

# AGA Laboratory Report



<b>Report Number</b>	R15042701
<b>Date of Issue</b>	13 September 2016
<b>Description</b>	GLOBAL SUPPLY LINE - JC BALL VALVES

**This report relates to AGA Testing Job Number J15042701**

<b>Issued To</b>	
<b>Customer Name</b>	Global Supply Line Pty Ltd

<b>Authorised</b>	
<b>Name</b>	Peter Arnold
<b>Signed</b>	<i>P Arnold</i>

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<b>Summary</b>	4 pages		
<b>Results Sheets</b>	18 pages	<b>TOTAL NUMBER OF PAGES:</b>	22 pages

*This Test Report is only valid when used in conjunction with the AGA Laboratory Specification Verification (LSV) issued by AGA which references the AGA Testing Job Number shown above*

*The results contained herein apply to the particular sample/s tested at the time of testing and to the specific tests carried out as detailed in this Test Report. The issuing of this Test Report does not indicate or imply any measure of approval /certification /recommendation /guarantee/endorsement of any product /manufacturer /supplier /user.*

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Accredited for compliance with ISO/IEC 17025

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards

Accreditation No: 17379

**Sample Details**

Sample No.	Nominal Size	Class	Body Type	Body Material	Serial No Marked
15042701/1	DN15	Class 150	Full bore	Stainless Steel	8790.1009
15042701/2	DN15	Class 150	Reduced bore	Carbon Steel	9113.1002
15042701/3	DN15	Class 300	Full bore	Carbon Steel	088314.9
15042701/4	DN15	Class 300	Reduced bore	Carbon Steel	1256.1
15042701/5	DN 20	Class 150	Full bore	Carbon Steel	7218.1
15042701/6	DN 20	Class 150	Reduced bore	Stainless Steel	8791.1 3
15042701/7	DN 20	Class 300	Full bore	Carbon Steel	6523.1 IT. 124
15042701/8	DN 20	Class 300	Reduced bore	Carbon Steel	5351.1 IT. 006
15042701/9	DN 40	Class 150	Full bore	Carbon Steel	2711.1
15042701/10	DN 40	Class 150	Reduced bore	Carbon Steel	081872
15042701/11	DN 40	Class 300	Full bore	Carbon Steel	082582 IT.7
15042701/12	DN 40	Class 300	Reduced bore	Stainless Steel	068967 IT.16
15042701/13	DN 80	Class 150	Full bore	Carbon Steel	6244.1 IT. 031
15042701/14	DN 80	Class 150	Reduced bore	Carbon Steel	083285. IT. 21
15042701/15	DN 80	Class 300	Full bore	Carbon Steel	086078 IT. 21
15042701/16	DN 80	Class 300	Reduced bore	Stainless Steel	3181.1 IT. 029
15042701/17	DN 50	Class 300	Reduced bore	Carbon Steel	88091.1049

**Sample Description**

*Manual Shut-off ball valve:*

- *Series 515 and Series 530: Full Bore*
- *Series 715 and Series 730: Reduced Bore*
- *Series 515 and Series 715: Class 150 (MWP 2000 kPa)*
- *Series 530 and Series 730: Class 300 (MWP 5100 kPa)*
- *Option of WCB (Carbon Steel) or CF8M (Stainless steel) body material*

**Sample Modifications**

*Nil.*



**Test Program**

AGA Application number:15161  
 Standard: AS4617 2004 amd 1

Clause		These clauses to be assessed on any available valve size/series/class.
2.1	Materials	
2.2	Construction	
2.3	Design	
2.4	Markings	
2.5	Instructions	
3.1	General	

Nominal Size	Class	Body Type	Body Material	3.2 Leakage	3.4 Operating effort	3.5 Mechanical Strength	3.6 Durability
DN15	Class 150	Full bore	Stainless Steel	X		X	
DN15	Class 150	Reduced bore	Carbon Steel	x		X	
DN15	Class 300	Full bore	Carbon Steel	X		X	
DN15	Class 300	Reduced bore	Carbon Steel	X		X	
DN 20	Class 150	Full bore	Carbon Steel	X	X		
DN 20	Class 150	Reduced bore	Stainless Steel	X	X		
DN 20	Class 300	Full bore	Carbon Steel	X	X		
DN 20	Class 300	Reduced bore	Carbon Steel	X	X		
DN 40	Class 150	Full bore	Carbon Steel	X	X		
DN 40	Class 150	Reduced bore	Carbon Steel	X	X		
DN 40	Class 300	Full bore	Carbon Steel	X	X		
DN 40	Class 300	Reduced bore	Stainless Steel	X	X		
DN 80	Class 150	Full bore	Carbon Steel	X	X	X	
DN 80	Class 150	Reduced bore	Carbon Steel	X	X	X	
DN 80	Class 300	Full bore	Carbon Steel	X	X	X	
DN 80	Class 300	Reduced bore	Stainless Steel	X	X	X	
DN 50	Class 300	Reduced bore	Carbon Steel	X			X

