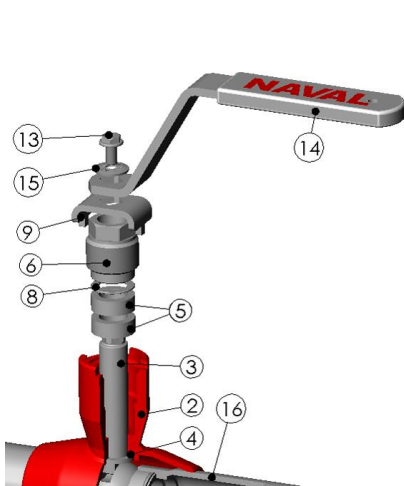
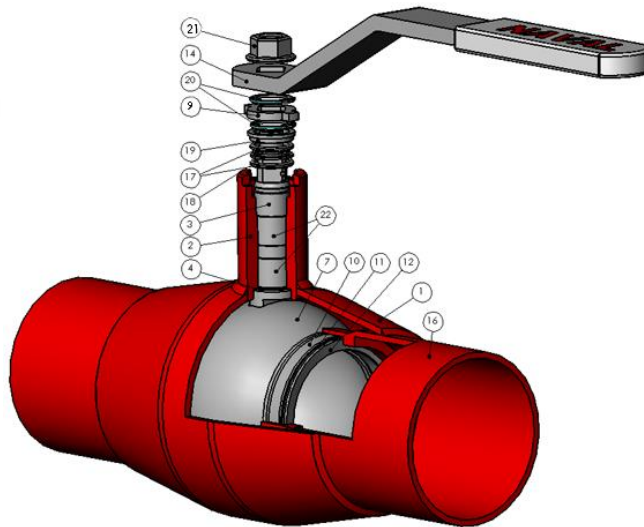


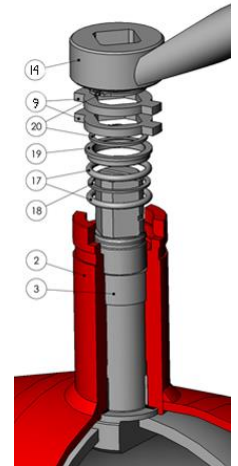
**INSTRUCTIONS FOR INSTALLATION, OPERATION AND MAINTENANCE OF
NAVAL VALVES FOR STEAM**



DN15 – 50



DN65-100



DN125 - 300

Osa	Nimi	Aine
1	BODY PIPE	P235GH/St37.8
2	STEM HOUSING	P355NH/Fe52EP
3	STEM	1.4057/AISI431
4	SLIP RING	PTFE+C
5	RING	GRAPHITE
6	GLAND BUSH	1.4305/AISI303
7	BALL	1.4301/AISI304
8	RING	JM1-15
9	STOP	1.4301/AISI304
10	SEAT RING	PTFE + 25%
11	SUPPORT RING	1.4404/AISI316
12	CUP SPRING	C 67 DIN 17222
13	SCREW	8,8 A2
14	HANDLE	1.4016/AISI430
15	CONTACT-PLATE	
16	WELDED END	P235GH/St37.8
17	O-RING	KALREZ /EPDM
18	SUPPORT RING	PTFE+C
19	STEM BUSHING	1.4305/AISI303
20	SEGER	
21	NUT	



1. Safety instructions

- 1.1 Read these instructions on installation, operation and maintenance carefully first!
- 1.2 Make sure the open/closed position of the valve corresponds to the position of the stem/handle!
- 1.3 To avoid danger, make sure the valve is suitable for the medium and the operating conditions!
- 1.4 Make sure the valve has been depressurised before it is removed!
- 1.5 Do not exceed the maximum pressure/temperature combinations. Cf. pressure/temperature curve on page 4.
- 1.6 Do not exceed maximum/minimum temperatures!
- 1.7 Remember that excessive external heating of the valve may damage it (e.g. in welding)!
- 1.8 Exercise care when installing, operating and servicing the valve!

2. Factors to be considered prior to installation and commissioning

2.1 Suitability

- Always make sure before installation that the valve is suitable for the medium.
- Navalsteam is designed for on-off service. The valves are specially suitable for steam, condensate, hot oil, gas and other non-corrosive media.

2.2 Checks

- Pay special attention to the correct installation method, the operating conditions and the purpose of use of the valves (ensure the suitability of the medium).
- Check the nameplate to ensure that the correct product has been delivered.
- Make sure there are no damages in the valve due to e.g. transport, storage etc. (welding seams, paintwork, corrosion etc.).
- Check the compatibility of the valve with equipment delivered by other suppliers.

