

Daemco Australia Pty Ltd

PRODUCT APPRAISAL REPORT 1806

Valve Spindle Extensions

**AS/NZS 2638.1:2011 Gate valves for waterworks purposes -
Metal seated**

**AS/NZS 2638.2:2011 Gate valves for waterworks purposes -
Resilient seated**

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WATER SERVICES
ASSOCIATION OF AUSTRALIA

Document History

The following information indicates the changes made to this document.

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Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	10 April 2018
WSAA Expert Panel	WSAA	10 April 2018
Peter Pittard, WSAA Consultant	WSAA	19 March 2018
Carl Radford, Product Appraisal Manager	WSAA	11 April 2018

Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak industry body representing the urban water industry. Our members provide water and sewerage services to over 20 million customers in Australia and New Zealand and many of Australia's largest industrial and commercial enterprises.

Based around our vision of 'customer driven, enriching life', WSAA facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry. We are proud of the collegiate attitude of our members which has led to industry-wide approaches to national water issues.

WSAA can demonstrate success in the standardisation of industry performance monitoring and benchmarking, as well as many research outcomes of national significance. The WSAA Executive retains strong links with policy makers and legislative bodies and their influencers, to monitor emerging issues of importance to the urban water industry.

WSAA was formed in 1995 as a non-profit organisation to foster the exchange of information between industry, government and the community, and to promote sustainable water resource management.

The urban water industry is committed to anchoring its services to customers' values, and to enrich communities where water services have broad economic, environmental and social values. In line with this our main activities focus on four areas:

1. influencing national and state policies on the provision of urban water services and sustainable water resource management
2. promoting debate on environmentally sustainable development and management of water resources and the community health requirements of public water supplies
3. improving industry performance and establishing benchmarks and industry leading practices for water service processes; and
4. fostering the exchange of information on education, training, research, water and wastewater management and treatment and other matters of common interest.

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1 EXECUTIVE SUMMARY

Daemco Australia Pty Ltd, a private company established in 2014, is an original design manufacturer with research and development capabilities, specialising in the water industry.

Dalian Reliable Industrial Co Ltd (DRIC), located in Dalian, Liaoning Province, Peoples Republic of China, manufactures Daemco's valve spindle extensions.

This appraisal is for a range of valve spindle extensions in lengths from 150mm to 1500mm, suitable for operation on gate valves up to and including DN 600. The solid integrally cast ductile iron valve spindle extensions are 36mm in diameter for all lengths.

The integrally cast ductile iron valve spindle extensions are manufactured to comply with AS/NZS 2638.1:2011 *Gate valves for waterworks purposes – Metal seated* and AS/NZS 2638.2:2011 *Gate valves for waterworks purposes – Resilient Seated*.

Each valve spindle extension is fitted with a M10 Grade 316 stainless steel grub screw to allow for retention on to the spindle cap.

The valve spindle extensions have a hot dip zinc galvanised coating.

Daemco and DRIC both have ISO 9001 Quality Management System licences.

Daemco valve spindle extensions in lengths from 150mm to 1500mm are deemed to comply with WSA PS-262 *Extension Spindles for Gate Valves* and considered as 'fit for purpose' for use with gate valves up to and including DN600.

1.1 Recommendations

It is recommended that WSAA members, subject to any specific requirements of the member, accept or authorise the Daemco Valve Spindle Extensions as detailed in this report for use with gate valves up to DN 600 in waterworks applications, provided they are installed in accordance with WSAA Codes and the manufacturer's requirements, where specified.

2 THE APPLICANT

2.1 The Supplier

Daemco Australia Pty Ltd, a private company established in December 2014, is an original design manufacturer with research and development capabilities, specialising in the water industry.

The Executive Director of Daemco, Anthony Favero, has been actively involved in the Australian water industry since 2006 having been engaged in quality, training, project management, manufacturing and marketing roles, including PVC pipe manufacture.

Daemco manufactures and distributes a range of products for the water industry that includes resilient seated gate valves, unrestrained mechanical couplings, ductile iron restrained couplings and flange adaptors for PE pipe and various other appurtenances. The Daemco range of products is distributed through established Australia resellers.

