



Assets Planning and Delivery Group
Engineering

Strategic Product Specification

SPS 261

Butterfly Valves for Waterworks Purposes

VERSION 5

REVISION 6

MAY 2022

FOREWORD

Each Strategic Product Specification has been prepared to inform Water Corporation staff, consultants, contractors and land developers of the requirements for selecting and acquiring a manufactured product to be used in strategic Corporation infrastructure. The definition of ‘Product’ includes items that comprise assembled components, equipment or plant for mechanical, electrical and civil infrastructure applications.

The objective of a Strategic Product Specification is to specify fit-for-purpose Product which will contribute to the provision of effective water services at least whole-of-life cost and with least risk to service standards and safety. A Strategic Product Specification also provides uniform standards for compatibility of new water infrastructure with existing water assets.

Many Strategic Product Specifications have drawn on the design, asset management and operational experience of Product performance in live service gained by the Corporation over time. Some Strategic Product Specifications have drawn on the experience of the water industry nationally by referencing Australian or WSAA standards.

Strategic Product Specifications are intended for reference and use in the following typical procurement scenarios:

- Capital funded infrastructure design and construction work;
- Private developer funded subdivision infrastructure for takeover by the Corporation;
- Operationally funded infrastructure design and construction work;
- Corporation period contracts for Product purchases;
- Product purchases for stock or for miscellaneous minor work.

A published Strategic Product Specification will, in some cases, comprise technical content that is typical of a range of products of the same type (type specification) but may exclude specific requirements that should apply to a particular project or application. In such cases, the project designer is required to document the supplementary project specific requirements in the appropriate Clause of the ‘Project Specific Requirements’ Appendix of the Specification.

The text of a published Specification should not be directly modified. In the event that a text variation is considered necessary to accommodate the needs of a particular project or application, the text modification should be documented in the appropriate Clause of a ‘Project Specific Requirements’ Appendix.

Enquiries relating to the technical content of this Specification should be directed to the Senior Principal Engineer, Mechanical Section, Engineering Business Unit to whom all enquiries relating to the technical content of the Specification should be directed. Future Specification changes, if any, will be issued to registered Specification users as and when published.

Head of Engineering

This document is prepared without the assumption of a duty of care by the Water Corporation. The document is not intended to be nor should it be relied on as a substitute for professional engineering design expertise or any other professional advice.

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The revision status of this specification is shown section by section below:

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Strategic Product Specification

SPS 261

Butterfly Valves for Waterworks Purposes

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1 Scope and General

1.1 Scope

This Specification sets out requirements for the manufacture, supply, testing, handling and delivery of double-flanged, resilient **seal-on-body** butterfly valves for waterworks purposes and as further described in the following. The Specification also details the means by which compliance with the Specification shall be demonstrated and the criteria for acceptance of Product. Valves shall be in a new unused condition.

The butterfly valves detailed in this Specification are designed for use the typical application Types (Type A to F) shown in Appendix D, which may include buried service applications, and for pressure ratings up to PN25. This specification is not intended to cover general purpose or dam guard valves applications – refer Notes for further guidance.

This Specification details the requirements in lieu of specific clauses, or as clarification for options that exist within, or as additional requirements to AS 4795.2. Unless otherwise specified in this Specification, the valves shall be manufactured, tested and supplied in accordance with the requirements of AS 4795.2 for seal-on-body type butterfly valves.

Other butterfly valve types used by the Corporation are referred to in the notes below for information.

NOTES:

1. Butterfly valves for general purpose non-buried service are specified in SPS 260, which references AS 4795.1 for wafer and lugged seal on body type valves.
2. Butterfly valves for high pressure applications, i.e. =>PN25, for non-buried and buried service, are specified in SPS 262, which references AS 4795.2 for double flanged seal on disc type valves.
3. Butterfly valves for dam guard valve non-buried service, which may be required to close under extreme flow velocities, are specified in SPS 263, which references AS 4795.2 for double flanged seal on disc type valves.
4. The normal and maximum fluid velocity, against which the valve could be required to operate, may be a key consideration in valve selection, manufacturer’s guidance should be used.

1.2 Referenced Documents

The Specification refers to the following standards, which are not already referenced in Appendix C of AS 4795.2:

Water Corporation “Strategic Product Appraisal Process Manual” (Internally controlled)

AS

1565	Copper and Copper Alloys – Ingots and Castings
1646	Elastomeric seals for waterworks purposes
1831	Ductile cast iron
2074	Cast Steels
2550.1	Cranes, hoists and winches – Safe use - General
2550.3	Cranes, hoists and winches – Safe use – Bridge, gantry, portal (including container cranes), jib and monorail cranes
2550.5	Cranes, hoists and winches – Safe use - Mobile
2550.11	Cranes, hoists and winches – Safe use – Vehicle loading cranes
4795.1	Butterfly valves for waterworks purposes – Wafer and lugged
4795.2	Double flanged butterfly valves for waterworks purposes – Double flanged

AS/NZS	
4680	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS/NZS ISO	
9001	Quality management systems – requirements
ASTM	
A380	Standard Practice for Cleaning, Scaling and Passivation of Stainless Steel Parts Equipment and Systems
DS	
26.41	Type Specification for an Electric Actuator for a Waterworks Valve
EN	
EN1092-1	Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 1: Steel flanges
EN1092-2	Circular flanges for pipes, valves, fittings and accessories, PN designated - Part 2: Cast iron flanges
ISO	
1083	Spheroidal graphite cast irons – Classification.
ISO/IEC	
17000	Conformity assessment – Vocabulary and general principles
17025	General requirements for the competence of testing and calibration laboratories
SAA Guides	
HB18	Guidelines for Third-Party Certification and Accreditation
HB 18.23	(ISO/IEC Guide 23) Guidelines for third-party certification and accreditation - Guide 23-Methods of indicating conformity with standards for third-party certification systems
HB 18.28	(ISO/IEC Guide 28)Conformity assessment - Guidance on a third-party certification system for products
SPS	
260	Wafer and Lugged Butterfly Valves
262	High Performance Butterfly Valves
263	Butterfly Guard Valves
271	Gate Valves for Waterworks Purposes – Metal Seated
272	Gate Valves for Waterworks Purposes – Resilient Seated

Welding Specification

WS-1 Metal arc welding

1.3 Definitions and Notation

Reference should be made to the Clause 1.4 Definitions contained in AS 4795.2 and the following definitions and notations which are intended to clarify terminology used in this Specification.

1.3.1 Australian Standards®

Standards that are developed, published and maintained by Standards Australia.

1.3.2 Certificate

A formal certificate issued by a Certification Body in accordance with the third party product certification system described in HB 18 including associated Product licence schedules.

1.3.3 Certification Body

An independent (or third party) organisation duly accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) to operate product Certification Schemes.

1.3.4 Certification Mark

A proprietary mark of product conformity issued in accordance with HB 18.23.

1.3.5 Certification Scheme

A third party product certification system operated in accordance with HB 18.28.

NOTE: The effect of this is to require maintenance by the Manufacturer of effective production control planning in addition to full type testing from independently sampled production and subsequent verification of conformity with specified standards.

1.3.6 Compliant Product

Product that has been assessed, by means of Product Appraisal, as conforming with standards and specifications that are specified by the Corporation.

1.3.7 Corporation

The Water Corporation of Western Australia.

1.3.8 Gearbox

The gearbox and any associated reducing gear assembly (where applicable), attached directly to the driven end of the valve shaft and external to an electric actuator.

1.3.9 Hydrodynamic Torque

The torque required to operate the butterfly valve disc during operation as a function of the dynamic flow conditions and the valve disc position.

1.3.10 Manufacturer

An entity or combination of entities that are responsible for selection, processing and control of Product constituent materials or compounds and for the processing equipment that collectively result in the manufactured product.

1.3.11 Notation

Statements expressed by use of the word 'shall' are mandatory or 'normative' requirements of the Specification. Statements expressed by use of the words 'should' or 'may' are 'informative' but not mandatory and are provided only for information and guidance. Notes in Specification text are informative. Notes that form part of Specification Tables are normative. An Appendix to the Specification that is designated 'normative' contains mandatory requirements. An Appendix that is designated 'informative' is provided for information and guidance only. The term 'specified' includes requirements of the Specification and requirements stated or referenced in other project documentation.

1.3.12 Officer

A duly authorised representative or appointed agent of the Corporation.

1.3.13 Product

A single unit or multiple units of manufactured end product or an assembly of manufactured component products, materials or equipment. This Specification and accompanying Purchasing Schedule define the nature and details of Product to be supplied. In this Specification the Product shall refer to seal-on-body butterfly valves for waterworks purposes.

NOTES:

1. An end product is most commonly an output of manufacturing processes that result in finished end products having the same features and characteristics and can be the result of a single or multiple production batches.
2. Manufactured equipment and assemblies of Product components or materials are commonly procured for mechanical, electrical and civil infrastructure applications.

1.3.14 Product Appraisal

A formal process whereby Product, including product design, is subjected to systematic engineering assessment to determine Product fitness for prescribed end uses and to evaluate conformity of its production systems with specified standards and requirements. Product Appraisal includes verification of the extent of compliance in accordance with the requirements of a relevant 'Technical Compliance Schedule'.

1.3.15 Product Assessor

An organization, Officer or other person who, having demonstrated specialist product knowledge and competence acceptable to the Corporation, is appointed to evaluate Product, appraise the Product and issues one or more Product Verification Report(s).

1.3.16 Product Certification

A formal process whereby the production and management systems for the manufacture of Product, are assessed by a Certification Body to evaluate compliance of these systems with specified product standards and tests, in accordance with Certification Scheme rules.

1.3.17 Product Verification Report

A formal report wherein a Product Assessor evaluates the extent of Product compliance with the specified product standards and specifications.

NOTE: Verification may be on a project-by-project basis or at agreed intervals, as appropriate to the scope of a Purchasing Schedule and Product end use, subject to determination by the Corporation.

1.3.18 Product Warranty

A formal express undertaking by a Supplier that indemnifies the Corporation against the consequences of supplied Product failure to comply with specified fitness for application and in-service life expectancy performance requirements.

1.3.19 Purchasing Schedule

A Corporation purchase order, tender, schedule of prices, bill of quantities, or specification that details the nature, quantity and other characteristics of Product to be supplied, purchased or installed.

NOTE: Table 11.1 of this Specification represents a component of the Purchasing Schedule.

1.3.20 Quality System

A management system that establishes, documents, implements and maintains organizational structures, resources, responsibilities, processes and procedures for the manufacture of Product and provision of Product related services in accordance with the requirements of AS/NZS ISO 9001.

1.3.21 Standards Australia

The peak non-government standards development body in Australia which develops Australian Standards®.