3. Installation

3.1 Welding into network

- 3.1.1 Do not remove the protective covers of the connections until just before installation.
- 3.1.2 Make sure there are no impurities or foreign objects inside the valve or the piping.
- 3.1.3 Make sure the chamfering of the piping is suitable for welding of the valve.
- 3.1.4 Naval recommend the use of electric welding methods.
- 3.1.5 The valve shall be completely open when welded into horizontal piping (Fig. 1).
- 3.1.6 When welding the valve into vertical piping, the valve shall be open when the upper seam is welded (Fig. 2a). If the valve is closed when the upper seam is welded, it must be filled with water (Fig. 2b). In gas welding the valve shall be closed when welding the bottom seam (Fig. 3). If gas welding is employed, make sure the valve does not become too hot, cf. 3.1.9.

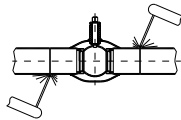


Figure 1.

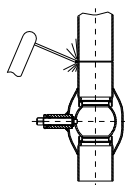


Figure 2a.

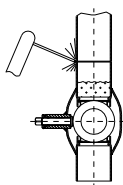


Figure 2b.

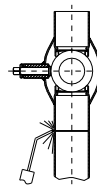


Figure 3.

- 3.1.7 Naval recommend that the handle be removed from the valve for installation.
- 3.1.8 Welding to be performed by a qualified welder.
- 3.1.9 Excessive heating of the valve must be avoided during the welding. The valve must be cooled down using e.g. a damp cloth, cooling paste etc. Resume work using shorter welding times.
- 3.1.10 Do not open/close the valve immediately after welding. Allow the valve to cool down properly before operating it.
- 3.1.11 During designing and construction of valve elements, uncontrolled thermal expansion of the pipeline media has to be prevented.

3.2 Pressure test

- Perform a pressure test at 1.1 x PN with the valve connected into the network and in closed position. Perform a pressure test at 1.5 x PN with the valve completely or partly open. Check the valve against leaks.

3.3 Valve support

- Typically support methods used with piping are employed. With Naval valves smaller than DN 50 no special supports are needed, but for valves larger than DN 50 local support instructions shall be complied with.

4. Operation

- 4.1 A valve designed for use as a shut-off valve may only be used in the open/closed position.
- 4.2 Avoid unnecessarily fast closing of the valve due to pressure shocks. For larger sizes (\geq DN 150), a by-pass valve is recommended.
- 4.3 In applications where the valve remains in the same position for most of the time, it can be opened or closed a few times during the year to avoid seizing of the valve.
- 4.4 A marking line on the stem shows the position of the ball (Fig. 5).

4.5 The valve handle shall be aligned parallel with the marking line on the stem (Fig. 4)

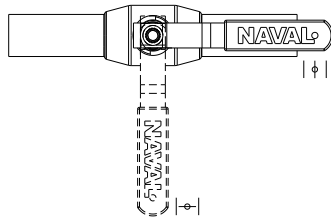


Figure 4.

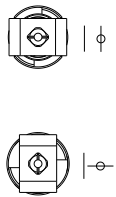


Figure 5.

4.6 In exceptionally corrosive applications, special protection of the valve body and connections should be employed.

4.7 If the Naval valve is the only pressure-bearing component at the end of the line, the valve must be plugged with a flange, plug or by some corresponding means.

4.8 The valves can be operated using the handle or an actuator.

5. Maintenance

The valves require no maintenance in normal conditions. However, the graphite and O rings on the stem can be replaced, if needed.

5.1 DN15 – 50 can be replaced graphite rings (2 pcs). DN65 – DN150 and DN300 the top two O-rings can be replaced. DN200 and DN250 the top O-ring can be replaced. Detailed instructions are given in the replacement instructions of graphite and O rings

5.2 The valve shall be depressurised for maintenance, if it is not disconnected from the line.

5.3 The valve shall be in closed position for the replacement of graphite and O rings.

5.4 The valve must be depressurised before it is removed from the piping.

5.5 Protective gear shall be worn when replacing graphite and O rings.

5.6 Do not open the valve until all the required components have been replaced.

6. Transport and storage

6.1 The valves must be protected against water, moisture and direct sun light.

7. Warranty

7.1 Naval Oy grants a two-year warranty on all of its products, but the warranty is at most three (3) years from the delivery of product.

7.2 The warranty covers defects in workmanship or material.

7.3 The warranty does not cover defects caused by incorrect installation, operation, maintenance or storage of the product.

