

***AUTHORISED ITEMS for SEWER SYSTEM***

# PRESSURE MAINS

**For Mains up to and including DN 200**

***ALL MINOR ITEMS NOT COVERED IN DETAIL IN THIS CATALOGUE TO BE  
IN ACCORDANCE TO APPROPRIATE AUSTRALIAN STANDARD.***

**Further information on products and materials is available on the WSAA web site**

[www.wsaa.asn.au](http://www.wsaa.asn.au)

***AUTHORISED ITEMS for SEWER SYSTEM***

**Document Update Information**

<b>Date</b>	<b>Change Type</b>	<b>Page Number(s)</b>	<b>Details</b>
1 Dec 2009	Revision 1	All 1 2 3 4 5 9 11	Standards Unit details changed PVC requirements changed Steel pipe requirements changed New welder added PE pipe requirements changed DI pipe requirements changed SPS requirements changed Johns Pty Ltd removed as valve supplier Streetbox Lid supplier changed
1 Jan 2011	Revision 2	6 1,3,4	SPS Diameters amended Colour of pipe and sleeving amended
1 Jan 2012	Revision 3	6	All Pumps Supplies name change

***AUTHORISED ITEMS for SEWER SYSTEM***

## ***Pressure Pipe and Fittings***

All pipe and fittings for Sewer Pressure Mains are as for the Water Supply System, therefore all pipe and fittings (<DN200) listed in the **Authorised Items for Water Reticulation System Catalogue** are authorised for use.

Marker Tape identifying that a Sewer Main is below shall be laid above the Sewer Pressure main on the overlay sand. Tape shall be non detectable polyethylene, Cream in colour, have the wording 'CAUTION : BURIED SEWER MAIN BELOW' or similar permanently printed on one side and shall meet all the requirements of AS 2648.1 - 'Underground marking tape'.

### ***General Notes :***

#### ***PVC Pipe***

Where a PVC pipe system is selected for a pumping main the requirements for the pumping main including class of pipe and all required fittings are to be determined by the designer and detailed on the **endorsed design drawings**. Only Oriented PVC (PVC-O) and Modified PVC (PVC-M) shall be used for Pressure Mains.

- PVC-O pipes are to be in accordance with AS 4441 : 2008.
- PVC-O pipes are to be in accordance with AS 4765 : 2007.
- **All pipes and fittings shall be Rubber Ring Jointed.**
- All fittings are to be Ductile Iron FBE coated in accordance with AS 2280 : 2004
- The class of pipe shall be PN16 unless approved otherwise by SA Water.
- Allowable diameter range – up to DN200.

Amdt  
Jun09

### ***Colour***

All pipes to be **CREAM** in colour.

### ***Authorised Manufacturers***

#### Modified PVC (PVC-M)

Iplex Pipelines -	Blue Rhino
Vinidex	Hydro Blue
Damos	
Key Plastics	
Tyco Water	Tuf-Flo
Micron Pipelines	

#### Oriented PVC (PVC-O)

Iplex Pipelines -	Apollo Blue
Vinidex	Supermain
Micron Pipelines	

Amdt  
Jun09

*For more details about these manufacturers refer to the **Manufacturers** section of this manual.*

***AUTHORISED ITEMS for SEWER SYSTEM******Steel Pipe - Cement Lined (SCL) and Polyethylene Lined (SPL)*****Cement lined**

SCL pipeline is not a preferred option for sewer rising mains and will only be authorised for use in specific applications including difficult creek crossings and gullies and for large diameter mains. It should be noted that all fittings will need to be fabricated.

Where there is a technical requirement for using Steel Cement Lined pipe, specific approval shall be obtained from Asset Management and/or Material Sciences Unit prior to placing any orders.

Amdt  
Jun09**Polyethylene Lined**

Steel pipe lined and coated with fusion bonded polyethylene (Sintalined) is authorised for use in sewer rising mains (generally >DN300). Where there is a requirement for a Mild Steel Polyethylene Lined pipe a detailed purchase specification should be obtained from Assets Planning and/or Material Sciences Unit prior to placing any orders.