1.3.22 Strategic Product

An essential infrastructure component whose performance is critical to the elimination of risk to the safe and effective provision of water services, which are functions of the Corporation under the Water Corporation Act as licensed under the Water Services Coordination Act.

NOTE: Strategic product is most commonly an element of permanent Corporation infrastructure. Ancillary operational and safety equipment, not intended to form part of this infrastructure but offers exceptional enhancements in operational performance or personnel safety may be deemed strategic.

1.3.23 Strategic Product Appraisal Process

The process described in the Strategic Product Appraisal Process Manual whereby manufactured products and equipment are evaluated and, where they comply with specified requirements, authorised for use in Corporation infrastructure.

1.3.24 Supplier

An entity or combination of entities that is responsible for the supply of Product.

NOTE: A supplier may be a manufacturer, owner, producer, distributor, vendor or an agent, tenderer or contractor for supply of Product or Product related service.

1.3.25 Testing

The determination of Product characteristics by inspection and by the application of specified test procedures.

1.3.26 Valve

The term valve (or valves) referred to in this Specification shall mean double flanged, resilient seal-on-body butterfly valve (or valves) for waterworks purposes, their primary and secondary gearboxes, extended spindles and spindle tubes, and where specified electric actuators.

1.4 Designation of Size

Valve sizes shall be as specified in Clause of 1.5 (c) of AS 4795.2 and as shown in Table 11.1 of this Specification.

1.5 Allowable Operating Pressures and Flow Velocities

Table 1.1 contained in AS 4795.2 shall be amended to include the following:

Table 1.1 – Classification and Rating for PN 25 Valves

PN	AOP kPa	MAOP kPa	ASTP kPa	Maximum flow velocity - m/s	
				Rated	Emergency
25	2500	3000	3125	5	7.5

NOTE: Valve pressure class (PN) will be as denoted in Table 11.1 of this Specification.

2 Materials and Components

2.1 General

Valve components and materials shall comply with the relevant requirements of Section 2: Materials and Components of AS 4795.2 and Table 2.1 below.

Table 2.1 Seal-on-Body Butterfly Valve Material Requirements

Component	Material	Standard	Designation
Disc	Aluminium bronze	AS 1565	C95810
	Stainless steel	Relevant recognised standard	Grade with PREN ≥ 22
Liner, seals and O-rings	Elastomer	AS 1646	EPDM, NBR, NR
Handwheel	Ductile cast iron	AS 1831	ISO 1083/JS/500-7/U; ISO 1083/JS/400-15/U
	Hot-dip galvanized steel	AS/NZS 4680	

The use of ductile cast iron discs, fabricated discs and pressed steel handwheels shall not be permitted

2.2 Stainless Steel

Stainless steel castings, plate and bar subjected to welding during the manufacture of any component shall be a low carbon or stabilized grade. Stainless steel components except fasteners shall be passivated in accordance with ASTM A380. Stainless steel castings shall be heat treated in accordance with AS 2074.

2.3 Valves for Seawater / Brine Applications

Basic materials shall be as per Sections 2.1 & 2.2, taking account of the corrosive nature of seawater or brine at environmental conditions as indicated in Table 11.1, the following shall be met:

- Wetted parts (including valve shaft and disc) shall be constructed from super duplex in accordance with Section 2.3.1.
- Any nickel based alloys that have to be used for minor wetted part components shall be in accordance with Section 2.3.2.
- Non-wetted external fasteners on the valve, gearbox or actuator shall be a minimum grade of 316SS
- Selection of bearing material for seal on body valves shall assume a loss of integrity of the primary bearing seal over time, with water ingress to the bearing housing. The bearings shall be treated as an immersed component. Bearing materials shall have suitable corrosion resistance and bearing properties.

For valves \geq DN600 the manufacturer shall provide documentary evidence of material properties (e.g. PREN, hardness) of the disc shaft and bearings to clearly demonstrate compliance with relevant requirements.

2.3.1 Super Duplex Stainless Steel

All super duplex materials in contact with the fluid shall have a pitting resistance equivalence number (PREN) of 40 calculated as follows:

$$PREN = Cr(\%) + 3.3 \times Mo(\%) + 16 \times N(\%)$$

2.3.2 Nickel Alloys

Any Hastelloy nominated for use in wetted areas of the valve shall be the minimum grade Hastelloy C

Haynes 625 and Inconel 625 are also accepted for use in wetted areas of the valve. Alternative Inconel grades are not accepted for use in any wetted areas of the valve.

2.3.3 Elastomeric Materials

Elastomeric materials shall not be adversely affected by contact with brine or seawater.

3 Design and Manufacture

3.1 General

Valves shall comply with the relevant requirements of Section 3: Design of AS 4795.2 except where varied by this Specification.

3.2 Valve

Valves shall comply with the seal option detailed in Clause 3.3.6(c) of AS 4795.2 for seal-on-body butterfly valves. Valves shall be unidirectional or bidirectional as specified in Table 11 and shall provide drop-tight shut-off at AOP and comply with the following.

3.3 Design and Selection

3.3.1 Mandatory Design Requirements

Butterfly valve applications can be complex requiring a number of engineering design options and requirements to be addressed in order for the valve to be correctly specified. Accordingly for larger or complex applications (>DN600, >PN16, high flow velocity, buried service and applications involving control or frequent operation) the designer should complete, as a minimum, Table 11.1 in Appendix A of this Specification, which forms an integral part of the Purchasing Schedule. For more simple applications (\leq DN600, above ground, isolation only) the MMR's in Appendix C may be used.

The valve design lifetime cycles shall exceed the number of cycles relative to the valve application over a period not less than 50 years by a factor of 50% and in any event shall be designed for a minimum life of 1,000 cycles.

3.3.2 Design Calculations

Where specified in Table 11.1 of this Specification, the Manufacturer shall provide a summary of design calculations for the valve to the Corporation prior to any purchasing agreement being entered into. Calculations shall include but not be restricted to provision of the relevant shaft stresses, lifetime cycles and following hydro-dynamic torques in table form or as curves (0° to 90° disc opening):

- Valve maximum unseating torque at AOP.
- Valve hydrodynamic torque at the maximum emergency flow velocity.
- Actuator output torque.

The Manufacturer shall indicate the basis used to develop this information and the relevant valve size applicable e.g. 3-D computer modeling (finite element analysis). The extent of extrapolation from the original valve size modeled to the related valve size shall be shown.

NOTE: Design calculations would only be required where the integrity of the valve was critical e.g. for large valves, high velocities and high cycling requirements.

3.3.3 Maximum Rated and Maximum Emergency Flow Velocities

Valves shall be centric type, designed to operate continuously at the maximum continuous flow velocity and safely close into the maximum emergency flow velocity as specified in Table 11.1 of this Specification.

The hydro-dynamic torque required for emergency flow velocity closure may be relatively high. Accordingly the actuator, drive train and valve shaft assembly shall be rated to safely withstand closure into the maximum emergency flow velocity without structural damage.

NOTE: 'Maximum emergency flow velocity' shall only be specified where valves may be required to close in such a scenario – e.g. trunk main burst pipe.

3.3.4 End Connections

Further to Clause 3.2 of AS 4795.2 the following shall apply:

- a) Valve end connections shall be compatible with mating flanges complying with AS 4087 unless otherwise specified in Table 11.1 of this Specification;
- b) Where valve sizes and/or pressure classes shown in table 11.1 of this specification are beyond the scope of AS 4087 (i.e. \geq DN 1400, PN25); flanges shall be compatible with EN 1092-1 or Corporation designed mating flanges (based on EN 1092-1);
- c) O-ring sealing of flanges shall not be permitted.
- d) Ring body style valves shall not be permitted;

3.3.5 Adjacent Pipe Size

For all pipework materials the valve disc shall operate over its full range into the mating flange and pipework without fouling. The table below shows relevant internal diameters for MSCL pipe. For other pipe materials the inside diameter of the mating flange or pipe shall be determined and disc clearance assured. Adjacent pipe size shall be specified in table 11.1

Table 3.1 – Adjacent Pipe Sizes (Mild Steel Cement Lined (MSCL) Pipe

Valve size DN	Internal diameter of (MSCL) pipe mm
100	86
150	140
200	191
250	245
300	290
400	376
450	427
500	478
600	574
700	675
750	726
800	767
900	866
1000	968
1050	1019
1200	1161
1400	1352
1600	1538
1800	1767
2000	2089

3.3.6 Welding of Stainless Steel

Further to Clause 3.3.1 of AS 4795.2, all fabrication and welding of stainless steel shall comply with the requirements of the Corporation’s Welding Specification WS-1.

3.3.7 Face-to-Face Dimensions

Clause 3.3.4 of AS 4795.2 shall be modified to include the following additional requirement: “Narrower face-to-face dimensions for pre-existing double flanged seal-on-body butterfly valves used by the Corporation will be acceptable e.g. specifically PN 21 butterfly valves with bonded liners.” All such non-standard valves shall ensure adequate space between flanges to accommodate standard fasteners (nuts, bolts and washers) of the appropriate diameter and length, without modification (i.e. bolt or washer trimming).

3.3.8 Lifting Eyebolts

Further to Clause 3.6 of AS 4795.2, design of eyebolts and the valve body shall include lifting the total assembled mass of the valve, which shall include the gearbox and the flanged matching pieces (as required).

3.4 Gearbox

In addition to the requirements for actuators and gearboxes contained in Clauses 3.4 and 3.5 of AS 4795.2 the following shall apply:

3.4.1 Gearbox Selection

The gearbox selection shall take into account (but not be limited to) the following requirements:

- (a) The gearbox and operator drive train shall be capable of withstanding the full stall torque of the actuator or 150% of the PMOT (refer to Definitions AS 4795.2),
- (b) The gearbox selection shall be based on lifetime cycles versus maximum output torque e.g. 'gearbox lifetime characteristic curve' (curve), a copy of which shall be provided in tabular or graphical form for valves \geq DN 700. The lifetime cycles determined from the curve shall exceed the number of cycles relative to the valve application over a period not less than 50 years by a factor of 50% and in any event shall be designed for a minimum life of 1,000 cycles.

NOTES:

1. One cycle relates to operating the valve from the closed to the fully open position and reverse e.g. through 90 degrees of movement and return.
2. The gearbox lifetime characteristic curve is used to determine the lifetime cycles relative to the gearbox operating torque for the valve. The number of cycles attributed over the life of the valve depends on the application e.g. cycling once per day equates to ~ 18,000 life cycles; twice per week is equivalent to ~ 5000 lifetime cycles etc. The vast majority of trunk-main valves will experience fewer than 1,000 lifetime cycles.