**Changes to agreed testing**

The test program above modifies that listed in quotation Q15042701



**RESULTS**

The results from the testing and assessments of the Test Program comply with the requirements of the Standard apart from the following:

**Non-Conformances**

Nil

**Observations**

Clauses 2.5 & 2.5

Instruction documentation and Markings were not provided for assessment

**UNCERTAINTY OF MEASUREMENT**

Uncertainties of the testing conducted have been calculated in accordance with the principles of the ISO-GUM at a confidence level of 95% and coverage factor 2.0, unless otherwise specified.

Unless otherwise specified the following uncertainty levels apply.

Temperature where $\pm 0.5^{\circ}\text{C}$ is not required: $\pm 2^{\circ}\text{C}$	Force: $\pm 1\%$ of reading
Leakage: $\pm 0.18$ ml/min	Time: $\pm 0.3$ seconds

Note 1: If shown, every numerical result followed a “ $\pm$ ” sign, the value which succeeds the “ $\pm$ ” sign, is the Uncertainty of Measurement.

**Photographs**





Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: Series 715,  
Series 730,  
Series 515,  
Series 530

LEGEND: ✓: Complies ✗: Does Not Comply NA: Not Applicable NR: Not required NT: Not Tested

CLAUSE	REQUIREMENT	RESULT	COMPLIES
<b>SECTION 2 – DESIGN AND CONSTRUCTION</b>			
2.1	<b>MATERIALS</b>		
2.1.1	<b>Continuity of satisfactory operation</b> Materials used in the construction shall be such that continuity of satisfactory operation can be expected during normal usage within the manufacturer’s specification.		✓
2.1.2	<b>Suitability of materials for conditions Of use</b> Materials and finishes, including dressings and lubricants, used in the construction, shall be suitable for the conditions of use (e.g. corrosion, temperature, handling, etc.).		✓
2.1.3	<b>Materials in contact with gas</b> Materials in contact with the gas, including lubricants, dressings and jointing compounds, shall be suitable for use with all gases.		✓
2.1.4	<b>Melting point of materials</b> Metallic materials used for the valve body(s), valve plugs, related structural components and retaining devices shall be made of materials with a melting point not less than 430°C.		✓
2.1.5	<b>Copper containing alloys</b> Components made of copper containing alloys (e.g. brasses) shall be resistant to season cracking when tested in accordance with AS 2136.		NA
2.1.6	<b>Component parts materials selected to appropriate Standards</b> Materials used for component parts shall be selected from appropriate Australian Standards or their equivalent.		✓
2.2	<b>CONSTRUCTION</b>		
2.2.1	<b>Continuity of satisfactory operation</b> Construction shall ensure continued safe operation during usage within the manufacturer’s specification.		✓
2.2.2	<b>Castings and hot pressings</b> All castings and hot pressings shall be clean and sound, free from laps, blow holes and pitting and all surfaces not machine finished shall be clean, smooth and free from sand.		✓
2.2.3	<b>Sealing of porous castings or cracks</b> Porous castings or cracks in gas-carrying parts shall not be sealed other than by an accepted method for the impregnation of castings, e.g. vacuum impregnation.		✓
2.2.4	<b>Assembled valves to be clean</b> The assembled valve shall not contain dirt, casting sand, swarf or other foreign matter. There shall be no excess diaphragm dressing, lubrication or jointing compound in the valve.		✓

TESTED BY: R. Cowan & M. Green

CHECKED BY: P. Arnold



## Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 715,  
Series 730,  
Series 515,  
Series 530*

