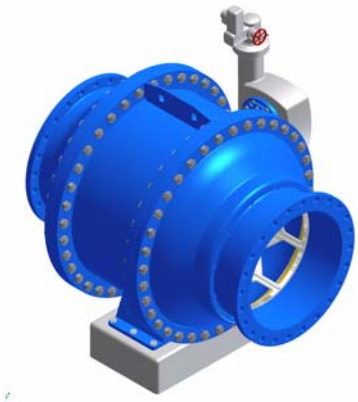
Válvulas IRUA, S.L.
Pol. Ind Erletxe, C-2 nave 3
48960 Galdácano (Vizcaya) - SPAIN
www.irua.es

N E E D L E V A L V E S

(AXIAL FLOW Type)

General Catalogue

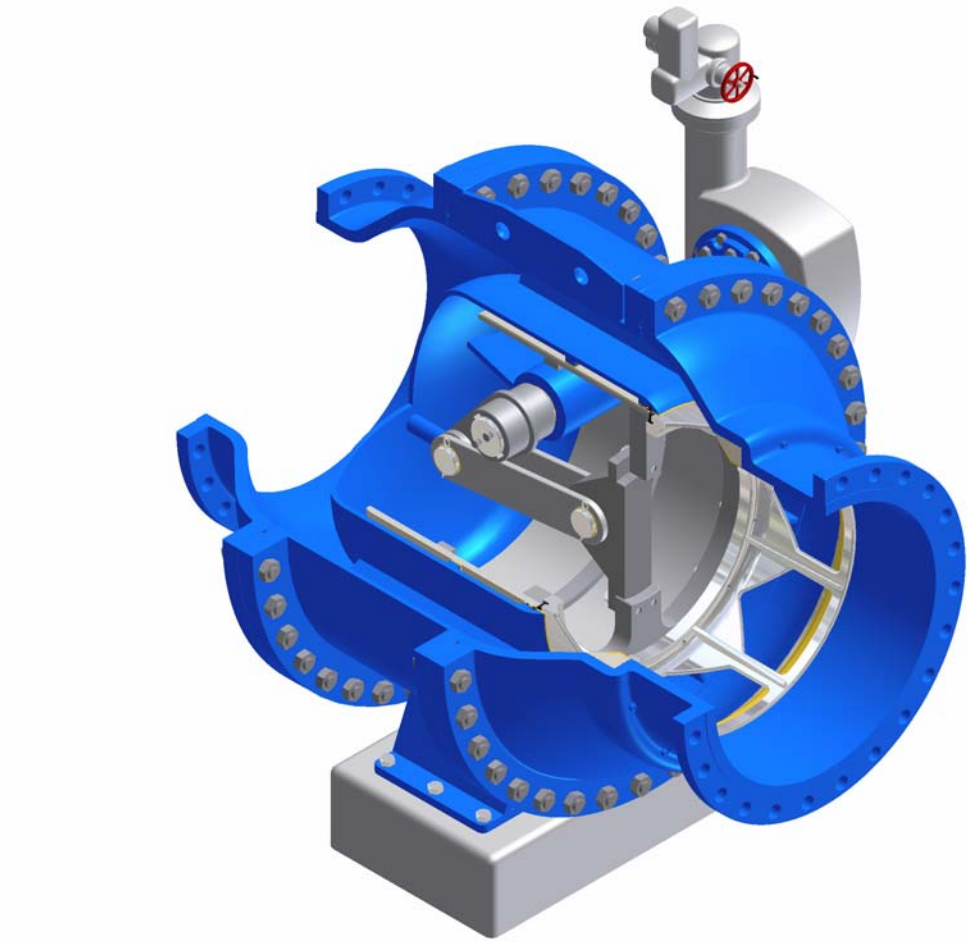


Description

The needle type is considered one of the most efficient control valve mainly due to its special design axial flow type and its versatility which permits to be used for throttling and/or On-Off services.
During the close operation of the valve and although the free area is decreasing, the flow lines shall continue in axial symmetry till the valve become fully closed.
The needle type design is such that can be more adequate for some applications than other control valves.