3.4.2 Direction of Rotation

The valves and actuators shall be designed to close when the input shaft of the gearbox actuator is rotated anti-clockwise e.g. the valve shall close when the operator hand-wheel or key is rotated anti-clockwise.

3.4.3 Gearbox Orientation

The gearbox, input shaft and actuator shall be located on the left hand side of the valve when viewed from upstream looking in the direction of flow, unless otherwise specified in Table 11.1 of this Specification.

NOTE: The Corporation's preferred gearbox orientation is for it to be located on the left hand side of the valve when looking in the direction of flow. This is primarily to rationalize gearbox type for the Supplier. Orientation on the right hand side may be accepted where required by space limitations or other factors.

3.4.4 Gearbox End-Stop

The gearbox shall be fitted with end-stops which are integral, adjustable and capable of withstanding the greater of:

- An input torque of 250Nm
- The full stall torque of the actuator (where provided).

End-stops shall be set to ensure the correct disc position, following assembly of the valve.

For manually operated valves, disc end-of-travel position shall be within 1 degree of the pipe axis parallel and perpendicular positions, with the disc in the fully open and closed positions, respectively.

For electrically actuated valves, the ends stops shall be set at 1 degree past the valve disc fully open and closed positions – this is to ensure the disc position is set by the actuator and to avoid high stresses between the actuator and gearbox during normal operation.

3.4.5 Gearbox IP Rating

Gearboxes shall have an Ingress Protection Rating (IP rating) equivalent to those defined in IEC/EN standard 60529.

Gearboxes for above ground valves shall have a rating of IP67 or higher.

Gearboxes for buried service valves and those mounted in below ground pits shall have a rating of IP68 based on possible submergence of 1.5m.

3.5 Extended Spindle and External Spindle Tube

Further to Clause 3.4.4 of AS 4795.2 an extended spindle shall be provided where the operator is located remotely from the valve - e.g. pit service, or an extended spindle and external spindle tube for buried service.

Where the operator is unable to observe the valve mounted position indicator e.g. pit service, or for an extended spindle application, the valve shall be supplied with a torque-limiting device and an additional position indicator in accordance with the following clauses.

The vertical distance from the valve centre-line to the top of the valve spindle cap or hand-wheel shall be as specified in Table 11.1 of this Specification.

3.5.1 Torque-limiting Device

Manually operated valves \geq DN 700 incorporating an extended spindle shall be fitted with a torque-limiting device in accordance with Clause 3.3.11(b) of AS 4795.2 (refer note). The torque-limiting device shall be located above the position indicator.

For all electrically operated valves, torque limitation shall be provided within the electric actuator in accordance with the requirements of DS26.41 (refer clause hereunder).

Torque limiting device settings shall be provided for each valve.

NOTE: A torque limiting device is required to protect the valve in the event that high torque is encountered in the travel range between the travel stops e.g. in the event of the valve disc encountering an obstruction

3.5.2 Position Indicator

Manually operated valves with an extended spindle, or where the basic position indicator cannot be observed during manual operation, shall be fitted with an additional position indicator (remote) in accordance with Clause 3.3.12 of AS 4795.2.

Electrically operated valves shall have position indication provided within the electric actuator in accordance with the requirements of DS26.41 (refer clause 3.6 hereunder)

NOTE: The position indicator should be an MLK mechanical valve position indicator available from MLK Industries, or equivalent.

3.6 Actuator

Where specified in the Table 11.1 of this Specification the valve shall be fitted with either:

- a) A manually operated spindle cap or handwheel, or

- b) An electric actuator complying with the relevant requirements of DS 26.41.

NOTE: Other actuator types may be specified by the Designer as required e.g. hydraulic cylinder

3.7 Lockout Devices

Valves shall be either fitted with lockout devices to enable their secure isolation, or shall be capable of accommodating them as specified in Clause 3.3.13 of AS 4795.2 and the following:

3.7.1 Spindle Cap

Spindle cap operators shall accommodate the Corporation's valve locking device in accordance with Drawing No EG20-11-2 attached at Appendix E of this Specification. The bottom plate of the locking device shall be capable of either being fitted under the spindle cap or alternatively locate into a groove in the body of the spindle cap. Other methods of accommodating the Corporation's valve locking device may be acceptable subject to approval by the Corporation.

3.7.2 Handwheel

Handwheels shall be fitted with provision for locking with a padlock.

3.7.3 Electric Actuator

Where the valve is electrically actuated it shall incorporate padlockable lockout devices in accordance with DS 26.41.

3.8 Flanged Matching Piece and By-pass Pipework (Optional)

Where specified in Table 11.1 of this Specification, valves shall be fitted with flanged matching pieces and by-pass pipework in accordance with the "Valve Matching Piece and By-pass Pipework Sketch" attached with the Tender Document. The complete assembly shall comprise:

- a) A flanged matching piece incorporating a by-pass valve stub, which shall be fitted to each butterfly valve flange and shall incorporate;
- b) Connecting by-pass pipework; gaskets; hot-dip galvanized fasteners comprising property class (PC) 8.8 bolts, PC 8, nuts and hardened washers (35-45 HRC); and
- c) By-pass resilient seated gate valves complying with SPS 272 for pressure classes to PN 25; or metal seated gate valves complying with SPS 271 for a pressure class of PN 35;
- d) Hydrostatically testing in accordance with Section 5 of this Specification.

4 Protective Coating

4.1 Valve

Valves shall be coated in accordance with Section 4: Protective Coatings of AS 4795.2

5 Performance Tests

5.1 General

Valves shall comply with Section 5: Performance Tests of AS 4795.2, except where varied in the following.

Product shall be tested in accordance with the test requirements of this Specification. Testing shall be deemed acceptable when test outcomes have been formally verified by a Certification Body or witnessed by a testing Officer. Product for which a test requirement has not been met shall be classified as non-compliant Product.

NOTES:

1. Testing should be carried out by an organisation accredited by NATA or in accordance with ISO/IEC 17025.
2. A testing Officer should normally be an Officer who has specialist knowledge of or training in product or materials testing appropriate to the Product characteristics to be tested.

5.2 Notification of Testing

The Corporation shall be notified in writing of each formal test proposal, allowing as a minimum the period nominated in Table 11.1 prior to the preparation of Product for testing except where a specified test has been the subject of a current valid Certificate issued by a Certification Body. This notification is required to enable the Corporation to make all necessary arrangements including appointment of a testing Officer in a timely manner.

5.3 Access to the Place of Manufacture

The testing Officer shall be afforded access, at all reasonable times, to all places of manufacture of Product or product components and shall be authorised to arrange or undertake such testing there as the Corporation deems appropriate to the testing regime specified.

5.4 Place of Manufacture other than WA

Where any Product or product component is being manufactured other than in Western Australia the Corporation may appoint a local inspecting Officer to undertake inspections and witnessed testing as required. The testing Officer shall be provided with all due authority and permits required to carry out testing at the place of manufacture.

NOTE: The cost of witnessed testing arranged by the Corporation will normally be borne by the Corporation unless otherwise negotiated.

5.5 Production Tests

Valves shall be tested in accordance with:

- a) The relevant production test requirements of Section 5.3 of AS 4795.2,
- b) Tests which modify existing tests in Section 5.3 of AS 4795.2 as specified in Clauses 5.5.1 to 5.5.4 of this Specification (as applicable),
- c) Additional tests specified in Clauses 5.5.5 and 5.5.6 of this Specification (as applicable),
- d) Flange matching piece and by-pass valve assembly tests as specified in Clauses 5.6.1 and 5.6.2 of the Specification (as applicable).

NOTES:

1. The type tests specified in Section 5.2 of AS 4795.2 are “once off” tests required for product certification by a Certification Body e.g. to obtain Standards Mark or equivalent (refer also AS 4795.2 Clause 1.4.22). Currently only limited certification of butterfly valves (for sizes \leq DN 600) has been obtained by the manufacturers.
2. The production tests specified above are based on Section 5.3 of AS 4795.2 and are required to verify compliance with SPS 261 after manufacture. Additionally a gearbox strength type test and an operational test have been included.

5.5.1 Coating Test

The coating shall be tested in accordance with Clause 5.3.1 of AS 4795.2 except that discontinuities at bolt holes, other external edges, hook holes, embossed lettering and scuff marks shall not be considered as defects.

5.5.2 Body Strength Test

The body strength test method outlined in the first paragraph of Clause 5.3.2 of AS 4795.2 shall apply and not the alternative test method specified in the second paragraph.

5.5.3 Disc Strength Test

The disc strength test specified in Clause 5.3.5 of AS 4795.2 shall be applicable to valve sizes \geq DN 700 for one valve of each size and pressure class within the batch.

NOTE: This test may be waived subject to the Manufacturer providing documentary evidence of satisfactory completion of a previously identical test conducted for the Corporation.

5.5.4 Free End Test

The free end test specified in Clause 5.3.6 of AS 4795.2 shall be applicable to valve sizes \geq DN 700 for one valve of each size and pressure class within the batch.

NOTE: This test may be waived subject to the Manufacturer providing documentary evidence of satisfactory completion of a previously identical test conducted for the Corporation.

5.5.5 Gearbox Strength Type Test

The gearbox strength test shall be applicable to valve sizes \geq DN 700 for one valve of each size and pressure class within the batch

Operate the valve from the fully closed to fully open position and record the number of turns of the input shaft and maximum input torque required during the operation.

With the disc temporarily fixed in a partially closed position (refer Note 2), apply a torque in the opening direction of 50% greater than the PMOT to the gearbox input shaft for a period of 2 minutes.

At the conclusion of the test the valve shall be operated through to the fully open position and then fully closed. There shall be no distortion or damage and the valve shall run freely and smoothly. The maximum input torque required to operate the valve and the travel number of turns from the fully closed to fully open position shall be identical to the original values.

NOTES:

1. This test may be waived subject to the Manufacturer providing documentary evidence of satisfactory completion of a previously identical valve test conducted for the Corporation.
2. The disc shall be wedged in the partially open position to ensure that the torque is transmitted through the gearbox, shaft, keys and pins to the disc; rather than to the input stops.

5.5.6 Operational Test

The operational type test specified in Clause 5.2.5 of AS 4795.2 shall be applicable to valve sizes \geq DN 700 for one valve of each size and pressure class within the batch. This test shall be carried out prior to the Sealing Test specified in Clause 5.3.3 of AS 4795.2.

5.5.7 Seal on Body Valve Liner Quality Tests

For significant orders of 6 or more valves of size \geq DN600, with a vulcanized rubber liner, the following tests shall apply to a single valve rubber liner for each batch of valves supplied:

- a) Compression set test of rubber
- b) Durometer hardness test
- c) Adhesion test

The tests may be performed on either a valve liner or a sample piece that is manufactured as part of the same curing process event as the valve liner. The test results shall be within the manufacturer’s own specified tolerances and in accordance with the manufacturer’s quality plan.

