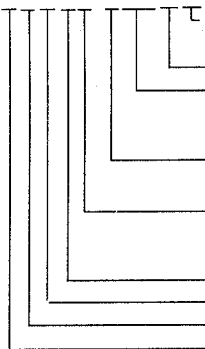
- \* ATI
- \* Barber coleman
- \* Honeywell
- \* Johnson
- \* Landis&Gyr
- \* Satchwell
- \* Sauter
- \* Staefa
- \* T/A
- \* TEG
- \* Others

# Three port seat valves

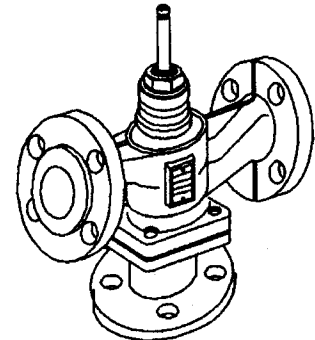
Cast iron, GG20, Flange connections PN16  
for Liquids, Steam & Gas

## VDF43..

**VDF43.125L**  Standard type



- Type of fluid : 0 or L = Liquid S= Steam O = Oil G= Gas R= Refrigerant
- Options are also available
- Flow characteristics; L=Linear, E=Equal percentage, S=Special
- Size of Ports (mm)  
05,06,07,08,09,10,11,12,13,14,15, 20,25,32,40,50,65,80,90=100,91=125  
92=150, 93=200, 94=250, 95=300 Options are also available
- Type of neck for actuator  
1= ATI, TEG/ L/G 2= H/W 6= Flow 7= Mech.sensor 8= Press.sensor 9= Optns
- Version No. of valve body.  
1= Self seat+Bz plug, 2= Stls seat + Bz plug, 3=Stls.seat+Stls.plug,  
5= Press.control, 7= for Press.regulator, 8= for Self operated 9= Options
- Nominal Pressure/Bar : 2= 6 3= 10 4=16 5= 25 6= 40
- Type of connection : G=Thread type ,F= Flange type connection
- Type of port : T=Through way, D= Divert, S= Special
- Product group :V=Valve



### Description

Flange valves made from cast iron, size DN15...300.  
Nominal stroke 20mm for DN15...50mm  
40mm for DN65mm ...200mm  
50mm for DN250mm...300mm

For use with Electric, Pneumatic or Hydraulic actuators.

### Permissible fluids

- Hot water :max.160° C
- Chilled water :-15° C max. in closed circuit only
- Water with following additives;  
-Hydrazine, Phosphate, for water treatment  
-Glycol,max.50%, for frost protection  
-Saturated steam,super heated steam abs press. 2bar  
-Hot oil:max 160° C  
-Refrigerant R12,R22,R502(spindle heating element required for this application)

### Application

Suitable for use a proportional control of mixing or diverting flow control in heating ventilating air conditioning, District heating system and other industrial applications.

### Operating pressure

16Bar(1600kPa)

### Leakage rate; Through

0%

By-pass

0%

### Connection port

ISO

### Summary of Types

Valves				Actuators										
DN	Type	Kvs	Rangeability	max.ΔP <sub>v100</sub> in kPa		Nominal stroke	Force (N) at max.ΔP <sub>v100</sub> in kPa (close-off ratings)							
mm	reference	m <sup>3</sup> /h	K <sub>vs</sub> /K <sub>vr</sub>	Mix.	Div.	mm	400N	600N	900N	1200N	2400N	4800N	9600N	15000N
15	VDF43.113	0.9	> 50	2400	2400	20	1000	1600	2400					
15	VDF43.114	1.9	> 50	2400	2400	20	1000	1600	2400					
15	VDF43.115	3	> 50	2400	2400	20	1000	1600	2400					
20	VDF43.120	5	>100	2400	2400	20	900	1400	2100					
25	VDF43.125	7.5	>100	2400	2400	20	600	1000	1500	2000				
32	VDF43.132	12	>100	2400	2400	20	400	600	900	1200	2400			
40	VDF43.140	19	>100	2400	2400	20	250	400	600	800	1600			
50	VDF43.150	31	>100	2000	2000	20	150	250	375	500	1000	2000		
65	VDF43.165	49	>100	1000	1000	40			90	125	250	500	1000	
80	VDF43.180	78	>100	800	800	40				100	200	400	800	
100	VDF43.190	124	>100	500	500	40				60	125	250	500	
125	VDF43.191	200	>100	450	450	40					80	150	300	450
150	VDF43.192	300	>100	300	300	40						100	200	300
*200	VDF43.193	500	>100	180	180	40						60	120	180
*250	VDF43.194	780	>100	120	120	50							80	120
*300	VDF43.195	1250	>100	90	90	50							60	90

