AQUANOVUS
Innovative Aqua Engineering

Novus Valve GEN III

DN375 - DN500 (Large Drill for Installation)

TECHNICAL DATA SHEET.

Introducing The Novus Valve

Novus Valve GEN III - A pioneering and accredited innovation, offering seamless valve installation at any desired location without disrupting water supply. Designed to be a permanent valve by conforming to all relevant engineering standards and requirements.

DN375 to DN500mm
Novus Valve

Size Range:

375, 400, 450, 475, 500, 600

Allowable Operating Pressure:

600 kPa, 16 Bar, 250 PSI

Maximum Temperature:

40 °C

Connection Type:

Clamp Type AS4181 – 2019, ISO1127, DIN 32676

Manufacturing QA Managment:

ISO9001, ISO14001, ISO45001

Certifications:

AS 4181 – 2019, AS 2638.2, EN12846, EN1622, WRAS

KWWA | WRAS WATER REGULATIONS ADVISORY SCHEME | WATER SERVICES ASSOCIATION OF AUSTRALIA | ISO 9001 | ISO 14001

Link to **Live** Installation Video

ABOUT NOVUS VALVE

The **Novus Valve Gen III** is an innovative product where a resilient seated valve can be installed under pressure. Water isolation is not required at any stages during the installation process.

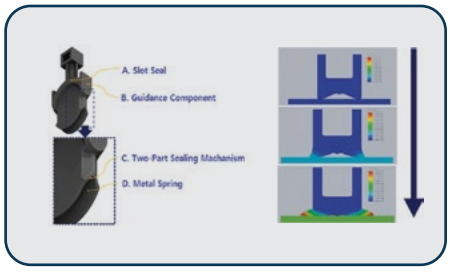
Novus Valve enables the installations to take place without disruption by utilising clamp type connection directly to the pipe rather than a flange/flange or socket/socket connection. By utilising our patented technology specific to the generation III, Novus Valve utilises unique technology to provide a reliable shut upon installation.

Novus Valve allows installations on the following.

- Various Pipe including variance in Outside Diameter and Inside Diameter
- Confined working space with encroaching services within the trench.
- Our pipe scale cleaner allows cleaning of the inner pipe prior to the seating of the gate.

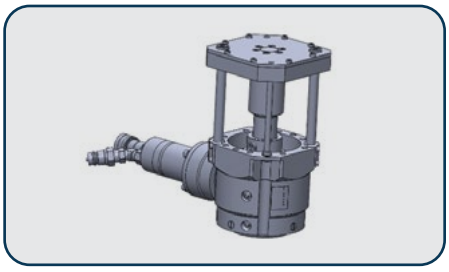
OUR UNIQUE TECHNOLOGY - NOVUS VALVE III

OUR DISC



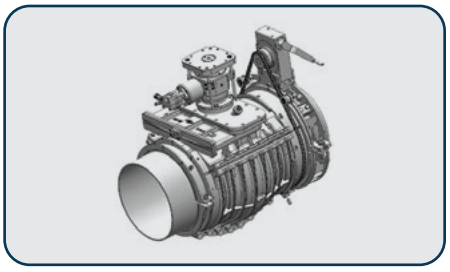
- Our unique disc design enables a **workable** shuts by sealing on various pipe conditions
- On pipes with uneven surfaces
- Pipes with in-situ poured lining.

OUR DRILL



- Our hydraulic drill has undergone development to reduce overall height of the drill.
- When fully extended, the drill is 512**mm.**
- Drill - (CE) Conformité Européenne

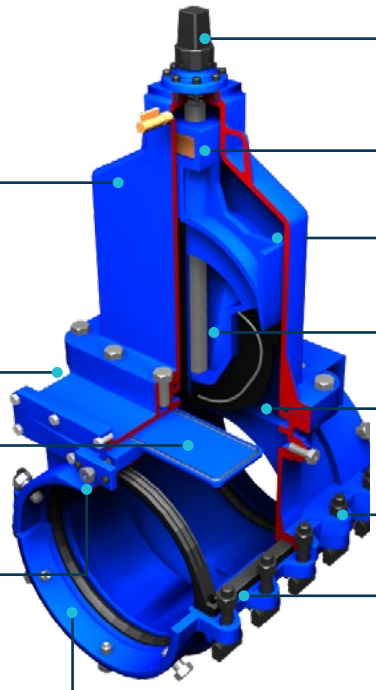
PRODUCT DURABILITY



- Our Clamps and Valve underwent multiple trials and design changes to meet **stringent pressure criteria.**
- As a result, out fitting has been rated to PN16, (1600 kPa, 16 Bar, 250 PSI)