CLAUSE	REQUIREMENT	RESULT	COMPLIES
2.2.5	<b>Accidental displacement of parts</b> Every part shall be secure against accidental displacement and shall be constructed to maintain a fixed relationship between essential parts under normal and reasonable conditions of handling and usage so as to ensure continued compliance with this Standard.		✓
2.2.6	<b>Attachment of knobs, handles, dials and pointers</b> Knobs, handles, movable dials and pointers, where supplied, shall be securely attached to their spindles.		✓
2.2.7	<b>Springs</b> Springs shall be resistant to corrosion. The ends of a helical spring shall be flat and in a plane perpendicular to the axis of the spring. The coils of a cylindrical helical spring shall not be able to overlap.		NA
2.2.8	<b>Securing of parts together</b> Adhesives shall not be used for securing parts together without additional mechanical fixing means, except for labels.		✓
2.2.9	<b>Sharp edges</b> Constituent parts shall be free from sharp edges that may cause damage or injury.		✓
2.2.10	<b>Valves incorporating a means of ignition</b> Where a means of ignition is incorporated with a valve, the valve shall be sufficiently robust to prevent distortion or damage in performing this additional operation.		NA
2.2.11	<b>Means of limiting the travel of manual valves</b> The means of limiting the travel of a manual valve shall be so arranged that it cannot be displaced or damaged.		✓
2.2.12	<b>Holes for assembly or mounting</b> Holes for screws, pins, etc., intended for the assembly of parts or for mounting shall not open into gasways and shall provide a minimum wall thickness of 1 mm from gasways.		✓
2.2.13	<b>Permanent sealing of non-functional holes</b> Non-functional holes used for manufacture and which form a passage between gasways and the atmosphere shall be permanently sealed by mechanical means.		✓
2.2.14	<b>Self tapping screws</b> Self-tapping screws, other than those that form a fully swaged machine type thread, shall not be used to secure together the external joint of a gas-carrying component that may be removed in servicing. The application of thread-forming screws shall be limited to malleable materials and shall not result in deformation or cracking of the component.		NA
2.2.15	<b>Application of lubricant or sealant</b> Valves with a rated working pressure exceeding 7 kPa, which require the addition of lubricant or sealant to maintain gas tightness, shall be capable of having this added without dismantling the valve.		NA

TESTED BY: R. Cowan &amp; M. Green

CHECKED BY: P. Arnold

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## Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 715,  
Series 730,  
Series 515,  
Series 530*

CLAUSE	REQUIREMENT	RESULT	COMPLIES
2.2.5	<b>Accidental displacement of parts</b> Every part shall be secure against accidental displacement and shall be constructed to maintain a fixed relationship between essential parts under normal and reasonable conditions of handling and usage so as to ensure continued compliance with this Standard.		✓
2.2.16	<b>Construction of parts not covered by this Standard</b> The construction of parts not covered by this Standard shall be in accordance with reasonable concepts of safety, substantiality and durability. The general assembly shall be of a neat and workmanlike character with all parts well fitted.		✓
2.2.17	<b>Tightening of a gland or any other adjustments</b> The tightening of a gland or any other adjustment shall not destroy the ability of the control to meet the requirements of this Standard.		✓
2.3	<b>DESIGN</b>		
2.3.1	<b>Components requiring servicing</b> Components requiring servicing during normal use shall be accessible and shall be manufactured so that parts cannot be incorrectly assembled.		✓
2.3.2	<b>Special tools not required for servicing or replacement</b> Special tools beyond those normally carried by service personnel shall not be required for field servicing or replacement.		✓
2.3.3	<b>Connections</b> With the exception of a valve supplied with special purpose fittings for a specific appliance the connections shall be in accordance with an approved standard and, if threaded, shall be provided with spanner flats. Valves shall be selected in accordance with AS 5601/AG 601 (female parallel threads are only permitted in applications up to 100 kPa).		✓
2.3.4	<b>Operation of valves</b> Valves shall close in a clockwise direction and have a positive stop at the 'OFF' position except those Type 2 valves where two separate functions are controlled by one valve.		✓
2.3.5	<b>Stop positions on valves</b> Valves shall be provided with a positive stop in all 'FULL ON' positions except those Type 2 valves having a turn-down position beyond the 'FULL ON' position.		✓
2.3.6	<b>Provision of check or detent in place of positive stop</b> Valves shall be provided with a check or detent where the 'OFF' or 'FULL ON' positions do not have a positive stop.		✓
2.3.7	<b>Screw down valves</b> Screw down valves shall be so designed that it is impossible to withdraw the valve stem completely in the normal operation of the valve.		NA
2.3.8	<b>Screws and nuts not to loosen</b> Screws, nuts, etc., that regulate the tension of valve springs, shall not loosen in the operation of the valve.		✓

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## Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 715,  
Series 730,  
Series 515,  
Series 530*

