

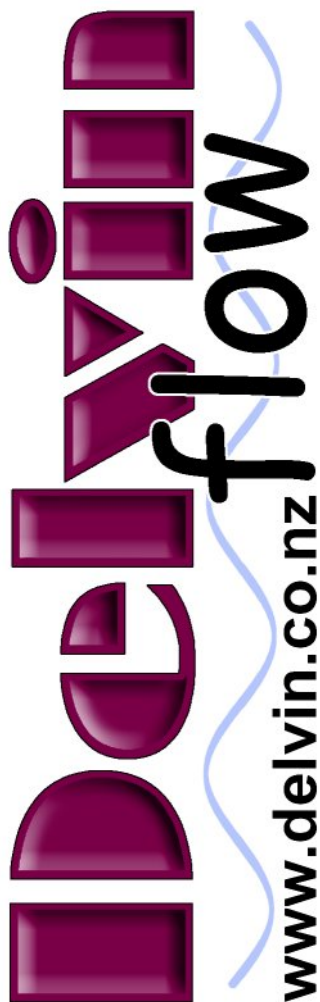
Catalogue



Delvin
flow
www.delvin.co.nz



Supplier
of valves to
New Zealand



Delvin Flow has been an active distributor of valves and related products in New Zealand since 1997.

In this time our customer base has grown considerably, encompassing the spectrum from end users through to our network of resellers spread throughout New Zealand.



In February 2011 (yes, during that event) we opened a branch in Christchurch so we could better serve our South Island customers.

Factors influencing our growth include;

- Our effective use of technology
- The contacts and expertise required to import and distribute quality products at competitive prices.
- National and International contacts for rapid access to parts for many brands of existing equipment.
- Access to design and engineering facilities for customised equipment (e.g. extended shafts for ball and butterfly valves)
- Our reputation for finding solutions when competitors can't (or won't).

Check us out online. We built the best valving website in New Zealand. Many current and potential customers experience the site, and are informed even before they contact our team.

Municipal Authorities and significant industries trust us to provide equipment that is reliable and well supported.

On a daily basis we assist industries involved with irrigation, food processing, defence, health, water and waste water, drilling, plumbing, heating & ventilation

Critical industries know that if they have a breakdown they can call our team at any time on mobile numbers. Our stock levels are managed in order to optimise response to regular and urgent enquiries.

I invite you to browse through this, our second catalogue. We've updated our product ranges and added some new categories. So have a look through, make a list and call us. We'll appreciate your call and will assist in any way we can.

Kerry Olsen - Manager

Contents

Actuators (Electric)	2
Actuators (Pneumatic)	4
Air Vents	5
Backflow Preventers.....	6
Balancing Valves.....	7
Ball Valves	7
Butterfly Valves	10
Camlocks	13
Check Valves	14
Clamps	15
Couplings	16
Diaphragm Valves.....	17
Filters	18
Fittings - Brass	19
Fittings – Stainless Steel	20
Flanges	21
Gaskets	22
Gate Valves	22
Gauges (Pressure)	24
Gland Packing.....	26
Globe Valves	26
Heat Exchangers.....	27
Hose-tails	28
Irrigation Systems	29
Knife-gate Valves	30
Marine Valves	31
Mixing Valves	32
Needle Valves	32
Nozzles & Hoseware	33

Pinch Valves	34
Piston Valves	34
Plug Valves & Eccentric Valves	35
Pneumatics	36
Pressure Reducing Valves	37
Pumps	38
Radiator Panels & Accessories	39
Safety Valves	41
Sanitary Valves & Fittings	43
Sealants	44
Seismic Switch	44
Sight Glass	45
Sluice Valves	45
Solenoid Valves	46
Steam-traps	48
Strainers	48
Thermometers	49
Titon Brass Fittings	50
Victaulic Joints	51
Water-Hammer Arresters	51
Water Meters / Flow Meters	52
Appendices:	
A: Pressure Gauge Guidelines	53
B: Flange Information	54
C: Flange Tables	55
D: Steam Tables	59
E: Brand Index	60
F: Account Application	62
G: Unit Conversion Tables	65

Delvin Flow

Address: 238 Taupo Quay
Wanganui
New Zealand

64 Coleridge St
Sydenham
Christchurch
New Zealand

Postal: P.O.Box 142
Wanganui
New Zealand

Phone: 06 348 8172
or 0800 123358

03 377 7124

Fax: 06 348 8173

03 377 7124

Email: delvin@delvin.co.nz

south@delvin.co.nz



'Best valving website in New Zealand, loaded with useful information and resources'



Actuators (Electric)



Electrically control the operation of a range of valve types.

Operation modes range from simple on / off through to full control – modulating from industry standard 4~20mA or 0~10V control signals and position feedback.

Supplying the electric signal will rotate the drive to either open or close the valve



Typically electric actuators are available in two styles

- 1) 90 degree operation, suitable for butterfly and ball valves
- 2) Multi turn (or linear) suitable for knife-gate, penstock, gate and globe valves.



Actuators must be correctly sized to suit the torque requirements of the valve and expected duty cycle. Allow an extra 30% torque to ensure long term reliable service.

Ensure the enclosure (IP rating) is suitable for the intended situation
It is imperative that the mechanical stops and limit switches are correctly set. The limit switches **MUST** stop the motor before the mechanical stops are reached. These stops are there to limit travel during manual over-ride only



Voltage ranges – 12V DC/AC, 24V DC/AC, 110V, 220-240V, 400V

Torque switches

Limit switches

Internal condensation heater

Modulating control



Model OM-A

**Inside model OM2M
(Modulating)**

- A Indicator
- B DC Motor
- C Modulator card
- D Condensation heater
- E Mechanical Stops
- F Handwheel Shaft
- G Planetary Gearbox

Not shown:

Limit switches
Torque switches



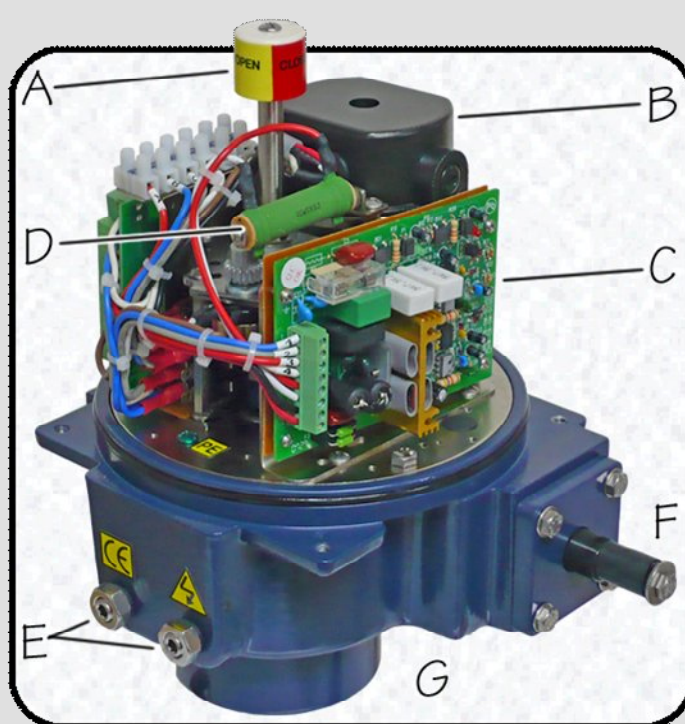
Model – BM-2



Model OM-6



Rotork Electric Actuator



Example: Actuated butterfly valve.

Electric actuators are available for all sizes of butterfly and ball valves

Electric Actuator Features

Enclosure:	IP67: Waterproof and dust-proof Material: Powder-coated aluminium alloy
Motor:	Standard extended duty-cycle induction motor complete with thermal protection to prevent motor burnout.
Manual over-ride:	Non-clutch design – Allows you to take manual control without first disengaging motor. Hand-wheel does not turn during normal operation.
Gear-train:	High alloy steel gear train provides self-locking function to avoid valve back drive. Gear train pre-lubricated with high temperature lubricant.
Environmental requirements:	Ambient temperature -30 to 65°C Humidity 30% to 95%
Options:	<ul style="list-style-type: none"> • Operating voltages (12VDC, 24VDC, 24VAC, 110VAC, 230VAC, 400V (3-phase)) • Condensation heater • Additional limit switches • Torque switches • Local control unit (Local / Remote / ON / OFF) • Modulating control (4-20mA or 0-10V) including position feedback • Nylon enclosure
Certification:	ISO9001, CE, CSA (Conforms to test standard for outdoor usage)

Electric Actuator Specifications / Selection Guide *

MODEL	Torque	Speed (90°)	Motor Power	Manual Over-ride	Mounting Flange	Weight	Ball Valve	3-Way Ball Valve	Butterfly Valve
	Nm	Secs	Watts	Yes/No	ISO 5211	Kg	DN	DN	DN
OM-1	35	13	10	Yes	F03 & F05	2	15,20,25,40	15, 20, 25	
OM-A	50	24	10	No	F07	3	50		50, 65, 80
OM-2	90	17	40	Yes	F07	11	32, 40, 50	40	50, 65, 80
BM-2	120	10	40	No	F07	4.5	50, 65, 80	32, 40, 50	50,65,80,100
OM-3	150	26	40	Yes	F07	11	65, 80	50	100, 125
OM-4	400	18	120	Yes	F10	22	100	65, 80	150, 200
OM-5	500	25	120	Yes	F10	22		100	250, 300
OM-6	650	31	120	Yes	F10	22			350
OM-7	1000	55	180	Yes	F12 & F14	36			400
OM-8	1500	55	220	Yes	F12 & F14	36			450

* Sourced from manufacturer's datasheet. Please check valve torque requirements prior to order

Actuators (Pneumatic)



Pneumatically control the operation of a range of valve types.

Double-Acting actuators require pressure to one port, while the other port is vented. Because they can work positively in both directions they are more forceful.

Spring return actuators have one port permanently vented. The other port is pressurised for one direction of travel, and vented for the reverse. They drive in one direction only, and allow internal springs to provide the return force. Spring return types are common in applications where a fail-safe state is required in the event of power / pressure failure. Air-solenoid valves are used to direct compressed air to either port to control the actuator.



TYPICAL USE

Two styles are most common.
1) 90 degree rotary types are used to turn butterfly or ball valves.
2) Linear types are used on knife-gate, penstock, gate valves etc.



CAUTIONS

Rotational actuators must be correctly sized to suit the torque requirements of the valve.
Allow an extra 30% margin to ensure problem free operation over the life of the valve and actuator.



VARIATIONS

Double acting or spring return styles available.
Solenoid options include the standard range of voltages.
Limit switch units available for rotary models



Double-Acting Pneumatic Actuator

Body: Extruded Aluminium ASTM6005

End Caps: Die-cast aluminium power coated.

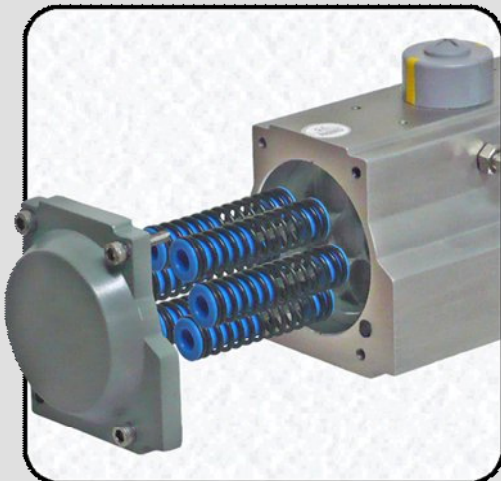
Pistons: Hard anodized die-cast aluminium

Pinion: Nickel alloyed steel.

Travel: Two external travel stops, $\pm 5^\circ$ each direction.

Torque: 20 to 2900Nm (Double Acting)

Mounting: ISO5211



Spring Kit

Pre-loaded springs offer torque from 9 to 1600Nm.

Spring-return mode provides a fail-safe option in event of power or air pressure loss.

Unlike double acting mode, spring return torque varies over the range of travel



Joucomatic Air Ram

Custom made for a range of bore sizes and strokes

Double acting for more linear force in both directions

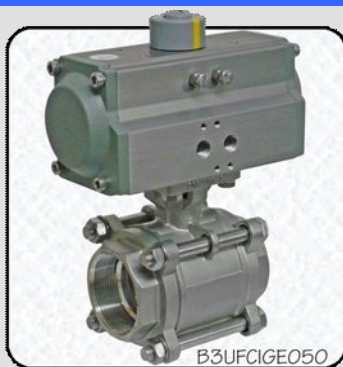


Joucomatic Air Ram

Custom made for a range of bore sizes and strokes

Double acting for more linear force in both directions

This model has threaded end flanges to allow for easy fixing.



Example: Actuated ball valve Model GS035 double acting pneumatic actuator mounted to 50mm ball valve.



Example: Wafer style butterfly valve complete with double acting pneumatic actuator, air solenoid valve and limit switch unit.

Delvin
flow
www.delvin.co.nz

Can't
find it?

0800
123358



Limit switch SWB-2-PM-A

Includes two limit switches for position feedback.
Enclosure is IP67 rated.
Mounts to all 90° turn actuators with ISO pattern

MODEL	Torque Nm (Double Acting)	Torque Nm * (Spring Return)
GS020	20	6.7
GS035	36.5	15.5
GS050	50.2	21.2
GS075	78.4	32.3
GS110	112.9	44.1
GS160	165.3	68.5
GS255	250	94
GS435	427.5	189

Torque figures for 5 bar air pressure.

* Spring return options show minimum torque when 10 springs fitted.

Torque Requirements for Typical Ball Valves	
8mm (1/4")	4 Nm
10mm (3/8")	4 Nm
15mm (1/2")	5.4 Nm
20mm (3/4")	7.4 Nm
25mm (1")	10.4 Nm
32mm (1-1/4")	13.5 Nm
40mm (1-1/2")	18 Nm
50mm (2")	25 Nm

Air Vents



Air vents automatically release air from pipe-work.



Typically mounted at high points of pipe-work where air pockets need to be eliminated.



Automatic air vent

Automatically vents air from pipe systems.

Body: Nickel plated brass

Float: Plastic

Temp: Max 80°C

Pressure: 10 Bar max

Sizes: 10mm & 15mm BSP



ARI S-050 Automatic air release valve

Body: High strength plastic

Sizes: 15mm, 20mm,

25mm BSP

Pressure: 0.2-16 Bar

Features: Self cleaning mechanism



Automatic Air Vent

Body: Brass

Pressure: 10 Bar max

Temp: 80°C max

Size: 10mm



Fort Vale stainless steel release / vacuum breaker

Combined air release and vacuum breaker suited to tanks. Factory set vacuum and pressure

Air is vented to ensure no over-pressure yet the valve will allow air to enter the vessel to prevent implosion

Backflow Preventers



The overall objective of the performance of backflow preventer is to insure the sanctity of

drinking water.

It is becoming more and more important that potable water supplies are protected from contamination from industrial and commercial operations in the event of situations that may allow for water to be siphoned back in the water supply line.



Fitted between the water supply line and any industrial / commercial situation that has the potential to pose a threat to the potable water supply.



The proper selection of backflow preventer is crucial to insure that the device works properly and is providing adequate protection for the specific application



Backflow prevention devices and assemblies include atmospheric vacuum breakers, dual check valves, pressure vacuum breakers, double check valves assemblies and reduced pressure principle backflow assemblies.

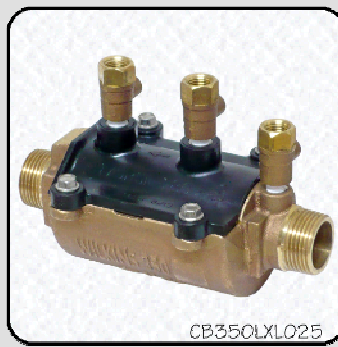


CB350L100

Wilkins model 350 double check backflow preventer

Test ports complete with ball valves.

Sizes: 65mm ~ 200mm



CB350LXL025

Type 350 LXL Double check valve complete with test points.

High performance, low head-loss design, short lay length.

Materials: Bronze & plastic
Sizes: 20mm & 25mm



CB975LXL040

Wilkins model 975 reduced pressure principle (RPZ) backflow preventer.

Test ports complete with ball valves.

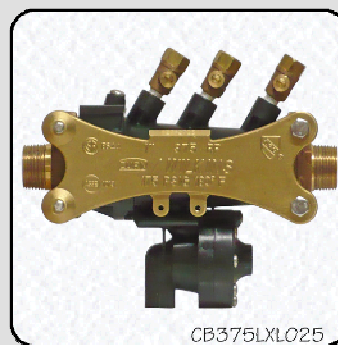
Sizes: 15mm ~ 50mm



RK34975XLR

Repair kit

We offer a full range of repair and maintenance kits for backflow preventers



CB375LXL025

Type 375 Reduced Pressure Zone (RPZ)

Top mounted test points
Materials: Bronze and plastic
Sizes 20mm & 25mm



Example: Valve Cage

This valve cage assembly includes water meters, back-flow preventer, resilient seated gate valves for isolation and bypass.

Balancing Valves

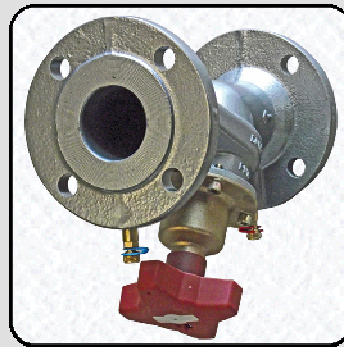


Allows heating or cooling circuits to share a common feed-line even though back-pressures differ.



Building heating / cooling systems on multiple levels or distributed over large areas.

Correct balance ensures the equipment at each floor (or building) is kept within operating parameters so comfortable conditions can be maintained.



Ball Valves



Ball valves are simple and inexpensive valves that are quickly and easily operated. Good ball valves allow unrestricted flow when fully open.



General purpose use, preferably where flow is either fully on or fully off. Plastic and stainless ball valves are best in harsh environments.



Avoid long straight upstream pipe-work which may suffer from water-hammer if a ball valve is shut off too quickly.

A closed ball valve holds a small amount of fluid, so do not use with fluids that could solidify, freeze or deteriorate whilst contained inside the valve.



Materials: PVC, Nickel plated brass, stainless, carbon steel
Connections: BSP screwed, socket weld, flanged, union ends.
Operation: lever, Tee handle, bare shaft (ready for actuator)
Sizes range from 10mm to 200mm



UPVC Ball Valve

Low cost ball valve with connections in BSP or socket weld.

Size: 15mm ~ 50mm



UPVC Ball Valve

Low cost ball valve with connections in BSP or socket weld.

Size: 65mm~100mm



PVC ball valve

Double union ends with BSP threads, Tee handle. PTFE (Teflon) seals



GF+ Coloro 353 one piece PVC ball valve

Ideal for many commercial applications, including spa pools and swimming pools.

Available with socket or BSP ends.



Ball Valve body
Size: 15~80mm

Our 'UBuild' series of PVC ball valves allow you to configure them with different connections to suit your application.
Connections are sealed with O-Rings.

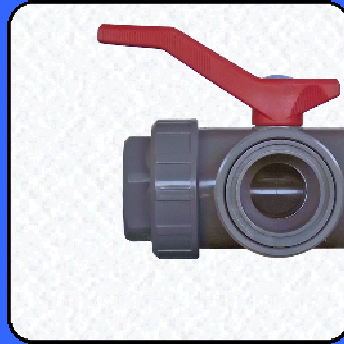
Seals: PTFE
Pressure: 16 Bar



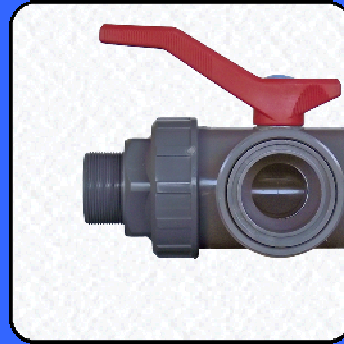
T-Port Valve body
Size: 32~50mm



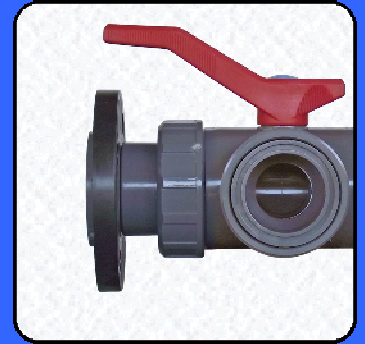
Hose connection



BSP Female connection



BSP Male connection



Flanged connection



Male / Male ball valve

Body: Nickel plated brass
Ball: Chrome plated
Seat: PTFE
Ends: M/M BSP
Sizes: 15mm ~ 25mm



M/F ball valve

Body: Nickel plated brass
Ball: Chrome plated
Seat: PTFE
Ends: M/F BSP
Sizes: 10mm ~ 25mm

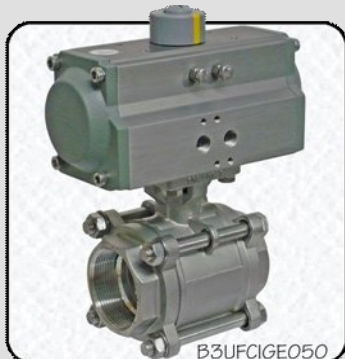


Body: Nickel plate brass
Seal: PTFE
Ends: BSP F/F
Sizes: 15mm ~ 50mm
Uses: Water, air, oils
Features: Internal check valve



Tee-handled ball valve

Polypropylene body, PTFE seals, PTFE ball.
Size: 15 ~ 50mm



Example: 3 piece stainless steel ball valve with double acting pneumatic actuator

Concentrate on the problem,
And the problem gets bigger.