NOVUS VALVE COMPONENTS

Novus Valve Cut Away Diagram



Valve Bonnet

Novus Valve bonnet manufactured as per the relevant sluice valve standards. The Novus Valve also passed all functionality tests as per the relevant standards allowing the valve to be classified as a permanent valve.

Upper Clamp Body

Temporary Valve

Made with Ductile Iron used to temporarily isolate main pressure above upper clamp.

Temporary Valve Key

Temporary valve key is operated to move the temporary gate horizontally to provide temporary isolation to remove the drill and install valve under pressure.

Lower Clamp body

Novus Valve Key

Direction of closure can be selected to be either clockwise or anti clockwise. Designed identical to a standard valve and operated in a same manner.

Valve Stem Nut

Main valve stem nut which controls vertical movement of the disc.

Inner Main Valve Disc (Ductile Iron)

Inner Main valve disc made with Ductile Iron for durability with pressure rating up PN16 or 1600 kPa.

Main Valve Stem

SS316 Valve Stem used to operate the direction of the disc.

Outer Main Valve Disc (EPDM Rubber)

Triple-layer rubber coating with high elasticity to provide greater isolation.

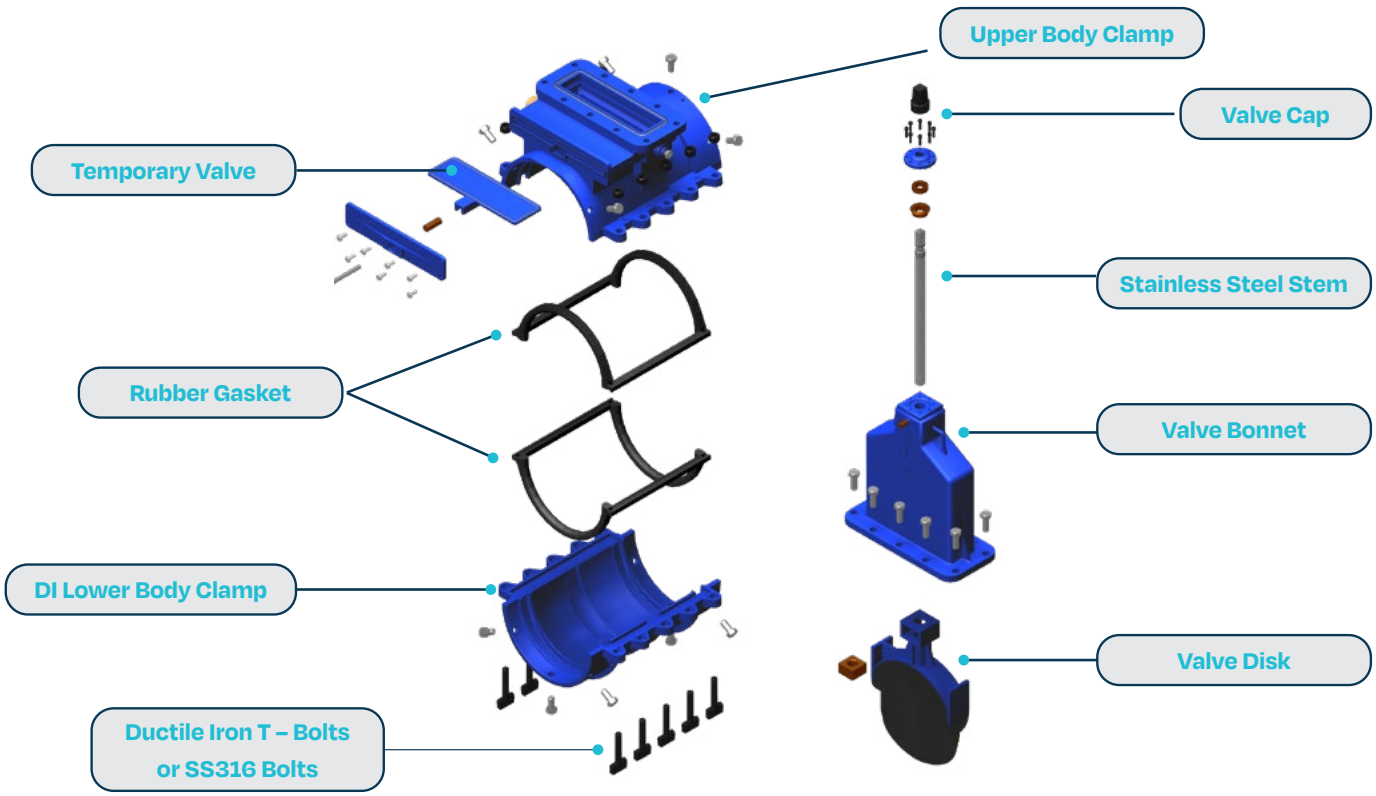
Bolt & Nut

SS316 bolts and nuts for assembly of the valve.

Gasket (EPDM Rubber)

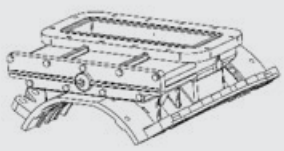
Gaskets come in two components. Made with EPDM rubber. With the rubber Gaskets designed to sit within the grooves of the casting to avoid any movement.

Novus Valve Components

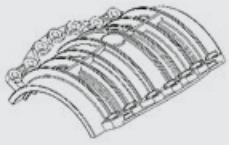


NOVUS VALVE DIMENSIONS (DN375MM TO DN500MM).

Typical Valve Arrangement For Novus Valve Between Size DN375 To DN500mm.



Novus Valve Upper Clamp

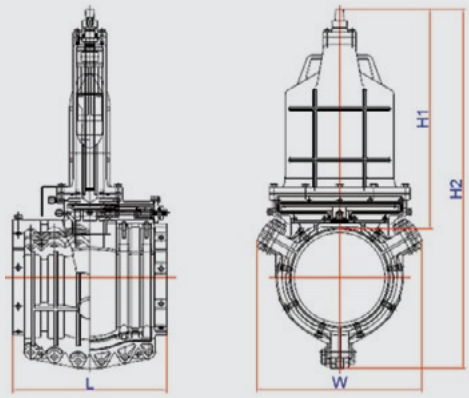


Novus Valve Lower Clamp

Valve Bonnet (Disc)

EPDM Gaskets x 3

SS316 Nuts & Bolts



Novus Valve Diagram (DN375 to DN500)

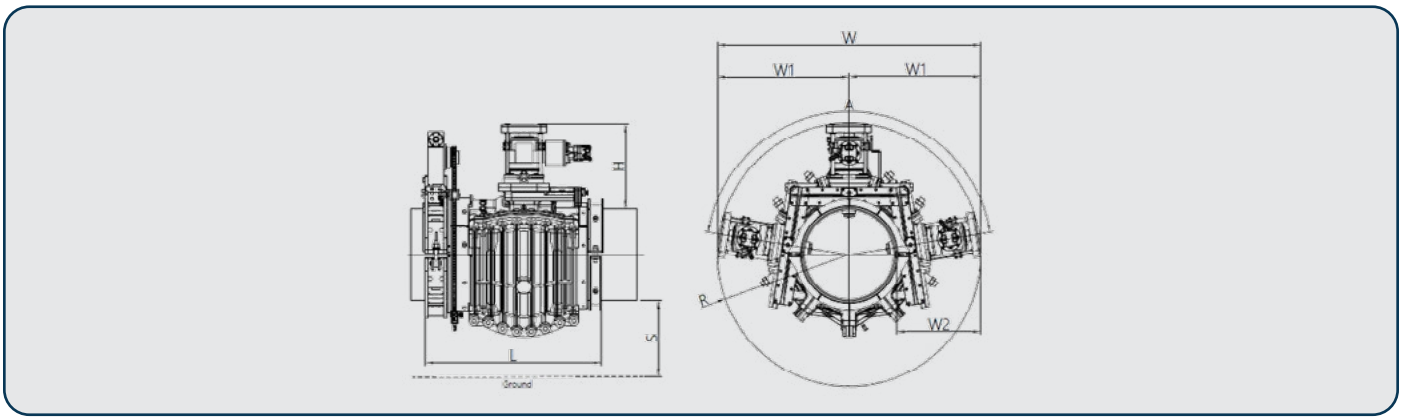
DN (mm)	Typical No. Of Turns	Length (L)	Width (W)	Height (H)	Total Height (H)
375	78	680 mm	727 mm	970 mm	1583 mm
400	78	680 mm	727 mm	970 mm	1583 mm
450	88	770 mm	814 mm	1082 mm	1768 mm
500	83	850 mm	898 mm	1221 mm	1982 mm

