

# Piston Valve Gear Box Version

## DN200/250/300

### Description

Piston Valve provides perfect tightness & durability on various media such as Steam, Superheated Steam, Heat Transfer Fluid, Water & Compressed Air. Gear box Piston Valve ensures ease of operation.

### Sizes and Pipe Connection

DN200/250/300 Flanged To CLASS150/300,PN16/40

### Body design conditions :

CLASS 150 / CLASS 300 / PN16 / PN40

### Operating Conditions:

#### Operating Conditions: CLASS 150

(PMA) Maximum allowable pressure	19.6 bar g at 38°C
(PMO) Maximum operating pressure	12.71 bar g at 232°C
(TMO)Maximum operating temperature	232°C at 12.71 bar g
Cold hydraulic test pressure	19.5 bar g (IBR requirement)
Min Operating Temperature: 0°C	

#### Operating Conditions: CLASS 300

(PMA) Maximum allowable pressure	51.1 bar g at 38°C
(PMO) Maximum operating pressure	42.58 bar g at 232°C
(TMO)Maximum operating temperature	232°C at 42.58 bar g
Cold hydraulic test pressure	64 bar g (IBR Requirement)
Min Operating Temperature: 0°C	

#### Operating Conditions: PN16

(PMA) Maximum allowable pressure	16 bar g at 38°C
(PMO) Maximum operating pressure	16 bar g at 200°C
(TMO)Maximum operating temperature	232°C at 15.74 bar g
Cold hydraulic test pressure	24 bar g
Min Operating Temperature: 0°C	

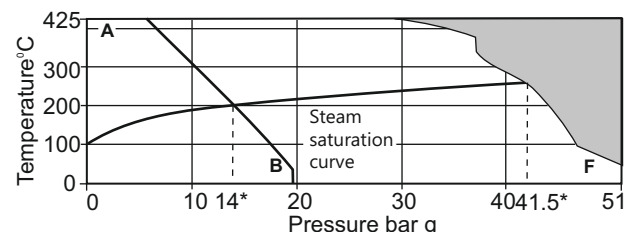
#### Operating Conditions: PN40

(PMA) Maximum allowable pressure	40 bar g at 38°C
(PMO) Maximum operating pressure	39.4 bar g at 232°C
(TMO)Maximum operating temperature	232°C at 39.4 bar g
Cold hydraulic test pressure	59 bar g
Min Operating Temperature: 0°C	



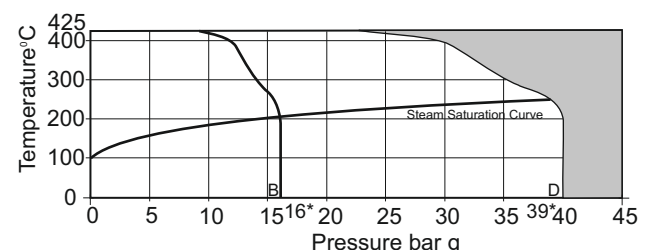
**DN200/250/300**

### Operating Range:



The product must not be used in this region.  
 A - B Flanged ANSI 150    A - F Flanged ANSI 300  
 \* PMO- Maximum operating Pressure

### DIN PSVAL



The product must not be used in this region.  
 A - B Flanged PN 16    A - D Flanged PN 40  
 \* PMO- Maximum operating Pressure