5.6 Flanged Matching Piece and By-pass Pipework Tests

The flanged matching piece and by-pass pipework (**only applicable where specified**) shall be hydrostatically tested in accordance with the following:

5.6.1 Valve Seat Test (Test 1)

This test requires one side of the assembly to be pressurized in accordance with the following. Prior to pressurising the assembly close the butterfly valve, and the by-pass gate valve fitted to the downstream matching piece stub, with the other by-pass gate valve/s open. Pressurise the matching piece by-pass assembly to the relevant seat test pressure shown in Table 5.1 below. Repeat this test for the other side of the assembly. There shall be no valve seat leakage or leakage from the valve flanges. Refer to the flanged matching piece and by-pass assembly sketch for clarification.

5.6.2 Valve Flanges Test (Test 2)

This test requires the assembly to be tested as a whole. With all by-pass valves and the butterfly valve in the open position pressurise the assembly to the relevant ASTP shown in Table 5.1 below. Refer to the flanged matching piece and by-pass assembly sketch for clarification. There shall be no leakage from any of the valve flanges.

Table 5.1 – Flanged Matching Piece By-pass Assembly Test Pressures and Duration

Pressure Class PN	Seat Test Pressure ¹ kPa	Duration - Minutes
16	1760	5
21	2310	5
25	2750	5

NOTE Seat test pressure is 1.1 x AOP in accordance with Clause 5.3.3 of AS 4795.2.

5.7 Inspection and Test Documentation

5.7.1 ITP Documentation

For valves sizes \geq DN700 and where specified in Table 11.1 the Manufacturer shall prepare an inspection quality plan (referred to as ITP) identifying relevant hold points and reporting requirements applicable to manufacture of the valves. Inspection and test reports, which represent output documents from the ITP, shall be provided for valves in accordance with the following table, as a minimum.

Table 5.2 – Inspection and Test Documentation

AS 4795 Clause	SPS 261 Clause	Test Type	Reporting Requirements
Hold Point – Prior to Manufacturer			
3.1	-	Check drawing, materials, gearbox selection against purchase specification	R – Each valve size and type
-	-	Check Inspection and Test Documentation in accordance with this table	R – Each Order
	3.3.2	Check design calculation	R – where specified in Table 11.1 (Critical Valves)
Hold Point – Prior to Dispatch			
3.3.2	-	Visual inspection - structural and surface defects	I - Each valve
3.3.12	-	Correct position of disc in the open and closed positions	I - Each valve
5.3.1	5.5.1	Coating thickness and continuity	R - Each valve
5.3.2	5.5.2	Body strength test, 1.5 x AOP	R - Each valve
5.3.3	-	Sealing, 1.1 x AOP	R - Each valve (Note 1)
5.3.4	-	Reverse seating, 1.1 x AOP	R - Each valve
5.3.5	5.5.3	Disc strength, 1.5 x AOP (Note 2)	R - Each valve \geq DN 700
5.3.6	5.5.4	Free-end test	R - one valve of each size and pressure class within the batch for \geq DN 700
-	5.5.5	Gearbox strength test, 1.5 x maximum input torque (refer Note 2)	R - one valve of each size and pressure class within the batch for \geq DN 700
-	5.5.6	Operational test	R - one valve of each size and pressure class within the batch for \geq DN 700
-	5.5.7	Compression set test, durometer test and adhesion test for rubber.	R – One valve from each batch of \geq 6 valves of \geq DN600 diameter
-	5.6.1	Bypass pipework valve seat test, 1.1 x AOP	R - Each valve
-	5.6.2	Bypass pipework flange seat test to ASTP	R - Each valve
-	5.7	Final ITP / Documentation check and valve inspection	R - Each valve

AS 4795 Clause	SPS 261 Clause	Test Type	Reporting Requirements
6.1	6.1.1, 6.1.2	Marking	R - Each valve
6.2	6.1.3	Direction of closure of handwheels and caps	R - Each valve

LEGEND: I – Inspection – Manufacturer Internal Quality Assurance;
 R – Reporting requirement to the Corporation

NOTES:

1. Seating and unseating torques for valves \geq DN 700 are to be recorded in the report.
2. This test may be waived subject to the Manufacturer providing documentary evidence of satisfactory completion of a previously identical test conducted for the Corporation.

5.7.2 Inspection and Test Reports

For the purposes of acceptance, each test report shall, as a minimum, bear the relevant Product item serial number and shall certify that the Product item has complied with the specified test requirements. Acceptance of the inspection and test reports shall only be deemed to be complete when the Officer has advised in writing to that effect. Separate test certificates shall be provided for all valve sizes \geq DN 700.

6 Marking and Packaging

Each Product shall be marked and packaged in accordance with Section 6: Marking and Packaging of AS 4795.2 except where varied in the following.

6.1 Marking

6.1.1 Body Markings

- (a) In addition to the requirements of Clause 6.1 of AS 4795.2 each valve shall be marked with the mass of valve in kilograms.
- (b) For extended spindle valves the Manufacturer shall permanently attach a separate corrosion resistant identification plate onto the body containing the following information:
 - Valve size DN;
 - Operator type e.g. BV (manual BV) or EBV (electrical BV);
 - Water Corporation Valve Number.

NOTE: This identification plate and a similar one attached to the enclosure tube are required to facilitate mating of the body to the correct enclosure tube and extended spindle assembly.

6.1.2 Enclosure Tube and Extended Spindle Assembly

The Manufacturer shall attach a separate identification plate onto the enclosure tube containing the following information:

- Valve size DN;
- Operator type e.g. BVS or BVH (manual BV spindle cap or BV handwheel) or EBV
- Water Corporation Valve Number.

6.1.3 Direction of Closure for Handwheels and Caps

Further to Clause 6.2 of AS 4795.2 handwheels and spindle caps shall be marked for anti-clockwise closing.

6.2 Packaging

6.2.1 General

Product shall be packaged with appropriate protection, which shall prevent damage or defects as a result of handling, storage or transportation. Flexible packaging material shall have a minimum expected life in outside storage conditions of 12 months from the date of delivery.

6.2.2 Identification Tag

Wherever requested in the Purchasing Schedule each Product item shall be identified using a weatherproof marking pen on a corrosion resistant metal identification tag securely wired to the Product in a conspicuous position using a galvanized tie wire with the following information:

- a) Material Master Record number (MMR)
- b) Contract number
- c) Purchase order number.

Where valves are ordered with extension spindles, both the valves and the spindles are to be tagged with matching identification numbers.

6.2.3 Marking of Packaging

Where requested in the Purchasing Schedule the Product shall be identified by marking on the outside of any protective packaging the same information as shown on the identification tag.

7 Manuals

7.1 Format and Language

Each valve shall be supplied complete with appropriate installation, operation and maintenance instructions or manuals, in clear diagrammatic and text format, in English. Manuals shall be available in hard and electronic form and shall be supplied as detailed in the Table 11.1 of this Specification.

7.2 Content

The manuals shall contain all the relevant information required to commission and maintain the Product in operational service, including the following:

- a) Details of Product features
- b) Operational adjustments
- c) Installation and commissioning instructions
- d) Preventative maintenance requirements and intervals
- e) Testing procedures
- f) Trouble shooting guidelines
- g) Complete list of parts and associated exploded views or sectional diagrams and reference part numbers.

8 Spare Parts and Special Tools

8.1 Spare Parts

8.1.1 Interchangeability

All spare parts shall be interchangeable for a Manufacturer's Product of the same size and model.

8.1.2 Availability

Spare parts and servicing facilities for the product shall be readily available in Western Australia.

8.2 Special Tools

Any special tools required for service and maintenance of the Product shall be supplied.

9 Transportation, Handling and Storage

9.1 General

Transportation, handling and storage facilities shall be designed to prevent Product damage or defects and to maintain Product free of deleterious matter. Product shall not be dropped off elevated vehicle platforms or sites. Mechanical handling equipment shall be in accordance with AS 2550.1, AS 2550.3, AS 2550.5 and AS 2550.11 and shall be appropriate to the loads to be lifted. Manual handling shall be in accordance with the National Standard for Manual Handling and the National Code of Practice for Manual Handling, published by National Occupational Health and Safety Commission, Australia. Product restraint during transportation shall be in accordance with Load Restraint Guide—Guidelines for Safe Carriage of Loads on Road Vehicles, published jointly by the Federal Office of Road Safety and the National Road Transport Commission, Australia.

NOTE: Where wire ropes or chains are used for loading and unloading, they should not come into direct contact with Product. Lifting elements in direct contact with Product should be of a non-abrasive design e.g. elastomeric or fabric webbing straps. During transportation, Product restraints should be checked for tension at regular intervals of travel and should not be released until the transporting vehicle is resting in a secure stable disposition on level ground.

9.2 Preservation of Product in Storage

Product shall be stored in original Product packaging in accordance with the published requirements of the Manufacturer, prior to installation. Sensitive component materials shall be protected from extended exposure to direct sunlight and high temperatures e.g. elastomeric components shall be stored in accordance with the general principles of AS 1646 Clause 6. Designated Product storage areas shall be of sufficient size to accommodate Product deliveries and shall be flat, reasonably level and free of combustible vegetation, sharp stones or projections that could cause Product damage or defects.

10 Quality Assurance

10.1 Certification

10.1.1 Certification of Product

Wherever this Specification requires compliance with nominated Product and test Standards, conformance shall be certified by means of a Certification Scheme, conducted by a Certification Body. Each Certificate shall expressly attest compliance of all Product items with the nominated Standards. Wherever specified, Certificates shall be submitted to the Officer nominated for this purpose. Product shall be marked in accordance with the requirements of the Certification Body.

NOTE: Compliance of Product including related accessories and services with nominated Standards and specified requirements may be verified by means of a Product Verification Report provided by a Product Assessor. The Product Verification Report should identify all relevant Certificates of Product compliance, duly issued in accordance with Certification Scheme rules.

10.1.2 Quality System

The processes for manufacture, testing, supply, transportation, handling, delivery and storage of Product to be supplied in accordance with this Specification shall form part of a documented Quality System. The System shall be certified by a Certification Body as complying with the requirements of AS/NZS ISO 9001 and shall provide for identification and traceability, control of production and delivery to the specified destination, customer verification and control of documents and records.

10.1.3 Product Re-verification

Product compliance with the Specification shall be subject to re-verification by a Product Assessor when, during the agreed Product supply period, there occurs any:

- a) Substantive change in Product design, material formulation or performance
- b) Product failure to perform in operational service to the nominated performance specification.