NOVUS VALVE GEN III CLAMP RANGE (OUTSIDE DIAMETER).

Novus Valve GEN III clamps developed to suit various pipes with variance in outside diameter.

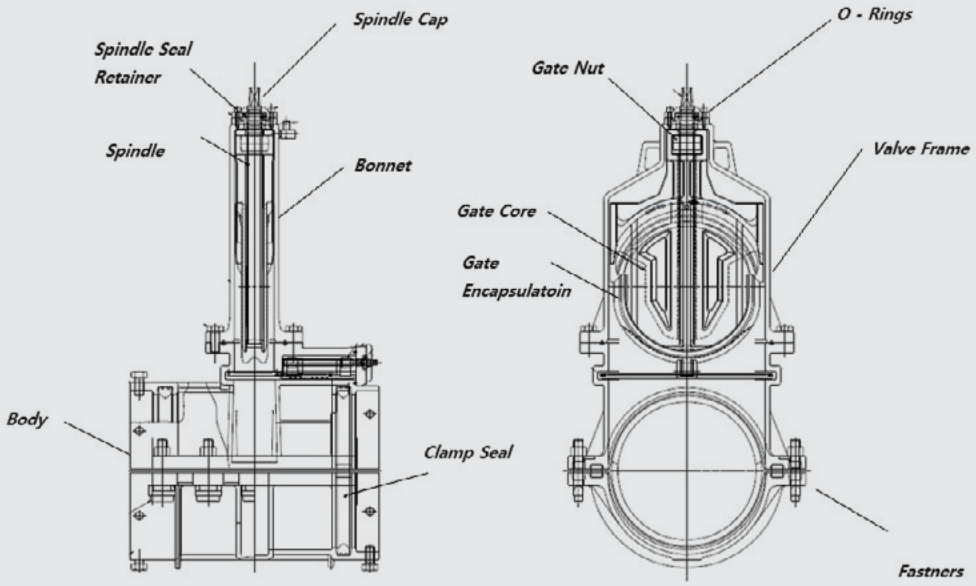
Clamp Codes					
DN	DP (mm)	SP (mm)	PE (mm)	AU ST (mm)	AU OS (mm)
375	X	X	X	425-433	X
400	425-433	402-410	396-404	X	X
450	476-484	453-461	446-454	504-512	512-520
500	528-536	504-512	X	X	X
600	610-635	X	X	TBA	TBA

MINIMUM SPACE REQUIRED FOR NOVUS VALVE.



DN	W	W1	W2	L	S (min.)	H
375mm	1580mm	790mm	575mm	980mm	400mm	575mm
400mm	1580mm	815mm	575mm	1070mm		575mm
450mm	1680mm	840mm	570mm	1150mm		575mm
500mm	1680mm	840mm	570mm	1150mm		575mm