For more information, see www.daemco.com.au

2.2 The Manufacturer

DRIC is a manufacturer and trading group specialising in the export of ferrous and non-ferrous metal castings and forgings. Its products include water valves and fittings, power line fittings, fire-fighting equipment, motor and pump parts, automotive and machine parts. DRIC has been engaged in exporting products to Europe and America since 1994 and also exports to countries including Italy, Germany, Spain, Sweden, Colombia, Brazil, Russia, UAE, Saudi Arabia, Australia and New Zealand.

The company designs and manufactures a wide range of products that include valves for the building services, fire protection, industrial and water market segments.

The company has a quality management system licensed to ISO 9001 and holds various product certifications including WRAS, FM and UL for its export range of products. It has three manufacturing facilities, with differing capabilities, employing more than 200 people.

3 THE PRODUCT

The Daemco range of valve spindle extensions incorporating lengths of 150, 225, 300, 375, 450, 600, 750, 900, 1000, 1200 and 1500mm are suitable for operation on gate valves up to and including DN 600. The solid integrally cast ductile iron valve spindle extensions are 36mm in diameter for all lengths.

Traditionally valve extension spindles are manufactured by welding or pinning forged or cast end-pieces onto a tube or shaft. Where the components are not corrosion resistant to soil and ground water, they are required to be protected with a suitable coating. The integrity of any welding is considered to be critical in allaying any operator safety concerns.

The Daemco range of integrally cast valve spindle extensions provides the benefit of a single piece solid product with no joins or welds.

The valve spindle extensions have a hot dip zinc galvanised coating.

Each spindle extension is fitted with a M10 Grade 316 stainless steel grub screw to allow for retention on to the spindle cap.



FIGURE 1 DAEMCO VALVE EXTENSION SPINDLES

4 SCOPE OF THE APPRAISAL

This Appraisal considers 150, 225, 300, 375, 450, 600, 750, 900, 1000, 1200 and 1500mm long Valve Spindle Extensions for use with gate valves up to and including DN 600, manufactured from integrally cast ductile iron.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA product appraisal network accepts Valve Spindle Extensions manufactured in compliance with AS/NZS 2638.1:2011 *Gate valves for waterworks purposes-Metal seated* and AS/NZS 2638.2 *Gate valves for waterworks purposes-Resilient seated*. The requirements relating to valve spindle extensions is identical in both standards and reference within this appraisal to AS/NZS 2638 is intended to refer to both Part 1 and Part 2.

The manufacturer is generally expected to have a production management and control system that has been duly accredited in accordance with AS/NZS ISO 9001.

5.2 Performance Requirements

Daemco Valve Spindle Extensions have been appraised for compliance with AS/NZS 2638 *Gate valves for waterworks purposes*.

Appraisal criteria are also determined by the WSAA Product Appraisal Technical Advisory Group and regularly reviewed to ensure that the criteria reflect the requirements of WSAA members.

The following Product Specification is also relevant to this application:

WSA PS-262 *Extension Spindles for Gate Valves*

Copies of the above Product Specification can be found in Appendix C or downloaded from the WSAA website.

6 COMPLIANCE WITH APPRAISAL CRITERIA

6.1 Compliance with Quality Assurance Requirements

The following quality assurance certificates have been submitted by Daemco.

Daemco Australia Pty Ltd, has a Quality Management System in compliance with ISO 9001:2008, Certificate No.1600, issued by Best Practice Certification.

Dalian Reliable Industrial Co Ltd, has a Quality Management System in compliance with ISO 9001:2008, Certificate No. 01 100 039053, issued by TUV Rheinland.

Copies of Quality Assurance licences have been included in Appendix B and are also available for downloading from the WSAA member's website.

6.2 Compliance with Performance Requirements

6.2.1 Materials

The valve spindle extensions are manufactured from grade 500/7 ductile iron. Daemco has provided a copy of a typical material test report to demonstrate compliance.

6.2.2 Dimensions

AS/NZS 2638 specifies critical mating dimensions of the caps and keys to ensure compatibility of all components in the field.

Daemco has detailed the critical dimensions of their valve spindle extensions in a Data Sheet included in Appendix A. The dimensions comply with AS/NZS 2638.