Concentrate on the solution
And the solution gets bigger.

- Anon



Ball Valve Display Stand



Body: Nickel plate brass
Seal: PTFE,
Ends: BSP F/F
Sizes: 8mm ~ 50mm
Uses: Water, air, oils
Chrome plated handle



L Port

Body: Nickel plate brass
Seal: PTFE
Ends: BSPT F/F
Sizes: 15mm ~ 50mm
Uses: Water, air, oils



T Port

Body: Nickel plate brass
Seal: PTFE
Ends: BSPT F/F
Sizes: 15mm ~ 50mm
Uses: Water, air, oils



Body: Nickel plate brass
Seal: PTFE
Ends: BSP M/F
Sizes: 15mm ~ 25mm
Uses: Water, air, oils
Male end suitable for copper pipe and crox nut



Gas approved ball valve

Body: Nickel plate brass
Seal: PTFE
Ends: BSPT M/F
Sizes: 8mm ~ 25mm
Uses: Water, air, oils, gas



Gas approved ball valve

Body: Nickel plate brass
Seal: PTFE
Ends: BSPT F/F
Sizes: 8mm ~ 25mm
Uses: Water, air, oils, gas



Gas approved ball valve.

Body: Nickel plate brass
Seal: PTFE
Ends: BSPT F/F
Sizes: 15mm ~ 50mm
Uses: Water, air, oils, gas



Body: 316 stainless steel
Seal: PTFE
Ends: BSPT F/F
Sizes: 10mm ~ 50mm
Pressure: 1000 psi
Uses: Water, air, oils



L Port ball valve

Body: 316 stainless steel
Seal: PTFE
Ends: BSPT F/F
Sizes: 10mm ~ 50mm
Pressure: 1000 psi
Uses: Water, air, oils



High pressure ball valve

Body: 316 stainless steel
Seal: PTFE
Ends: BSPT F/F
Sizes: 10mm ~ 50mm
Pressure: 3000 psi
Uses: Water, air, oils
Features: Lockable handle



Body: 316 stainless steel
Seal: PTFE
Ends: BSPT M/F
Sizes: 10mm ~ 25mm
Pressure: 1000 psi
Uses: Water, air, oils
Features: Lockable handle



Body: 316 stainless steel
Seal: PTFE
Ends: BSPT F/F
Sizes: 8mm ~ 50mm
Pressure: 1000 psi
Uses: Water, air, oils
Features: Lockable handle



Body: 316 stainless steel
Seal: PTFE
Ends: BSPT F/F
Sizes: 10mm ~ 50mm
Pressure: 1000 psi
Uses: Water, air, oils
Features: Lockable handle



Body: 316 stainless steel
Seal: PTFE
Ends: BSPT F/F
Sizes: 65mm ~ 100mm
Pressure: 1000 psi
Uses: Water, air, oils
Features: Lockable handle



Body: 316 stainless steel
Seal: PTFE
Ends: Flanged ANSI 120
Sizes: 65mm ~ 100mm
Uses: Water, air, oils, steam

Butterfly Valves



Butterfly valves are simple, reliable and range in size from 50mm to 600mm and beyond.

They can be controlled by a notched lever, hand-wheel, compressed air, or electricity.



Isolation or variable control for applications such as water treatment, irrigation, flood-wash etc.

For applications requiring sanitary butterfly valves, please turn to page 43



Avoid placing a butterfly valve too close to the intake of a pump.

Large butterfly valves must be shut off slowly to avoid damage to pipe work from water-hammer.

EPDM liners are not suitable for tallow (ask for Buna-N).



Wafer or lugged style
Operation – Lever, handwheel, bare shaft ready for actuator
Seat: EPDM, Viton, Buna-N, metal



Wafer style butterfly

Body: Cast iron
Coating: Epoxy or Electro fused
Disc options: 304 or 316 stainless
Seat options: EPDM, Buna-N, Viton,
Sizes: 50mm ~ 600mm
Operator: lever handle, handwheel, pneumatic or electric actuator



Lugged style butterfly

Body: Cast iron
Coating: Epoxy or Electro fused
Disc: 304 or 316 stainless
Seat: EPDM, Buna N, Viton,
Connection: AS2129 Table-E
Sizes: 50mm ~ 600mm
Operator: Lever handle, handwheel, pneumatic or electric actuator



All stainless steel butterfly

Available in either wafer or lugged style.
Body: 304 or 316 stainless
Disc: 304 or 316 stainless
Seat options: EPDM, Viton, Buna-N



WAM brand special butterfly

Flanged one end with the other designed to suit sock.
Used for controlling cement flow in concrete batching.
Body: Aluminium
Disc: Teflon coated



Metal Seated Butterfly

Metal seated valves for high temperature applications. This example is used in a hot oil line.

Body: handle & scale GG 25

Disc: (up to DN100) St 37

Disc: (DN125 up) GG 25

Spindle: 1.4021



Metal Seated Butterfly

High temperature capability. Eccentric type disc.

Operators available include handle, gear operator, pneumatic, electric.

Sizes: 50mm ~ 200mm



Grooved Butterfly

Rubber encapsulated disc seals against the cast iron epoxy-coated body.

Grooves designed to fit with Victaulic style connections allow for pipe misalignment and movement.



Replacement Seat

Replacement seats available for most common butterfly brands.



Example: Wafer style butterfly valve with double acting pneumatic actuator, air solenoid valve and limit switch unit.

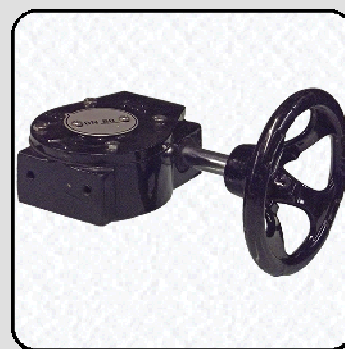
Spring Return actuators also available for fail safe operation



Example: Butterfly valve fitted with electric actuator



Example: Butterfly valve fitted with gear operator.



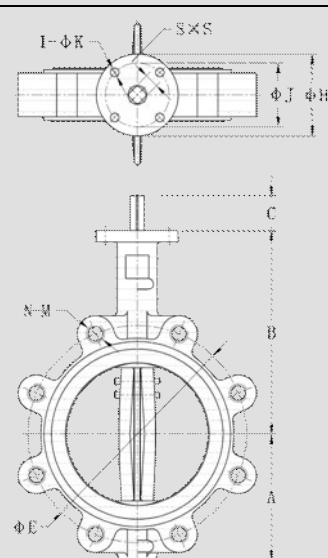
Gear operator

Gear operators are available for our range of butterfly valves.

Visual indicator.

Adjustable travel stops.

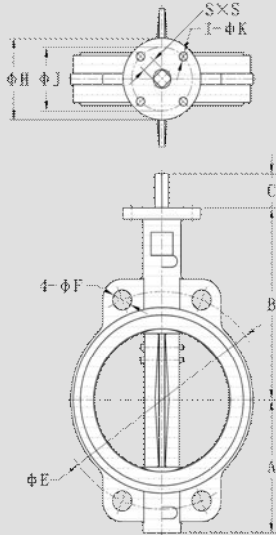
Sizes: Suit valves from 50mm ~ 500mm.



Lugged-style Butterfly Valves

Size		A	B	C	E		N - M		H	J	I - K	S	Kg	
mm	in				AS2129 Table E	PN16	AS2129 Table E	PN16					Lvr	Gear
50	2	76	162	32	114	125	4-M16	4-M16	65	50	4 - 7	9	3.5	7
65	2½	89	174	32	127	145	4-M16	4-M16	65	50	4 - 7	9	3.75	8
80	3	95	181	32	146	160	4-M16	8-M16	65	50	4 - 7	9	5.75	10
100	4	114	200	32	178	180	8-M16	8-M16	90	70	4 - 9.5	11	7.2	11
125	5	127	213	32	210	210	8-M16	8-M16	90	70	4 - 9.5	14	9.75	14
150	6	139	225	32	235	240	8-M20	8-M20	90	70	4 - 9.5	14	11.75	16
200	8	177	260	38	292	295	8-M20	12-M20	125	102	4 - 11.5	17	19	27
250	10	203	292	38	356	355	12-M20	12-M24	125	102	4 - 11.5	22	29	37
300	12	242	337	38	406	410	12-M24	12-M24	125	102	4 - 11.5	22	37	47
350	14	277	368	45	470	470	12-M24	16-M24	125	102	4 - 11.5	22		
400	16	308	400	51	521	525	12-M24	16-M27	210	165	4 - 22	27		
450	18	342	422	51	584	585	16-M24	20-M27	210	165	4 - 22	27		
500	20	374	479	64	641	650	16-M24	20-M30	210	165	4 - 22	27		
600	24	459	562	70	756	770	16-M30	20-M33	210	165	4 - 22	36		

Wafer-style Butterfly Valves



Size		A	B	C	E		F		H	J	I - K	S	Kg	
mm	in				AS2129 Table E	PN16	AS2129 Table E	PN16					Lvr	Gear
50	2	76	162	32	114	125	18	18	65	50	4 - 7	9	3	6.25
65	2½	89	174	32	127	145	18	18	65	50	4 - 7	9	3.6	7
80	3	95	181	32	146	160	18	18	65	50	4 - 7	9	4.15	7.5
100	4	114	200	32	178	180	18	18	90	70	4 - 9.5	11	5.75	9
125	5	127	213	32	210	210	18	18	90	70	4 - 9.5	14	7	10.5
150	6	139	225	32	235	240	22	22	90	70	4 - 9.5	14	9	12.5
200	8	177	260	38	292	295	22	22	125	102	4 - 11.5	17	14.5	20.5
250	10	203	292	38	356	355	22	26	125	102	4 - 11.5	22	20.5	26.5
300	12	242	337	38	406	410	26	26	125	102	4 - 11.5	22	33	40
350	14	277	368	45	470	470	26	26	125	102	4 - 11.5	22		
400	16	308	400	51	521	525	26	30	210	165	4 - 22	27		
450	18	342	422	51	584	585	26	30	210	165	4 - 22	27		
500	20	374	479	64	641	650	26	33	210	165	4 - 22	27		
600	24	459	562	70	756	770	33	36	210	165	4 - 22	36		

8. Square Stem:

7. Bushing:

Minimises torque requirement
Isolates stem from valve body,
preventing stem seizure due to
corrosion in the journal.

6. O-Ring:

Further protection from stem leakage

5. Disc

Provides bubble-tight shut-off
Assures minimum torque
Shaped to prolong seat-life

1. Cast-Iron Body ISO5211 compliant top flange

2. One-piece Stem

3. Taper Pin Stem to disc connection Field replaceable

4. Seat Cartridge style Field Replaceable Negates need for gaskets

Size

Seating Torque (Nm) *

DN50 (2")	13
DN65 (2½")	17
DN80 (3")	28
DN100 (4")	42
DN125 (5")	68
DN150 (6")	88
DN200 (8")	165
DN250 (10")	260
DN300 (12")	410
DN350 (14")	560
DN400 (16")	1100
DN450 (18")	1380
DN500 (20")	1720
DN600 (24")	2020

* Torque figures assume
media pressure is 10 bar.

Camlocks



Camlock fittings are quick-release couplings that adapt to standard threads or hose-tail barbs.



Couplings for flexible hoses for irrigation, or tanker use.



Not intended for aggressive media



Camlocks come in a variety of materials including stainless steel, bronze, polypropylene, and different grades of aluminium



Type A
Male camlock to female thread



Type B
Female camlock to male thread



Type C
Female camlock to hoesail



Type D
Female camlock to female thread



Type E
Male camlock to hoesail



Type F
Male camlock to male thread



Type DC
Dust Cap



Type DP
Dust Plug



Other camlock styles are available on request.

Check Valves



Check valves restrict fluid flow to just one direction. They come in many forms, sizes and materials. Some check valves are spring loaded for fast operation, though these types are more likely to impede flow at low pressures.



Situations where reverse flow could cause contamination or cause a pump to lose its priming charge after it is stopped.



Avoid chemicals and temperatures that will affect the seals in the valve. Use Swing checks only for forward flow that is horizontal or rising. Consider a ball check for semi-solids such as pulp or effluent.



Spring Check Valve

Body: Brass
Seat: Brass
Disc: EPDM
Sizes: 15mm ~ 100mm
Ends: BSP female threads
Pressure: up to 10 bar
Uses: Water, air

Delvin
flow
www.delvin.co.nz

Spread
the
word!



Bronze Swing Check

Body: Bronze
Disc: Bronze
Sizes: 15mm ~ 50mm
Ends: BSP female
Pressure: 20 Bar
Uses: Water, oils
Complies to AS1628DR



Lift Check Valve

Body: Bronze
Seat: Bronze
Disc: PTFE
Sizes: 15mm ~ 50mm
Ends: BSP female threads
Pressure: 32 Bar



Piston Check

Spring loaded disc ensures tight sealing in any orientation
Body: 316 Stainless Steel
Seat: 316 Stainless Steel
Disc: PTFE
Sizes: 15mm ~ 50mm
Ends: BSP female
Pressure: 40 Bar
Uses: Water, oils, air etc.



Stainless Steel Swing Check

Body: 316 stainless steel
Disc: 316 stainless steel
Sizes: 15mm ~ 50mm
Ends: BSP Female
Pressure: 200 psi.
Uses: Water, oils



Stainless Steel Disc Check

Body: 316 stainless steel
Disc: 316 stainless steel
Sizes: 15~80mm
Ends: BSP Female
Pressure: < 63 bar
Uses: Water, oils



Wafer-style Disc Check

Body: ASTM A351-CF8M
Trim: ASTM A351-CF8M
Metal seats
Pressure: < 40 bar
Size: 15~100mm



Wafer Check Valve

Dual discs for less potential for slamming

Body: Cast Iron

Seat: EPDM

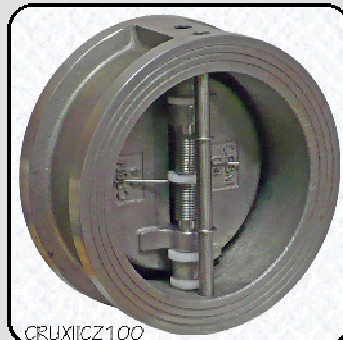
Disc: 316 stainless

Sizes: 50mm ~ 600mm

Ends: To suit
ANSI125/150,
AS2129 TE/TD

Pressure: up to 12 bar

Uses: Water



Wafer Check Valve

Dual discs reduce slamming

Body: 316 Stainless

Seat: EPDM

Disc: 316 stainless

Sizes: 50mm ~ 300mm

Ends: ANSI125/150,
AS2129 TE/TD

Pressure: up to 12 bar

Uses: Water, mildly
aggressive medium



Wafer Check Valve

Single disc for less head loss

Body: Cast Iron

Seat: EPDM

Disc: 304 or 316 stainless

Sizes: 50mm ~ 300mm

Ends: To suit
ANSI125/150,
AS2129 TE/TD

Pressure: up to 16 bar

Uses: Water



Screw-down Check Valve

This check valve is able to be flow controlled or fully closed.

Flow enters from the bottom port. The hand-wheel controls the degree of lift.

Material options include bronze, marine cast iron, marine cast steel.

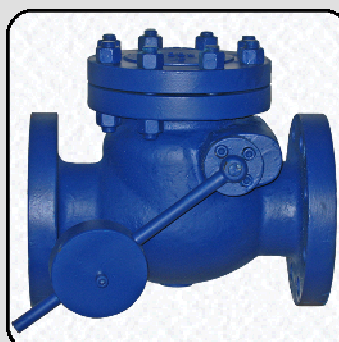
Flanged styles to suit JIS 5K and 10K

Sizes 50mm to 350mm

Ball Check Valve

Ball check valves are ideal in situations where there is the potential for semi-solids in the line.

The internal ball is rubber encapsulated - allows for a good seal even if particles are between the sealing surfaces.



Counterweighted Check Valve

Counterweight allows for back pressure to be asserted.

The back pressure can be adjusted simply by positioning the weight along the arm.

Available in sizes from 50mm upwards

Clamps



Galvanised Saddle

Typically used to secure pipe to a surface such as a wall or ceiling.



2 piece Munzing ring

Use to support pipe-work. Threaded boss at top has internal 10mm thread.

Sizes: 15mm ~ 100mm



Munzing ring support bracket and threaded rod

Boss threaded to 10mm
Galvanised steel



Galvanised steel 2 piece pipe clamp.

Swivel joint fits between top eye of clamp & support bracket. Sizes 50mm up.

Stainless Hose Clamp

Screw type hose clamp.
To suit hose sizes 10mm ~ 60mm



HCSSC050032



HCSHE051048

Stainless Hose Clamp.

Heavy duty type.
Stainless clamp
To suit hose diameters 17 ~ 121mm

Couplings



Flexible couplers are used to allow for movement / vibration or misalignment in pipework.



Bathroom taps,
Toilet cisterns
Pump intakes

Irrigation supply lines etc.



Ensure the coupling is appropriate for the media, temperature and pressure.

PVC Joiner

Ideal for joining broken PVC pipe. Easy to install.
Sizes: 15mm~100mm



FRJ065

Expansion Joint

EPDM liner allows for movement or misalignment between two pipes.
Sizes: BSP DN25 ~ DN50
Flanged DN50 ~ DN400



FY6Q9015400

Flexible Hose

(Straight ends)

Stainless steel braided outer with EPDM inner.

½" BSP swivel nuts with sealing washer.

Lengths 200mm ~ 600mm
Max pressure 10 Bar



FYEQ9015400

Flexible Hose

(Elbow one end)

Stainless steel braided outer with EPDM inner.

½" BSP swivel nuts with sealing washer.

Lengths: 200mm ~ 600mm
Max pressure: 10 Bar



FYSQ020300

Ripple Tube

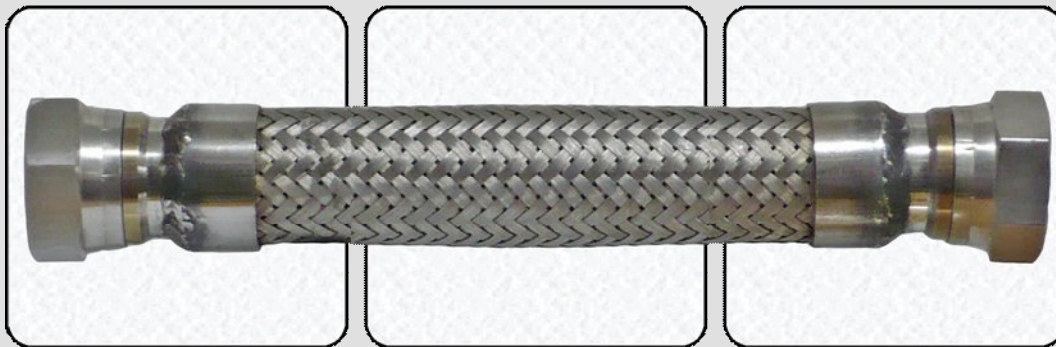
Flexible 304 stainless tube with BSP connectors and PTFE seals.

Sizes: 15mm: (200~600 long)

20mm: (300~600 long)

Max pressure: 16 bar

Max temp: 120°C



Custom made coupling

This 300mm long coupling has 25mm BSP ends, and is all stainless.

Diaphragm Valves



Diaphragm valves are well suited to controlling flow



Good for modulating or restricting flow of liquids or air



Avoid chemicals and temperatures that will affect the diaphragm in the valve. (Most valves have a range of diaphragm materials to suit specific applications)



Type A Diaphragm



Flanged Diaphragm Valve with cast handle

Saunders Type A valves direct the flow over a weir which is controlled by the diaphragm



Flanged Diaphragm Valve (Saunders type A)

Body: Cast Iron
Diaphragm: Options are available to suit different media and conditions.
Sizes: over 65mm
Options: Hand-wheel or pneumatically actuated.
Valve internals can be lined for aggressive services

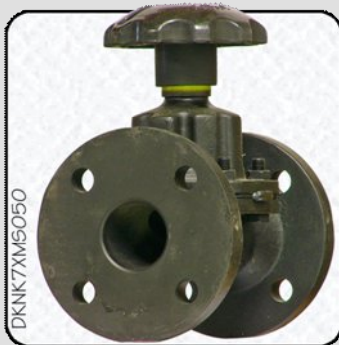


BSP Diaphragm Valve (Saunders type A)

Body: Cast iron
Diaphragm: Options to suit different media and conditions
Sizes 15~50mm



Type KB Diaphragm



Saunders Diaphragm Valve Type KB

Body: Cast Iron
Diaphragm: Options are available to suit different media and conditions.
Sizes: 15 ~ 50mm: BSP, over 65mm: Flanged
Options: Hand-wheel or pneumatically actuated.
Valve internals can be lined for aggressive services



BDK Diaphragm Valve

Body: Cast Iron
Diaphragm: Options are available to suit different media and conditions.
Sizes: 15 ~ 50mm: BSP



GF315 Hand-wheel operated Diaphragm Valve

Body: PVC, CPVC, ABS, PP-h.
Seals: EPDM, PTFE/EPDM,
Ends: Spigot
Sizes: 15mm ~ 50mm



GF025 Actuated Diaphragm Valve

Body: PVC, PP-h
Diaphragm: EPDM, PTFE/EPDM.
Sizes: 15mm ~ 150mm
Ends: 15 ~ 50mm: double union, over 65mm: Flanged
Function: Fail-safe close

Filters



Remove various particles from a liquid or air line
Replacement screens or elements available



Fitted to lines where the potential for unwanted particles exists.
Commonly installed in water lines before valves to prevent particles from causing damage or blockages to control valves



Tagline Filter

Body: Polypropylene
Rated: 8 Bar
Screens: 130μ, 200μ, 300μ
Size: 20mm BSP male connections
Media: Water



Amiad "T" Compact Filter

Complete with flushing valve
Body: Plastic
Rated: 10 Bar
Sizes: 25mm & 40mm
Media: Water



Amiad Compact Filter

Available with or without flushing valve
Body: Plastic
Rated: 10 Bar
Sizes: 20mm & 25mm
Media: Water



Arkal 3" Twin Filter

High volume filter with increased flow capacity
Pressure testing ports on inlet and outlet
Drain ball valve
Detachable Spine
Removable filter covers
Connections: Flanged, BSPT (Male), Victaulic

Fittings - Brass



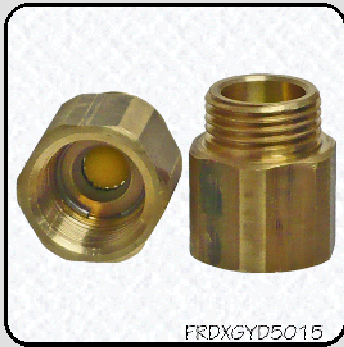
Commonly used in plumbing.