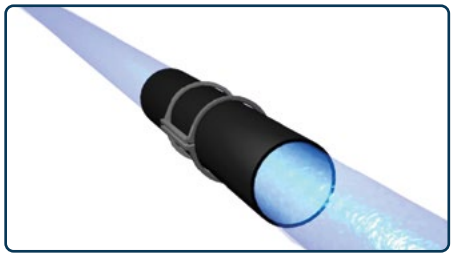
NOVUS VALVE COMPONENT MATERIALS



NOVUS-VALVE COMPONENT MATERIAL LIST

Component	Basic Material	Novus-Valve		
		Material	Standard	Grade
Body	Ductile Iron	Ductile Iron	ISO1083	JS/400/15
Bonnet	Ductile Iron	Ductile Iron	ISO1083	JS/400/15
Spindle seal retainer	Copper Alloy	Copper Alloy	AS/NZS 2638.2	CAC703*
Gate core	Ductile Iron	Ductile Iron	ISO1083	JS/400/15
Valve frame	Ductile Iron	Ductile Iron	ISO1083	JS/400/15
Gate Encapsulation	Synthetic Rubber	Synthetic Rubber	AS1646	EPDM
Gate nut	Copper Alloy	Copper Alloy	AS/NZS 2638.2	CAC703*
Spindle	Stainless Steel	Stainless Steel	ASTM A 276	431
Spindle cap	Ductile Iron	Ductile Iron	ISO1083	JS/400/15
O-rings	Synthetic Rubber	Synthetic Rubber	ISO4658	NBR
Fasteners	Stainless Steel	Stainless Steel	ASTM A 276	316
Clamp seal	Synthetic Rubber	Synthetic Rubber	AS1646	EPDM

NOVUS VALVE INSTALLATION PROCESS.



STEP 1

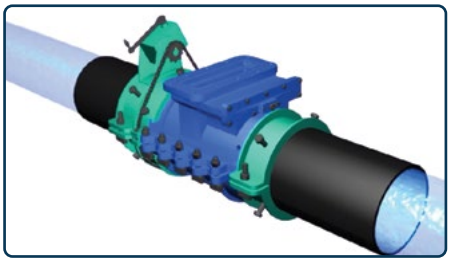
PREPARATION OF PIPE

Pipe is to be cleaned free of any sharp objects. Frictionless tape and lubricants re applied onto the pipe. Then the gaskets are placed on top of the prepared pipe.

STEP 2

PLACEMENT OF THE CLAMP

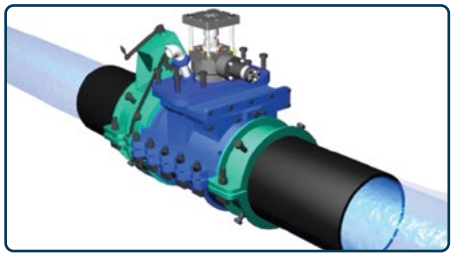
Both upper clamps and the lower clamps are placed on the pipe. Using the correct fasteners, both upper clamp and lower clamps are installed



STEP 3

INSTALLATION OF END RINGS

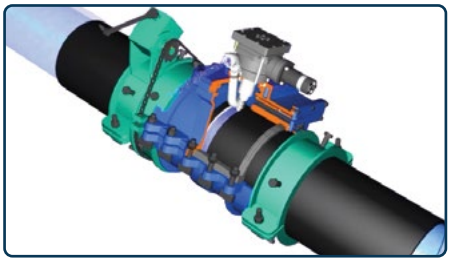
End rings are installed on both side against the clamp. End rings are installed temporarily during installation to allow the valve / to rotate to correct angle during the cutting process



STEP 4

PLACEMENT OF THE DRILL

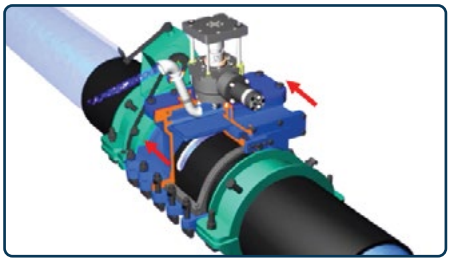
Drill is placed onto the upper clamp of the Novus Valve. With the drill and the upper clamp attached, pressure testing is completed to ensure that the fitting is installed correctly, and no leakages are observed.



STEP 5

CUTTING THE PIPE

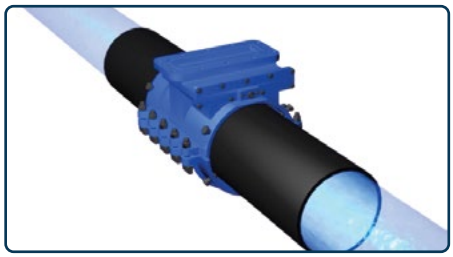
Using the correct end mill, drill is lowered, and rotated allowing the pipe to be cut. End rings are used to ensure that correct angle for the cut has been achieved.