6.2.3 Type Tests

A strength test is specified in AS/NZS 2638 to ensure safe performance of valve spindle extensions in the field. The test requires the spindle extension to be fitted to a spindle cap and a torque applied until it reaches 1.25 times the minimum strength test torque of the maximum size valve it has been designed to operate with.

AS 2638.1 and AS/NZS 2638.2 both specify a minimum strength test torque for a DN 600 gate valve as 2400Nm, which equates to an applied test torque for the valve spindle extension of 3000Nm.

Daemco has provided a copy of a report detailing the test carried out on a 1500mm long valve spindle extension (considered to be the worst case) at 3035Nm. The test was conducted by ALS Industrial Pty Ltd. There was no failure and a permanent set of 0.2mm was recorded.

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

Valve Spindle Extensions are commonly used in the industry and it is not considered necessary to provide additional training or installation instructions.

8 PRODUCT MARKING

The Daemco Valve Spindle Extensions are marked in accordance with the requirements of the AS/NZS2638, as below and shown in Figure 2.

- Manufacturers Name: Daemco
- Allowable size range: \leq DN600
- Length of Spindle: e.g.300



FIGURE 2 PRODUCT MARKING

9 PACKAGING AND TRANSPORTATION

The spindle extensions are typically included with other products that Daemco supplies and are packed within a crate, on a skid, pallet or bubble wrapped in cardboard.

10 PRODUCT WARRANTY

The products are covered by the normal commercial and legal requirements of the *Competition and Consumer Act 2010 (Cth)*, which covers manufacture to the relevant standard, and details of Daemco's warranty is included in their terms and conditions of sale.

11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD TESTING REPORT

The valve spindle extensions are currently approved by South East Water, City West Water and Water Corporation WA

Valve spindle extensions are considered standard products and installation trials were not deemed necessary as part of this Appraisal.

12 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

No issues raised.

13 FUTURE WORKS

No future works have been identified for this Appraisal.

14 DISCLAIMER

This Product Appraisal Report (Report) is issued by the Water Services Association of Australia Limited on the understanding that:

This Report applies to the product(s) as submitted. Any changes to the product(s) either minor or major shall void this Report.

To maintain the recommendations of this Report any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the Report and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.

WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.

The following information explains a number of very important limits on your ability to rely on the information in this Report. Please read it carefully and take it into account when considering the contents of this Report.

Any enquiries regarding this report should be directed to the Program Manager, Carl Radford, Phone: 03 8605 7601 email carl.radford@wsaa.asn.au.

14.1 Issue of Report

This Report has been published and/or prepared by the Water Services Association of Australia Limited and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

By accepting this Report, the Recipient acknowledges and represents to the Publisher(s) and each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

14.2 Limits on Reliance on Information and Recommendations

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Neither the Publisher(s) nor any person involved in the preparation of the Report accept(s) any liability for any loss or damage suffered by any person however caused (including negligence or the omission by any person to do anything) relating in any way to the Report or the product appraisal criteria underlying it. This includes (without limitation) any liability for any recommendation or information in the Report or any errors or omissions.

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The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith (and subject to the limitations noted in this Report). However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher(s).

This Report does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it (Product). The product appraisal criteria used in preparing this Report may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product.

Recipients should also independently verify and assess the appropriateness of any recommendation in the Report, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnity insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

14.3 No Updating

Neither the Publisher(s) nor any person involved in the preparation of this Report [has] [have] any obligation to notify you of any change in the information contained in this Report or of any new information concerning the Publisher(s) or the Product or any other matter.