Re-verification shall require the issue of a new or supplementary Product Verification Report. Product components and test outcomes that are not significantly affected by the Product change or failure may be excluded from the scope of re-verification, provided that these outcomes have already been reported in a current valid Product Verification Report that is acceptable to the Corporation.

Wherever the requirements of the Specification apply to a Product supply period in excess of three years, continuing acceptance of Product shall be subject to re-verification. The purpose of re-verification shall be to confirm the continuing compliance of Product quality and production control processes with the requirements of the Specification

10.2 Compliance and Acceptance

10.2.1 Means of Demonstrating Compliance

Compliance with this Specification shall be demonstrated by means of Product Appraisal and issue by a Product Assessor of a Product Verification Report that confirms compliance. Otherwise, Product shall be deemed non-compliant and ineligible for registration as Product authorized for use in Corporation infrastructure.

NOTES:

1. Where a project includes design work including Product design, Product Appraisal may form part of the project design review process and the Product Assessor may be a member of the project design review team.
2. A Product Verification Report should verify the extent of compliance with the Specification including all relevant 'Technical Compliance Schedule' Appendices and the currency of a Certificate where relevant to the Product.

10.2.2 Acceptance Criteria

For acceptance, Product shall be supplied as specified in the Purchasing Schedule.

Prior to the implementation of any arrangement to supply Product, the Supplier shall, in accordance with specified requirements:

- a) Nominate applicable Product Warranty terms; and
- b) Provide documentary verification in the form of a current valid Certificate or Product Verification Report as appropriate to the Product; and
- c) Detail each element of Product that does not comply with the specified requirements together with the extent of non-compliance.

NOTE: Where the Specification includes Technical Compliance Schedules, the nature and extent of all non-compliances should be provided in accordance with the appropriate Schedules.

10.3 Non-compliant Product

10.3.1 General

Product whose design, workmanship or performance fails to conform to the specified requirements shall be clearly tagged and quarantined by the Supplier as non-compliant and shall be subject to rejection for return to and replacement by the Supplier.

Where the Specification includes a 'Technical Compliance Schedule', Product shall be deemed non-compliant except where a Supplier has demonstrated compliance in accordance with the requirements of the 'Technical Compliance Schedule' Appendices of the Specification.

10.3.2 Manufacturing Repairs (In-process)

Welding, the use of fillers and other repairs shall generally not be permissible on Product which is in the course of production. Repairs to custom-built Products such as axially-split pumps and large valves may be considered only if determined by the Corporation to be minor casting repair work in non-strategic locations. Accordingly, details of any defect which the Manufacturer considers can be repaired; together with details of proposed repair procedures shall be submitted in writing for determination by the Corporation.

The Manufacturer shall make provision in its production Quality System and in the appropriate inspection and test plans (ITPs) for sufficient hold points whenever casting defects are encountered. Production work on non-compliant components shall cease and repair work shall not commence until the following details have been confirmed by the Corporation in writing that:

- a) Repair of the non-compliant components in lieu of their replacement is acceptable; and
- b) Proposed repair procedures are acceptable; and
- c) Any proposal to vary the terms of the original Product Warranty as a consequence of the in-process repair is acceptable.

10.3.3 Product Warranty

The Supplier shall replace non-compliant Product with Product that conforms to the acceptance criteria or shall repair or rectify all faults, damage or losses caused by defective Product. Except as may otherwise be specified, the Product Warranty shall indemnify and keep indemnified the Corporation against all losses suffered by the Corporation as a result of non-compliant Product for a period no less than 24 months after Product delivery or 12 months after Product installation, whichever period elapses first.

10.3.4 Product Repair

All reasonable proposals for repair or remedy of defects will be considered, provided that each such proposal is accompanied by a methodology statement that accords with the performance objectives of this Specification, as determined by the Corporation. For acceptance, a proposal for repair or remedy of Product defects shall not void or otherwise diminish the provisions of the Product Warranty.

11 Appendix A: Project Specific Requirements (Normative)

11.1 General

Project specific information and requirements, generally not included elsewhere in this Strategic Product Specification shall apply as specified in the following Clauses. **The Purchaser/Designer should complete the following table to form part of the Purchasing Schedule particularly for larger more complex projects.**

11.2 Project Requirements

The following table details project specific requirements for the butterfly valves to be procured.

TABLE 11.1: SCHEDULE OF PROJECT TECHNICAL REQUIREMENTS

Item		Requirement / Value
Valve identifier/Description		
Application Type (A,B,C,D,E or F - Clause 1.1, Appendix D)		
Application	Shut-off	Yes/No
	Regulating	Yes/No
Valve seal type (Clause 3.2)		Seal on body
Nominal size DN		
Adjacent Pipe Size (Clause 3.3.5)		
Pressure class PN		
Maximum upstream pressure	kPa	
Maximum dynamic (surge) pressure	kPa	
Maximum pressure differential	kPa	
Maximum downstream pressure	kPa	
Maximum rated flow velocity	m/s	
Maximum emergency flow velocity	m/s	
Seawater or Brine Service		
Seawater / Brine Temperature		
Valve operation	Unidirectional or bi-direction sealing required	
	Frequency of operation	
	Lifetime cycles	
	Opening time	secs
	Closing time	secs
Flange standard compatibility e.g. AS 4087, EN 1092 etc. (Clause 3.3.4)		
Gearbox service rating (Note 1)	IP 67 for above ground or non-flooding pit, or	
	IP 68 for a pit subject to flooding or buried service	
Direction of rotation to close valve (Clause 3.4.2)		Anti-clockwise
Gearbox orientation facing downstream (Clause 3.4.3), (Note 2)		
Extended spindle required (Manual/electric actuator) – (Clause 3.5)		Yes/No

Extended spindle distance from valve centerline to top of spindle cap (Note 3), handwheel or electric actuator (Note 4) mm		
Torque limiting device and remote position indicator required (manual/electric actuator) – (Clause 3.4.4, 3.5.1, 3.5.2)		Yes/No
Actuator type	Manual	Yes/No
	Handwheel	Yes/No
	Spindle cap	Yes/No
	Electric	Yes/No
	Pneumatic	Yes/No
	Hydraulic	Yes/No
Lockout devices (Clause 3.7)	Spindle cap (Clause 3.7.1, Appendix E)	Yes/No
	Handwheel	Yes/No
	Electric actuator	Yes/No
Flanged matching piece and by-pass pipework required (Clause 3.8), (Note 5)		Yes/No
Support feet required		Yes/No
Witness testing required		Yes/No
Prior notification period to appoint testing officer and arrange travel approvals (Clause 5.2), (Note 7) days		
Disc strength test required (Clause 5.5.3)		Yes/No
Free end test required (Clause 5.5.4)		Yes/No
Gearbox strength type test required (Clause 5.5.5)		Yes/No
Operational test required (Clause 5.5.6)		Yes/No
Flange matching piece and by-pass pipework tests (Clause 5.6)		Yes/No
Inspection and test documentation (Clause 5.7)	Inspection quality plan (ITP) required	Yes/No
	Valve test certificates required	Yes/No
Energy supply	Electrical (provide details e.g. 415V 3φ 50hz)	
	Pneumatic (provide details e.g. maximum and minimum pressures – kPa)	
Manuals (Section 7)	Electronic copy required	Yes/No
	Number of hard copies required	

NOTES:

1. Type of gearbox service:

IP 67 permitted above ground. IP 68 required below ground or flood prone pit

2. Gearbox orientation:

In accordance with Clause 3.4.3, location on the LHS (viewed from upstream) is preferred.

3. Calculation for extended spindle - buried service valve with spindle cap operator:

Provide the distance from valve centerline to finished surface level (FSL) minus 125 mm (to the top of spindle cap) e.g. FSL should be 125 mm ±25 mm above the spindle cap.

4. Calculation for extended spindle - buried or pit service valves with handwheel or electric actuator:

Provide the distance from valve centerline to finished surface level plus 900 mm (to the top of the manual handwheel or electric actuator handwheel) e.g. FSL should be 900 ±150 mm below the handwheel.

5. Flanged matching piece and by-pass pipework sketch:

Where applicable, the flanged matching piece and by-pass assembly sketch should be attached.

6. Minimum period required for notification of tests

As a minimum travel approval may take 7 days for travel within Australia or 3 weeks for overseas travel.

12 Appendix B: Technical Compliance Schedules (Normative)

12.1 Compliance Schedules

Suppliers shall demonstrate Product compliance with the Specification by completing Technical Compliance Schedules 1A and 1B as shown in **TABLE 12.1A** and **TABLE 12.1B** on an item by item basis. Table 12.1A refers to clauses contained in AS 4795 whereas Table 12.1B refers to additional clauses contained in SPS 261. For acceptance, the extent of scheduled technical item compliance shall be supported by verifiable documentary evidence. Each scheduled item nominates a Standard or Specification clause number with which the extent of Product compliance shall be demonstrated.

The Supplier shall denote compliance of an item by ticking the unshaded ‘Yes’ column appropriate to that item. Where Product does not comply with specified requirements, the Supplier shall tick the ‘No’ column and shall detail the reasons for non-conformance and any proposed alternatives in the ‘Comments’ column. The Supplier shall denote acceptance and understanding of a Specification clause by ticking the corresponding ‘Noted’ column wherever unshaded.

Failure to notify the Corporation of all non-compliant Product components, including the extent of non-compliance, may void an accepted offer to supply or may result in rectification of all non-compliant Product elements, at the Supplier’s cost.