### Gear Box Details:

Gearbox Type: BEVEL

Gearbox Series: DN200 - ATB03

DN250 & DN300 - ATB06

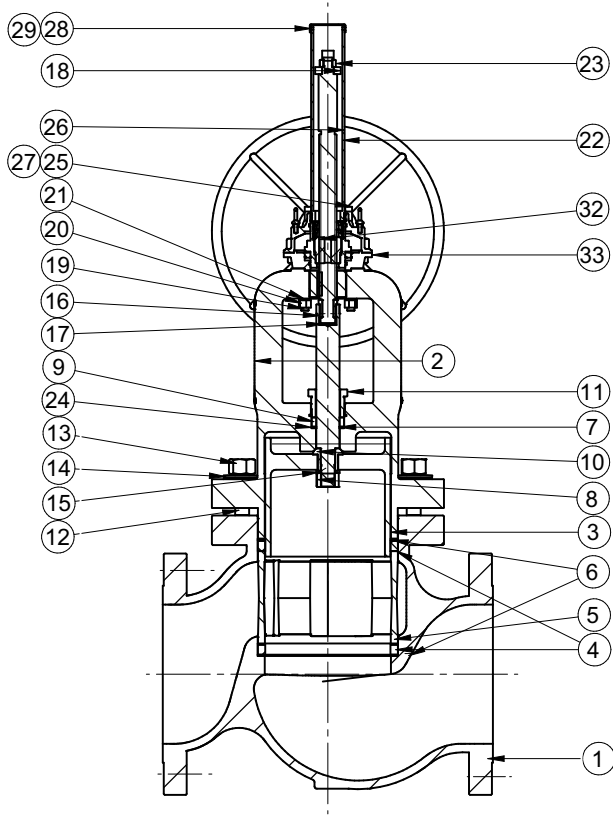
Mechanical Advantage: ATB03 – 2.7:1

ATB06 – 2.9:1

Maximum Thrust: DN200 – 35 KN

DN250 – 65 KN

DN300 – 80 KN



### Material:

Sr.No.	Description	Material	Standard
1	Body Casting	Cast Steel	ASTM A 216 Gr.WCB
2	Bonnet Casting	Cast Steel	ASTM A 216 Gr.WCB
3	Piston	Stainless Steel	ASTM A 351 CF8
4	Body Sealing Stack	SS Reinforced Graphite	
5	Spacer	Stainless Steel	ASTM A 743 CA 15
6	Bonnet Sealing Ring	Elastomer	
7	Stem	Stainless Steel	ASTM A 276 Type 304
8	M30 L.H.Hex Nut	Stainless Steel	ASTM A 276 Type 304
9	Gland Sealing Stack	SS Reinforced Graphite	
10	Back Seat	Stainless Steel	ASTM A 276 Type 410
11	Gland Nut	Stainless Steel	ASTM A 276 Type 410
12	M30 Stud	Carbon Steel	ASTM A 193 Gr.B7
13	M30 Hex Nut	Carbon Steel	ASTM A 194 Gr.2H
14	Belleville Washer	Spring Steel	
15	SS Washer	Stainless Steel	ASTM A 276 Type 304
16	Split Nut	Brass	
17	Thrust Plate	Stainless Steel	ASTM A 276 Type 410
18	Guide Block	Brass	
19	M16 Stud	Carbon Steel	ASTM A 193 Gr.B7
20	M16 Nut	Carbon Steel	ASTM A 194 Gr.2H
21	M16 Spring Washer	Stainless Steel	ASTM A 276 Type 304
22	Spindle	Stainless Steel	ASTM A 276 Type 410
23	Lock Nut	Stainless Steel	ASTM A 276 Type 410
24	Gland Seal	Elastomer	
25	Anti-Rotation Bracket	Carbon Steel	IS2062
26	Anti-Rotation Spindle Cover	Carbon Steel	IS2062
27	Bracket Mounting Allen Bolt (Not Shown in Assembly drg.)	Carbon Steel	Gr. 8.8
28	Spindle Cover Cap	Carbon Steel	IS2062
29	Cap Retaining Screw (Not Shown in Assembly drg.)	Carbon Steel	Gr. 4.4
30	Name Plate (Not Shown in Assembly drg.)	Stainless Steel	ASTM A 240 Type 304
31	Self Tapping Screw (Not Shown in Assembly drg.)	Alluminium	
32	Stem Nut	Alluminium, Bronze	
33	Gear Box Unit		

### Overall Dimensions:

SIZE	CLASS	L	Ø D	ØPCD	Ø H	NO. OF HOLES	T	E (Approx)	WEIGHT (Kg) (Approx)
DN200	150	495	34.5	298.5	22	8	27	1010	180
DN200	300	559	38.0	330.2	25.4	12	39.7	1010	225
DN200	PN16	600	340	295	22	12	24	1010	180
DN200	PN40	600	375	320	30	12	34	1010	225
DN250	150	622	405	362	25.4	12	28.6	1100	315
DN250	300	622	445	387.4	28.6	16	46.1	1100	355
*DN250	PN16	730	405	355	26	12	26	1100	355
*DN250	PN40	730	450	385	33	12	38	1100	385
DN300	150	698	485	431.8	25.4	12	30.2	1400	590
DN300	300	711	520	450.8	31.75	16	49.5	1400	620
*DN300	PN16	850	460	410	26	12	28	1400	620
*DN300	PN40	850	515	450	33	16	42	1400	650

All dimensions are in mm.