***Authorised Manufacturers***

- Tyco Water

***Recognised Fabricators of SCL pipework and fittings***

- Water Engineering Technologies (SA Water Berri and Crystal Brook workshops)
- Lincoln Engineering
- Ottoway Engineering
- Contract Engineering SA

Amdt  
Jun09***Applicable Australian Standards***

- AS1281 Cement mortar lining of steel pipes and fittings.
- AS1579 Arc welded steel pipes and fittings for water and waste water.
- AS4321 Fusion - bonded medium density polyethylene coating and lining for pipes and fittings.

*For more details about these manufacturers refer to the **manufactures list** in this manual.*

***AUTHORISED ITEMS for SEWER SYSTEM******Polyethylene Pipe***

Where a Polyethylene pipe system is selected for a pumping main the requirements for the pumping main shall be :

- PE80B or PE100 and PN12.5 (minimum) with appropriate fittings .

**NOTE : conditions apply to jointing methods**

***Jointing***

- Butt Welding - Specification (Butt Welding by authorised PE welders only)
- Electrofusion - Specification
- Mechanical - **Sizes 25 mm to 110 mm**

***Colour***

Black with Cream Stripes or all Cream

***Authorised Manufacturers******Pipes***

- Iplex Pipelines
- Vinidex
- PPI (up to DN100)

***Fittings***

Any combination of PE fittings, as shown in the Water Supply Construction Manual, necessary to achieve the design drawing requirements can be used. Products available from the following manufacturers are authorised:

**Mechanical Jointing.**

- George Fischer
- Plasson
- Magnum (Iplex)
- STP (Fusion Plast Australia)
- Philmac

**Electrofusion Jointing.**

- Philmac (Durafuse)
- Plasson
- Rollmaplast
- George Fischer
- Fusion Plast Australia

**Field Butt Welding**

Gas Tec

*For more details about these manufacturers refer to the **Manufacturers** section of this manual.*

***AUTHORISED ITEMS for SEWER SYSTEM******Ductile Iron Pipe - Cement Lined (DICL) and Polyurethane Lined (DIPL)***

A Ductile Iron Pipe system is only used for special applications including difficult creek/gully crossings and where a high head (pressure) is applied. Where DI is selected for a pumping main the requirements for the pumping main including class of pipe and all required fittings are to be detailed on the approved design drawings.

All fittings used are to be produced by the respective pipe manufacturer.

***Cement Lined***

Ductile Iron Cement Lined Pipe is not a preferred option for sewer rising mains and will only be authorised for use in specific applications. All DICL pipes are to be protected from corrosion by covering with a protective sleeving cream in colour. Where there is a requirement for DICL pipe, specific authorisation should be obtained from Asset Management and/or Material Sciences Unit prior to placing any orders.

***Authorised Manufacturer*** Tyco Water

Amdt  
Jun09***Polyurethane Lined***

Ductile Iron Polyurethane lined pipe (Ecopur) is authorised for use in specific applications such as creek crossings where internal corrosion protection is required. Where there is a requirement for Ductile Iron Polyurethane Lined pipe a detailed purchase specification should be obtained from Asset Management and/or Material Sciences Unit prior to placing any orders.

***Authorised Manufacturer*** Von Roll (Ecopur) – Supplied by Promains

***Restrained Joints***

The use of respective proprietary “Restrained Jointing” systems is authorised and in some instances may be deemed a requirement. Where a “Restrained Jointing” System is utilised, a suitably marked pink marker tape is to be buried above the pipe to ensure that when future repairs are carried out “Restrained Joint” integrity is maintained.

Refer to Water Supply Construction Drawings or the product manufacturer for minimum restrained lengths and installation details.

*For more details about these manufacturers refer to the **Manufacturers** section of this manual.*

***AUTHORISED ITEMS for SEWER SYSTEM******Package Pump Stations***

Package pump stations are categorised by the size of the sump and the size of the pipework. Package Pumping Stations include a separate valve chamber or cabinet and safety covers. All package pump stations are to be installed in accordance with the **Authorised Manufacturers Drawing**, the **Endorsed Design Drawings** and **Sewer Construction Manual**.