Use DR brass in applications where the fitting is to be buried.



Non-standard fittings can be made to order.



FRDXGYD5015

Flow Restrictors

Limits water flow to cisterns, basins & showers.

Body: Brass, M/F

Flow: 15mm: 2.5~15 L/min
20mm: 20, 25 L/min



Wide Flange Backnut



Left: Rite Tight Drift
Right: Female Rite Tight fitting



Example: Male Rite-Tight assembly



Left: Male/Female test-port
Right: Male/Female test-port with test nipple



Left: Female/Female union
Right: Male/Female union



Left: Reducing Bush
Right: Reducing Nipple



Coupling nut

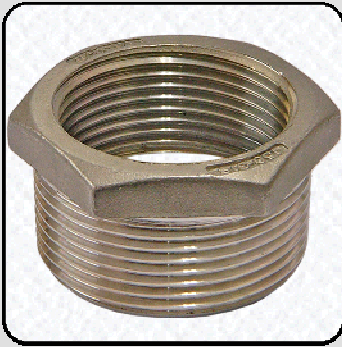


Female Stopcock
Sizes 15~25mm



Left: Hex Nipple
Right: Barrel Nipple

Fittings – Stainless Steel



Reducing Bush

Please refer to page
43 for Sanitary
Valves & Fittings



BSP threaded elbow



BSP threaded M/F (Street)
elbow



BSP threaded socket



BSP threaded barrel nipple



Weld nipple



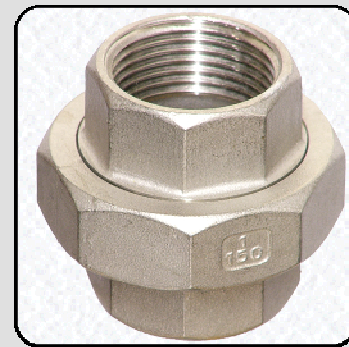
Butt weld concentric reducer



BSP threaded plug



BSP threaded Tee



BSP Union



BSP threaded reducing hex
nipple



BSP Reducing socket



Fabricated Hosetail Bend



Fabricated Hosetail



Fabricated Tee

Flanges



Fitted to the end of pipes to allow for the insertion of valves etc or the joining of two sections of pipe



Flange information: Page 54
Flange dimensions: Page 55



Material
Table (dimensions)
Pressure Rating



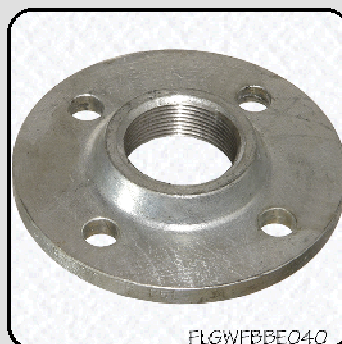
Blind Flange

Material: Carbon Steel,
Stainless Steel
Table: AS2129 Table D&E,
ANSI 125/150
Sizes: 15NB ~ 300NB



Galv Malleable Flange

Material: Malleable iron
Table: AS2129 Table D&E
Sizes: 15NB ~ 100NB



Galv wrought Flange

Material: Galvanised steel
Table: AS2129 Table D&E
Sizes: 15NB ~ 200NB



Plate Flange

Material: Carbon Steel
Table: AS2129 Table D&E
Sizes: 15NB ~ 200NB



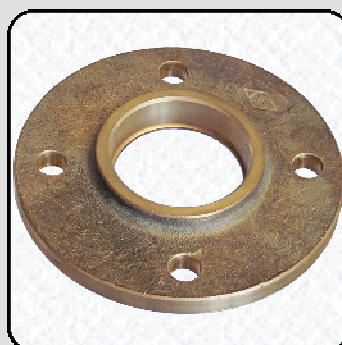
Copamate Flange with Male/Female Socket

Allows copper pipes and fittings to be joined to a flange



Plate Flange

Material: Stainless Steel
Table: AS2129 Table D & E
Sizes: 15NB ~ 200NB



Bronze Slip-on Flange

Material: Bronze
Table: AS2129 Tab D & E



Dressing Sets

Included are bolts, nuts, washers and insertion rubber or high temperature asbestos free gaskets to suit size and type of valve and flanges.

Available in Stainless steel or galvanised steel

Gaskets



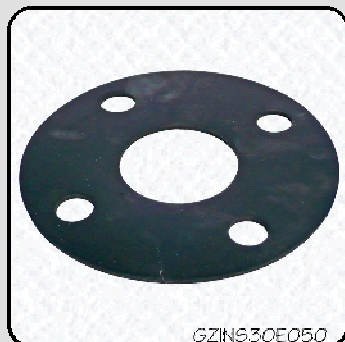
To ensure proper sealing between two surfaces



Between flanges for water pipes, steam lines.

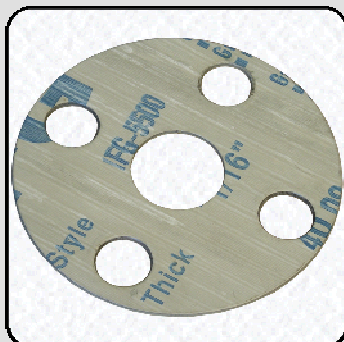


Correct gasket material selection is critical. Generally insertion rubber is used for water lines. A number of options are available for steam applications



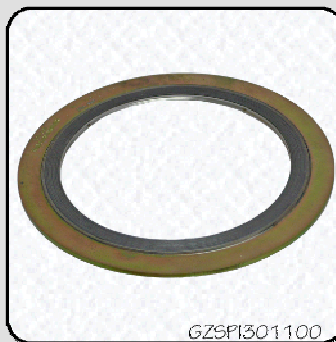
Insertion Rubber Gasket

Pre-cut to suit any table.
Sizes 15mm and above.
Gasket thicknesses: 3mm
Other gasket materials include Neoprene, Nitrile, and White Hygienic.



Non-Asbestos Gasket

Pre-cut to suit any table
Cut gaskets from 15mm~600mm.
Thickness: 1.5mm & 3mm.
Other gasket materials are available to suit specific applications



Spiral Wound Gasket

Sizes: 15mm upwards.
Various options available for boiler doors etc



Dressing Sets

Included are bolts, nuts, washers to suit size of valve and flanges.
Available in Stainless steel or galvanised steel

Gate Valves



Excellent for isolating sections of pipe-work, and other applications where on/off operation is required.
Similar to Sluice Valves



Water tobyls, isolation for maintenance / replacement of parts in existing pipe-work.



Avoid situations where the gate valve remains partly open. This can cause vibration and early failure.



Materials include brass, bronze, stainless, forged steel, cast iron.
Connections include BSP thread, socket weld and flanged



Brass Gate Valve

Body: Brass
Gate: Brass
Ends: BSP Female
Sizes: 15mm ~ 100mm



Brass Gate Valve M/F

Body: Brass
Gate: Brass
Ends: BSP Male / Female
Sizes: 15mm ~ 25mm



Brass Gate Valve M/M

Body: Brass
Gate: Brass
Ends: BSP Male / Male
Sizes: 15mm ~ 25mm



Brass Gate Valve

Body: DZR Brass
Gate: DZR Brass
Ends: Screwed BSP
Sizes: 8mm ~ 50mm



GAUKCIB025

Stainless Steel Gate Valve

Body: Stainless steel
Gate: Stainless steel
Ends: BSP screwed
Sizes: 8mm ~ 50mm
Pressure: 200 psi



GAFK7CDG100

Bronze Flanged Gate Valve.

Body: Bronze
Gate: Bronze
Ends: Flanged to AS2129 Table E



LVG18050

Lever-action Gate Valve

Body: Bronze
Gate: Bronze
Sizes: 25mm and above
(Styles vary with size)



GAZKWUUE015

Class 800 Socket Weld Gate Valve

Body: Forged Steel
Seat: 13% Cr
Gate: 13% Cr
Sizes: 15mm ~ 50mm
Ends: Socket Weld
Pressure: Class 800
Uses: Steam, Water



GAUK7IDI150

Stainless flanged Gate Valve

Body: 316 stainless Steel
Seat: 316 stainless Steel
Gate: 316 stainless Steel
Sizes: 50mm ~ 200mm
Ends: Flanged
ANSI125/150
AS2129 TE
Uses: Water, low pressure
geothermal steam



GANK7XDIO80

Cast Iron Gate Valve

Body: Cast Iron
Seat: Bronze
Gate: Cast Iron
Sizes: 50mm ~ 200mm
Ends: Flanged TE



Cast Iron Gate Valve

Body: Cast Iron
Gate: Bronze
Ends: Flanged to TE
Other flange options
available



GAJK6NDF150

Resilient Seated Gate Valve

Body: Ductile Iron
Gate: Rubber coated
Seat: Ductile Iron
Sizes: DN50 to DN300

Gauges (Pressure)



Pressure gauges allow measurement of pressure in a pipe or vessel.



Measurement which shows correct operation of pumps / filters etc, or indicates a fault / maintenance due. Some applications require calibration & certification.



Best accuracy when working pressure is mid-scale.

Avoid overheating pressure gauges - use a 'pigtail' for protection.

Avoid vibration of the needle - choose liquid filled gauge. Vent liquid filled gauges once installed to improve accuracy at low pressures (<7 bar).

When installing, screw in the threaded connector with a spanner.



Ranges: Vacuum to 700 bar
Face sizes: 40, 50, 63, 100 & 150mm

Body: Stainless / steel / plastic

Internals: brass or stainless

Scales: combinations of kPa, bar and psi

Connection: 1/4", 3/8" & 1/2" BSP

Styles include bottom entry, rear entry and rear entry panel mount.

Refer to Appendix A for guidelines, and Appendix G for Unit Conversion Tables



Rear Entry

Face: 63mm

Connection: 1/4" BSP

Case: Stainless steel

Internals: Brass

Glycerine filled

Please check for available ranges



Bottom Entry

Face: 63mm

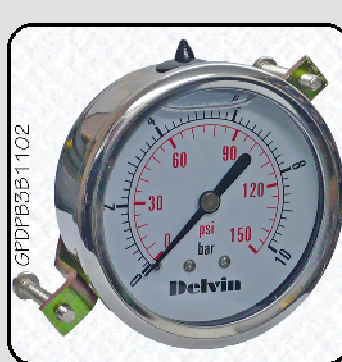
Connection: 1/4" BSP

Case: Stainless steel

Internals: Brass

Glycerine filled

Please check for available ranges



Rear Entry Panel Mount

Face: 63mm

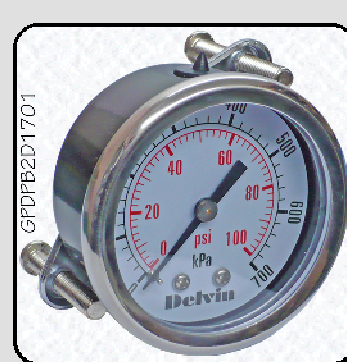
Connection: 1/4" BSP

Case: Stainless steel

Internals: Brass

Glycerine filled

Please check for available ranges



Rear Entry Panel Mount

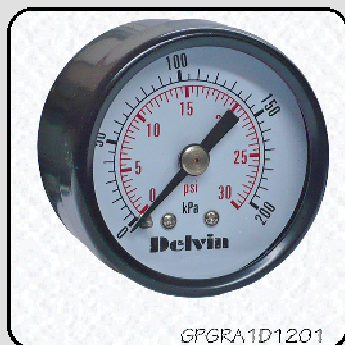
Face: 50mm

Connection: 1/4" BSP

Case: Black steel

Internals: Brass

Please check for available ranges



Rear Entry

Face: 40mm

Connection: 1/8" BSP

Case: Black steel

Please check for available ranges



Bottom Entry

Face: 40mm

Connection: 1/8" BSPT

Case: Black steel

Please check for available ranges



All Stainless Pressure Gauge

Face: 100mm

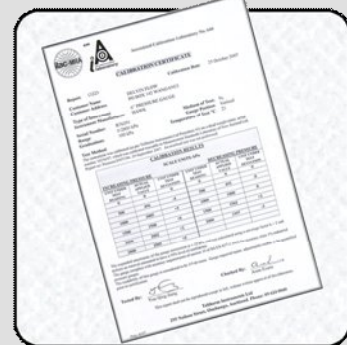
Case: Stainless steel

Internals: Stainless steel

Connection: 3/8" bottom

Scale: Dual scale

Please check for available ranges

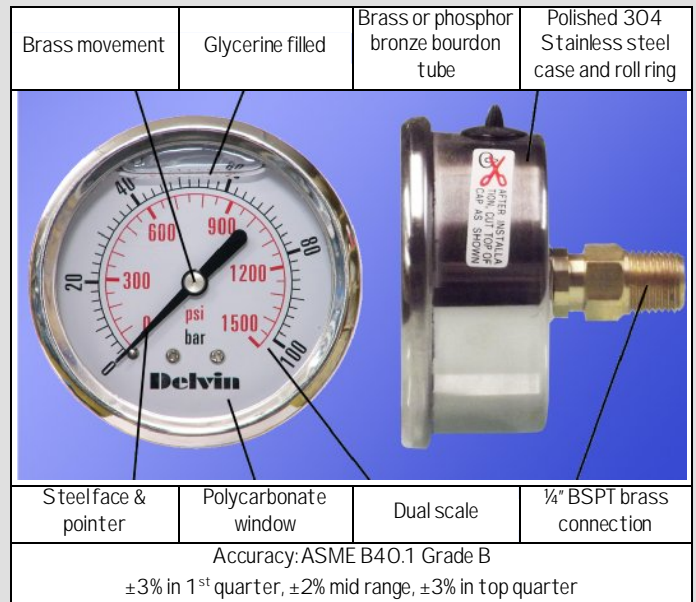


Setting and Certification

We can arrange for specialised pressure gauges and thermometers to be set and certified by an IANZ accredited calibration laboratory.

Common Gauge Ranges

kPa	Bar	PSI	Ref
-100	-1	-15	
±100	±1	±15	
70	0.7	10	700
100	1	15	101
200	2	30	201
250	2.5	35	251
400	4	60	401
700	7	100	701
1000	10	150	102
1400	14	200	142
1600	16	250	162
2000	20	300	202
2800	28	400	282
4000	40	600	402
7,000	70	1,000	702
10,000	100	1,500	103
14,000	140	2,000	143
20,000	200	3,000	203
28,000	280	4,000	283
35,000	350	5,000	353
40,000	400	6,000	403
70,000	700	10,000	703



Please refer to Appendix G for Unit Conversion Tables



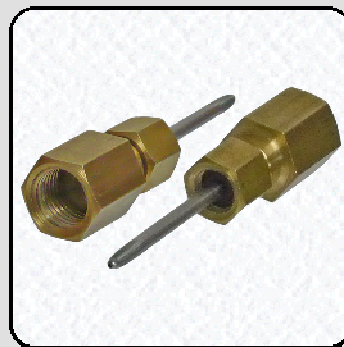
Gauge Display Stand

Displays 7 x 40mm, and 23 x 63mm pressure gauges in both bottom and rear entry. The bottom row holds panel-mount gauges. A rear cavity accommodates surplus stock / boxes / information sheets. 560 x 350 x 200 deep.



Wall Mount Pressure Gauge

Large face with easy to read graduations
Face: 150mm
Case: Aluminium
Internals: Brass
Connection: 3/8\"



Binder Test Point

A pressure gauge is screwed into the adapter which includes a "spear" point. This is inserted through a special membrane into the line to be pressure tested



Pigtail

Recommended for pressure gauges in lines where the temperatures exceed 80°C
Materials: Steel & stainless steel
Sizes: 8mm, 10, 15mm

Gland Packing



Gland packing is inserted between a valve stem or pump shaft and the outer casing.

Generally a compression gland compresses the packing within the cavity. This prevents leaking but allows the valve stem or pump shaft to rotate



TYPICAL USE

Common on pumps, knife-gate valves, ball valves, globe valves, gate valves



CAUTIONS

Select the correct packing to suit the valve or pump.



VARIATIONS

Gland packing is available in different materials and shapes. Materials include pure PTFE & Graphite.

Shapes include round and square

Graphite type 116

PTFE impregnated with graphite.

Sizes: 3mm, 5mm, 6.5mm, 8mm, 9.5mm, 11mm, 12.5mm, 14.5mm, 16mm, 17.5mm 19mm



General Purpose

PTFE

Sizes: 3mm, 5mm, 6.5mm, 8mm, 9.5mm 12.5mm

Globe Valves



Globe valves are well suited in situations where controlling flow is important



TYPICAL USE

Fluid lines in industry where flow control is required



CAUTIONS

Size valves so they're not used in an almost closed state. This may cause unnecessary seat-wear.



VARIATIONS

Body material
Connection
Pressure Rating



GLUKCJB025

Stainless Steel Globe Valve

Body: 316 stainless steel
Seat: 316 stainless steel
Disc: PTFE
Pressure: 200 psi
Sizes: 8mm ~ 50mm



GLBZKZD025

Kitz Bronze Globe Valve

Body: Bronze
Seat: bronze
Disc: PTFE
Rated: 10 Bar
Ends: BSP female
Sizes: 15mm ~ 50mm

Delvin
flow
www.delvin.co.nz

Let's
talk
valves

0800
123358



GLZKWSNE025

Forged Steel Globe Valve

Body: Forged steel
Seat: ½ Stellite
Disc: ½ Stellite
Rated: Class 800
Ends: Socket weld

Please refer to page 31 for Marine Valves



Bronze Globe Valve

Marine bronze straight pattern screw down globe valve.

Flanged to DIN standard PN16, but also available to suit JIS flanges.

Sizes: 50~ 200mm



Quick Acting Globe Valve

Bronze body lever acting globe valve. Ideally suited when quick easy control of fluid is required. Particularly popular in the meat industry.

Body material high grade bronze.

Pressure rated to 10 Bar.

Sizes: 15, 20, 25mm



Angled Globe Valve

Asco type E290A385

Body: Bronze

Seat: Bronze

Disc: PTFE

Sizes: 15mm ~ 50mm

Uses: Air, water, oil, steam

Pressure: up to 10 Bar

Temp: -10°C to 180°C

Spring to close action

Heat Exchangers



Plate-heat exchangers are an efficient way to transfer energy between liquids without them being mixed.

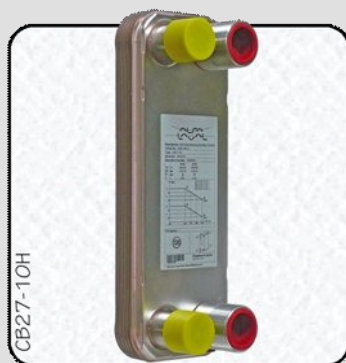


Control of fluid flow on one side of the heat exchanger allows energy transfer to be adjusted and temperatures to be controlled in closed-loop systems



Observe limitations such as maximum temperature and pressure.

Do not allow deposits (such as lime scale) to build up on internal surfaces.



Alfa Laval Plate Heat Exchanger

Model CB27-10H

Several models available to suit most heating applications



Kaori Brazed Plate Heat Exchangers

Intended for use as evaporators, condensers & desuperheaters in refrigeration systems.

Also ideal for applications involving clean water.

Hose-tails



Hose-tails have a male thread on one end and a barbed tail on the other.

The barbed tail fits inside flexible hose and is secured by a hose clamp



Hose-clamps are not optional!



Materials include aluminium, galvanised steel, polypropylene, stainless steel

Reducing types



Material: Stainless Steel
Sizes: 15NB ~ 65NB



Material: Galvanised Steel
Sizes: 15NB ~ 200NB



Material: Polypropylene
Sizes: 15NB ~ 50NB



Fabricated Stainless
Hosetail

Sizes: 15 to 50mm
Female connection available



Fabricated Stainless
Hosetail with 90° bend



Fabricated Stainless
Reducing Hosetail

“I’ve missed more than 9000 shots in my career.