\* Contact Forbes Marshall for these sizes

**Installation Note:**

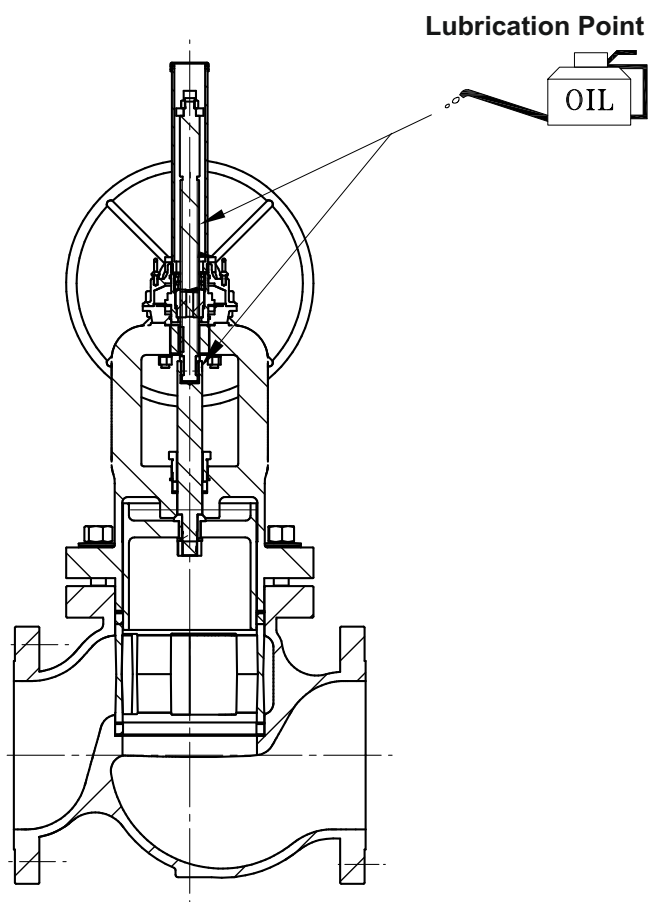
the Valve is designed for installation in a vertical or horizontal line. To open valve turn hand wheel till it stops & guide block is visible in upper window. To close turn the hand wheel till it stops & guide block is visible in lower window. Do not use "F" Key. If any leakage is observed during operation at outlet, close valve fully and tighten opposite Bonnet nuts equally, in step of half or one turn, until leakage stops.

**Recommended Bonnet nut tightening Torque-80-90 Nm.****Safety Information:**

Pressure: Before attempting any maintenance of the Valve, ensure the pressure is isolated & safety Vented to atmosphere. Do not assume that the system is depressurized even when a pressure gauge indicated zero.

**Maintenance:**

Use Molykote M30 oil for Lubrication. Lubricate spindle threads, Stem, Split nut.  
Operate valve once or twice after lubrication.

**How to order:**

Example: DN300 Gear Operated Piston Valve with Flange ends Class 150.

**Available Spares:**

SEALING RING KIT	BODY SEALING RING-2 NO.S , BONNET SEALING RING -1 NO, NA265 BONNET SEAL -2 AND GLAND SEAL-1 NO.
PISTON KIT	PISTON WITH SPINDLE PACK OF 1 SET
ANTI ROTATION ASSEMBLY KIT	ANTI ROTATION SPINDLE BACKET, SPINDLE COVER, SPINDLE COVER CAP, GUIDE BLOCK, STOPPER NUT, M10 ALLEN BOLT, M6 SCREW
BEARING 'O'RING KIT	PINION BEARING 2NO., ADAPTOR SLEEVE BEARING 2NO., PINION 'O' RING, ADAPTOR SLEEVE 'O'RING 2NO.
SHAFT WITH INTERNAL KIT	PINION, BEVEL GAER, ADAPTOR SLEEVE

**How to Order Spares:**

Order spares as per the code no. specified in the user manual.



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Forbes Marshall Arca  
Codel International  
Forbes Solar  
Forbes Vyncke  
Forbes Marshall Steam Systems

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