TABLE 12.1A: AS 4795 -TECHNICAL COMPLIANCE SCHEDULE 1A

Butterfly Valves for Waterworks Purposes					
Section/Clause		Noted	Compliance		Comments
			Yes	No	
1. SCOPE AND GENERAL					
1.1	Scope				
1.2	Application				
1.3	Normative References				
1.4	Definitions				
1.5	Designation of Size				
1.6	Allowable Operating Pressures				
2. MATERIALS AND COMPONENTS					
2.1	General				
2.2	Corrosion-Resistant Materials				
2.3	Contamination of Water				
2.4	Elastomeric Components				
Table 2.1	Basic Material Requirements				
3. DESIGN					
3.1	General				
3.2	End Connections				
3.3	Component Design				
3.3.1	Welding and Post-weld Heat Treatment				
3.3.2	Castings				
3.3.3	External Drainage Holes				
3.3.4	Face-to-Face Dimensions				
3.3.5	Supports				
3.3.6	Seal Options				
3.3.7	Shaft				
3.3.8	Shaft Sealing and Ingress				
3.3.9	Shaft Bearings				
3.3.10	End Thrust				
3.3.11	Torque-Limiting Devices				
3.3.12	Position Indicator				
3.3.13	Lockout Devices				
3.4	Operation				
3.4.1	General				

3.4.2	Direction of Closure				
3.4.3	Spindle Cap Spindle extension and Key				
3.4.4	External Spindle Tube				
3.5	Gearboxes				
3.6	Lifting Devices				
3.7	Fasteners				
4. PROTECTIVE COATINGS					
4.1	General				
4.2	Components				
4.3	Continuous Immersion				
5. PERFORMANCE TESTS					
5.3	Production Tests				
5.3.1	Coating Test (Test 1)				
5.3.2	Body Strength Test (Test 2)				
5.3.3	Sealing Test (Test 3)				
5.3.4	Reverse Testing Test (Test 4)				
5.3.5	Disc Strength Test (Optional)				
5.3.6	Free End Test (Optional)				
5.3.7	Weld Deposit Seat Test (Test 5)				
6. MARKING AND PACKAGING					
6.1	Marking				
6.1.1	On Body of Valve				
6.1.2	Nameplate or Label				
6.1.3	Secondary Marking				
6.2	Direction of Closure for Handwheels and Caps				
6.3	Packaging				
6.3.1	General				
6.3.2	Buried Service Valves				

TABLE 12.1B: SPS 261 - TECHNICAL COMPLIANCE SCHEDULE 1B

Butterfly Valves for Waterworks Purposes					
Section/Clause	Noted	Compliance		Comments	
		Yes	No		
1. SCOPE AND GENERAL					
1.1	Scope				
1.2	Referenced Documents				
1.3	Definitions and Notation				
1.4	Designation of Size				
1.5	Allowable Operating Pressures and Flow Velocities				
2. MATERIALS AND COMPONENTS					
2.1	General				
2.2	Stainless Steel				
2.3	Valves for Brine / Seawater Applications				
2.3.1	Super Duplex				
2.3.2	Nickel				
2.3.3	Elastomeric Materials				
3. DESIGN & MANUFACTURE					
3.1	General				
3.2	Valve				
3.3	Design and Selection				
3.3.1	Mandatory Design Requirements				
3.3.2	Design Calculations				
3.3.3	Maximum Rated and Maximum Emergency Flow Velocities				
3.3.4	End Connections				
3.3.5	Adjacent Pipe Sizes				
3.3.6	Welding of Stainless Steel				
3.3.7	Face-to-Face Dimensions				
3.3.8	Lifting Eyebolts				
3.4	Gearbox				
3.4.1	Gearbox Selection				
3.4.2	Direction of Rotation				
3.4.3	Gearbox Orientation				
3.4.4	Gearbox End-Stop				
3.4.5	Gearbox IP Rating				

3.5	Extended Spindle and External Spindle Tube				
3.5.1	Torque-limiting Device				
3.5.2	Position Indicator				
3.6	Actuator				
3.7	Lockout Devices				
3.7.1	Spindle Cap				
3.7.2	Handwheel				
3.7.3	Electric Actuator				
3.8	Flanged Matching Piece and By-pass Pipework (Optional)				
4. PROTECTIVE COATING					
4.1	Valve				
5. PERFORMANCE TESTS					
5.1	General				
5.2	Notification of Testing				
5.3	Access to the Place of Manufacture				
5.4	Place of Manufacture other than WA				
5.5	Production Tests				
5.5.1	Coating Test				
5.5.2	Body Strength Test				
5.5.3	Disc Strength Test				
5.5.4	Free End Test				
5.5.5	Gearbox Strength Type Test				
5.5.6	Operational Test				
5.5.7	Seal on Body Valve Liner Tests				
5.6	Flanged Matching Piece and By-pass Pipework Tests				
5.6.1	Valve Seat Test (Test 1)				
5.6.2	Valve Flanges Test (Test 2)				
5.7	Inspection and Test Documentation				
5.7.1	ITP Documentation				
5.7.2	Inspection and Test Reports				
6. MARKING AND PACKAGING					
6.1	Marking				
6.1.1	Body Markings				
6.1.2	Enclosure Tube and Extended Spindle Assembly				
6.1.3	Direction of Closure for Handwheels and Caps				
6.2	Packaging				
6.2.1	General				
6.2.2	Identification Tag				
6.2.3	Marking of Packaging				
7. MANUALS					
7.1	Format and Language				
7.2	Content				
8. SPARE PARTS AND SPECIAL TOOLS					
8.1	Spare Parts				
8.1.1	Interchangeability				
8.1.2	Availability				
8.2	Special Tools				
9. TRANSPORTATION, HANDLING AND STORAGE					
9.1	General				
9.2	Preservation of Product in Storage				
10. QUALITY ASSURANCE					
10.1	Certification				
10.1.1	Certification of Product				
10.1.2	Quality System				
10.1.3	Product Re-verification				
10.2	Compliance and Acceptance				
10.2.1	Means of Demonstrating Compliance				
10.2.2	Acceptance Criteria				
10.3	Non-compliant Product				
10.3.1	General				
10.3.2	Manufacturing Repairs (In-process)				
10.3.3	Product Warranty				
10.3.4	Product Repair				
11. APPENDIX A					
11.1	General				

11.2	Project Requirements				
12. APPENDIX B					
12.1	Compliance Schedules				
13. APPENDIX C					
13.1	Material Master Records				
14. APPENDIX D, E					
14.1	Valve Application Types				
14.2	Valve Locking Device				

Name of Supplier:

Signature:

Date:

The Supplier shall provide the information required by Technical Compliance Schedule 2 as shown in **TABLE 12.2**.

TABLE 12.2: TECHNICAL COMPLIANCE SCHEDULE 2

Butterfly Valves for Waterworks Purposes		
1.	SUPPLIER'S REPRESENTATIVE	
1.1	Full name	
1.2	Postal address	
1.3	Facsimile number	
1.4	Email address	
1.5	Phone number	
1.6	Mobile number	
2.	QUALITY ASSURANCE	
2.1	Extent of third party accreditation of Supplier	
2.2	Extent of third party accreditation of Manufacturer	
2.3	Details of certificates and verification reports attached	(Yes/No)
3.	TECHNICAL INFORMATION	
3.1	Performance information supplied	(Yes/No)
3.2	Details of the Manufacturer's inspection and testing plans supplied.	(Yes/No)
3.3	Valve, extended spindle and actuator drawings supplied	(Yes/No)
3.4	Table or curve for lifetime cycles versus maximum output torque provided	(Yes/No)
3.5	Details of servicing facilities in Perth supplied.	(Yes/No)
3.6	Additional pamphlets and drawings in conjunction with the technical literature supplied.	(Yes/No)
4.	VALVE DESIGN AND MANUFACTURE	
4.1	Manufacturer's name	
4.2	Place of manufacture	
4.3	Valve model	
4.4	Valve seal type e.g. seal-on-body	
4.5	Size (DN)	
4.6	Valve(s) rated for full end-of-line service without restraint at the free end	(Yes/No)
4.7	Flanges, valve body and components are all the same rating	(Yes/No)
4.8	Valve lifetime design cycles	
4.9	Mass of valve (with actuator as applicable)	kg
4.10	Flange standard compatibility and PN rating	
4.11	Valve gearbox IP rating	
4.12	Actuator type – Manual: cap or handwheel; electric; hydraulic	
4.13	Valve AOP	kPa
4.14	Valve maximum rated flow velocity	m/s
4.15	Valve maximum emergency flow velocity	m/s
4.16	Valve maximum differential pressure	kPa
4.17	Coating test applied voltage	V
4.18	Body strength test	kPa
4.19	Sealing test	kPa
4.20	Disc strength test	kPa
4.21	Free end test	kPa
4.22	Gearbox strength type test	Nm
4.23	Operational test	No of cycles
4.24	Matching piece by-pass assembly valve seat test (Test 1)	kPa
4.25	Matching piece by-pass assembly valve flanges test (Test 2).	kPa
4.26	Flow coefficient (max opening)	Kv
4.27	Valve unseating torque	Nm

4.28	Published maximum operating torque (PMOT)	Nm			
5.0	VALVE MATERIALS		MATERIAL	STANDARD	GRADE
5.1	Body				
5.2	Disc				
5.3	Shaft				
5.4	Shaft bearings				
5.5	Body liner				
5.6	Seals and O-rings				
5.7	Disc pins				
5.8	External fasteners				
5.9	Extended input spindle				
5.10	External spindle tube				
5.11	Coating – body				
5.12	Coating - extended input spindle tube				
5.13	Alternative materials offered are equivalent or better than materials specified in Table 2.1 of AS 4795.2		(Yes/No or N/A)		
6.0	GEARBOX (Primary)				
6.1	Manufacturer				
6.2	Model/Type				
6.3	Gearing type				
6.4	Published maximum output torque	Nm			
6.5	Maximum Input torque for valve (PMOT)	Nm			
6.6	Torque rating $\geq 150\%$ of valve PMOT	Nm			
6.7	Torque rating of gearbox travel stops	Nm			
6.8	Location of travel stops e.g. input shaft or quadrant				
6.9	Gear ratio				
6.10	Efficiency				
6.11	Mechanical advantage				
6.12	Type of gear reduction e.g. worm/quadrant, spur, etc.				
6.13	Stroke (degrees of travel e.g. -5° to 95°)				
6.14	Enclosure rating (IP rating to AS 60529)				
6.15	Mounting flange standard e.g. ISO 5211				
6.16	Materials		MATERIALS	STANDARD	GRADE
	• Body and cover				
	• Shaft				
	• Quadrant				
	• Worm				
	• Bearing				
	• Fasteners				
	• Gaskets and O-rings				
	• Coating				
6.17	Lubricant				
6.18	Orientation				
7.0	GEARBOX (Secondary as required)				
7.1	Manufacturer				
7.2	Model/Type				
7.3	Gearing type				
7.4	Published maximum output torque (PMOT)	Nm			
7.5	Input torque for valve PMOT	Nm			
7.6	Torque rating is $\geq 150\%$ valve PMOT (for $\geq \text{DN } 700$)				
7.7	Gear ratio				
7.8	Efficiency				
7.9	Mechanical advantage				
7.10	Type of gear reduction e.g. worm/quadrant, spur etc.				
7.11	Stroke (degrees of travel e.g. -5° to 95°)				

7.12	Enclosure rating (IP rating to AS 60529)			
7.13	Mounting flange standard e.g. ISO 5211			
7.14	Materials	MATERIAL	STANDARD	GRADE
	• Body and cover			
	• Shaft			
	• Quadrant			
	• Worm			
	• Bearing type and material			
	• Fasteners			
	• Gaskets and O-rings			
	• Coating			
7.15	Lubricant			
7.16	Orientation			
7.17	Wrapping material (buried service valve gearboxes)			
8.0	INPUT AT HANDWHEEL/CAP			
8.1	Number of handwheel or spindle cap turns from valve fully open to fully closed			
8.2	Direction of handwheel rotation to close valve (from above)			
8.3	Spindle cap method of accommodating valve locking device			
9.0	POSITION INDICATOR			
9.1	Manufacturer			
9.2	Model			
9.3	Scale Marking e.g. fully open, intermediate and fully closed			
9.4	Enclosure rating in accordance with AS 60529			
10.0	TORQUE LIMITING DEVICE			
10.1	Manufacturer			
10.2	Model			
10.3	Torque setting			
10.4	Materials of construction e.g. corrosion resistant			
11.0	ELECTRIC ACTUATOR			
11.1	Manufacturer			
11.2	Model			
11.3	Enclosure protection rating, IP			
11.4	Motor size		kW	
11.5	Motor full load current		A	
11.6	Motor rated voltage		V	
11.7	Motor starting current		A	
11.8	Motor efficiency – Full load		%	
11.9	Power factor – Full load			
11.10	Motor duty (Number of starts per hour)			
11.11	Operating time valve open to valve closed		secs	

Name of Supplier:

.....