I’ve lost almost 300 games.

26 times, I’ve been trusted to take the game winning shot and missed.

I’ve failed over and over and over again in my life.

And that is why I succeed.” - *Michael Jordan*

Irrigation Systems



Large area irrigation requires planning & experience. Controlled irrigation is paramount in

managing water use while optimising returns and protecting the asset



TYPICAL USE

Golf courses, food crops, vineyards, orchards, sports-grounds etc.



CAUTIONS

Allow for future expansion of pipe-work & electrical systems.



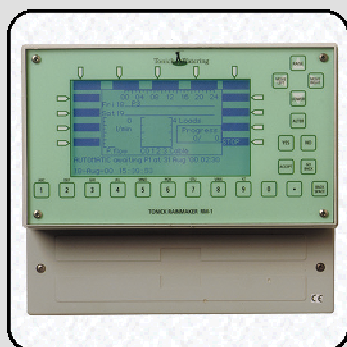
VARIATIONS

Sprinkler heads, drip-feed, frost protection, wired / wireless control, feedback & data-logging, pump control.

Delvin Flow is proud to represent Tonick Watering in New Zealand.

Tonick Watering was formed in 1996 to design and produce innovative decoders to provide superior performance and reliability with the majority of other brands; this has culminated in a comprehensive range of types, all incorporating highly effective lightning protection and a 5 year warranty.

Complementary to decoder development, Tonick have developed a range of versatile controllers which again offer superior capability and a unique level of user-friendly operation compared with conventional products.



Tonick RM-1 Controller

Tonick Rainmaker control unit with LCD & buttons is used in conjunction with translators).

The Rainmaker RM-1 controller comprises a wall-mounted control panel with a large graphics Liquid Crystal Display (LCD). Around the edge of the LCD is a set of keys which provide a "point and select" facility. This together with graphical displays of run times and watering schedules make the RM-1 particularly easy to use.

- Compatible with most existing decoder types. No need to scrap any serviceable wiring or decoders
- Powerful flow management for a shorter overall time to water
- Up to 511 named stations are available over 36 holes plus putting greens etc.
- Radio remote control facility as a low-cost option.



Tonick Translator

The RM-1 communicates down an isolated cable to between 1 and 4 signalling units called translators.

Each translator connects via a plug-in Lightning Protection Unit (LPU) to the 2 or 3 wire course cable.

Depending on the decoder type used, up to 255 decoders can be addressed from each translator.

Up to 4 decoders may be simultaneously active (with different run times) on each cable.

Thus a 4 Translator system can have 16 decoders active at any one time.



TW-2W-1

Irrigation Decoder

Tonick Irrigation Decoders allow for several units to be wired in parallel from a central controller. The controller signals the decoders to open solenoid valves according to a schedule.



HR40FC

Plastic Solenoid Valve

Sizes: 25mm, 40mm 50mm
Voltage: 24VAC by default
Operation: Normally closed
Features: Flow control

Please refer to page 46 (Solenoid Valves) for more options.



Tonick TW-3 Controller

Combines simplicity of programming with the latest technology.

- Easy set up, with a dial-type rotary switch & graphic backlit display.
- Waterproof, UV resistant case and transformer
- Each of the four watering programs has up to 12 starts / day and can be programmed for any or all days of the week.
- Cycles may run in parallel allowing up to 4 decoders on at the same time.
- Monthly seasonal adjust percentage
- No-watering dates
- Extra manual program available, independent of any automatic cycle.
- Operate from front panel or via remote control circuit.
- Records run log, failure log and total time / precipitation over the last 7 days for each station.

Knife-gate Valves



Knife-gate valves are useful for many applications in larger sized pipe-work (50mm up). Unlike traditional gate valves, they can throttle (anywhere from fully open to fully closed).



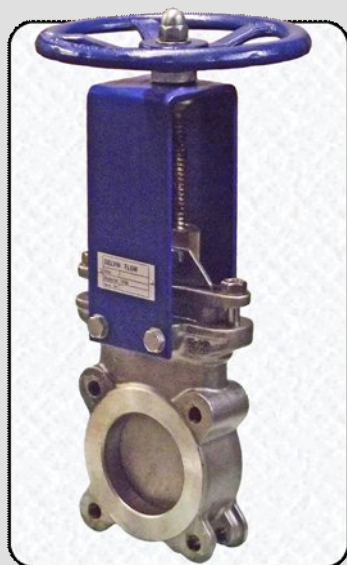
Ideally suited for the control of sewerage, slurries, waste products, semi solids, pulp, bulk powders



Most knifegate valves are designed for single flow direction. Ensure adequate space above the valve for the centre stem to rise when fully open.



Materials include stainless steel, cast iron, PVC etc. Operated by handwheel, electric or pneumatic options. Seat materials include metal, EPDM, Viton, PTFE



Knifegate Valve

Body: 304 or 316 stainless
Knife: 304 or 316 stainless
Seat: PTFE, EPDM, Viton
Flange: To suit ANSI or AS2129 flanges.
Sizes: 50mm ~ 600mm
Operator: Hand-wheel, Gear operator, Pneumatic or Electric Actuator.



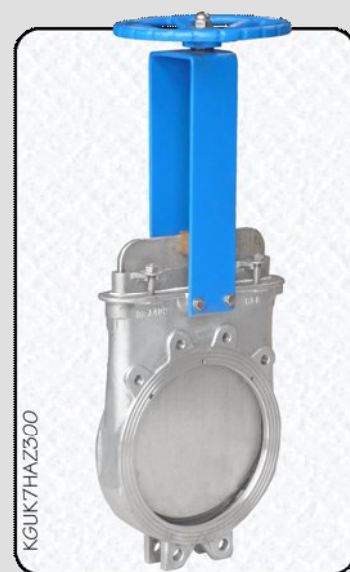
Pneumatically Actuated Knifegate Valve

Body: 304 or 316 stainless
Knife: 304 or 316 stainless
Seat: PTFE, EPDM, Viton
Flange: To suit ANSI or AS2129 flanges.
Sizes: 50mm ~ 600mm



PVC Slide Valve

Body: PVC
Gate: PVC
Seals: Rubber O Rings
Sizes: 50mm ~ 150mm
Ends: Socket weld



DN300 Knifegate valve, 304 stainless body and knife, handwheel with offset non-rising stem

“Whether you think you can
or think you can’t,
you’re right.” - *Henry Ford*

Marine Valves



Marine valves are designed and manufactured to suit the environment in which they will be used.

We source marine valves from foundries that fully comply with JIS, DIN, GB, CB standards

In some cases, where necessary we can offer full Lloyds certification.

With many vessels in our waters having been manufactured in various parts of the world, it is important we know the specific flange pattern dimensions in order to provide the correct replacement.



In many cases the valve may be situated below the vessels water line. Therefore very strict adherence to manufacturing detail must be observed.

Do not replace a valve in a marine situation with a type that is not suited either in material composition or pressure.

Sea water can be quite aggressive in certain conditions and correct valve selection in critical



Dikkan Marine Valve

Straight through pattern. Available as either a globe type valve or a screw down non return valve.

Valves produced in a Lloyds approved foundry. Full Lloyd's certification can be issued.

Valves flanged to suit DIN standard flanges.

Sizes from 50mm to 300mm



Dikkan Angled Marine Valve

This style is available as an angle globe valve or as a screw down non return valve. Valves produced in a Lloyds approved foundry. Full Lloyd's certification can be issued.

Valves flanged to suit DIN standard flanges.

Sizes from 50mm to 300mm



Bronze Globe Valve

Marine bronze straight pattern screw down globe valve.

Flanged to DIN standard PN16, but also available to suit JIS flanges.

Sizes: 50~ 200mm



Screw-down Check Valve

This check valve is able to be flow controlled or fully closed.

Flow enters from the bottom port. The hand-wheel controls the degree of lift.

Material options include bronze, marine cast iron, marine cast steel.

Flanged styles to suit JIS 5K and 10K

Sizes 50mm to 350mm

Mixing Valves



Sometimes referred to as tempering valves.
Two inlet ports – hot and cold. Blending within the valves limits the outlet temperature



Now mandatory in some facilities including hospitals, meat works, schools etc.



Ensure the maximum temperature permitted through the valve is not exceeded.
Pressure of the hot and cold lines should be balanced for best performance



Jrgumat Thermo-blending Valve

Model 3400
15mm ~ 50mm BSP
65mm ~ 80mm Flanged
Standard factory set temperatures: 25°, 40°, 48° and 55°C (some adjustment possible with a screw)



Siemens 3 Port Mixing Valve

Controlled via top mounted actuator. Blends hot and cold water to give a desired output temperature.



Siemens SKD62 Actuator

This spring return (fail-safe) actuator is for the larger mixing valves in heating circuits (e.g. heated swimming pools)



Example: Siemens SQS65.5 spring return actuator fitted to a 20mm two port control valve.

Needle Valves



Needle valves provide very fine flow control



Good in fluid lines that require finite flow control. Water treatment plants, waste water treatment, chemical dosing

Needle Valve

Suited to conditions where precise flow control is required
Material: Stainless Steel
Sizes: 1/8" ~ 1/2"



Needle Valve

Suited to conditions where precise flow control is required
Material: Bronze
Sizes: 1/8" ~ 3/8"

Nozzles & Hoseware



Fire Nozzle

Adjustable from jet to spray
Rugged plastic construction
Rubber bumper around nose.
End connection: 25mm



Fire Nozzle

Adjustable from jet to spray
Rugged plastic construction
Rubber bumper around nose.
End connection: 40mm



Fax your
order to

06
3488173



Jet Fog Nozzle

Cast and treated aluminium
for rugged, long lasting,
smooth operation. With
integral bumper.
End connection: 32mm
Performance (690 kPa):
Setting Fog angle
1/3 turn Jet
2/3 turn 70°
1 turn 160°



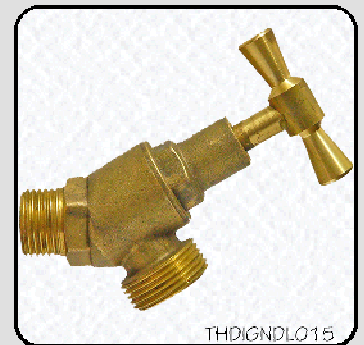
Pistol-grip Nozzle

20mm BSP connection
Adjustable flow
Lock-on clip (remove for
marine use)



Brass Hose Nozzle

Body: Brass
Ball: Chrome plated
Handle: Zinc Plated
End: 15mm Hose Tail
Size: 15mm



Hose Tap

Body: Brass
Sizes: 15mm & 20mm
male, 15mm female



Pinch Valves



Pinch valves have a pliable tube (sleeve) which carries the medium through the valve body.
External force applied to the sleeve distorts it and controls flow.
When fully open these valves offer minimal restriction.



Reliable control of mediums containing abrasive substances or semi solids.
Ideal for wastewater, mining, pulp, fishing etc.
Worthwhile option in areas where media could contain volcanic ash



Pneumatic or hand-wheel operation.

Standard Handwheel Operated Pinch Valve

Two worm-driven bars deform the inner sleeve to restrict flow.



Pneumatic Pinch Valve

Compressed air is introduced into the top port in the body.
The sleeve within the body is flexible and compresses as air pressure increases thus controlling / restricting flow.

To re-open the valve, the air supply is removed and exhausted.

Body: Cast iron.
Sleeve: Material options to suit application
Sizes: 10mm ~ 300mm

Piston Valves



A Piston Valve is a device used to control the motion of a fluid along a tube or pipe by means of a linear motion of a piston within a chamber or cylinder



In lines where modulating control is required.
Even in cases where there are high pressure differentials, piston flow control valves do not permit vibration or noise, due to the fact that the piston is continuously guided



Do not use in lines where there maybe particles or semi-solids



A range of styles offering different end connections, body materials and sizes



Bonetti Piston Valve

Body: Cast Steel
Ends: BSP female threads
Piston: Stainless steel
Sleeve: Stainless steel
Rated: Class 800

Plug Valves & Eccentric Valves



Plug valves have a cylindrical, tapered plug which is ported. The valve is opened or closed by rotating the plug 90°. Eccentric valves have a single seat and just one side of the plug.
(Trade-off: more care needed regarding orientation and flow direction)
Modern plug valves require lubrication which reduces friction and leakage.



Typically used where there is the potential for semi-solids.
e.g. waste water plants, timber process and treatment, bitumen etc.



Take care when selecting the valve to ensure that the valve material is suitable.
Never undo bonnet bolts while valve is under pressure



Plug valves can be either screwed or flanged. Actuation options include manual lever, gear operator, pneumatic or electric.
Plug may be metal or rubber coated

Delvin
flow
www.delvin.co.nz

Specific brand?

We can help



3 Way Plug Valve

Body: Cast Iron
Sizes: 40mm ~ 150mm
Ends: Available with undrilled flanges
Uses: Slurries, Dirty water



2 Way Plug Valve

Body: Cast iron
Sizes: 40mm ~ 150mm
Ends: Available with undrilled flanges
Plug: Vulcanised
Uses: Slurries, Dirty water



Dressing Sets

Included are bolts, nuts, washers and insertion rubber or high temperature asbestos free gaskets to suit size and type of valve and flanges.
Available in Stainless steel or galvanised steel



DeZurik Eccentric Valve (DN100)

Body: Cast iron
Sizes: DN100~DN500
Ends: Table D & E
Plug: Vulcanised

*“If you’re going through hell,
keep going.”
- Winston Churchill*



Example: DN150 DeZurik Eccentric plug valve complete with Rotork 500Nm Electric Actuator.

Pneumatics



Control and/or regulate air line pressure. Provide power to drive devices through the medium of air.



Air is still a practical way of driven a wide of air tools including drills, punches, riveters, spray guns, valve actuators and rams, tyre inflation etc.

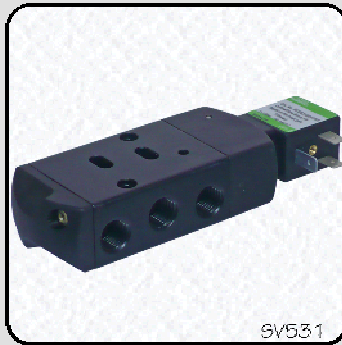


Pneumatic devices must not be used on air lines producing pressures over that which the device was designed for.

Delvin
flow
www.delvin.co.nz

Fax your
order to

06
3488173



Actuator solenoid valve

5/2 port Namur mount solenoid valve.
Also available in 3/2 option for spring return actuators.
Body: Die-cast aluminium
Seals: Nitrile
Port sizes: 1/8", 1/4:"
Voltages: 12 VDC, 24VDC, 24VAC, 110VAC, 230VAC



Manual Spool Valve

Body: Zinc diecast
Internal parts of stainless steel
Seals: Nitrile
Sizes: 1/4", 3/8" BSP
Pressure: up to 10 Bar
Temp: -10°C to +60°C



Manual Hand Valve

SMC VH Series
Three body sizes with ports 1/4" ~ 1"
Having 4 ports, this valve is available in 2 position or 3 position closed or exhaust centre



Type 34203082 pneumatic regulator

Port sizes 1/2" BSP



Type 34205006BP

Filter/Regulator & Gauge.
1/4" BSP Port Size
25µm Filtration
Maximum pressure 10 Bar



Type 34205012BP

Filter/Regulator & Gauge
Lubricator
1/4" BSP Port Size
25µm Filtration
Max Pressure 10 Bar



Type 34205010BP

Regulator & Gauge
1/4:" BSP Port Size
Maximum Pressure 10 Bar



Airline connector

Male BSP to air-line
Female BSP to air-line



Straight air line connector



Elbow air line connector



Tee air line connector

Delvin flow
www.delvin.co.nz

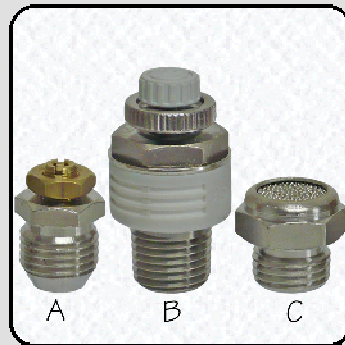
Need more details?

**WWW.
delvin.co.nz**



Elbow connector

Male BSP to air-line
Female BSP to air-line



- A. Exhaust restrictor
B. Exhaust restrictor
C. Exhaust filter

Air-line Connectors

Material: Nickel plated brass or plastic.
Seal: NBR O ring
Tube Ø: 3mm to 14mm
Thread: 1/8" to 1/2" BSP

Pressure Reducing Valves (PRVs)



Pressure reducing valves can be used for water, air steam. Two main types are pilot acting and direct acting.
Pilot acting are best suited for larger valves and in situations where good accuracy is required.
Direct acting suitable for smaller sizes



Water mains to reduce water pressure to desirable level for the network. Air and steam pressure reducing in industry.



Valves must be sized to ensure valve does not operate near the closed position for most of the time. In some cases the valve can be a smaller size than the line the valve is fitted to.
When sizing, it is important to consider minimum and maximum flows.



Wilkins PRV Model BR4

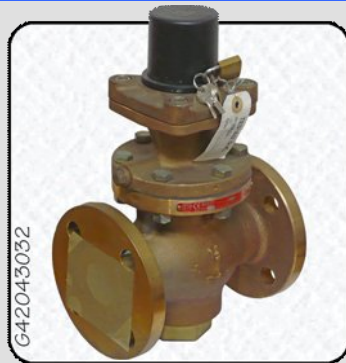
Pressure rated to 400psi (27.6 bar)

Default setting: 50psi 3.45 bar

Max temperature: 82°C

Sizes 15~25mm have output pressure range 1~10 bar

Sizes 32~50mm have output pressure range 1~5 bar



Bailey G4

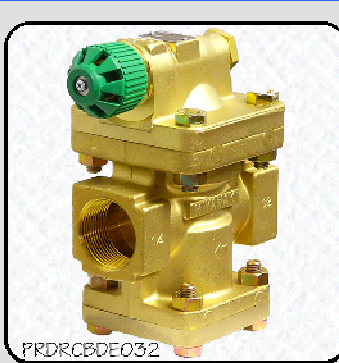
The Bailey 'G4' regulator is a self-actuating, pilot operated pressure reducing valve.

Compact design.

Materials: Bronze, Cast iron, Cast steel

Sizes: 15mm~150mm

Ends: Screwed or flanged



Miyawaki type RE3 pressure reducing valve.

Pilot operated PRV

Compact design

Easy adjustment using plastic knob

Accurate operation by using stainless micro bellows



Z-Tide PRV

Adjustable, Direct-acting pressure reducing valve complete with pressure gauge.

Stainless body with Viton seal

Pumps



Pumps provide the means to move liquids through pipe-work.

Most applications involve water, but may be oil, liquid product, or a slurry.



Water supply, drainage, circulation (heating or cooling), processing, distribution etc.



Check manufacturers datasheet for pumping capability, orientation, power requirements, inlet conditions that prevent damage from cavitation.



Submersible pump

Ideal for sumps and pits. Some models incorporate a float switch



Water pressure system

Includes integrated tank, non return valve, pressure sensor, controller lead and plug



Inline circulator pump.

For heating and cooling. Sizes 20mm ~ 32mm have union ends. Sizes over 40mm have flanged ends. Single or 3 phase options for most sizes



Smedegaard

Inline circulator pump

Sizes 20mm ~ 32mm have union ends. Sizes over 40mm have flanged ends. Single or 3 phase options for most sizes



Milton Roy Series G Dosing Pump

Range of controllable diaphragm operated pumps able to deliver flow rates from 1 to 13000 litres per hour, and pressures from 2 to 900 bar.

Wetted parts available in PVC, 316 Stainless or PVDF



Wilden Diaphragm Pump

Air operated, double diaphragm pump.

Sizes: 6.35mm ~ 101.6 mm (1/4" ~ 4")

Materials: Wide range of options to meet many applications



KSB Close Coupled Pump

High quality 3 phase centrifugal pump.

Sizes: 32mm ~ 125mm

Casing: Cast iron

Impellor: Zinc free bronze



KSB Long Coupled Pump

Example assembled on base plate with electric motor

Sizes: 32mm ~ 250mm

Casing: Cast iron

Impellor: Zinc free bronze

Radiator Panels & Accessories



Valves: Control the rate at which water passes through a radiator panel thus having a heating effect on the panel.

Two common styles are handwheel and thermostatic.

Handwheel valves are manually set. Thermostatic valves automatically adjust depending on sensed temperature.

Lockshield valves are fitted to the radiator panel outlet and limit the flow through the panel

Panels: Sized to suit the area required to be heated. Clean and efficient.



Convenient and efficient means of heating, however this form of heating does require an adequate source of hot water. Water is "pushed" through the system via a circulating pump



System design must ensure that the temperature of hot water permitted to pass through a radiator system does not exceed 40 degrees



Valves are generally either 15mm or 20mm although other sizes are available but less common.

Valve shape can be either straight or angle to suit installation.

Radiator panels are available in a number of sizes

Please refer to 'Mixing Valves' (page 32) for temperature control products



Radiator Panels

Radiator panels available in a range of sizes to suit desired output.

Construction of either aluminium or pressed steel.



Insulated Pipe

Pexal composite pipe. Multi-layer pipe offers the advantages of both metal and plastic. Crimp type fittings allow for speedy installation

The Pexal System

The Pexal pipe system has been developed to speed installation and increase functionality.