Range of Manufacture

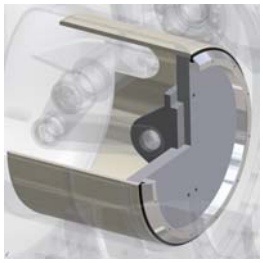
Sizes: DN100-DN1600
Pressure ratings: PN10-PN16-PN25-PN40-PN64 acc. to EN1092 /
#150-#300 acc. to ANSI standards
Flow media: potable water (others under request)



Cross-sectioned DN900 needle valve with throttling Vee-ports

General Features

- Streamlined body for minimum head loss at fully open position valve.
- Pressure balanced piston fully guided on several internal rails, axially movable in flow direction.
- Rugged construction.
- Absence of vibrations in any position when working, fully open and intermediate positions.
- Absence of turbulences and minimum cavitation effects. Close operation without waterhammer.
- Double seal metal-metal and metal-resilient seal ring to guarantee a tight no leakage sealing. See picture 2.
- Standard Vee-Port seal for precise control; perforated cylinder also available as well and others under request. See picture 3.
- Stainless steel seat with no contact parts which provides a minimum wear.
- Very low operating forces are required due to the hydrodynamic design of the plunger. The external and internal pressures on the plunger are equilibrated so only the friction forces have to be overcome. See picture 1.
- Wide range of closing/opening times due to the short stroke.
- As a rotating design body conception, the valve shall bear high axial forces and high working pressures.
- The axial flow valve can be used to carry out flow and pressure tests according to the Venturi principle.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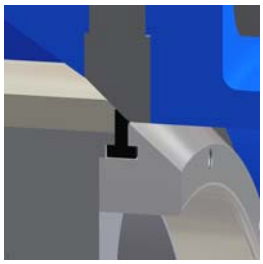
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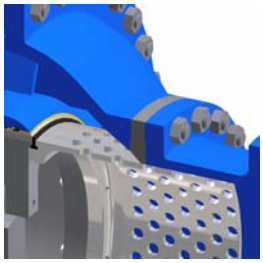
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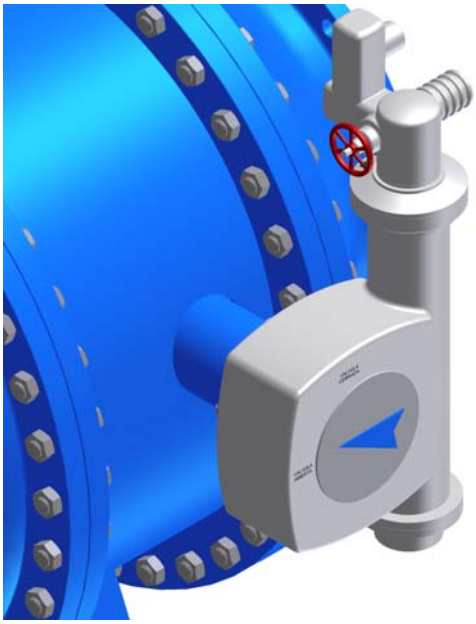


Operating Actuation

- Manual
- Hydraulic
- Electric
- Pneumatic

The valve can be operated by handwheel with gearbox or by electrical actuator with gearbox as standard but any other actuating system device shall be attended under request.

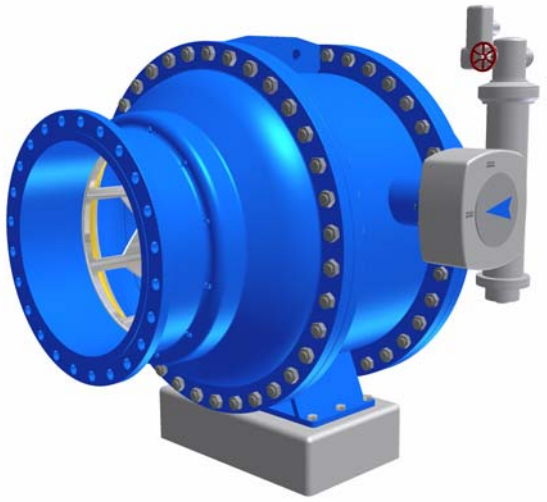
The valve can also be pilot operated to hydraulic control of pressure and/or flow: pressure reducing, pressure sustaining, pressure relief, flow control, anti burst, etc.
This application shall be of interest when a low head loss is needed.

Materials of Construction

Different needle valves materials combinations depending on the working pressures and the requirements of the client. The standards materials shall be:

BODY
Cast Iron GJL250 / Ductile Iron GJS500-7 / Fabricated Steel / A216-WCB
For valves beyond DN500 fabricated Steel or Cast Steel is recommended due to its resistance and weldability features.