Notes; 100 kPa = 1Bar =10mWG  
max.ΔP<sub>v100</sub> =Max.permissible differential pressure across open valve  
ΔP<sub>v100</sub> =differential pressure across fully open valve in installation in full load.  
ΔPmax =max. permissible differential pressure across closed valve

\* = only upon special order  
k<sub>vs</sub> =nominal flow value of valve in m<sup>3</sup>/h at nominal stroke and a pressure drop of 1 Bar  
k<sub>vr</sub> =smallest flow value in m<sup>3</sup>/h for pressure drop of 1 bar at which the flow characteristic tolerance are still maintained

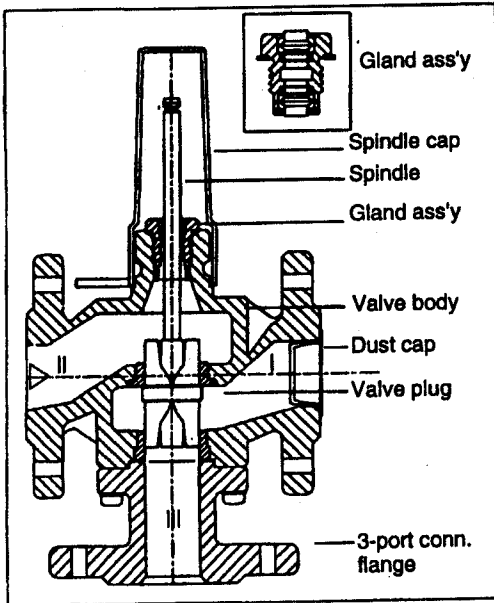
### Accessories

Electric heating element for sub zero temp. applications

## Design Features

Valves are supplied as a separate unit. The assembly is straightforward, neither special tools nor adjustments are required.

- Sealing gland assembly is easily interchangeable on site
- Spindle is made of stainless steel
- Plug materials can be of any for various applications to meet accurate performances.
- Size from 15mm to 150mm, up to 300mm on request
- Kv value from 0.1 to 1250
- Protective Plastic cover for spindle
- Quick actuator mounting



Various type of plugs for the functional control in wide range of applications



Parabolic  
Water only



Perforated  
gas, oil  
steam



Profiled  
water, gas, steam  
oil, any media

Spare part order Nr.

- PN:VDF43.03XXAR : Parabolic  
PN:VDF43.03XXAF : Perforated  
PN:VDF43.03XXAP : Profiled

Various type of sealing gland assemblies for different media and wide range of temperature and pressure.



Standard version



Special version  
for refrigerants

Spare part order Nr.

- PN:VDF40.02A : Hot water  
PN:VDF40.02B : Chilled water  
PN:VDF40.02C : Steam  
PN:VDF40.02D : Oil  
PN:VDF40.02E : GAS  
PN:VDF40.02R : Refrigerants

## Application Advice

For basic information and further details on valve selection and sizing refer to data sheets 4001..4019.

The valve can be installed either in the supply or the return pipe work. The latter is given preference since return side temperature is lower. Strainer is recommended for correct control and long life.

For steam applications: The valves are only suitable for saturated or superheated steam; the steam pipes must be properly drained or blow off the dirt inside the pipe.

Selecting actuator is also very important since it is not properly matched control valve does not work correctly. For correct selection of actuators also refer to the Data Sheet of various actuators, 4300... 4499.