The Pexal multi-layer pipe offers the advantages of both metal and plastic. The values of one material compensate for the deficiencies of the other.

Metal's negative aspects such as corrosion, toxicity, scaling and rigidity are eliminated by the PE-X layers which surround the pipe.

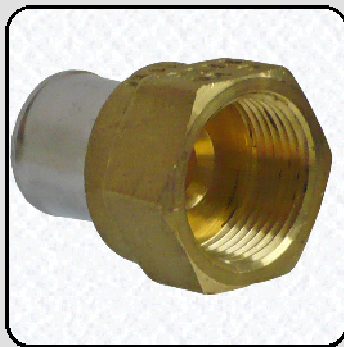
The negative aspects of plastics such as permeability to gas and UV rays, elevated thermal expansion and weakness are overcome by the presence of the aluminium pipe.

Installation is allowed directly in the ground, within concrete slab, inside wall cavities, or external to the building envelope. It is recommended that connections buried in the ground or concrete be covered with Denso tape.



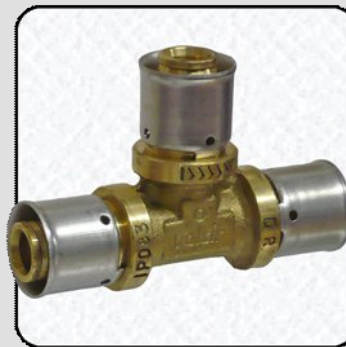
Pexal Crimp Wingback

Sizes: 16 & 20mm
Material: DR Brass



Pexal Crimp Socket

Also available with swivel nut.
Sizes: 16mm ~ 63mm
Material: DR Brass



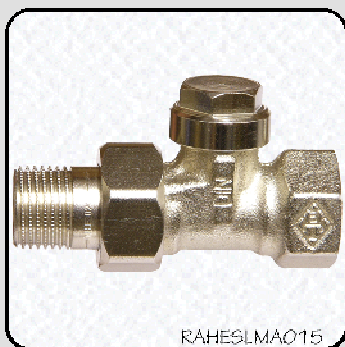
Pexal Crimp Tee

Available as equal Tees in sizes 16mm ~ 63mm or reducing Tees 20x16x16 ~ 63x63x50
Material: DR Brass



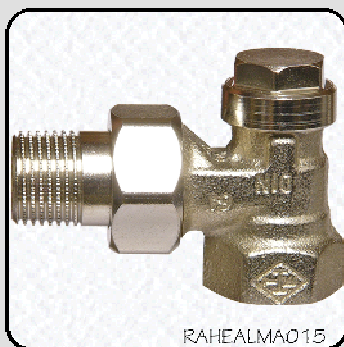
Denso Tape

Petrolatum Tapes provide on site anti-corrosion protection of gas, water, oil and other pipes and pipeline valves and fittings.



Heimeier Straight lockshield valve

Lockshield valves are fitted on the return flow of radiator panels. Adjustment limits the flow through the panel



Heimeier Angle lockshield valve

Lockshield valves are fitted on the return flow of radiator panels. Adjustment limits the flow through the panel



Straight Hand-wheel Valve

Sizes: 15mm ~ 25mm



Straight Hand-wheel Valve

Sizes: 15mm ~ 25mm



Danfoss type RA/V 2960

Also available:
RA/V 2950
RA/V 2920



Heimeier Type K Head

When fitted to a thermostatic valve, the head modulates it depending on the ambient temperature



Sauter Motorised Head

230V, 2.5W
Normally closed (power to open)
IP43



Radiator Bleed valve

Mounted at the top of a radiator panel so that air pockets can be vented. Key operated, though a screwdriver can also be used.

Please refer to 'Heat Exchangers' on page 27



Heimeier Straight Thermostatic Valve
 Sizes: 15mm, 20mm



Heimeier Angled Thermostatic Valve
 Sizes: 15mm, 20mm



Danfoss Angled Thermostatic valve
 Sizes: 15mm, 20mm



Foil Faced Pipe Insulation
 Available in meter lengths for a range of thicknesses and pipe sizes,
 Use foil tape for joining.

Safety Valves



Safety valves protect equipment by relieving excess pressures.



Applications involving steam, compressed air etc.
 Safety valves will often need to be set and certified.



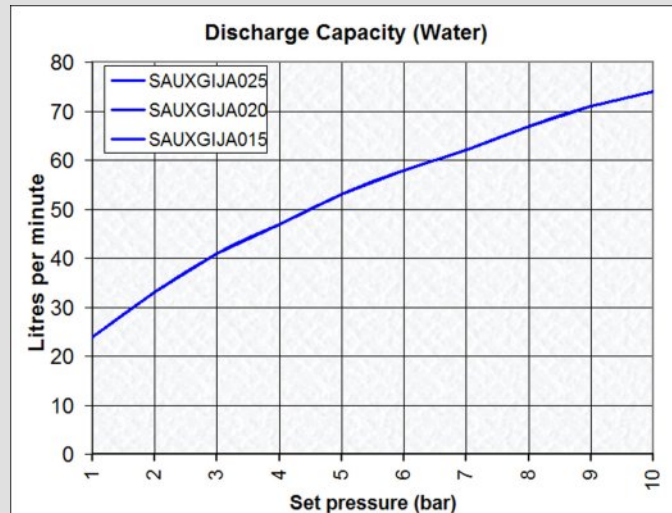
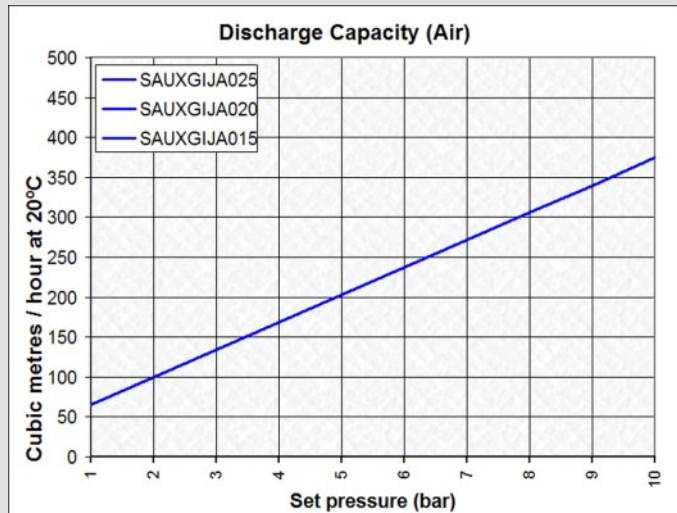
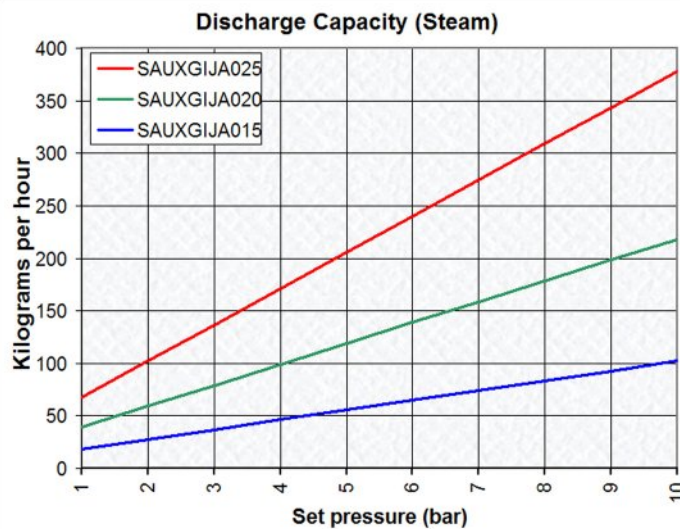
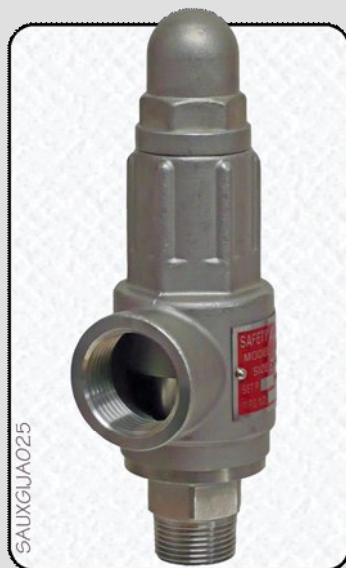
Avoid discharge into areas where injury could result.
 Avoid restriction / reduced size pipe-work on discharge side.
 Ensure discharge capacity exceeds requirements.



Body & Seat Materials
 Spring ranges
 Easing Lever
 Discharge Capacity

Dome Type Safety Valve

Body: 316 Stainless
 Seat: Stainless
 Disc: Stainless
 Pressure: Adjustable from 0.3 Bar ~ 10 Bar
 Inlet: DN15, DN20, DN25
 Outlet: DN25 BSP





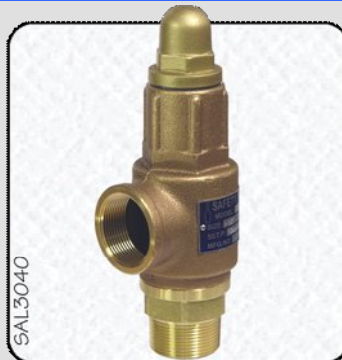
Dome type safety valve

Body: Bronze
 Seat: Stainless steel
 Disc: PTFE
 Pressure: Adjustable from 0.3 Bar ~ 10 Bar
 Inlet: DN15, DN20, DN25
 Outlet: Same as inlet



Lever type safety valve

Body: Bronze
 Seat: Stainless steel
 Disc: PTFE
 Pressure: Adjustable from 0.3 Bar ~ 10 Bar
 Inlet: DN15, DN20, DN25
 Outlet: Same as inlet
 Feature: Easing lever



Dome Type Safety Valve

Body: Bronze
 Seat: Bronze
 Disc: Bronze
 Pressure: Adjustable from 0.3 Bar ~ 10 Bar
 Inlet: DN32, DN40, DN50
 Outlet: Same as inlet



Lever Type Safety Valve

Body: Bronze
 Seat: Bronze
 Disc: Bronze
 Pressure: Adjustable from 0.3 Bar ~ 10 Bar
 Inlet: DN32, DN50, DN50
 Feature: Easing lever



Fort Vale Air-Release / Vacuum breaker

Protects tanks from over-pressure and implosion.
 Material: Stainless steel
 Check for pressure/vacuum ranges (fixed)



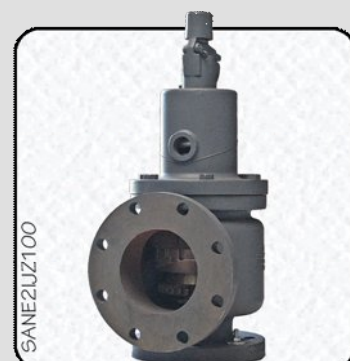
High Lift Safety Valve

Body: Stainless Steel
 Seat: Stainless Steel
 Disc: Stainless Steel
 Inlet: DN20, DN25
 Outlet: DN25 BSP
 Pressure: 11 bar ~ 20 Bar



High Pressure Safety Valve

Body: Bronze
 Seat: Bronze
 Disc: Bronze
 Size: DN15 ~ DN25 BSP
 Pressure: 12 ~ 25 Bar



Kunkle Safety Valve

Large capacity safety valves.
 Flanged to ANSI150/300
 Smaller sizes to NPT threads
 Pressures factory set.



Safety Valve

Body: Brass
 Seat: Brass
 Disc: Rubber
 Size: 10, 15, 20mm BSP
 Uses: Compressed air systems



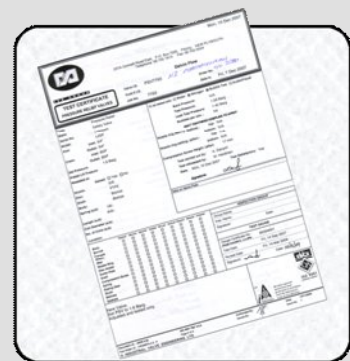
Fire Valve

Two fusible links melts when subjected to high temperature causing the valve to shut.
 Body: Brass
 Size: 10mm connections
 Applications: Fuel systems



Springs

Springs for safety valves.
 Some models require different springs to suit the required blow-off pressures



Setting and Certification

Delvin Flow can have safety valves set and certified by a NZ accredited laboratory

Sanitary Valves & Fittings



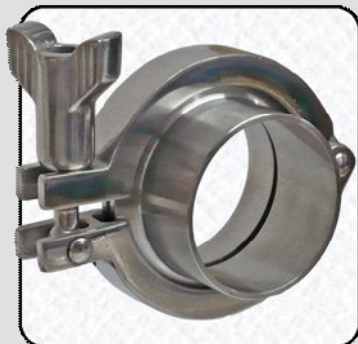
Sanitary fittings join stainless steel tube and components in a uniformly smooth, non-contaminating or non-corrosive environment in which to transport a product.

They are self aligning joints which not only reduce contamination hazard but minimize turbulence and pressure drops through a process system

Their benefits provide for crevice free clean-in-place or easy-fast takedown, low cost, compact, leak free installation and ready adaptability to food process machinery etc.



Food & Beverage processing,
Dairy, Pharmaceuticals etc.



Tri-Clover Fitting

In recent years a lot of food processing and pharmaceutical machinery has been imported into New Zealand with Tri-Clover fittings attached.
Sizes: 25mm ~ 150mm



RJT Fitting.

This has been the more commonly used system in New Zealand, Particularly in the dairy industry.
Sizes: 25mm ~ 150mm



In-Line Sparger

(Shown with manifold)
Built in check valve to prevent liquid entering gas supply line
Sinter elements available in 0.5µm, 2µm, 7µm, 15µm, 60µm and 90µm.



Double-Swaged Hose-tail with RJT connection

Rotary Spray Head

Sprays hot or cold water, incl dissolved cleaning chemicals
Designed for Barrel cleaning with other patterns for small to medium tanks.
Available, with 1mm or 1.5mm slots
Low maintenance.



Spray Ball.

Used for cleaning tanks and barrels.
Fits over a 1" tube
Different spray patterns available



Sanitary Sight Glass

Allows media to be visually assessed inline.
Connections: RJT or butt-weld
Lens: Glass or polycarbonate
Size: 1", 1½", 2", 3" & 4"



Manual Sanitary Butterfly Valve



Pneumatically Actuated Sanitary Butterfly Valve (Spring return type)



Variant with pneumatic positioner fitted.

Sealants



Dressed Hemp

80 gram roll
Teased hemp
Ready off the roll



Ceelon thread tape

12mm wide x 10m x
0.075mm
Lubricates
Vibration resistant
Non-seizing



Denso Tape

Petrolatum Tapes provide
on site anti-corrosion
protection of gas, water, oil
and other pipes and pipeline
valves and fittings.



Seismic Switch



Mechanical switch that triggers during an earthquake.



Allows pumps and pressurised systems to be safely
shutdown to prevent equipment damage or product loss.



**PSP Model 510 Seismic
Actuated Electrical Switch**

When configured, this switch will cut electrical power circuits during a seismic event. A visual indication is provided to show the ready / triggered states. Circuits will not be restored until the device is physically reset. The switch is mounted securely to a building via mounting brackets and levelled using a chain site. Ensure annual inspection and test procedures are scheduled. DPDT contacts, 10A 250VAC.

Model 510 Seismic Switches meet California Standard 12-23-1 for Earthquake Actuated Automatic Gas Shutoff Systems & ANSI Standard Z21.70 for Earthquake-Actuated Automatic Gas Shutoff Systems.

*“Keep away from people who try to belittle your ambitions.
Small people always do that, but the really great make you feel that you,
too, can become great.” - Mark Twain*

Sight Glass



To visually display the level of liquid in a container.



Commonly used to show the water level in boilers, or the cooling oil level in pole transformers.



Use the correct tubing - ensure it is appropriate to handle expected temperatures and pressures.
If you intend to include a float, ensure that it will not escape the tube, and that it actually floats in the liquid!



Material options include glass and polycarbonate.



Single Window Sight Glass

For monitoring operation of a steam trap.

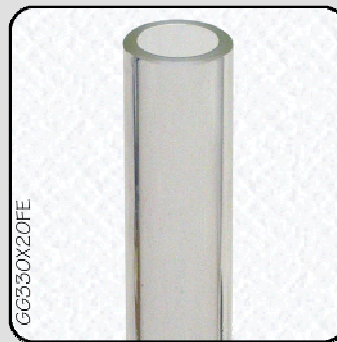
Size: 15mm ~ 25mm



Sight Checker

Installed 1m downstream from a steam-trap to check for correct operation.

Stainless ball provides visual indication and stops reverse flow



Gauge Glass

Heavy walled glass tubing cut to any length and the ends flamed.

Diameter: - 1/2" & 3/4"

Length: up to 2 metres



Gauge Glass Cone

Gauge glass cones are used to seal around the gauge glass tube.

Cones available to suit 1/2" & 3/4" tube

Sluice Valves



For isolation in water and waste water lines



Generally installed in water lines.
Modern sluice valves are nylon 11 or epoxy coated to ensure long life.
The wedge or gate is rubber encapsulated to ensure bubble tight shut-off



Sluice valves have a reverse thread on the spindle, so they are turned **CLOCKWISE TO OPEN**
See Gate Valves for normal opening direction



Sluice valves are available with different connections.
e.g. flange to flange, flange to spigot, spigot to spigot

Resilient seated sluice valve

Body: Cast Iron
Coating: Nylon 11 or Epoxy coated
Operation: Anti-clockwise closing
Ends: Spigot
Sizes: DN40 ~ DN150



Resilient seated sluice

Body: Cast Iron
Coating: Nylon 11 or Epoxy coated
Operation: Anti-clockwise closing
Ends: Flanged AS2129 Table D or E.
Flange to Spigot
Sizes: 40mm ~ 600mm

Solenoid Valves



Electrically control the flow of water, air, gas or steam.
Valves can be either normally open or normally closed.



Used in a wide range of industries for the control of air, water, gas and steam
Also commonly used for irrigation



Check datasheets regarding the expected flow, pressure, temperature, medium, duty cycle etc.
Valves should be mounted with the coil vertical above the valve body



Common voltages: 12VDC, 24VDC, 24VAC, 110VAC, 240VAC
Common body materials: Brass, PVC, ABS, Cast iron



Burkert Type 5281

General purpose solenoid valve. (Servo assisted)
Body: Brass
Diaphragm: NBR, FKM, EPDM
Sizes: 15mm ~ 65mm
Pressure: 0.2 ~ 16 Bar



Burkert 3 way Solenoid Valve

Type 330 is 3/2 direct acting pivoted armature solenoid valve.
The valve is fast acting
Size: 1/4"
Body: Brass or Stainless
Voltage: 24VDC, 240VAC



Brass Solenoid Valve

General purpose solenoid valve.
Body: Brass
Diaphragm: NBR
Sizes: 15mm ~ 50mm
Temperature: Max 60°C
Operation: N/C & N/O
Voltage: 24VDC, 24VDC, 240VAC



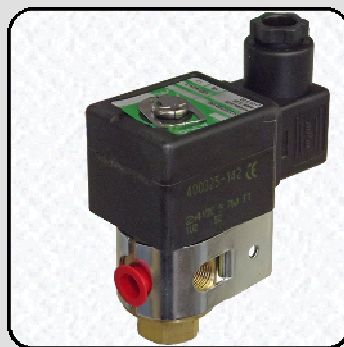
Asco Coils

A range of different styles and voltages



ASCO SCD210D2

Water / Air / Light oil
230V coil
Max Temp: 80°C
Size: 15mm (1/2")



ASCO SCD320B130

Water / Air / Light oil
24VDC coil 9.7W
Max Temp: 50°C
Size 6mm (1/8")



ASCO SUD222D2E

Steam
230VAC 16.7W
Max Temp: 180°C
Size: 15mm (1/2")



ASCO AGSCD210C74

Fuel Gas
Automatic Shut-off
24VDC 11.2W
Size 10mm



Brass Solenoid Valve

Body: Brass
Diaphragm: EPDM
Sizes: 20, 25, 40, 50mm
Voltages: 12VDC, 24VDC, 24VAC.



Bermad Series 400 Control Valve

This versatile valve body can be configured to offer many applications – Hydraulic control, Pressure reducing, Pressure sustaining, Quick pressure relief valve, Reservoir control valve.