**SPECIAL REQUIREMENT**

SA Water has identified a zone along the foreshore where a high corrosion rate occurs to the pumps, bases and guides etc. For this reason all SPS installed within 1 km of the coast must be assessed for corrosion potential and where appropriate SA Water will specify that all steel items installed inside the chamber will be required to be manufactured from Grade 316 Stainless Steel or other non-corrosive material. This includes the Pumps, Guiderails etc.

***Authorised Manufacturers***

- |  |                      |
|--|----------------------|
| - Global Pumps (formally All Pumps Supplies) | uses Grundfos pumps  |
| - ITT Flygt Limited.                         | uses ITT Flygt pumps |

NOTE: Manufacturers **may not** produce the full range, refer to following information.

***AUTHORISED ITEMS for SEWER SYSTEM***

***Package Pump Stations (P.P.S.)***

***P.P.S with Non Trafficable Cover***

Non trafficable covers normally consist of two hinged covers per opening which lay flat when open. The covers are generally manufactured from 6 mm (min) aluminium chequer plate with recessed hinges and lifting handles.

**Note:**

Hinged safety grids are required to be mounted below the cover to prevent operators accidentally falling into the chamber. The individual covers are only opened during pump removal.

Description	All Pump Supplies	ITT Flygt
1 800 mm dia sump	★	★
2 100 mm dia sump	★	
2 200 mm dia sump		★
2 250 mm dia sump	★	
3.000 mm dia sump		★
3 200 mm dia sump	★	

***P.P.S. with Trafficable Cover***

*To be used only where directed by the Principal Engineer Wastewater Systems*

Trafficable covers require the use of access covers which comply with the requirements of AS 3996 with a Class “D” Load classification. The covers require standard lifting keyholes as detailed in AS 3996.