7.4 In order to obtain warranty compensation, the defective product shall be sent to Naval Oy for investigation.

8. For more detailed information, please contact Naval Oy Marketing or Technical Support.

9. Contact information:

Naval Oy

P.O.Box 32

Riihenkalliontie 10

FI-23801 LAITILA

Puh. nro +358-2-85 091

Fax +358-2-856 506

E-mail naval@naval.fi

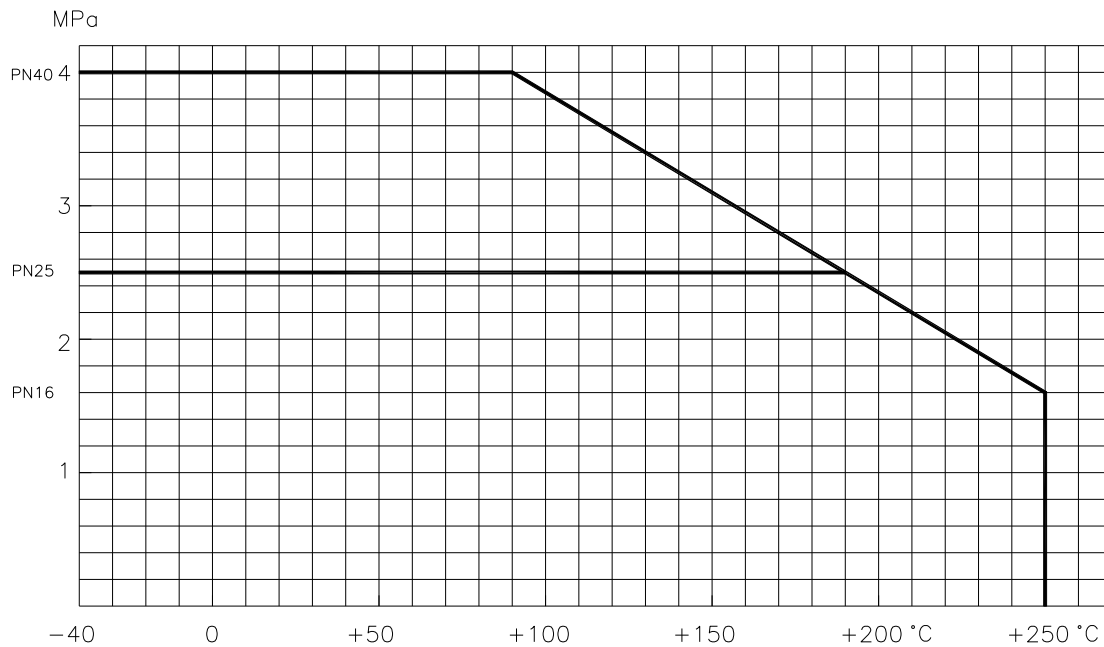
www address www.naval.fi

STEEL BALL VALVE
TECHNICAL DATA:

OPERATING PRESSURE: 0 - 40 bar
 OPERATING TEMPERATURE: -40 - +250°C
 MATERIAL: BODY: CARBON STEEL St 37.8/P235GH
 BALL: STAINLESS STEEL AISI 304/1.4306
 GASKETS: TEFLON/PTFE
 STEM PACKINGS: GRAPHITE/KALREZ

CONNECTION: WELDED, FLANGED

PRESSURE RESISTANCE AS A FUNCTION OF TEMPERATURE
(DO NOT EXCEED CURVE VALUES)



Using a steam ball valve below -20°C please contact the factory.

Kv-VALUES

Size	DN													
	10-15	20	25	32	40	50	65	80	100	125	150	200	250	300
Kv-values	6	14	26	41	67	105	182	315	420	650	1070	1420	2620	4280



Rev. 13
18.10.2011

The Manufacturer: **NAVAL OY**
Valmistaja/Tillverkare: **Laitila**
FINLAND

Manufacturer's certificates and applied directives: <i>Valmistajan sertifikaatit ja sovelletut direktiivit:</i> <i>Tillverkarens certifikater och tillämpade direktiv:</i>				
Standard / Directive <i>Standardi / Direktiivi</i> Standard / Direktiv	Notified Body <i>Ilmoitettu laitos</i> Anmälda organ		Certificate no. <i>Certifikaatin numero</i> Nummer av certifikat	Valid <i>Voimassa</i> Giltig
ISO 9001:2008	DNV		80921-2010-AQ-FIN-FINAS	2014-09-30
PED 97/23/EC Module H	DNV	0575	98924-2011-CE-FIN-DNV	2014-07-25

Hereby we declare that product(s) detailed below have been manufactured in compliance with the above mentioned Directive:

*Vakuutamme, että alla mainitut tuotteet on valmistettu Direktiivin mukaisesti:
Vi försäkrar, att följande produkter har tillverkats enligt Direktivet:*

The Product: Naval steam ball valve
Tuote/Produkt: Naval höyrypalloventtiili / Naval kulventil för ånga

Type: 237 408 - ...599, 273 411 - ... 999, 274 009 - ... 999
Tyyppi/ Typ: DN32 – DN300, PN16-PN40

Manufacturing number:
Valmistusnumero/Tillverkningsnummer:

Laitila, Finland, 18.10.2011

NAVAL OY

Mika Kotiranta
Quality Manager

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