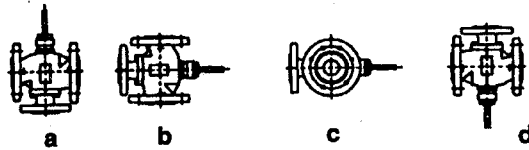
Observe the permissible temperatures. For more details refer to <Application > and <Technical Data>

Data Sheet 3401 contains basic system data on POLYTEK. All hints and explanations given in this sheet must be observed.

## Mounting and Installation Advice

Do not remove the protection cap of the valves by tearing off the finger tap before mounting actuators.

Mounting positions



a. b. c. = permitted d = not recommended

Application & Flow direction



Mixing

Inlet from II and III to I

Diverting

Inlet from I to II and III

The valve mounting instructions are supplied in the protection cap of the valves.

## Commissioning Advice

a. Remove the protection cap of the valves by tearing off the finger tap.

b. Check the valve spindle whether it is bent or safe by

- Pushing valve spindle : valve opens ( Inlet II to I )  
by-pass closes ( port III )  
Pulling valve spindle : valve closes ( Inlet II to I )  
By-pass opens ( port III )

c. Care must be taken not to make any damage on the surface of valve spindle, Any scratch or touching tool directly on spindle surface may cause valve leaking.

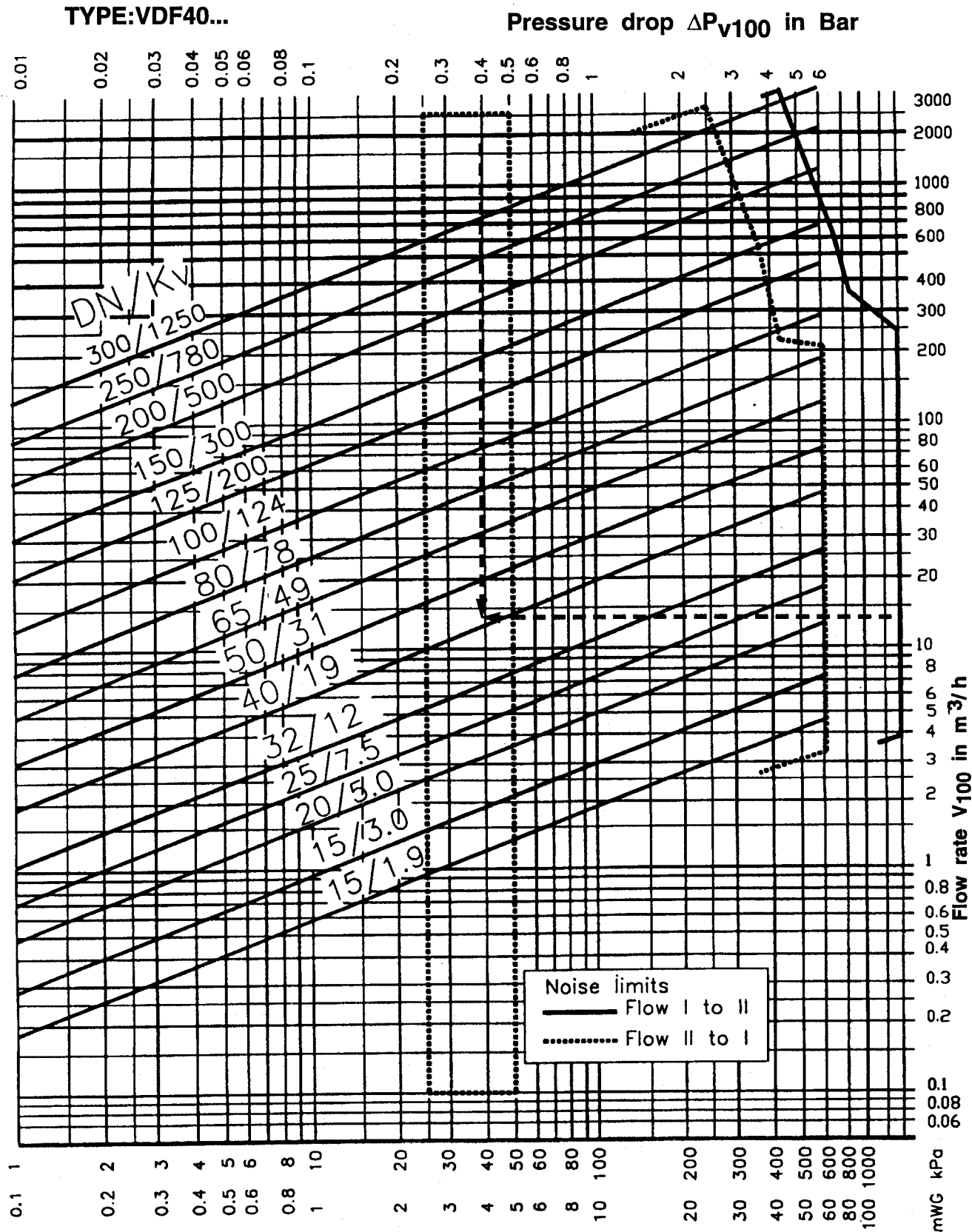
d. Read mounting instruction of actuator before installation c: actuator. Wrong installation may cause malfunctioning.