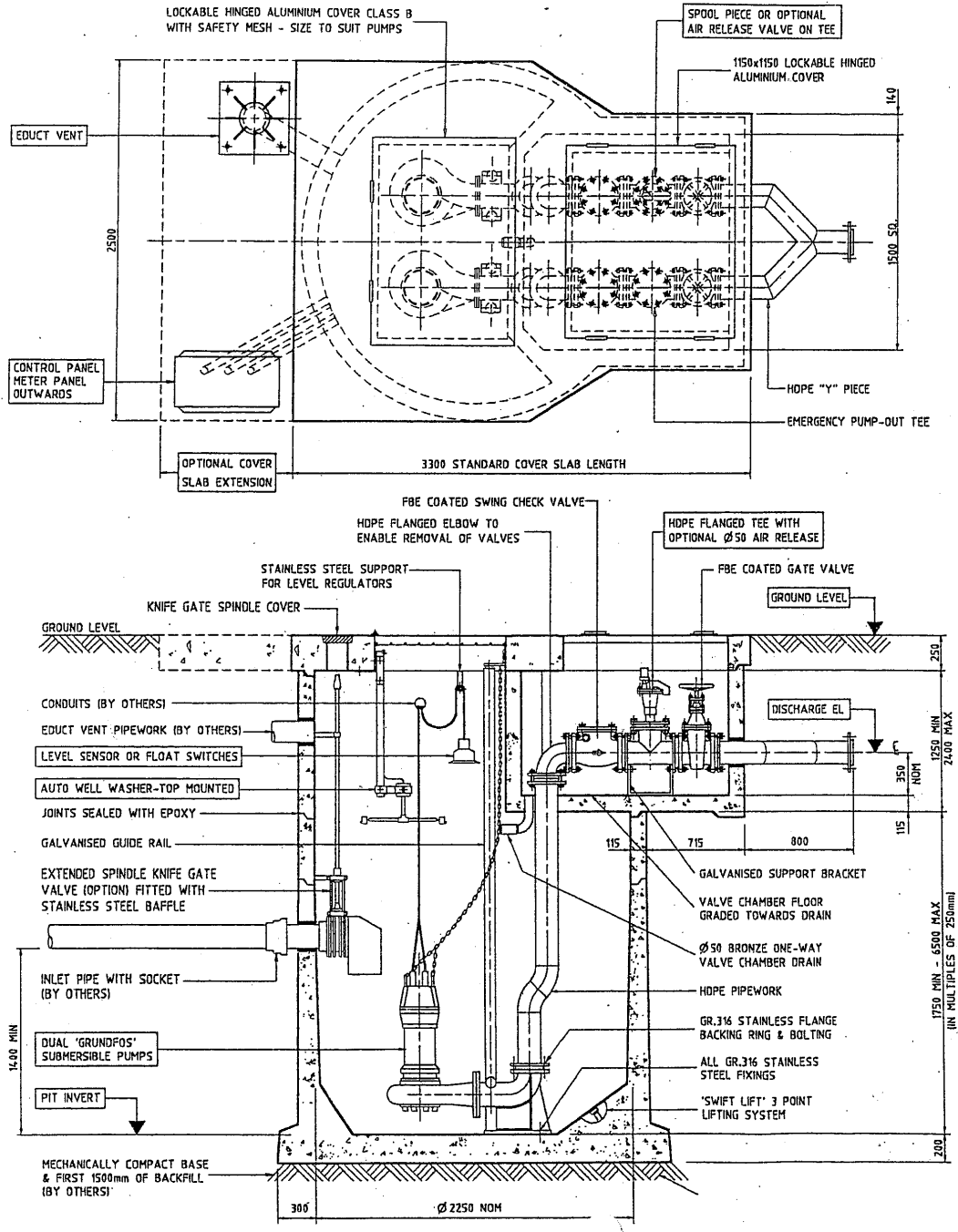
**Note:**

The use of fences or bollards is not required with these stations.

Description	All Pump Supplies	ITT Flygt
1 800 mm dia sump	★	★
2 100 mm dia sump	★	
2 200 mm dia sump		★
2 250 mm dia sump	★	
3.000 mm dia sump		★
3 200 mm dia sump	★	