STEP 6

TEMPORARY GATE VALVE

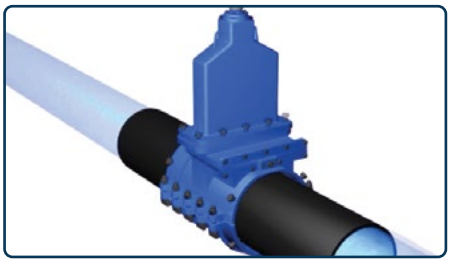
Temporary gate valve is operated to isolate main pressure from the upper clamp to the drill. Once the temporary gate valve is fully closed, the drill can be removed.



STEP 7

Removal of the Drill

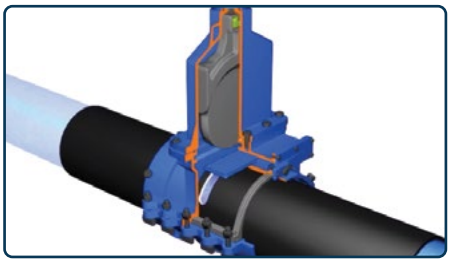
With temporary gate valve isolating the main pressure, the drill can be removed safely without the operator being exposed to any risk.



STEP 8

PLACEMENT OF THE BONNET

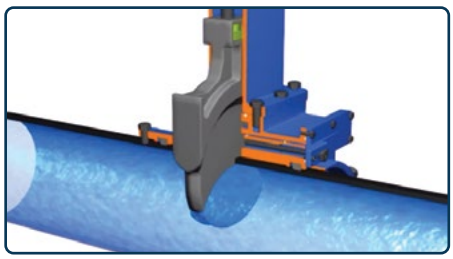
All temporary fitting including end rings are removed. The valve bonnets are then placed on top of the upper clamp.



STEP 9

TEMPORARY GATE VALVE

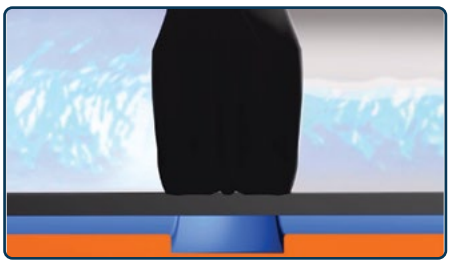
Temporary Gate valve is opened so that the disc can be lowered into the incision made on the pipe. All component of the valve is now exposed to main pressure at this stage



STEP 10

OPERATION OF THE VALVE

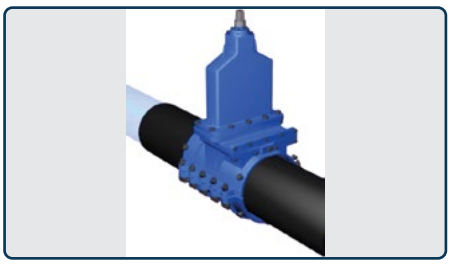
Novus Valve is operated, allowing the disc to be lowered into the main



STEP 11

ISOLATION OF WATER

As the valve is lowered, and compressed onto the inner surface of the pipe, water isolation can be achieved.



STEP 12

COMPLETED INSTALLATION

Novus Valve is fully functional and can be operated at any time.

OUR ACCREDITATION, CERTIFICATES, STANDARD CONFORMANCE.

AUSTRALIA

WSAA

Water Services Association of Australia

AS4020

Testing of Products for Use in Contact with Drinking Water

AS2638.2

Gate valves for water works purposes

AS4181

Repair and off-take clamps for water industry purposes

THE UNITED KINGDOM

WRAS

Water Regulations Approval Scheme

REGULATION 31

Completed Report by DWI approved consultancy

THE REPUBLIC OF KOREA

Korean Standard KS Conformance

K Water

Korean Water Association

Water Standard Conformance Verification

Drinking Water Product

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Link to Live Installation Video

FOR ANY QUERIES

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