Signature:

Date:

.....

13 Appendix C: Material Master Records (Informative)

The following Material Master Records (MMR) comprise Corporation catalogue numbers that are unique to the particular products described for the purposes of Corporation activities or work.

SUMMARY OF MMR OPTIONS FOR DOUBLE FLANGED BUTTERFLY VALVES – SPS 261

Type	Above or Below Ground	Manual or Electric	Lever, Cap or Handwheel	Extended Spindle	Position Indicator	Torque Limiter
A	Above ground	Manual	Lever ¹ , Handwheel	-	-	-
B	Above ground	Manual	Cap or Handwheel	Yes	Yes	≥ DN 700
C	Below ground	Manual	Cap or Handwheel	Yes	Yes	≥ DN 700
D	Above ground	Electric	-	-	-	-
E	Above ground	Electric	-	Yes	-	-
F	Below ground	Electric	-	Yes	-	-

MMR	PURCHASE ORDER LONG TEXT – PN16, DN100
19580	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19581	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19582	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19583	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19584	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19585	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN150
19586	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19587	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19588	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19589	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19590	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19591	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN200
19592	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19593	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19594	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19595	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19596	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19597	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN250
19598	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19599	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19600	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19601	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19602	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19603	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN300
19604	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19605	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19606	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19607	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19608	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19609	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2 Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN400
19610	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19611	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19612	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19613	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19614	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19615	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN500
19622	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19623	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19624	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19625	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19626	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19627	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN600
19628	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19629	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19630	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19631	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19632	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19633	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 3. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN700
19634	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19635	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19636	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19637	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19638	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19639	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN800
19640	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19641	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19642	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19643	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19644	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19645	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN900
19646	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19647	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19648	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 3. Tag Extension Spindle and Outer Tube with Valve Number.
19649	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19650	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19651	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length after when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN1000
19652	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19653	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19654	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19655	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19656	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19657	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN16, DN1200
19658	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19659	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19660	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19661	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19662	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19663	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN16; Double Flanged to AS 4087 Figure B5; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length after Valve Installation; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN21, DN100
19664	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19665	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19666	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19667	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Coated to Water Corporation Specification PA Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19668	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19669	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN21, DN150
19670	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19671	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19672	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19673	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Coated to Water Corporation Specification PA Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19674	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19675	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN21, DN200
19676	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19677	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19678	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19679	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Coated to Water Corporation Specification PA Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19680	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19681	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 3. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN21, DN250
19682	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19683	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19684	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19685	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Coated to Water Corporation Specification PA Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19686	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19687	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN21, DN300
19688	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19689	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19690	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19691	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19692	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19693	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN21, DN400
19694	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19695	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19696	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19697	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19698	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19699	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN21, DN500
19706	Valve, Butterfly; Ductile Cast Iron Body; DnN500; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19707	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19708	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19709	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19710	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19711	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN21, DN600
19712	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19713	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19714	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19715	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19716	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19717	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN21, DN700
19718	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19719	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19720	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19721	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19722	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19723	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN21, DN800
19724	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19725	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19726	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19727	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19728	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19729	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN21, DN900
19730	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19731	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19732	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19733	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19734	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19735	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN21, DN1000
19736	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19737	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19738	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19739	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19740	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19741	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 3. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN21, DN1200
19742	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
19743	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19744	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19745	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
19746	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
19747	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - ACCESSORIES & SPECIALS
19802	Extension Shaft; Stainless Steel, Type 316; 0 to 3M Long; To Suit Manual/Electric Butterfly Valve; C/W Outer Tube Assembly. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle & Outer Tube with Valve Number.
20934	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN35; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Air Valve Isolation for Waterworks Purposes.
20935	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B5; Manual Operation; Anti-Clockwise Closing; Type A; C/W Stainless Steel Lever Operator with Padlock Tab; Above Ground Use for Air Valve Isolation for Waterworks Purposes.
68060	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Bi-Directional Valve Sealing; Manual Operation; Anti-Clockwise Closing; Type C; IP68 Rated Gearbox; Gearbox Bare Shaft with no Spindle Arrangement; Below Ground Use for Waterworks Purposes. To be Manufactured in Accordance with Water Corporation SPS261 and Clause 11 (Appendix A - Project Specific Requirements). Note: For IWSS and Aroona Critical Valve Spares Use Only.
68061	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Bi-Directional Valve Sealing; Manual Operation; Anti-Clockwise Closing; Type C; IP68 Rated Gearbox; Gearbox Bare Shaft with no Spindle Arrangement; Below Ground Use for Waterworks Purposes. To be Manufactured in Accordance with Water Corporation SPS261 and Clause 11 (Appendix A - Project Specific Requirements). Note: For IWSS and Aroona Critical Valve Spares Use Only.
68062	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Bi-Directional Valve Sealing; Manual Operation; Anti-Clockwise Closing; Type C; IP68 Rated Gearbox; Gearbox Bare Shaft with no Spindle Arrangement; Below Ground Use for Waterworks Purposes. To be Manufactured in Accordance with Water Corporation SPS261 and Clause 11 (Appendix A - Project Specific Requirements). Note: For IWSS and Aroona Critical Valve Spares Use Only.
68063	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Bi-Directional Valve Sealing; Manual Operation; Anti-Clockwise Closing; Type C; IP68 Rated Gearbox; Gearbox Bare Shaft with no Spindle Arrangement; Below Ground Use for Waterworks Purposes. To be Manufactured in Accordance with Water Corporation SPS261 and Clause 11 (Appendix A - Project Specific Requirements). Note: For IWSS and Aroona Critical Valve Spares Use Only.
68064	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Bi-Directional Valve Sealing; Manual Operation; Anti-Clockwise Closing; Type C; IP68 Rated Gearbox; Gearbox Bare Shaft with no Spindle Arrangement; Below Ground Use for Waterworks Purposes. To be Manufactured in Accordance with Water Corporation SPS261 and Clause 11 (Appendix A - Project Specific Requirements). Note: For IWSS and Aroona Critical Valve Spares Use Only.
68065	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Bi-Directional Valve Sealing; Manual Operation; Anti-Clockwise Closing; Type C; IP68 Rated Gearbox; Gearbox Bare Shaft with no Spindle Arrangement; Below Ground Use for Waterworks Purposes. To be Manufactured in Accordance with Water Corporation SPS261 and Clause 11 (Appendix A - Project Specific Requirements). Note: For IWSS and Aroona Critical Valve Spares Use Only.
68066	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Bi-Directional Valve Sealing; Manual Operation; Anti-Clockwise Closing; Type C; IP68 Rated Gearbox; Gearbox Bare Shaft with no Spindle Arrangement; Below Ground Use for Waterworks Purposes. To be Manufactured in Accordance with Water Corporation SPS261 and Clause 11 (Appendix A - Project Specific Requirements). Note: For IWSS and Aroona Critical Valve Spares Use Only.
68067	Valve, Butterfly; Ductile Cast Iron Body; DN1400; Resilient Seal on Body; PN21; Double Flanged to AS 4087 Figure B3 Dimensions; Bi-Directional Valve Sealing; Manual Operation; Anti-Clockwise Closing; Type C; IP68 Rated Gearbox; Gearbox Bare Shaft with no Spindle Arrangement; Below Ground Use for Waterworks Purposes. To be Manufactured in Accordance with Water Corporation SPS261 and Clause 11 (Appendix A - Project Specific Requirements). Note: For IWSS and Aroona Critical Valve Spares Use Only.

MMR	PURCHASE ORDER LONG TEXT PN25, DN100
21414	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21415	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21416	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21417	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21418	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21419	Valve, Butterfly; Ductile Cast Iron Body; DN100; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN25, DN150
21420	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21421	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21422	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21423	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21424	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21425	Valve, Butterfly; Ductile Cast Iron Body; DN150; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT - PN25, DN200
21426	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21427	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle & Outer Tube with Valve Number.
21428	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21429	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21430	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21431	Valve, Butterfly; Ductile Cast Iron Body; DN200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN25, DN250
21432	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21433	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21434	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21435	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21436	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21437	Valve, Butterfly; Ductile Cast Iron Body; DN250; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN25, DN300
21438	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21501	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21439	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21440	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21441	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21442	Valve, Butterfly; Ductile Cast Iron Body; DN300; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN25, DN400
21443	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21444	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21445	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21446	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21447	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21448	Valve, Butterfly; Ductile Cast Iron Body; DN400; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN25, DN450 (Non Preferred Size)
21449	Valve, Butterfly; Ductile Cast Iron Body; DN450; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21450	Valve, Butterfly; Ductile Cast Iron Body; DN450; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21451	Valve, Butterfly; Ductile Cast Iron Body; DN450; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21452	Valve, Butterfly; Ductile Cast Iron Body; DN450; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21453	Valve, Butterfly; Ductile Cast Iron Body; DN450; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21454	Valve, Butterfly; Ductile Cast Iron Body; DN450; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT PN25, DN500
21455	Valve, Butterfly; Ductile Cast Iron Body; DnN500; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21456	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21457	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21458	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21459	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21460	Valve, Butterfly; Ductile Cast Iron Body; DN500; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN25, DN600
21461	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21462	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21463	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21464	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21465	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21466	Valve, Butterfly; Ductile Cast Iron Body; DN600; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN25, DN700
21467	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21468	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21469	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21470	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21471	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21472	Valve, Butterfly; Ductile Cast Iron Body; DN700; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN25, DN800
21473	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21474	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21475	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21476	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21477	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21478	Valve, Butterfly; Ductile Cast Iron Body; DN800; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN25, DN900
21479	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21480	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21481	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21482	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21483	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21484	Valve, Butterfly; Ductile Cast Iron Body; DN900; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 3. Tag Extension Spindle and Outer Tube with Valve Number.