**AUTHORISED ITEMS for SEWER SYSTEM**

**ALL PUMP SUPPLIES Package Pumping Stations**

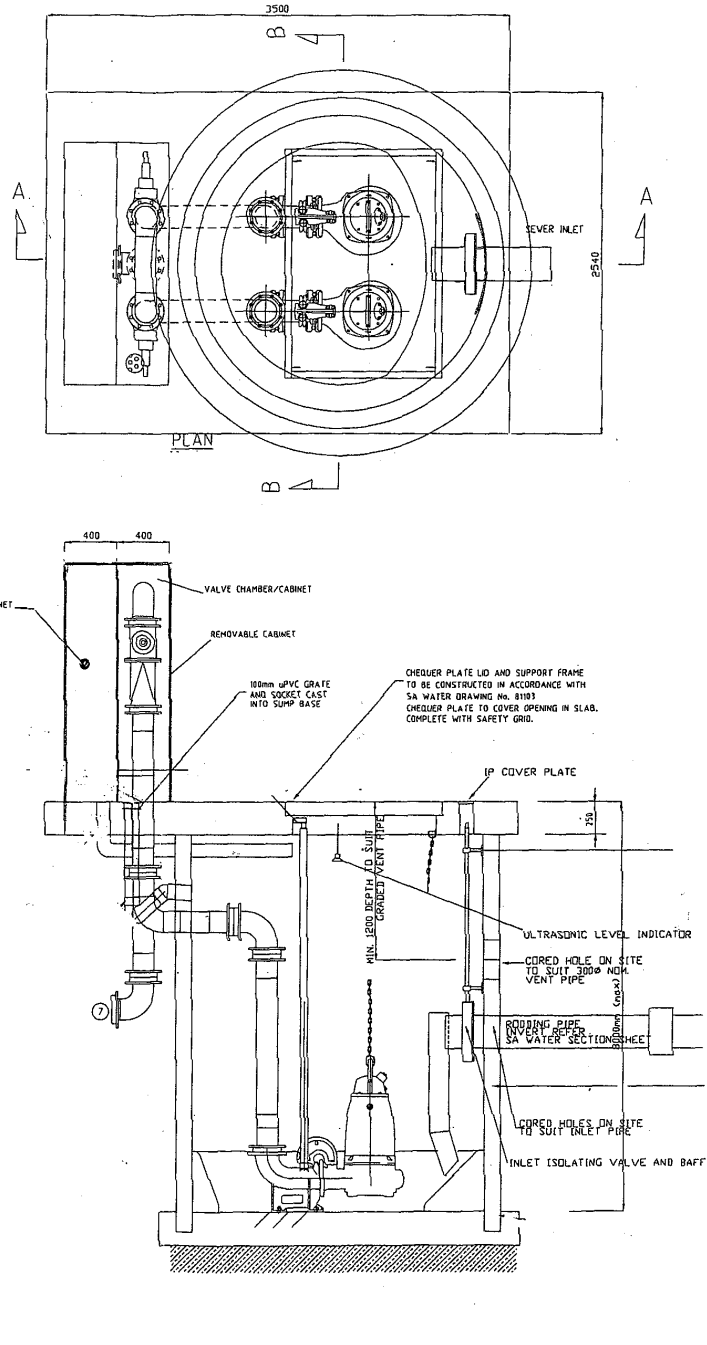


**Typical ALL PUMPS Package Pumping Station with Cantilever Valve Chamber**

**AUTHORISED ITEMS for SEWER SYSTEM**

**ITT FLYGT Package Pumping Stations**

**Note:**  
 Remote vent pipe required

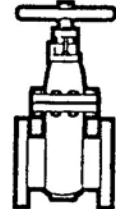


SECTION ON B-B

**Typical FLYGT Package Pumping Station with Valve Cabinet**

***AUTHORISED ITEMS for SEWER SYSTEM***

SA Water Product Description ***Valves - Gate Resilient Seated***  
*(Manually operated handwheel, clockwise closing to AS2638-2)*

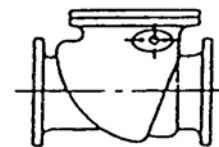


**Not for buried applications**  
 Alternative Description

Size DN Pipe	SA Water Stock No.	AVK	Crevet Pipelines	Tyco Water	P.S.A. (Turnflo)
80 (1.6 MPa)	4820-0194	*	*	*	*
100 (1.6 MPa)	4820-0197	*	*	*	*
150 (1.6 MPa)	4820-0201	*	*	*	*

Amdt  
Jun09

SA Water Product Description ***Valves - Swing Check***  
*(Cast Iron - Flange/Flange to AS3578 with extended spindle and counter weight)*



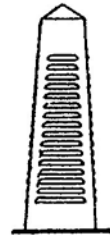
**Not for buried applications**

Size DN Pipe	AVK	Crevet Pipelines	Tyco Water
80 (1.6 MPa)	*	*	*
100 (1.6 MPa)	*	*	*
150 (1.6 MPa)	*	*	*

Amdt  
Jun09

**AUTHORISED ITEMS for SEWER SYSTEM**

**Vents - Induct**



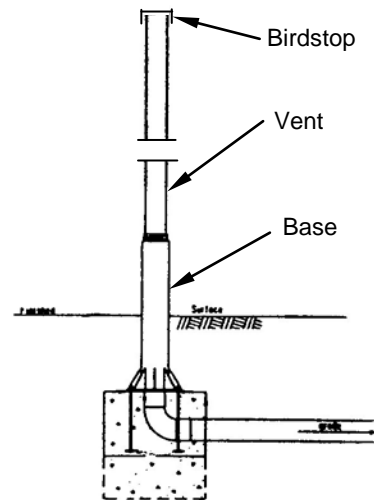
Alternative Description

Size mm L x D x H	SA Water Stock No.	Ottoway Engineering
600 x 600 x 1 200	5680-0098	*