14.4 No Warranty

The Publisher(s) do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

APPENDIX A – PRODUCT LITERATURE

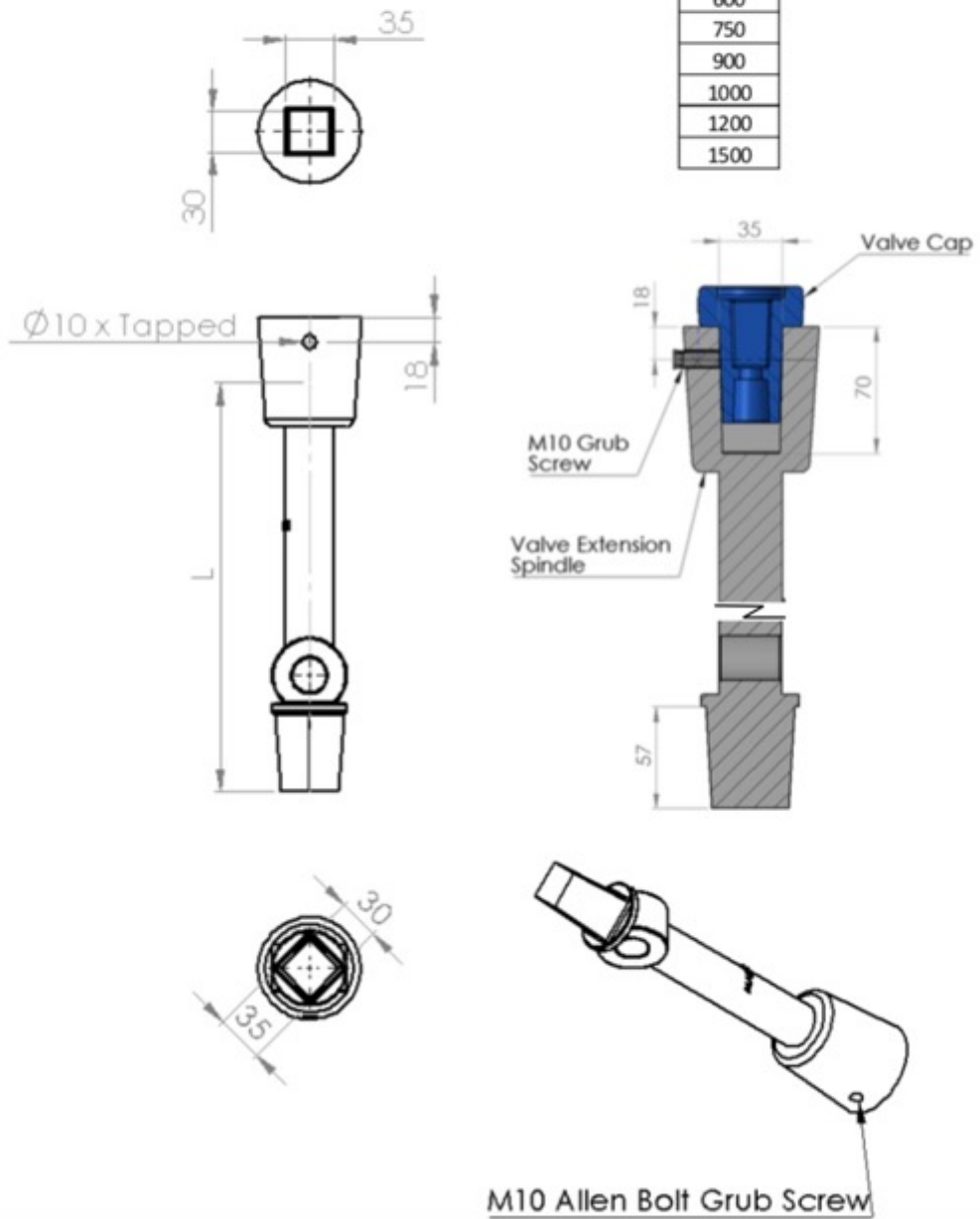


VALVE EXTENSION SPINDLES

Materials: Integral Cast Ductile Iron 500-7, Hot Dipped Galvanized
Grub Screw SS316

Sizes: Nominal lengths from 150 to 1500mm

L
150
225
300
375
450
600
750
900
1000
1200
1500



APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certification Certificates are available for downloading from the WSAA Members Website.

**TABLE B1
MANAGEMENT SYSTEMS-DALIAN RELIABLE INDUSTRIAL CO LTD**

Youhao Mansion No. 158 Youhao Road, Dalian City, Liaoning Province. 116001. PR China	
Quality Systems Standard	ISO 9001:2008
Certification Licence No.	01 100 039053
Certifying agency	TUV Rheinland Cert GmbH
First date of certification	2005
Current date of certification	17 January 2014
Expiry date of certification	14 September 2018