Body: Cast Iron
Ends: 20mm ~ 80mm BSP
50mm up Flanged
Table D



Stainless Solenoid Valve

Stainless steel bodied solenoid valves may be better suited for aggressive types medium.
The valve shown is a direct acting type for low pressure applications
Sizes: 15mm ~ 50mm



Dorot 80 series Irrigation Solenoid Valve

Body: Plastic
Voltage: 24VAC by default
Sizes: 20mm, 25mm, 40mm 50mm
Features: Flow Control
Manual over-ride



Plastic Solenoid Valve

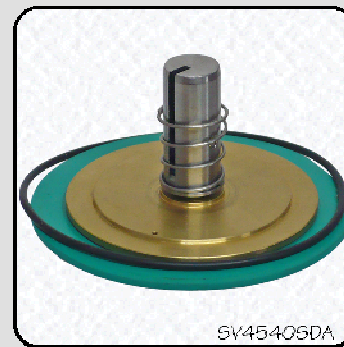
Sizes: 25mm, 40mm 50mm
Voltage: Standard 24VAC
Operation: Normally closed
Features: Flow control



Example: Repair kit for a Burkert 281 solenoid valve. Includes diaphragm, spring, o-rings, screws etc



Example: Repair kit for an Asco solenoid valve



Example: Repair kit for Process Systems 40mm stainless direct acting solenoid valve



Bermad Coils

Example: 3 way, 24VAC



Atos Coils

A range of different styles and voltages



Baccara Coils

Suits most irrigation type solenoid valves.
Voltages: 12 VDC, 24VDC/AC



Danfoss Coils

We offer a range of replacement coils for most Danfoss solenoid valves

Steam-traps



Steam traps remove condensate from steam lines.
(Condensate traps could be a more appropriate term)



Seek advice for best type for your application



Thermodynamic
Free-float
Ball Float
Inverted Bucket
Balanced Pressure
Bimetallic



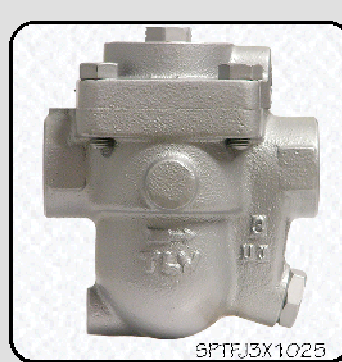
Thermodynamic Steam Trap

Gestra brand.
Stainless steel body
Sizes: 15mm ~ 25mm



Thermodynamic Steam Trap

Disc type steam trap for low pressure range.
High durability
Easy maintenance
Sizes: 15mm ~ 50mm
Ends: BSP screwed and flanged



Free Float Steam Trap

A reliable and durable free-float steam trap with tight shut-off.
Sizes: 15mm ~ 25mm
Pressure: 2, 5, 8, 10, 21 Bar



Inverted Bucket Trap

Free-floating.
Frictionless operation.
Hardened main valve and seat - only two moving internal parts.
Sizes: 15mm ~ 32mm

Strainers



Strainers protect downstream equipment from problems caused by solids such as rust, scale, or foreign objects.



Protection for pumps, pressure reducing valves, or control valves.



Install so that flow follows the arrow direction.
Ensure that strainers are regularly checked and cleaned.



Body material
Mesh size

Brass Strainer

Body: Brass
Element: Stainless steel
Sizes: 15~50mm
Ends: BSP screwed



Stainless Steel Strainer

Body: Stainless Steel
Element: Stainless steel
Sizes: 15~50mm
Ends: BSP screwed

Thermometers



Thermometers (Temperature Gauges) display temperature from a probe or sensor.

Many are for general purpose measurement, though some of the more serious applications will require calibration / certification.



Measurement which shows correct operation of heating / refrigeration etc, or indicates a fault / maintenance due.



Avoid use with temperatures that exceed the limits of the scale. Avoid personal risk by placing sensor stem into a thermowell (pocket).



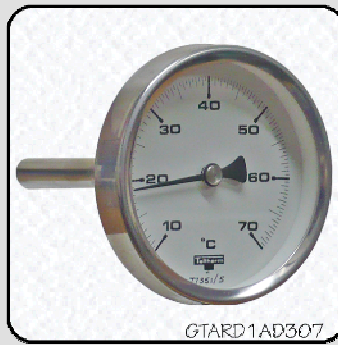
Face size
Sensor type – rear mounted stem, bottom mounted stem, remote capillary & bulb.



GTARD1KA115

Rear Entry Thermometer

Dial: 63mm face
Range: 0~120°C, 0~150°C
Thread: ½" BSP



GTARD1AD307

Rear Entry Thermometer

½" BSP pocket
Dial: 50mm face
-40/+60°C, -20/+40°C,
-20/+80°C, +10/70°C,
0/120°C, 0/150°C, 0/200°C,
50/250°C



GTARD2BB115

Rear Entry Thermometer

Dial: 100mm face
Range: 0~120°C, 0~150°C
Thread: ½" BSP



GTABD2BB112

Bottom Entry Thermometer

Dial: 100mm face
Range: 0~120°C, 0~150°C
Thread: ½" BSP

Delvin flow
www.delvin.co.nz

Can't find it?

0800 123358



GTACD25B112

Capillary Thermometer

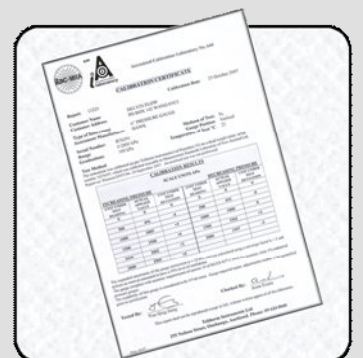
Panel mount capillary thermometer
Dial: 100mm
Capillary Length: 2mtr, 3mtr.
Other lengths available
Range: 120°C, 150°C.
Other ranges available



POCKET04

Stainless Steel Thermowell

Suits our 63mm face thermometers
½" BSP male / female thread



Setting and Certification

We can arrange for specialised pressure gauges and thermometers to be set and certified an IANZ accredited calibration laboratory.

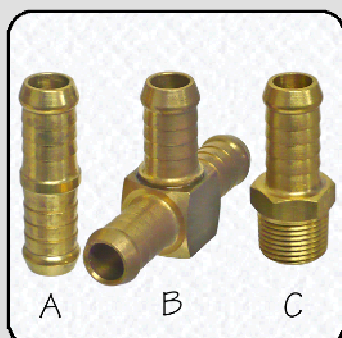
Titon Brass Fittings



Titon brand brass fittings are available in a large number of styles.
Reducing bushes, nipples, sockets, tube and hose connectors

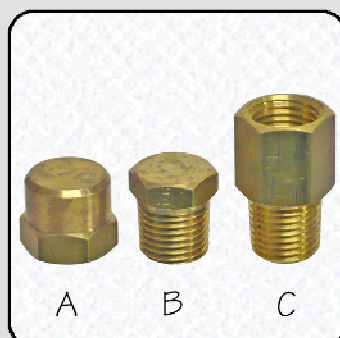


Airline fittings (hose tails)
Compression fittings
Pipe fittings

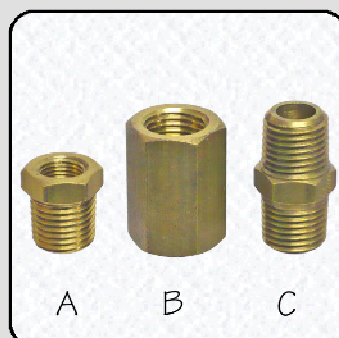


Airline Fittings

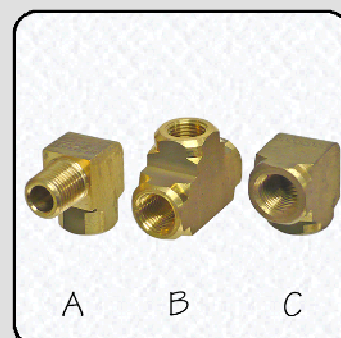
- A:** Joiner
Sizes: 3/16"~1"
B: Tee
Sizes: 3/16"~1"
C: Male connector
Sizes: 3/16"~1"



- A:** Brass Cap
Sizes: 1/8"~1/2"
B: Brass Plug
Sizes: 1/4"~1"
C: M/F Adaptor
Sizes: 1/8"~1"



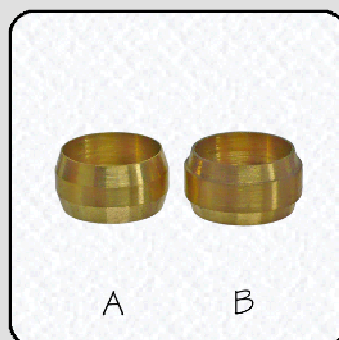
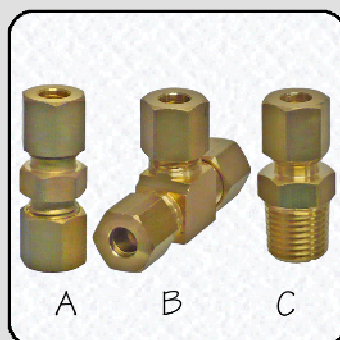
- A:** Reducing Bush
Sizes: 1/8"~1"
B: Hex Socket
Sizes: 1/8"~1"
C: Hex Nipple
Sizes: 1/8"~1"



- A:** M/F 90° Elbow
Sizes: 1/8"~1/2"
B: Female Tee
Sizes: 1/8"~1/2"
C: Female 90° Elbow

Compression Fittings

- A:** Double Union
Sizes: 1/8" ~ 3/4"
B: Union Tee
Sizes: 1/8"~3/4"
C: Male Connector
Sizes: 1/8"~1"



Compression Sleeves

- A:** Copper sleeve
Sizes: 1/8"~3/4"
B: Nylon sleeve
Sizes: 1/8"~1"

Mmmm... Good deal

Delvin flow
www.delvin.co.nz

Suppliers of valves & accessories to
New Zealand.
0800 123358
delvin@delvin.co.nz

Victaulic Joints



A Victaulic (Victory-hydraulic) joint consists of a split housing and a pressure responsive gasket.



TYPICAL USE

Fire protection systems, and building services pipework, heating, chilled water, domestic supply etc.



CAUTIONS

Ensure gasket material is suitable for the medium & temperature / pressure. Seek advice for pipework design and installation.



VARIATIONS

Gasket materials
Sizes
Pre-prepared grooved pipe



VC080

Victaulic Housing

Used to secure the connection and house the gasket.

Sizes: 40mm ~ 200mm



VG080

Victaulic Gaskets

Sizes: 40mm ~ 200mm

Gasket materials are available to suit medium and temperature



Supplier of valves to New Zealand



Grooved Butterfly

Rubber encapsulated disc seals against the cast iron epoxy-coated body.

Grooves designed to fit with Victaulic style connections allow for pipe misalignment or movement.

Water-Hammer Arresters



Absorbs the pressure wave in pipe-work when flow is suddenly halted



TYPICAL USE

Mounted just upstream of the valve that stops flow.



CAUTIONS

.Install using hex section near thread
Avoid denting pressure chamber



Hydra-Rester

Designed to keep system surge pressure to 10 bar or below.

Seamless chamber

Max Working Pressure: 24 bar

Max Temperature: 121°C

Size: 15mm

Water Meters / Flow Meters



Register and record water usage and flow rate.



TYPICAL USE
Municipal authorities
Irrigation systems
Private bores
Apartments



CAUTIONS
Install with correct flow direction.
Check instructions regarding orientation and surrounding pipework.



VARIATIONS
Sizes range from 15mm up.
Some models have pulse output. This allows remote recording



Meinecke Meistream Water Meter

Body: Powder coated
Meistream water meters can be installed in any orientation without affecting its metrological performance



Meinecke WPD Water Meter

Body: Powder coated
Sizes: 40mm ~ 300mm
Option: Pulse output



Meitwin Water Meter

3 in one measuring element.
One measuring unit adjusted and verified for three sizes.
Main meter and by-pass meter placed in a row.
Main meter with hydro-dynamic balanced rotor
Sizes: 50mm ~ 150mm
Ends: Flanged



Magflo

Works on magnetic induction.
No pressure drop, no moving parts, high accuracy. Assumes pipe is always full.
Trusted in many industries.
Sizes DN15 to DN2000



Class B Water Meter

Sizes: 15mm ~ 50mm
Optional EV Pulse Head



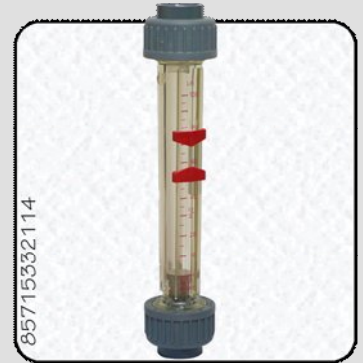
Water meter with pulse Output

Pulse output for 1 pulse per litre or 10 pulses per litre
Sizes: 15mm ~ 50mm



Ultrasonic – Clamp On

Available as portable or dedicated meters.
Fluid flow can be measured without damaging the pipe.
Suitable for virtually any fluid and pipe material from 15mm to 3000mm diameter.



Gemu Flow Meter

Union Ends
Range of sizes and flow rates

Appendix A: Pressure Gauge Guidelines

Delvin pressure gauges are available in a variety of pressure ranges, with options of either bottom or rear entry point.

Most of the Delvin gauges are glycerine filled, which means they are more tolerant to rapid fluctuations in pressure. The liquid dampens out pulsations, reduces wear on moving parts and prolongs the useful life of the gauge.

Selecting the best gauge.

Ideally, select a gauge where its normal operation will be around 50% to 60% of full scale. To protect the gauge, you must also be sure that the maximum scale will never actually be reached.

Protecting from high temperatures.

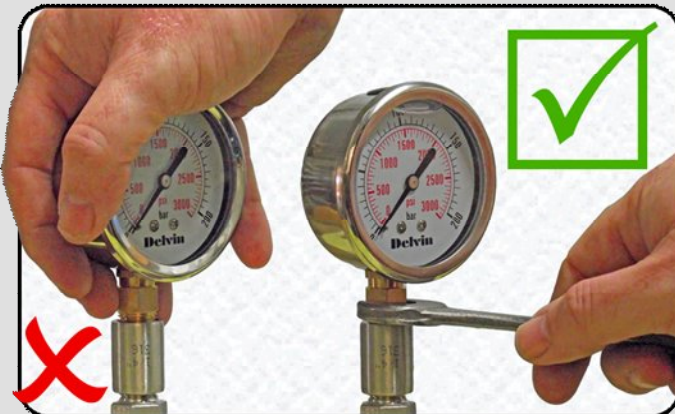
When used with steam or hot liquids, gauges may discolour and/or have a shortened life unless precautions are taken.

In such situations it is strongly advised to use a 'pigtail' to help isolate the gauge from damaging temperatures.



Installation

Thread seal tape or hemp will not only prevent leakage past the thread, but will allow you to have the gauge facing in a desirable direction.

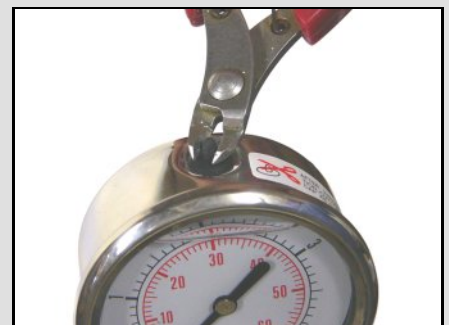


When installing a gauge, NEVER use the head of the gauge to screw it into a socket as this can damage the seal around the stem.

Gauges are designed to be installed with an open-ended spanner.

Once fixed in position, remember to cut the tip off the rubber bung at the top of the gauge.

This will ventilate the gauge, and improve accuracy, particularly at low pressures.



Appendix B: Flange Information

What is DN?

DN stands for 'Diameter Nominale'.

Put simply, it is a rough translation of mm from imperial sizes, assuming that an inch is 25mm.

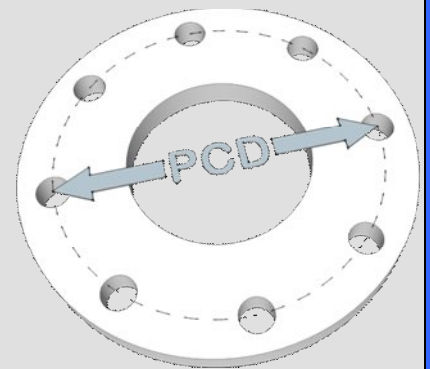
We refer to a 12" flange as DN300, when in fact it is 305mm.

½"	DN15	6"	DN150
¾"	DN20	8"	DN200
1"	DN25	10"	DN250
1¼"	DN32	12"	DN300
1½"	DN40	14"	DN350
2"	DN50	15"	DN375
2½"	DN65	16"	DN400
3"	DN80	18"	DN450
4"	DN100	20"	DN500
5"	DN125	24"	DN600

What is the PCD?

The PCD of a flange is one of the most critical dimensions.

PCD (Pitch Circle Diameter) is the diameter of a circle that goes through the centre of each bolt hole.



REALLY USEFUL TIP

Sometimes it's hard to measure the PCD of a butterfly valve or a flange that's installed in pipework.

As accurately as you can, measure adjacent holes (see photo) and calculate the PCD.



4 holes: multiply by 1.414

8 holes: multiply by 2.613

12 holes: multiply by 3.864

Example:

This 150mm flange has 8 holes and measures 90mm.

$PCD = 90 \times 2.613 = 235\text{mm}$

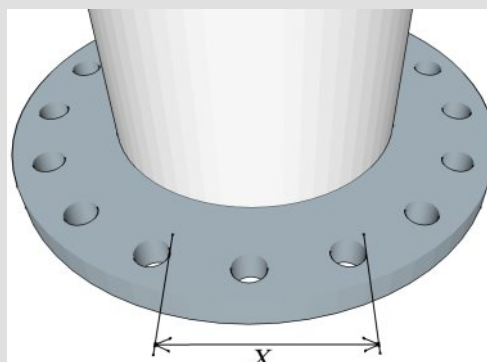
Flange tables suggest Table E or Table D

$$PCD = \frac{X}{\sin\left(\frac{p}{\text{holes}}\right)}$$

For large flanges (more than 12 holes) measure in the same way, **but skip over one hole.**

Challenge: Diagram shows 16 hole flange, DN300.

If X is about 172mm, what is the most likely flange?



16 holes: multiply by 2.613

20 holes: multiply by 3.236

24 holes: multiply by 3.864

Appendix C: Flange Tables

British Standard BS10	Table D	Table D is the most popular for applications with water. All dimensions are specified in inches.	
	Table E		
	Table F		
	Table G		
	Table H		
	Table J		
	Table K		
Australian Standard AS2129	Table C	These flanges are equivalent to the BS10 flanges, except that all dimensions are specified in mm. In some sizes, bolt holes are slightly larger to give better clearance.	
	Table D		
	Table E		
	Table F		
	Table G		
	Table H		
	Table J		
American National Standards Institute ANSI	ANSI 125	Higher numbers denote higher pressures. Sometimes people use the word 'Class' instead of ANSI. e.g. an ANSI 150 flange might be called a 'Class 150' All dimensions are specified in inches.	
	ANSI 150		
	ANSI 300		
	ANSI 600		
	ANSI 900		
	ANSI 1500		
British Standard BS4504	BS4504-6	PN6	Engineers use the prefix PN (Pressure Nominale). e.g. a BA4504-16 flange will commonly be referred to as a PN16 Generally, a PN16 flange is designed to withstand pressures up to 16 bar. All dimensions are specified in mm.
	BS4504-10	PN10	
	BS4504-16	PN16	
	BS4504-25	PN25	
	BS4504-40	PN40	
	BS4504-64	PN64	
	BS4504-100	PN100	

15NB (1/2")						20NB (3/4")					
Table	Flange Dia	PCD	Bolts	Hole Size	Thick-ness	Table	Flange Dia	PCD	Bolts	Hole Size	Thick-ness
ANSI 125/150	89	2 3/8" / 60mm	4 x 1/2"	16	8	ANSI 125/150	98	2 3/4" / 70mm	4 x 1/2"	16	14
ANSI 600	95	2 5/8" / 67mm	4 x 1/2"	16	14	ANSI 300	117	3 1/4" / 83mm	4 x 5/8"	19	16
ANSI 900	121	3 1/4" / 83mm	4 x 3/4"	22	22	ANSI 600	117	3 1/4" / 83mm	4 x 5/8"	19	16
AS2129 Table D	95	67mm	4 x M12	14	10	ANSI 900	130	3 1/2" / 89mm	4 x 3/4"	22	25
AS2129 Table E	95	67mm	4 x M12	14	10	AS2129 Table D	100	73mm	4 x M12	14	10
AS2129 Table F	95	67mm	4 x M12	14	10	AS2129 Table E	100	73mm	4 x M12	14	10
AS2129 Table H	115	83mm	4 x M16	17	13	AS2129 Table F	100	73mm	4 x M12	14	10
AS2129 Table J	115	83mm	4 x M16	17	16	AS2129 Table H	115	83mm	4 x M16	18	13
BS10 Table D	95	2 5/8" / 67mm	4 x 1/2"	14	10	AS2129 Table J	115	83mm	4 x M16	18	16
BS10 Table E	95	2 5/8" / 67mm	4 x 1/2"	14	10	BS10 Table D	102	2 7/8" / 73mm	4 x 1/2"	14	10
BS10 Table F	95	2 5/8" / 67mm	4 x 1/2"	14	10	BS10 Table E	102	2 7/8" / 73mm	4 x 1/2"	14	10
BS10 Table H	114	3 1/4" / 83mm	4 x 5/8"	17	13	BS10 Table F	102	2 7/8" / 73mm	4 x 1/2"	14	10
BS10 Table J	114	3 1/4" / 83mm	4 x 5/8"	17	16	BS10 Table H	114	3 1/4" / 83mm	4 x 5/8"	17	13
BS10 Table K	114	3 1/4" / 83mm	4 x 5/8"	17	19	BS10 Table J	114	3 1/4" / 83mm	4 x 5/8"	17	16
BS4504-PN6	80	55mm	4 x M10	11		BS10 Table K	114	3 1/4" / 83mm	4 x 5/8"	17	19
BS4504-PN10	95	65mm	4 x M12	14		BS4504-PN6	90	65mm	4 x M10	11	
BS4504-PN16	95	65mm	4 x M12	14		BS4504-PN10	105	75mm	4 x M12	14	
BS4504-PN25	95	65mm	4 x M12	14	16	BS4504-PN16	105	75mm	4 x M12	14	18
						BS4504-PN25	105	75mm	4 x M12	14	18