**Vents - Educt**



Birdstop Protection



Vents MUST be fitted with Birdstop Protection

Alternative Description

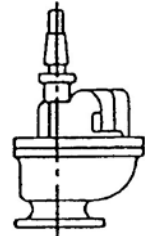
Item Dia(mm) x Ht(m)	SA Water Stock No.	Ottoway Engineering	Cronin Wire Products
<b>BASE</b> DN 300mm x 2.1m		*	
<b>VENT STACK</b> DN 300mm x 15m		*	
<b>BIRDSTOP PROTECTION</b>			*

***AUTHORISED ITEMS for SEWER SYSTEM***

SA Water Product Description

**Valve - Fireplug  
for Air Bleed**

Alternative Description  
Fireplug (flanged)

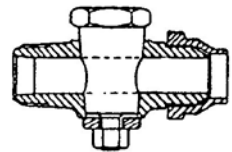


Nom. Size DN	SA Water Stock No.	Crevet Pipelines	Tubemakers
80mm	4210-0031	★	★

SA Water Product Description

**Main Cock  
for Air Bleed**

Alternative Description  
Cock Plug

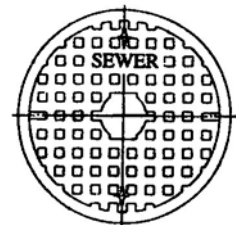


Size Nom. Pipe Tube (mm)	SA Water Stock No.	Autotherm
20	4820-0120	★

SA Water Product Description

**Street Box Cover - Sewer**

Note : Used in conjunction with the Street Box Frame (5680-0061)  
Refer Water Construction Manual.



Alternative Description

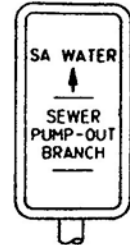
Item	SA Water Stock No.	Bianco PCP (BIA)	Cooke Precast (WASA)
Cover (One Piece Lid)	5680-0407	★	★

***AUTHORISED ITEMS for SEWER SYSTEM***

SA Water Product Description

Signs

Alternative Description

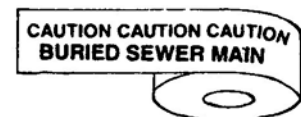


Item Description	SA Water Stock No.	Ottoway Engineering	Peninsula Castings
Sewer Pump-Out Branch sign with 32mm Galv. Post	9905-0854	★	★
Sewer Stop Valve sign with 32mm Galv. Post	9905-0855	★	★
Sewer Air Valve sign with 32mm Galv. Post	9905-0856	★	★
Sewer Pump-Out Branch sign only	-	★	★
Sewer Stop Valve sign only	-	★	★
Sewer Air Valve sign only	-	★	★

SA Water Product Description

Tape

***Underground Warning - Non Detectable***



NOTE : Marker tape is to be placed on overlay sand above all sewer pressure mains.  
 Cream in colour to AS2648.1

Alternative Description

Item Description	SA Water Stock No.	Tapex	Romac Trading	Heatech
'CAUTION : BURIED SEWER MAIN BELOW'	9330-0430	★ (880650)	★ (ATI 500)	★ (ZUW-10 Custom)

***AUTHORISED ITEMS for SEWER SYSTEM***

***INDEX***

Main Cock	
20mm for Air Bleed	11
<b><i>Package Pumping Stations</i></b>	
General	5
P.P.S. with Cover	6
P.P.S. with Trafficable Cover	6
Typical PPS Layouts	
ALL PUMP SUPPLIES	7
FLYGT	8
<b><i>Pipes and Fittings</i></b>	
General	1
Ductile Iron Cement Lined	4
Ductile Iron Polyurethane Lined	4
Polyethylene	3
PVC	1
Steel Cement Lined (SCL)	2
Steel Poyethylene Lined (Sintaline)	2
Signs	12
Street Box Cover	
Sewer	11
Tape	
Underground Warning - Non Detectable	12
<b><i>Valves</i></b>	
Fireplug - for Air Bleed	11
Gate to AS 3579 - Hand wheel operated	9
Swing Check to AS 3578 with extension spindle	9
<b><i>Vents</i></b>	
Educt	10
Induct	10