**TABLE B2
MANAGEMENT SYSTEMS-DAEMCO AUSTRALIA PTY LTD**

215 Bell Street Preston, Melbourne, Victoria, Australia. 3072	
Product Standard/Spec	ISO 9001:2008
Certificate No.	1600
Certifying Agency	Best Practice Certifications
First date of certification	8 August 2016
Current date of certification	8 August 2016
Expiry date of certification	14 September 2018

Certificate

Standard **GB/T 19001-2008 / ISO 9001:2008**

Certificate Registr. No. 01 100 039053

Certificate Holder: **Dalian Reliable Industrial Co., Ltd.**
Unified Social Credit Code: 91210200723494999T
Registration Address: No. 158, Youhao Road, Zhongshan District,
Dalian City, Liaoning Province 116001, P. R. China
Operation Address: Room 1909, Youhao Mansion,
No. 158, Youhao Road, Zhongshan District,
Dalian City, Liaoning Province 116001, P. R. China

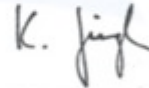
Scope: **International Trade of Metal Products (including Iron Castings,
Steel Castings, Forgings, Power Line Fittings, Valve, Pipe Fittings)**

Proof has been furnished by means of an audit that the requirements of GB/T 19001-2008 / ISO 9001:2008 are met.

Validity: The certificate is valid from 2017-01-17 until 2018-09-14.

This certificate information can be searched on CNCA official website <http://www.cnca.gov.cn>

2017-01-04



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Am Grauen Stein · 51105 Köln

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DAEMCO AUSTRALIA PTY LTD

Best Practice Certification Pty Ltd has assessed the above company as complying with the following management system standard requirements at the address shown.

Standard: AS/NZS ISO 9001:2008 - Quality Management System

Scope of Certification:

The design, manufacture and distribution of industrial products for the water supply, sewerage, drainage, electrical, gas and communications industry.

Exclusions: Nil

Address: Factory 3 25-27, Gleneig Street, Coolaroo VIC 3048 AUSTRALIA

Issue Date:
08/08/2016

Expiry Date:
14/09/2018*

Client Number:
1600



CERTIFICATION APPROVED:

Kobi Simmat
Chief Executive Officer
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* Subject to regular surveillance audits



www.jas-anz.org/register



APPENDIX C - WSA PRODUCT SPECIFICATION

WATER SERVICES ASSOCIATION of Australia

PRODUCT SPECIFICATION

WSA PS – 262 EXTENSION SPINDLES FOR GATE VALVES

262.1 SCOPE

This specification covers extension spindles for use with metal and resilient seated gate valves.

262.2 REQUIREMENTS

- (a) Extension spindles shall comply¹ with AS/NZS 2638.1:2011 Test J and AS/NZS 2638.2:2011 Test M.
- (b) Where extension spindles are fabricated using welding, all welding shall be carried out in accordance with AS/NZS 1554.1:2014 Category GP. Cast iron (including grey and ductile iron) components shall not be welded.
- (c) Where the materials used are not corrosion resistant to soil and ground water (e.g. plain carbon or low alloy steels) the extension spindle shall be coated² using bitumen paint or synthetic resin based protection systems or thermal bonded polymeric coatings. Bitumen paint shall comply with AS/NZS 3750.4:1994. Synthetic resin base coatings shall comply with AS/NZS 3750.19:2008. Thermal-bonded polymeric coatings shall comply with AS/NZS 4158:2003/Amdt 1:2005.

262.3 QUALITY ASSURANCE

- (a) Extension spindles shall have a certificate of compliance to this specification.

262.4 AGENCY OR PROJECT SPECIFIC REQUIREMENTS

Nominal size(s) of valve(s) (DN) on which extension spindles are to be used	
Length(s) of extension spindle(s), m	
A specific corrosion protection system (i.e. bitumen or synthetic resin based protection systems or thermal bonded polymeric coatings) or a corrosion resistant material ² (e.g. Grade 316 stainless steel)	

NOTES:

- 1 Where the maximum strength test torques specified in AS/NZS 2638.1:2011 and AS/NZS 2638.2:2011 are not the same for the same nominal size of valve, the higher value shall be used.
- 2 In aggressive soils and ground waters, corrosion resistant materials such as grade 316 stainless steel should be specified.

UNCONTROLLED IF PRINTED

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APPENDIX D - SUPPLIER CONTACTS

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