25NB (1")

Table	Flange Dia	PCD	Bolts	Hole Size	Thick-ness
ANSI 125/150	108	3 1/8" / 79mm	4 x 1/2"	16	11
ANSI 300	124	3 1/2" / 89mm	4 x 5/8"	19	17
ANSI 600	124	3 1/2" / 89mm	4 x 5/8"	19	17
ANSI 900	149	4" / 102mm	4 x 7/8"	25	29
AS2129 Table D	115	83mm	4 x M12	14	10
AS2129 Table E	115	83mm	4 x M12	14	10
AS2129 Table F	120	87mm	4 x M16	18	10
AS2129 Table H	120	87mm	4 x M16	18	14
AS2129 Table J	120	87mm	4 x M16	18	19
BS10 Table D	114	3 1/4" / 83mm	4 x 1/2"	14	10
BS10 Table E	114	3 1/4" / 83mm	4 x 1/2"	14	10
BS10 Table F	121	3 7/16" / 87mm	4 x 5/8"	14	10
BS10 Table H	121	3 7/16" / 87mm	4 x 5/8"	17	14
BS10 Table J	121	3 7/16" / 87mm	4 x 5/8"	17	19
BS10 Table K	127	3 3/4" / 95mm	4 x 5/8"	17	22
BS4504-PN6	100	75mm	4 x M10	11	
BS4504-PN10	115	85mm	4 x M12	14	
BS4504-PN16	115	85mm	4 x M12	14	18
BS4504-PN25	115	85mm	4 x M12	14	18

32NB (1 1/4")

Table	Flange Dia	PCD	Bolts	Hole Size	Thick-ness
ANSI 125/150	117	3 1/2" / 89mm	4 x 1/2"	16	13
ANSI 300	133	3 7/8" / 98mm	4 x 5/8"	19	19
ANSI 600	133	3 7/8" / 98mm	4 x 5/8"	19	21
ANSI 900	159	4 3/8" / 111mm	4 x 7/8"	25	29
ANSI 1500	159	4 3/8" / 111mm	4 x 7/8"	25	29
AS2129 Table D	120	87mm	4 x M12	14	13
AS2129 Table E	120	87mm	4 x M12	14	13
AS2129 Table F	135	98mm	4 x M16	18	13
AS2129 Table H	135	98mm	4 x M16	18	17
AS2129 Table J	135	98mm	4 x M16	18	19
BS10 Table D	121	3 7/16" / 87mm	4 x 1/2"	14	13
BS10 Table E	121	3 7/16" / 87mm	4 x 1/2"	14	13
BS10 Table F	133	3 7/8" / 98mm	4 x 5/8"	17	13
BS10 Table H	133	3 7/8" / 98mm	4 x 5/8"	17	17
BS10 Table J	133	3 7/8" / 98mm	4 x 5/8"	17	19
BS10 Table K	133	3 7/8" / 98mm	4 x 5/8"	17	22
BS4504-PN6	120	90mm	4 x M12	14	
BS4504-PN10	140	100mm	4 x M16	18	
BS4504-PN16	140	100mm	4 x M16	18	18
BS4504-PN25	140	100mm	4 x M16	18	18

40NB (1 1/2")

Table	Flange Dia	PCD	Bolts	Hole Size	Thick-ness
ANSI 125/150	127	3 7/8" / 98mm	4 x 1/2"	16	14
ANSI 300	156	4 1/2" / 114mm	4 x 3/4"	22	21
ANSI 600	156	4 1/2" / 114mm	4 x 3/4"	22	22
ANSI 900	178	4 7/8" / 124mm	4 x 1"	29	32
AS2129 Table D	135	98mm	4 x M12	14	13
AS2129 Table E	135	98mm	4 x M12	14	13
AS2129 Table F	140	105mm	4 x M16	18	13
AS2129 Table H	140	105mm	4 x M16	18	17
AS2129 Table J	140	105mm	4 x M16	18	22
BS10 Table D	133	3 7/8" / 98mm	4 x 1/2"	14	13
BS10 Table E	133	3 7/8" / 98mm	4 x 1/2"	14	13
BS10 Table F	140	4 1/8" / 105mm	4 x 5/8"	17	13
BS10 Table H	140	4 1/8" / 105mm	4 x 5/8"	17	17
BS10 Table J	140	4 1/8" / 105mm	4 x 5/8"	17	22
BS10 Table K	152	4 1/2" / 114mm	4 x 3/4"	22	25
BS4504-PN6	130	100mm	4 x M12	14	
BS4504-PN10	150	110mm	4 x M16	18	
BS4504-PN16	150	110mm	4 x M16	18	18
BS4504-PN25	150	110mm	4 x M16	18	18

50NB (2")

Table	Flange Dia	PCD	Bolts	Hole Size	Thick-ness
ANSI 125/150	152	4 3/4" / 121mm	4 x 5/8"	19	16
ANSI 300	165	5" / 127mm	8 x 5/8"	19	22
ANSI 600	165	5" / 127mm	8 x 5/8"	19	25
ANSI 900	216	6 1/2" / 165mm	8 x 7/8"	25	38
AS2129 Table D	150	114mm	4 x M16	18	14
AS2129 Table E	150	114mm	4 x M16	18	14
AS2129 Table F	165	127mm	4 x M16	18	16
AS2129 Table H	165	127mm	4 x M16	18	19
AS2129 Table J	165	127mm	4 x M20	22	25
BS10 Table D	152	4 1/2" / 114mm	4 x 5/8"	17	14
BS10 Table E	152	4 1/2" / 114mm	4 x 5/8"	17	14
BS10 Table F	165	5" / 127mm	4 x 5/8"	17	16
BS10 Table H	165	5" / 127mm	4 x 5/8"	17	19
BS10 Table J	165	5" / 127mm	4 x 3/4"	22	25
BS10 Table K	165	5" / 127mm	8 x 5/8"	17	25
BS4504-PN6	140	110mm	4 x M12	14	
BS4504-PN10	165	125mm	4 x M16	18	
BS4504-PN16	165	125mm	4 x M16	18	20
BS4504-PN25	165	125mm	4 x M16	18	20

65NB (2 1/2")

Table	Flange Dia	PCD	Bolts	Hole Size	Thick-ness
ANSI 125/150	178	5 1/2" / 140mm	4 x 5/8"	19	17
ANSI 300	191	5 7/8" / 149mm	8 x 3/4"	22	25
ANSI 600	191	5 7/8" / 149mm	8 x 3/4"	22	29
ANSI 900	244	7 1/2" / 191mm	8 x 1"	29	41
AS2129 Table D	165	127mm	4 x M16	18	14
AS2129 Table E	165	127mm	4 x M16	18	14
AS2129 Table F	185	146mm	8 x M16	18	16
AS2129 Table H	185	146mm	8 x M16	18	19
AS2129 Table J	185	146mm	8 x M20	22	25
BS10 Table D	165	5" / 127mm	4 x 5/8"	17	14
BS10 Table E	165	5" / 127mm	4 x 5/8"	17	14
BS10 Table F	184	5 3/4" / 146mm	8 x 5/8"	17	16
BS10 Table H	184	5 3/4" / 146mm	8 x 5/8"	17	19
BS10 Table J	184	5 3/4" / 146mm	8 x 3/4"	22	25
BS10 Table K	184	5 3/4" / 146mm	8 x 3/4"	22	29
BS4504-PN6	160	130mm	4 x M12	14	
BS4504-PN10	185	145mm	4 x M16	18	
BS4504-PN16	185	145mm	4 x M16	18	18
BS4504-PN25	185	145mm	8 x M16	18	22

80NB (3")

Table	Flange Dia	PCD	Bolts	Hole Size	Thick-ness
ANSI 125/150	191	6" / 152mm	4 x 5/8"	19	19
ANSI 300	210	6 5/8" / 168mm	8 x 3/4"	22	29
ANSI 600	210	6 5/8" / 168mm	8 x 3/4"	22	32
ANSI 900	241	7 1/2" / 191mm	8 x 7/8"	25	38
AS2129 Table D	185	146mm	4 x M16	18	14
AS2129 Table E	185	146mm	4 x M16	18	14
AS2129 Table F	205	165mm	8 x M16	18	16
AS2129 Table H	205	165mm	8 x M16	18	22
AS2129 Table J	205	165mm	8 x M20	22	32
BS10 Table D	184	5 3/4" / 146mm	4 x 5/8"	17	14
BS10 Table E	184	5 3/4" / 146mm	4 x 5/8"	17	14
BS10 Table F	203	6 1/2" / 165mm	8 x 5/8"	17	16
BS10 Table H	203	6 1/2" / 165mm	8 x 5/8"	17	22
BS10 Table J	203	6 1/2" / 165mm	8 x 3/4"	22	32
BS10 Table K	203	6 1/2" / 165mm	8 x 3/4"	22	32
BS4504-PN6	190	150mm	4 x M16	18	
BS4504-PN10	200	160mm	8 x M16	18	
BS4504-PN16	200	160mm	8 x M16	18	20
BS4504-PN25	200	160mm	8 x M16	18	24

100NB (4")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	229	7 1/2" / 191mm	8 x 5/8"	19	24
ANSI 300	254	7 7/8" / 200mm	8 x 3/4"	22	32
ANSI 600	273	8 1/2" / 216mm	8 x 7/8"	25	38
ANSI 900	292	9 1/4" / 235mm	8 x 1 1/8"	32	44
AS2129 Table D	215	178mm	4 x M16	18	17
AS2129 Table E	215	178mm	8 x M16	18	17
AS2129 Table F	230	191mm	8 x M16	18	19
AS2129 Table H	230	191mm	8 x M16	18	25
AS2129 Table J	230	191mm	8 x M20	22	35
BS10 Table D	216	7" / 178mm	4 x 5/8"	17	17
BS10 Table E	216	7" / 178mm	8 x 5/8"	17	17
BS10 Table F	229	7 1/2" / 191mm	8 x 5/8"	17	19
BS10 Table H	229	7 1/2" / 191mm	8 x 5/8"	17	25
BS10 Table J	229	7 1/2" / 191mm	8 x 3/4"	22	35
BS10 Table K	241	7 3/4" / 197mm	8 x 7/8"	25	35
BS4504-PN6	210	170mm	4 x M16	18	
BS4504-PN10	220	180mm	8 x M16	18	
BS4504-PN16	220	180mm	8 x M16	18	20
BS4504-PN25	235	190mm	8 x M20	22	24

125NB (5")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	254	8 1/2" / 216mm	8 x 3/4"	22	24
ANSI 300	279	9 1/4" / 235mm	8 x 3/4"	22	35
ANSI 600	330	10 1/2" / 267mm	8 x 1"	29	44
ANSI 900	349	11" / 279mm	8 x 1 1/4"	35	51
AS2129 Table D	255	210mm	8 x M16	18	17
AS2129 Table E	255	210mm	8 x M16	18	17
AS2129 Table F	280	235mm	8 x M20	22	22
AS2129 Table H	280	235mm	8 x M20	22	29
AS2129 Table J	280	235mm	8 x M24	26	26
BS10 Table D	254	8 1/4" / 210mm	8 x 5/8"	17	17
BS10 Table E	254	8 1/4" / 210mm	8 x 5/8"	17	17
BS10 Table F	279	9 1/4" / 235mm	8 x 3/4"	22	22
BS10 Table H	279	9 1/4" / 235mm	8 x 3/4"	22	29
BS10 Table J	279	9 1/4" / 235mm	8 x 7/8"	25	38
BS10 Table K	279	9 1/4" / 235mm	12 x 7/8"	25	41
BS4504-PN6	240	200mm	8 x M16	18	
BS4504-PN10	250	210mm	8 x M16	18	
BS4504-PN16	250	210mm	8 x M16	18	22
BS4504-PN25	270	220mm	8 x M24	26	26

150NB (6")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	279	9 1/2" / 241mm	8 x 3/4"	22	25
ANSI 300	318	10 5/8" / 270mm	12 x 3/4"	22	37
ANSI 600	356	11 1/2" / 292mm	12 x 1"	29	48
ANSI 900	381	12 1/2" / 318mm	12 x 1 1/8"	32	56
AS2129 Table D	280	235mm	8 x M16	18	17
AS2129 Table E	280	235mm	8 x M20	22	17
AS2129 Table F	305	260mm	12 x M20	22	22
AS2129 Table H	305	260mm	12 x M20	22	29
AS2129 Table J	305	260mm	12 x M24	26	38
BS10 Table D	279	9 1/4" / 235mm	8 x 5/8"	17	17
BS10 Table E	279	9 1/4" / 235mm	8 x 3/4"	22	17
BS10 Table F	305	10 1/4" / 260mm	12 x 3/4"	22	22
BS10 Table H	305	10 1/4" / 260mm	12 x 3/4"	22	29
BS10 Table J	305	10 1/4" / 260mm	12 x 7/8"	25	38
BS10 Table K	305	10 1/4" / 260mm	12 x 7/8"	25	41
BS4504-PN6	265	225mm	8 x M16	18	
BS4504-PN10	285	240mm	8 x M20	22	
BS4504-PN16	285	240mm	8 x M20	22	22
BS4504-PN25	300	250mm	8 x M24	26	28

200NB (8")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	343	11 3/4" / 298mm	8 x 3/4"	22	29
ANSI 300	381	13" / 330mm	12 x 7/8"	25	41
ANSI 600	419	13 3/4" / 349mm	12 x 1 1/8"	32	56
ANSI 900	470	15 1/2" / 394mm	12 x 1 3/8"	38	64
AS2129 Table D	335	292mm	8 x M16	18	19
AS2129 Table E	335	292mm	8 x M20	22	19
AS2129 Table F	370	324mm	12 x M20	22	25
AS2129 Table H	370	324mm	12 x M20	22	32
AS2129 Table J	370	324mm	12 x M24	26	41
BS10 Table D	337	11 1/2" / 292mm	8 x 5/8"	17	19
BS10 Table E	337	11 1/2" / 292mm	8 x 3/4"	22	19
BS10 Table F	368	12 3/4" / 324mm	12 x 3/4"	22	25
BS10 Table H	368	12 3/4" / 324mm	12 x 3/4"	22	32
BS10 Table J	368	12 3/4" / 324mm	12 x 7/8"	25	41
BS10 Table K	368	12 1/2" / 318mm	12 x 1"	29	48
BS4504-PN6	320	280mm	8 x M16	18	
BS4504-PN10	340	295mm	8 x M20	22	
BS4504-PN16	340	295mm	12 x M20	22	24
BS4504-PN25	360	310mm	12 x M24	26	30

250NB (10")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	406	14 1/4" / 362mm	12 x 7/8"	25	30
ANSI 300	445	15 1/4" / 387mm	16 x 1"	29	48
ANSI 600	508	17" / 432mm	16 x 1 1/4"	35	64
ANSI 900	546	18 1/2" / 470mm	16 x 1 3/8"	38	70
AS2129 Table D	405	356mm	8 x M20	22	19
AS2129 Table E	405	356mm	12 x M20	22	22
AS2129 Table F	430	381mm	12 x M24	26	25
AS2129 Table H	430	381mm	12 x M24	26	35
AS2129 Table J	430	381mm	12 x M27	30	48
BS10 Table D	406	14" / 356mm	8 x 3/4"	22	19
BS10 Table E	406	14" / 356mm	12 x 3/4"	22	22
BS10 Table F	432	15" / 381mm	12 x 7/8"	25	25
BS10 Table H	432	15" / 381mm	12 x 7/8"	25	35
BS10 Table J	432	15" / 381mm	12 x 1"	29	48
BS10 Table K	432	15" / 381mm	16 x 1"	29	51
BS4504-PN6	375	335mm	12 x M16	18	
BS4504-PN10	395	350mm	12 x M20	22	
BS4504-PN16	405	355mm	12 x M24	26	26
BS4504-PN25	425	370mm	12 x M27	30	32

300NB (12")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	483	17" / 432mm	12 x 7/8"	25	32
ANSI 300	521	17 3/4" / 451mm	16 x 1 1/8"	32	51
ANSI 600	559	19 1/4" / 489mm	20 x 1 1/4"	35	67
ANSI 900	610	21" / 533mm	20 x 1 3/8"	38	79
AS2129 Table D	455	406mm	12 x M20	22	22
AS2129 Table E	455	406mm	12 x M24	26	25
AS2129 Table F	490	438mm	16 x M24	26	29
AS2129 Table H	490	438mm	16 x M24	26	38
AS2129 Table J	490	438mm	16 x M27	30	51
BS10 Table D	457	16" / 406mm	12 x 3/4"	22	22
BS10 Table E	457	16" / 406mm	12 x 7/8"	25	25
BS10 Table F	489	17 1/4" / 438mm	16 x 7/8"	25	29
BS10 Table H	489	17 1/4" / 438mm	16 x 7/8"	25	38
BS10 Table J	489	17 1/4" / 438mm	16 x 1"	29	51
BS10 Table K	489	17" / 432mm	16 x 1 1/8"	32	32
BS4504-PN6	440	395mm	12 x M20	22	
BS4504-PN10	445	400mm	12 x M20	22	
BS4504-PN16	460	410mm	12 x M24	26	28
BS4504-PN25	485	430mm	16 x M27	30	34

350NB (14")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	533	18 3/4" / 476mm	12 x 1"	29	35
ANSI 300	584	20 1/4" / 514mm	20 x 1 1/8"	32	54
ANSI 600	603	20 3/4" / 527mm	20 x 1 3/8"	38	70
ANSI 900	641	22" / 559mm	20 x 1 1/2"	41	86
AS2129 Table D	525	470mm	12 x M24	26	25
AS2129 Table E	525	470mm	12 x M24	26	25
AS2129 Table F	550	495mm	16 x M27	30	32
AS2129 Table H	550	495mm	16 x M27	30	41
AS2129 Table J	550	495mm	16 x M30	33	54
BS10 Table D	527	18 1/2" / 470mm	12 x 7/8"	25	25
BS10 Table E	527	18 1/2" / 470mm	12 x 7/8"	25	25
BS10 Table F	552	19 1/2" / 495mm	16 x 1"	29	32
BS10 Table H	552	19 1/2" / 495mm	16 x 1"	29	41
BS10 Table J	552	19 1/2" / 495mm	16 x 1 1/8"	32	54
BS10 Table K	572	20" / 508mm	16 x 1 1/4"	35	60
BS4504-PN6	490	445mm	12 x M20	22	
BS4504-PN10	505	460mm	16 x M20	22	
BS4504-PN16	520	470mm	16 x M24	26	30
BS4504-PN25	555	490mm	16 x M30	33	38

375NB (15")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
BS10 Table D	552	19 1/2" / 495mm	12 x 7/8"	25	
BS10 Table E	552	19 1/2" / 495mm	12 x 7/8"	25	
BS10 Table F	578	20 1/2" / 521mm	16 x 1"	29	
BS10 Table H	578	20 1/2" / 521mm	16 x 1"	29	
BS10 Table J	578	20 1/2" / 521mm	16 x 1 1/8"	32	
BS10 Table K	857	21 1/4" / 540mm	20 x 1 1/4"	35	
AS2129 Table D	552	495mm	12 x M24	26	25
AS2129 Table E	552	495mm	12 x M24	26	32
AS2129 Table F	578	521mm	16 x M27	30	38
AS2129 Table H	578	521mm	16 x M27	30	51

400NB (16")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	597	21 1/4" / 540mm	16 x 1"	29	37
ANSI 300	648	22 1/2" / 572mm	20 x 1 1/4"	35	57
ANSI 600	699	23 3/4" / 603mm	20 x 1 1/2"	41	76
ANSI 900	705	24 1/4" / 616mm	20 x 1 5/8"	44	89
AS2129 Table D	580	521mm	12 x M24	26	25
AS2129 Table E	580	521mm	12 x M24	26	25
AS2129 Table F	610	552mm	20 x M27	30	32
AS2129 Table H	610	552mm	20 x M27	30	44
AS2129 Table J	610	552mm	20 x M30	33	57
BS10 Table D	578	20 1/2" / 521mm	12 x 7/8"	25	25
BS10 Table E	578	20 1/2" / 521mm	12 x 7/8"	25	25
BS10 Table F	610	21 3/4" / 552mm	20 x 1"	29	32
BS10 Table H	610	21 3/4" / 552mm	20 x 1"	29	44
BS10 Table J	610	21 3/4" / 552mm	20 x 1 1/8"	32	57
BS10 Table K	629	22 1/4" / 565mm	20 x 1 1/4"	35	67
BS4504-PN6	540	495mm	16 x M20	22	
BS4504-PN10	565	515mm	16 x M24	26	
BS4504-PN16	580	525mm	16 x M27	30	32
BS4504-PN25	620	550mm	16 x M33	36	40