MMR	PURCHASE ORDER LONG TEXT – PN25, DN1000
21485	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21486	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21487	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21488	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21489	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21490	Valve, Butterfly; Ductile Cast Iron Body; DN1000; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

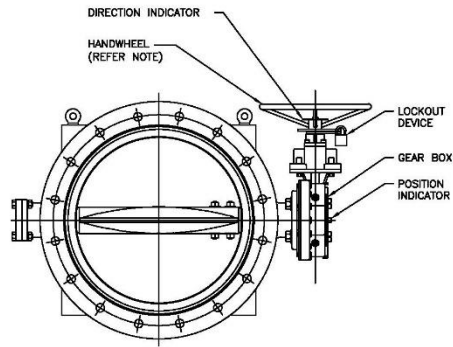
MMR	PURCHASE ORDER LONG TEXT – PN25, DN1200
21491	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type A; C/W Gear Operator, Handwheel; Above Ground Use for Waterworks Purposes.
21492	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type B; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21493	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Manual Operation; Anti-Clockwise Closing; Type C; C/W Stainless Steel Extended Spindle and Outer Tube Assembly with Position Indicator, Torque Limiter and Cast Iron Cap or Handwheel; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length and Cap or Handwheel when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21494	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type D; Above Ground Use for Waterworks Purposes.
21495	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type E; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Above Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.
21496	Valve, Butterfly; Ductile Cast Iron Body; DN1200; Resilient Seal on Body; PN25; Double Flanged to EN1092; Electrical Operation; Anti-Clockwise Closing; Type F; C/W Stainless Steel Extended Spindle and Outer Tube Assembly; Below Ground Use for Waterworks Purposes. Notes: 1. Specify Spindle Length when Ordering; 2. Tag Extension Spindle and Outer Tube with Valve Number.

14 Appendix D and E: Drawings (Informative)

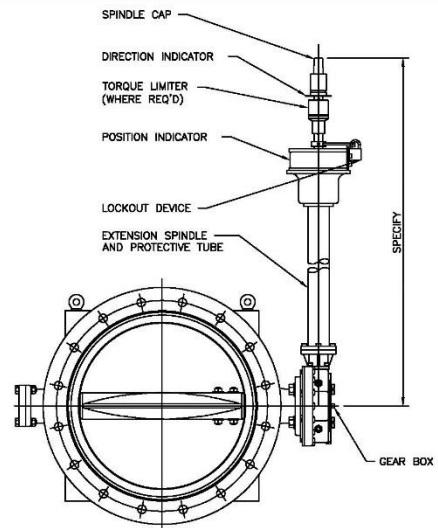
14.1 Appendix D – Valve application Types

14.2 Appendix E – Valve locking device

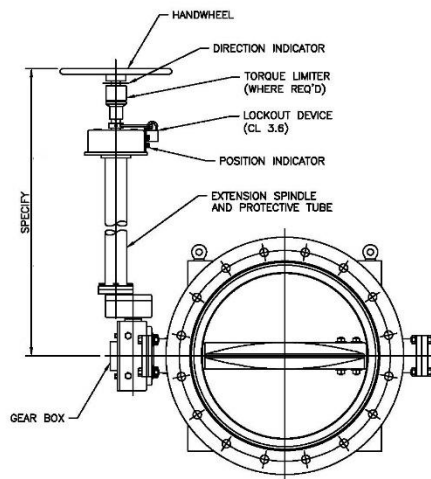
APPENDIX D



OPTION - TYPE A
 ABOVE GROUND - LEVER/HANDWHEEL

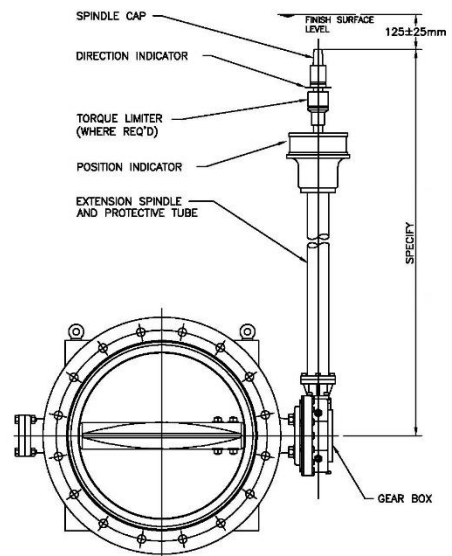


OPTION - TYPE B
 ABOVE GROUND - SPINDLE CAP
 & EXTENSION SPINDLE



NOTE:
 1. CLAUSE REFERENCE RELATED TO SPS 261

OPTION - TYPE B
 ABOVE GROUND - HANDWHEEL
 & EXTENSION SPINDLE

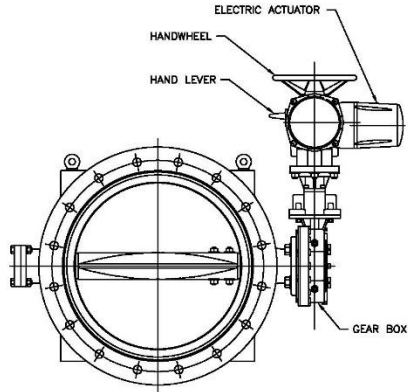


NOTE.
 VALVE POSITION INDICATOR HOUSING BY OTHERS

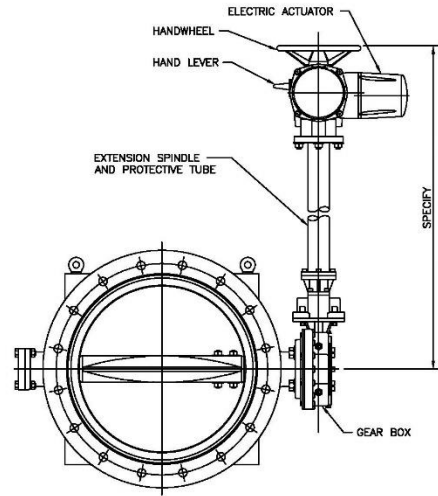
OPTION - TYPE C
 BELOW GROUND - SPINDLE CAP
 & EXTENSION SPINDLE

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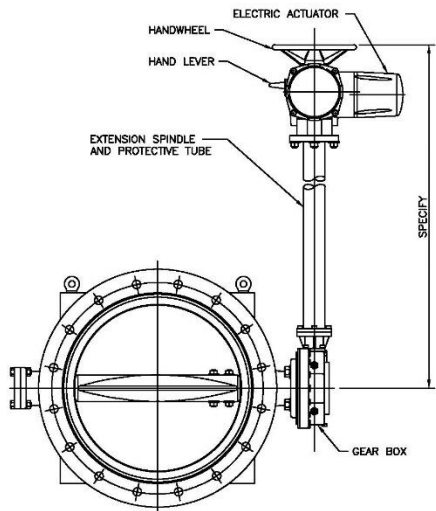
APPENDIX D (CONT'D)



OPTION – TYPE D
 ABOVE GROUND – ELECTRIC ACTUATOR



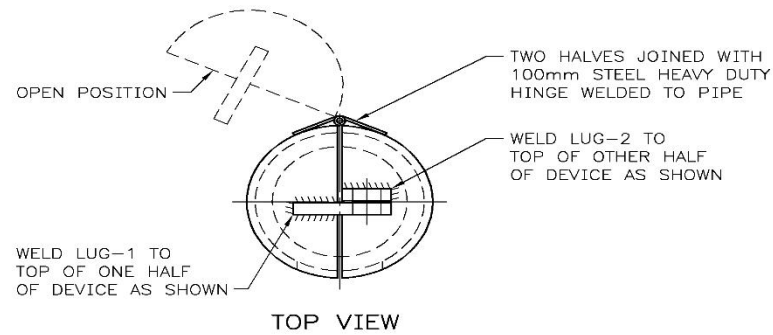
OPTION – TYPE E
 ABOVE GROUND – ELECTRIC ACTUATOR &
 EXTENSION SPINDLE



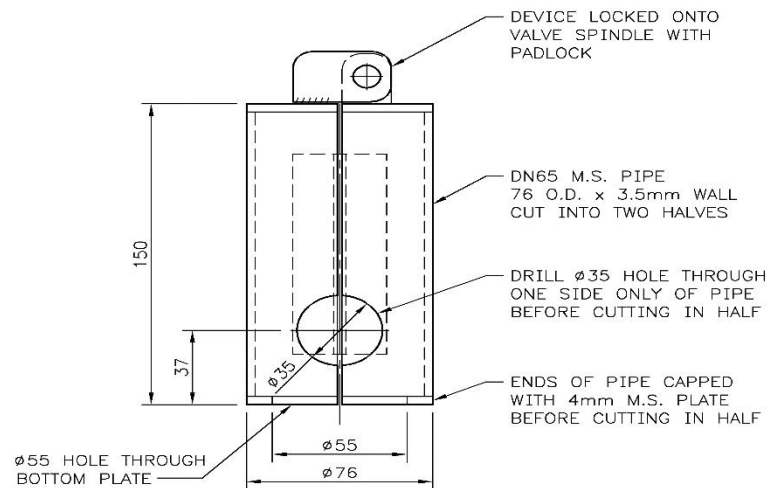
OPTION – TYPE F
 BELOW GROUND – ELECTRIC ACTUATOR &
 EXTENSION SPINDLE

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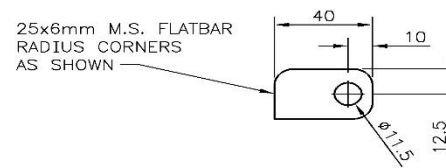
APPENDIX E



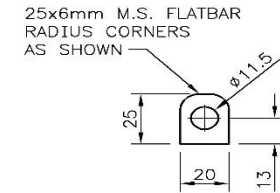
TOP VIEW



SIDE VIEW



LUG-1 DETAIL



LUG-2 DETAIL

VALVE LOCKING DEVICE SHALL BE USED IN CONJUNCTION WITH WATER CORPORATION LOCK AND TAG PROCEDURE "WC-OSH (109)"

GENERAL NOTES

1. UNLESS OTHERWISE NOTED ALL DIMENSIONS ARE IN MILLIMETRES.
2. PAINT WITH INORGANIC ZINC SILICATE AFTER MANUFACTURE.

THIS DRAWING IS DERIVED FROM DRAWING EG20-11-2

END OF DOCUMENT