# Hints for correct valve sizing

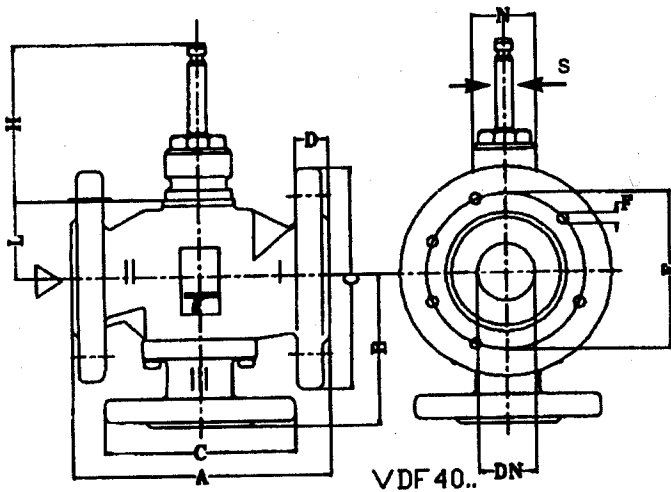
Example: Given data:  $\Delta P = 0.35 \text{ Bar}$  and  $K_v = 13$   
 a. Trace down the vertical line of 0.35 Bar of  $\Delta P$  to an intersecting point with horizontal line of  $K_v$  flow rate of  $13 \text{ m}^3/\text{h}$ .

b. Select  $K_v=19$  of DN40 between the line of  $K_v=31$  and the line of  $K_v=19$

The answer is **TYPE:VDF43.140 ;40mm(1-1/4")** of  $K_v=19$



## Dimension



DN mm	Inch	A	B	C	D	F	H	L	N		S	Wgt kg	Suitable actuators		
									ATI	H/W			ATI	L/G	H/W
15	1/2"	100	50	100	10	12x 4	96.5	26	44	35	10	3.8	AQX SQX/SKD M904+Q455		
20	3/4"	100	50	100	10	12x 4	96.5	26	44	35	10	4.0			
25	1"	160	80	115	16	14x 4	96.5	34	44	35	10	4.6			
32	1 1/4"	200	100	150	18	18x 4	96.5	39	44	35	10	8.0			
40	1 1/2"	200	100	150	18	18x 4	96.5	39	44	35	10	8.0			
50	2"	230	115	165	20	18x 4	96.5	39	44	35	10	11.7			
65	2 1/2"	290	145	185	20	18x 4	116.5	60	44	35	14	14.7	AQX64 SKC62 M904+Q455		
80	3"	310	155	200	22	18x 8	116.5	91	44	35	14	18.8			
100	4"	350	175	220	24	18x 8	116.5	102	44	35	14	29			
125	5"	400	200	250	26	18x 8	116.5	118	44	35	14	42			
150	6"	480	240	285	26	22x 8	116.5	124	44	35	14	61			
200*)	8"	600	305	345	29	22x12	116.5	150	44	35	16	150	AQX65		
250*)	10"	720	370	400	29	22x12	116.5	180	44	35	16	210			

Dimensions in mm

\*) Available upon order in quantity only