450NB (18")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	635	22 3/4" / 578mm	16 x 1 1/8"	32	40
ANSI 300	711	24 3/4" / 629mm	24 x 1 1/4"	35	60
ANSI 600	743	25 3/4" / 654mm	20 x 1 5/8"	44	83
ANSI 900	787	27" / 686mm	20 x 1 7/8"	51	102
AS2129 Table D	640	584mm	12 x M24	26	29
AS2129 Table E	640	584mm	16 x M24	26	29
AS2129 Table F	675	610mm	20 x M30	33	35
AS2129 Table H	675	610mm	20 x M30	33	48
AS2129 Table J	675	610mm	20 x M33	35	60
BS10 Table D	641	23" / 584mm	12 x 7/8"	25	29
BS10 Table E	641	23" / 584mm	16 x 7/8"	25	29
BS10 Table F	673	24" / 610mm	20 x 1 1/8"	32	35
BS10 Table H	673	24" / 610mm	20 x 1 1/8"	32	48
BS10 Table J	673	24" / 610mm	20 x 1 1/4"	35	60
BS10 Table K	718	25 3/4" / 654mm	20 x 1 3/8"	38	76
BS4504-PN6	595	550mm	16 x M20	22	
BS4504-PN10	615	565mm	20 x M24	26	
BS4504-PN16	640	585mm	20 x M27	30	

500NB (20")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	699	25" / 635mm	20 x 1 1/8"	32	43
ANSI 300	775	27" / 686mm	24 x 1 1/4"	35	64
ANSI 600	813	28 1/2" / 724mm	24 x 1 5/8"	44	89
ANSI 900	845	29 1/2" / 749mm	20 x 2"	54	108
AS2129 Table D	705	641mm	16 x M24	26	32
AS2129 Table E	705	641mm	16 x M24	26	32
AS2129 Table F	735	673mm	24 x M30	33	38
AS2129 Table H	735	673mm	24 x M30	33	51
AS2129 Table J	735	673mm	24 x M33	36	64
BS10 Table D	705	25 1/4" / 641mm	16 x 7/8"	25	32
BS10 Table E	705	25 1/4" / 641mm	16 x 7/8"	25	32
BS10 Table F	737	26 1/2" / 673mm	20 x 1 1/8"	32	38
BS10 Table H	737	26 1/2" / 673mm	20 x 1 1/8"	32	51
BS10 Table J	737	26 1/2" / 673mm	20 x 1 1/4"	35	64
BS10 Table K	787	28" / 711mm	20 x 1 1/2"	41	83
BS4504-PN6	645	600mm	20 x M20	22	
BS4504-PN10	670	620mm	20 x M24	26	
BS4504-PN16	715	650mm	20 x M30	33	36
BS4504-PN25	730	660mm	20 x M33	36	44

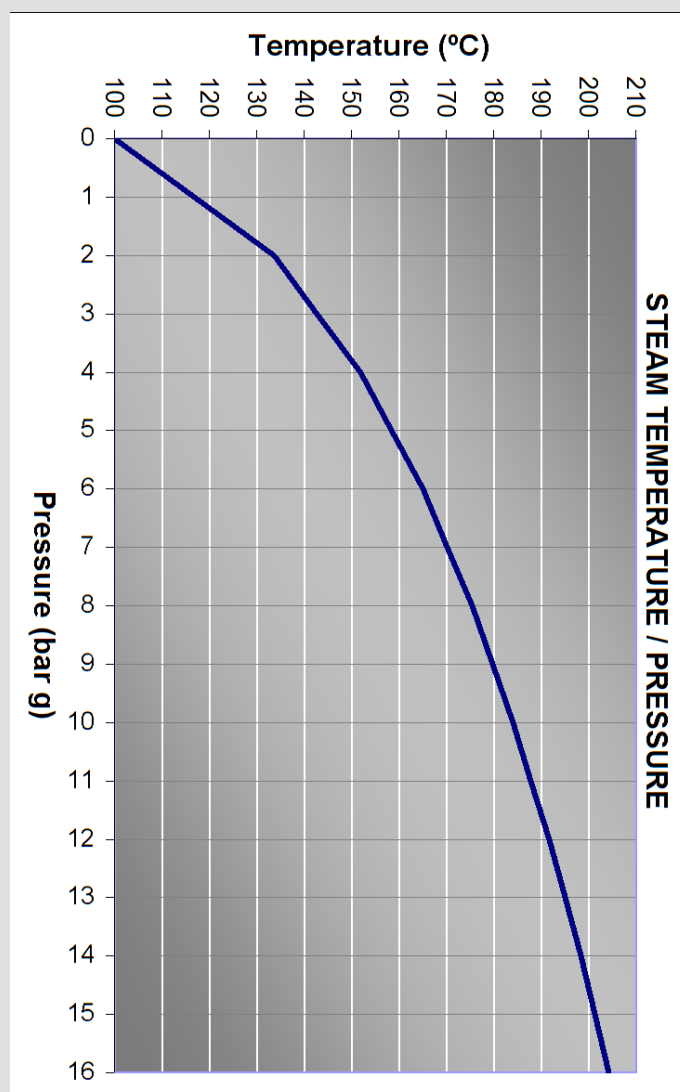
600NB (24")

Table	Flange Dia	PCD	Bolts	Hole Size	Thickness
ANSI 125/150	813	29 1/2" / 749mm	20 x 1 1/4"	35	48
ANSI 300	914	32" / 813mm	24 x 1 1/2"	41	70
ANSI 600	940	33" / 838mm	24 x 1 7/8"	51	102
ANSI 900	1041	34" / 864mm	20 x 2 1/2"	67	140
ANSI 1500	1168	39" / 991mm	16 x 3 1/2"	92	203
AS2129 Table C	825	756mm	16 x M27	30	35
AS2129 Table D	825	756mm	16 x M27	30	35
AS2129 Table E	825	756mm	16 x M30	33	38
AS2129 Table F	850	781mm	24 x M33	36	41
AS2129 Table H	850	781mm	24 x M33	36	57
AS2129 Table J	850	781mm	24 x M36	39	70
BS10 Table D	826	29 3/4" / 756mm	16 x 1"	29	35
BS10 Table E	826	29 3/4" / 756mm	16 x 1 1/8"	32	38
BS10 Table F	851	30 3/4" / 781mm	24 x 1 1/4"	35	41
BS10 Table H	851	30 3/4" / 781mm	24 x 1 1/4"	35	57
BS10 Table J	851	30 3/4" / 781mm	24 x 1 3/8"	38	70
BS4504-PN6	755	705mm	20 x M24	26	
BS4504-PN10	780	725mm	20 x M27	30	
BS4504-PN16	840	770mm	20 x M33	36	40
BS4504-PN25	845	770mm	20 x M36	39	46

Appendix D: Steam Tables

Pressure / Temperature / Volume

Gauge Pressure	Temperature	Specific Volume
barg	°C	m³/kg
0.0	100	1.673
0.5	112	1.149
1.0	120	0.881
1.5	128	0.714
2.0	134	0.603
2.5	139	0.522
3.0	144	0.461
3.5	148	0.413
4.0	152	0.374
4.5	156	0.342
5.0	159	0.315
5.5	162	0.292
6.0	165	0.272
6.5	168	0.255
7.0	171	0.240
7.5	173	0.227
8.0	175	0.215
8.5	178	0.204
9.0	180	0.194
9.5	182	0.185
10.0	184	0.177
10.5	186	0.173
11.0	188	0.163
11.5	190	0.160
12.0	192	0.151
12.5	193	0.146
13.0	195	0.141
13.5	197	0.136
14.0	198	0.132
14.5	200	0.127
15.0	201	0.124
15.5	203	0.120
16.0	204	0.117



Appendix

E: Brand Index

Ace Ball valves

Air Torque Pneumatic actuators

Ajax Pumps

Alfa Laval Heat exchangers

Anderson Steam separators

Ari Air vents, Screw down non-return valves

Armstrong Steam traps

Asco Solenoid valves, Piston valves, air line fittings

Atos Solenoids / coils

Audco Plug valves, Lube sticks

Basic Ball valves

BDK Diaphragm valves

Bermad Solenoid valves, relief valves, control valves

Bi-Lok Pipe and tube fittings

Birkett Safety Valves, Pressure reducing valves (Bailey Birkett)

Bonney Gate Valves

Bonomi Check valves, Ball Valves

Bray Butterfly valves, Electric and pneumatic actuators

Broady Pressure Valves, Relief Valves, Safety Valves

Burkert Solenoid Valves

Caleffi Radiator Valves, Ball valves

Cambrian Foot valves, spraying equipment

Conbraco Backflow Preventers (spring checks)

Dab Water Pumps

Danfoss Refrigeration and Heating Valves

Deublin Rotary unions

DeZurik Butterfly Valves, Knifegate Valves, Actuators

Dorot Pressure reducing valves, control valves, abnormal flow shut-off, Pressure sustaining,

Duo-check Wafer check valves

El-O-Matic Pneumatic Actuators, Electric Actuators

Europa Spring Check valves

Ferrolli Convector radiator panels

FIP Ball valves

Flo-Check Check valves

Flyght Check valves, submersible pumps, sewerage pumps

Fuzhou Water meters

Gaestra Steam traps, slim style spring loaded check valves.

GEA Sanitary grade Butterfly valves

Gemsol Solenoids and coils

Gemu Solenoid valves, Piston valves, diaphragm valves, flow meters

George Fischer Ball valves, Diaphragm valves, Check valves

Gresswell Safety valves, Relief valves

Grundfos Circulating pumps, cold water circulating pumps, booster pumps, submersible pumps

Habonim High temperature ball valves

Hansen Pipe fittings

Hasteloy Check valves, gas valves, globe valves

Hattersley Gate valves, Globe valves

Heimeier Radiator valves & thermostatic heads

Hillen Ball-check valves

Hitachi Globe valves

Hopkinsons ...Boiler valves

InvirocheckWafer style check valves

Itap Ball valves, Gate valves

ITT Diaphragm valves

Jacoby-Tarbox Sight glass, flow indicators

Jamac Check valves, Globe valves, Gate valves, Boiler valves

Jamesbury Butterfly valves for high temperature steam. Segmented ball valves

John GuestValve accessories, Air line fittings

JoucomaticAir solenoids, Air rams and actuators

Jrgumat Tempering valves

Kent Water meters

Kitz Check valves, gate valves, globe valves, ball valves

Klinger Gaskets, gasket material

KSB Centrifugal pumps and accessories

Landis & Staefa Heating control equipment

Limitorque Valve actuators, pneumatic actuators

Mac Air solenoid valves

MacEwans Pumps

Meinecke Water meters

Milliken Plug valves

Miyawaki Steam traps, pressure reducing valves, Air vents / air traps

Moygro Check valves

Mueller Strainers, valves

Neles-Jamesbury Butterfly valves

Newman Milliken Plug valves

Norbro Pneumatic actuators

Nordmann Steam humidifiers

Orbinox Knife gate valves

Pedrollo Pumps

Pegler Gate valves, globe valves

Peter Smith ... Boiler valves

Pneumax Pneumatic rams

Promatic Pneumatic Actuators

Rotork Electric Actuators, Pneumatic Actuators, Hydraulic Actuators

Saunders Diaphragm valves

Shuk Gaskets

Siemens HVAC, Heating controllers, valves, water meters.

Sika Gauges, level control

Sioux Water hammer arresters

SMC Pneumatics

Smedegard Pumps

Socam Water meters

Spirax Steam traps, pressure control & regulators

Sun Yeh Electric actuators

Taylors Boiler valves

Teltherm Pressure gauges, temperature gauges

Teltru Temperature gauges

Titon Brass fittings

TLV Steam traps, Air vents, pressure control valves, ball valves, butterfly valves, sight glasses.

Tonick Irrigation controllers, pop-ups, solenoid valves

Topic Ball valves

Turnflo Ball valves, butterfly valves, knifegate valves

Value Butterfly valves

VDO Pressure gauges

Velan Gate valves, Globe valves

Wallace Pumps

WAM Hose nozzles, camlocks

WAM Butterfly valves

Watson McDaniel Steam traps, temperature regulators, pressure regulators

Wika Pressure gauges, thermometers

Wilkins Backflow preventers

WiloPumps

WorcesterBall valves

YorkCheck valves

YoshitakePressure regulators

Tips When Ordering Pipe.

1. All pipe is to be made of a long hole, surrounded by metal or plastic centred around the hole.
2. All pipe is to be hollow throughout the entire length - do not use holes of different length than the pipe.
3. The ID (inside diameter) of all pipe must not exceed the OD (outside diameter) - otherwise the hole will be on the outside.
4. All pipe is to be supplied with nothing in the hole so that water can be put inside at a later date.
5. All pipe is to be supplied without rust. This can be more readily applied at the job site. NB: Some vendors are now able to supply pre-rusted pipe. If available in your area, this product is recommended as it will save a lot of time on the job site.
6. All pipe over 162 metres in length should have the words "long pipe" clearly printed on each end, so the contractor will know it is a long pipe.
7. Pipe over 3km in length must have the words "long pipe" painted in the middle, so the contractor will not have to walk the entire length of the pipe to determine whether or not it is a long pipe.
8. All pipe greater than 150mm in diameter must have the words "large pipe" painted on it so the contractor will not mistake it for a small pipe.
9. Flanges must be used on all pipe. Flanges must have holes for the bolts quite separate from the big hole in the middle.
10. When ordering 90 degree, 45 degree or 30 degree elbows, be sure to specify right handed or left handed, otherwise you will end up going the wrong way.
11. Be sure to specify to your vendor whether you want level, uphill or downhill pipe. If you use downhill pipe for going uphill, the water will flow the wrong way.
12. All couplings should have either right-hand or left-hand thread. Do not mix the threads, otherwise, as the coupling is being screwed on one pipe it will be unscrewed from the other.

238 Taupo Quay, Wanganui. Ph 06 3488172 Fax 06 3488173 delvin@delvin.co.nz

This application form allows us to set up a trading account for you, and place your business in a suitable category that allows us to best support your needs.

We give our assurance that all information you provide will be treated as confidential.

Account Details

Business Name

Contact Name Position

Person in charge of accounts

Phone Fax

Email

Delivery Address.....

Postal Address.....

Profile (please tick one or more boxes that most closely apply to your business)

<input type="checkbox"/> Construction	<input type="checkbox"/> Manufacture	<input type="checkbox"/> Rural support
<input type="checkbox"/> Design / consultancy	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Service
<input type="checkbox"/> Food processing	<input type="checkbox"/> Resale	<input type="checkbox"/> Waste
<input type="checkbox"/> Infrastructure	<input type="checkbox"/> Residential services	<input type="checkbox"/> Other:

Products of Interest (Please tick the product ranges that you are interested in)

<input type="checkbox"/> Actuators – Electric	<input type="checkbox"/> Flanges / Fittings	<input type="checkbox"/> Pumps
<input type="checkbox"/> Actuators – Pneumatic	<input type="checkbox"/> Gaskets	<input type="checkbox"/> Radiators / valves
<input type="checkbox"/> Backflow preventers	<input type="checkbox"/> Gate / Knife-gate valves	<input type="checkbox"/> Relief / Safety valves
<input type="checkbox"/> Ball valves	<input type="checkbox"/> Gauges	<input type="checkbox"/> Solenoid valves
<input type="checkbox"/> Butterfly valves	<input type="checkbox"/> Globe valves	<input type="checkbox"/> Steam
<input type="checkbox"/> Check valves	<input type="checkbox"/> Insulation	<input type="checkbox"/> Strainers
<input type="checkbox"/> Diaphragm valves	<input type="checkbox"/> Pinch valves	<input type="checkbox"/> Vacuum breakers
<input type="checkbox"/> Expansion joints	<input type="checkbox"/> Pressure reducers	<input type="checkbox"/> Water meters
<input type="checkbox"/> Other		

Would you prefer to have product information ☐ emailed or ☐ faxed?

By signing below, you confirm that;

- the details you have provided are correct
- you have authority to buy goods on behalf of the above business
- you agree to our standard terms and conditions of trading on the reverse of this form.

Signature Date.....

Thanks for your time. Please forward this form to us. We will process it within 7 days and contact you with an account code. In the meantime, please visit our website (www.delvin.co.nz) for information about our products and services.

Terms and conditions of Trade

Payment

Payment for goods shall be made on or before the 20th of the month following the date of invoice.

Interest may be charged on any amount left owing after the due date at the rate of 2% per month or part month.

Any expenses, disbursements or legal costs incurred by Delvin Flow in the enforcement of any rights contained in this agreement shall be paid by the customer including any legal fees or any debt recovery fees.

A deposit may be required for procurement of indented goods.

Ownership

Title in any goods supplied by Delvin Flow passes to the customer only when the customer has made payment in full for all goods provided by Delvin Flow and of all sums due to Delvin Flow by the customer on any account whatsoever.

Until all sums due to Delvin Flow by the customer have been paid in full, Delvin Flow has a security interest in all goods.

Return of Goods.

Items may be accepted for return if received by Delvin Flow within ten days from invoice date provided they are undamaged and in good condition. A restocking fee may apply. Items indented or imported specifically for a customer are not returnable.

Liability

The consumers Guarantee Act 1993, the Fair Trading act 1996 and other statutes may imply warranties or conditions or impose obligations upon Delvin Flow which cannot by law (or which can to a limited extent by law) be excluded or modified. In respect of any such warranties, conditions or terms imposed on Delvin Flow, Delvin Flow's liability shall, where it is allowed, be excluded or if it is not able to be excluded only apply to the minimum extent required by the relevant statute.

Delvin Flow will not be held liable for delays caused by other parties, or by circumstances beyond our control.

Warranty

Delvin Flow will (with our own discretion) take steps to repair, replace, or make good any item that fails within twelve months of being supplied by us, provided the following requirements are met;

1. The product has been correctly installed by suitably qualified persons, using any manufacturers' guidelines and current best-practice.
2. The product is being used within its permissible parameters of pressure, temperature, duty cycle etc.
3. The medium has not interfered with the normal operation of the product.
4. The product has not been modified or adapted in any way since initial delivery.
5. The product has not been mishandled, dropped, or stored in unfavourable conditions subsequent to initial delivery.
6. The product is being used for a purpose that it was designed for.

If goods supplied from Delvin Flow are damaged during transit to you, Delvin Flow will (with its own discretion) take steps to repair, replace, or solve any issues, provided it is reported within seven days of delivery.

Delvin Flow's liability under the terms of this warranty is limited to the value of the affected item supplied and the cost of transport from its closest depot. No liability is implied due to loss of production, personal injury or consequential failures.

Signature

Name

Date

Notes

Items and pages that are most useful for us:

Appendix G: Unit Conversion Tables

Temperature

°F	°C
0	-17.8
10	-12.2
20	-6.7
30	-1.1
40	4.4
50	10.0
60	15.6
70	21.1
80	26.7
90	32.2
100	37.8
110	43.3
120	48.9
130	54.4
140	60.0
150	65.6
160	71.1
170	76.7
180	82.2
190	87.8
200	93.3
210	98.9
220	104.4
230	110.0
240	115.6
250	121.1
260	126.7
270	132.2
280	137.8
290	143.3
300	148.9
310	154.4
320	160.0
330	165.6
340	171.1
350	176.7
360	182.2
370	187.8
380	193.3
390	198.9
400	204.4
410	210.0
420	215.6
430	221.1
440	226.7
450	232.2
460	237.8
470	243.3

Pressure

psi	kPa	Bar
1.0	6.89	0.07
1.2	8.27	0.08
1.5	10.3	0.10
2.0	13.8	0.14
2.5	17.2	0.17
3.0	20.7	0.21
3.5	24.1	0.24
4.0	27.6	0.28
5.0	34.5	0.34
6.0	41.4	0.41
7.0	48.3	0.48
8.0	55.2	0.55
10	68.9	0.69
12	82.7	0.83
15	103	1.03
20	138	1.38
25	172	1.72
30	207	2.07
35	241	2.41
40	276	2.76
50	345	3.45
60	414	4.14
70	483	4.83
80	552	5.52
100	689	6.89
120	827	8.27
150	1,030	10.3
200	1,380	13.8
250	1,720	17.2
300	2,070	20.7
350	2,410	24.1
400	2,760	27.6
500	3,450	34.5
600	4,140	41.4
700	4,830	48.3
800	5,520	55.2
1,000	6,890	68.9
1,200	8,270	82.7
1,500	10,300	103
2,000	13,800	138
2,500	17,200	172
3,000	20,700	207
3,500	24,100	241
4,000	27,600	276
5,000	34,500	345
6,000	41,400	414
7,000	48,300	483
8,000	55,200	552
10,000	68,900	689

Flow

L/min	L/sec	m³/hr
1	0.02	0.06
2	0.03	0.12
3	0.05	0.18
4	0.07	0.24
5	0.08	0.30
6	0.10	0.36
7	0.12	0.42
8	0.13	0.48
9	0.15	0.54
10	0.2	0.6
20	0.3	1.2
30	0.5	1.8
40	0.7	2.4
50	0.8	3.0
60	1.0	3.6
70	1.2	4.2
80	1.3	4.8
90	1.5	5.4
100	2	6
200	3	12
300	5	18
400	7	24
500	8	30
600	10	36
700	12	42
800	13	48
900	15	54
1,000	17	60
2,000	33	120
3,000	50	180
4,000	67	240
5,000	83	300
6,000	100	360
7,000	117	420
8,000	133	480
9,000	150	540
10,000	167	600

Torque

lbf-ft	Nm
1	1.4
2	2.7
3	4.1
4	5.4
5	6.8
6	8.1
7	9.5
8	10.8
10	13.6
12	16.3
15	20.3
20	27.1
25	33.9
30	40.7
35	47.5
40	54.2
50	67.8
60	81.3
70	94.9
80	108
100	136
120	163
150	203
200	271
250	339
300	407
350	475
400	542
500	678
600	813
700	949
800	1,085
1,000	1,356
1,200	1,627
1,500	2,034
2,000	2,712
2,500	3,390
3,000	4,067
3,500	4,745