PLUNGER
Fabricated Steel + Stainless Steel A316.
GUIDES
Bronze + Aluminium Bronze hardfacing.
ELASTOMERS / SEALS
NBR (Nitrile) / EPDM / Viton
SEAT
Stainless Steel A316 / Aluminium Bronze.
SHAFTS
Stainless Steel A431
BEARINGS
Autolubricated based on Bronze type DU/DUB.
BUSHINGS
Bronze Rg.5
BOLTS AND PINS
Stainless Steel A-4 (A316)
OTHER INTERNAL COMPONENTS
Stainless Steel A-4 (A316)



Coating

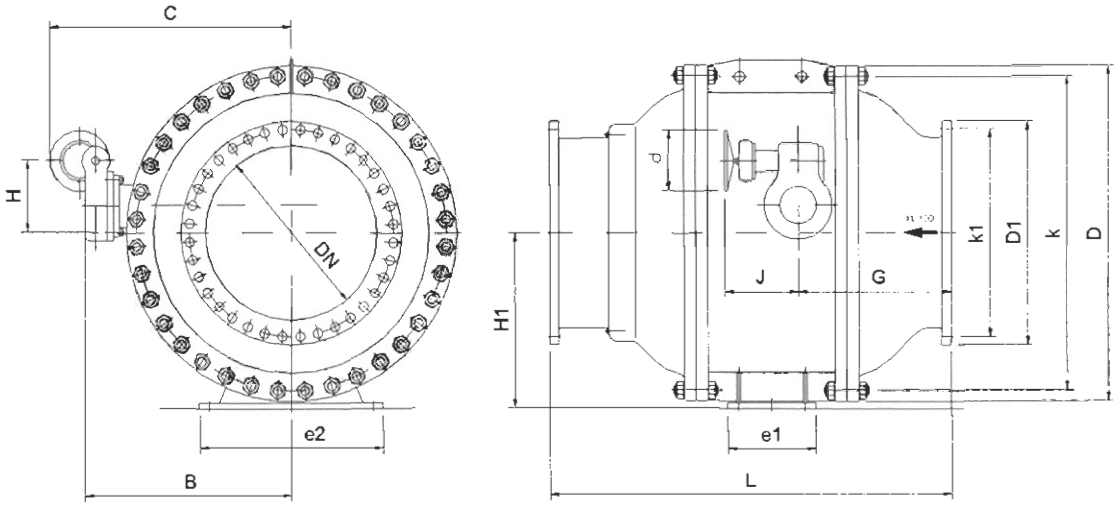
Body and shaft: Internal and external 300 microns thickness of fusion bonded epoxy coating.
Special coatings available under request.

Location and Installation

Horizontal and vertical positions of installation are accepted. The valve is supplied from the factory ready for installation. It must be installed with the flow direction as indicated on the valve (see highlighted arrow). IRUA's needle valves are supplied with foot plates mounted to their bottoms.
Upstream and downstream isolating shutoff valves should be provided to allow the valve to be serviced.
For pilot operated needle valves, the pilot is factory set according to the requirements of the client, being also adjustable within its range in the field by turning the adjusting screw.

Dimensional General Drawing

NEEDLE VALVE N.D. 100/1600 - N.P. 16
(Axial Flow)



ND	L	D	k	D1	k1	N	d	H	H1	e1	e2	B	C	G	J
100	350	340	295	220	180	8	250	120	270	155	270	375	525	150	155
125	400	405	350	250	210	8	250	120	300	180	300	375	525	155	175
150	450	460	410	285	240	8	250	120	330	200	325	410	560	170	175
200	550	520	470	340	295	12	300	120	360	225	400	410	560	210	175
250	650	580	525	405	355	12	300	120	380	255	450	430	580	250	225
300	750	715	650	460	410	12	450	120	460	300	500	450	600	285	225
350	850	840	770	520	470	16	450	120	520	350	550	490	640	325	225
400	950	970	900	580	525	16	450	160	580	435	600	570	785	360	275
450	1050	1025	950	640	585	20	550	160	610	455	650	650	865	400	275
500	1150	1125	1050	715	650	20	550	160	660	500	700	720	1070	435	275
600	1350	1255	1170	840	770	20	550	160	730	550	750	800	1150	515	275
700	1550	1485	1390	910	840	24	550	208	845	655	800	910	1290	590	475
800	1800	1585	1490	1025	950	24	600	208	905	700	1025	950	1330	685	475
900	2050	1685	1590	1155	1050	28	600	208	950	755	1150	1015	1395	780	475
1000	2300	1820	1710	1255	1170	28	600	208	1010	800	1275	1075	1455	875	475
1200	2550	1930	1820	1485	1390	32	700	208	1075	860	1400	1140	1560	970	500
1400	2800	2345	2230	1685	1590	36	700	208	1280	1000	1525	1345	1725	1065	500
1600	3050	2555	2440	1930	1820	40	700	208	1390	1100	1650	1455	1855	1160	500

TEST PRESSURE BODY 25 BARES
SEAT 16 BARES

MAX. WORKING PRESSURE
ADMISSIBLE AT 40°C: 16 BARES