CLAUSE	REQUIREMENT	RESULT	COMPLIES
2.2.5	<b>Accidental displacement of parts</b> Every part shall be secure against accidental displacement and shall be constructed to maintain a fixed relationship between essential parts under normal and reasonable conditions of handling and usage so as to ensure continued compliance with this Standard.		✓
2.3.9	<b>Lubricant—blockage or effect on gas flow</b> Valves shall be such that in normal use and with reasonable application of lubricant the gas passages do not become blocked and the gas flow is not affected in any way.		✓
2.3.10	<b>Lever—'OFF' position</b> Straight through valves with integral or permanently attached levers or 'T' handles shall have the plane of the lever or handle at right angles to the direction of gas flow when the valve is in the 'OFF' position.		✓
2.3.11	<b>Means of compensating for wear</b> Valves shall be provided with means of compensating for wear and shall have adequate clearances for this to operate.		✓
2.3.12	<b>Valves with associated electrical device</b> Where a valve has an associated electrical device, the device shall meet the requirements of the appropriate electrical authority.		NA
2.3.13	<b>Type 1 valves</b>		
2.3.13.1	<b>Metallic materials</b> The valve body(s), valve plugs, related structural components and retaining devices shall be made of metallic materials.		✓
2.3.13.2	<b>Angle between the fully open and fully closed positions</b> The valve shall have a 90° turn between the fully open and fully closed positions and the operating lever shall be permanently attached to the valve so that it cannot be incorrectly assembled.		✓
2.3.13.3	<b>Single action lever to close valve</b> The operating lever shall be of a single action type to close the valve.		✓
2.3.13.4	<b>Valve to be sealed and gas tight—travel angle</b> The valve shall be sealed and gas tight after the operating lever has travelled through an angle of 85° from the fully open position, i.e. 5° of overtravel shall be provided from the point where the valve first becomes gas tight to the fully closed position. If the operating lever is released at this point, the valve shall not move to a position where leakage can occur.		✓
2.3.13.5	<b>Operation or gas tightness of valves greater than 25mm</b> A valve exceeding 25 mm nominal size shall not require any lubricant to operate or be gas tight if the rated working pressure of the valve exceeds 1.1 kPa.		✓
2.3.14	<b>Type 2 valves</b>		
2.3.14.1	<b>Metallic materials</b> The valve body(s), valve plugs, related structural components and retaining devices shall be made of metallic materials.		NA
2.3.15	<b>Type 3 valves</b>		

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## Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 715,  
Series 730,  
Series 515,  
Series 530*

CLAUSE	REQUIREMENT	RESULT	COMPLIES
2.2.5	<b>Accidental displacement of parts</b> Every part shall be secure against accidental displacement and shall be constructed to maintain a fixed relationship between essential parts under normal and reasonable conditions of handling and usage so as to ensure continued compliance with this Standard.		✓
2.3.15.1	<b>Plastic valves—appropriate Standards</b> Plastic valve body(s), valve plugs, related structural components and retaining devices shall comply with the appropriate Standards AS 1464, AS 2944 and AS/NZS 4130.		NA
2.3.15.2	<b>Angle between the fully open and fully closed positions</b> The valve shall have a 90° turn between the fully open and fully closed positions.		NA
2.3.15.3	<b>Single action lever to close valve</b> The operating lever shall be of a single action type to close the valve.		NA
2.3.15.4	<b>Valve to be sealed and gas tight – travel angle</b> The valve shall be sealed and gas tight after the operating lever has travelled through an angle of 85° from the fully open position, i.e. 5° of overtravel shall be provided from the point where the valve first becomes gas tight to the fully closed position. If the operating lever is released at this point, the valve shall not move to a position where leakage can occur.		NA
2.3.15.5	<b>Operation or gas tightness of valves greater than 25mm</b> A valve exceeding 25 mm nominal size shall not require any lubricant to operate or be gas tight if the rated working pressure of the valve exceeds 1.1 kPa.		✓
2.4	<b>MARKINGS</b>		
2.4.1	<b>General</b> Markings shall be provided and shall include: (a) Manufacturer's name or trademark. (b) Model designation. (c) Month and year of manufacture or serial number. (d) Rated working pressure in kPa. (e) Direction of flow, if necessary.		Note 1
2.4.2	<b>Marking of electrical connections</b> Electrical connections shall be clearly and durably marked and identified, if applicable.		
2.4.3	<b>Durability of markings</b> Markings shall remain legible, durable and permanently attached throughout the life of the valve, e.g. to abrasion, humidity and temperature.		

**Note 1:** Sample Markings or relevant artwork were not provided for assessment

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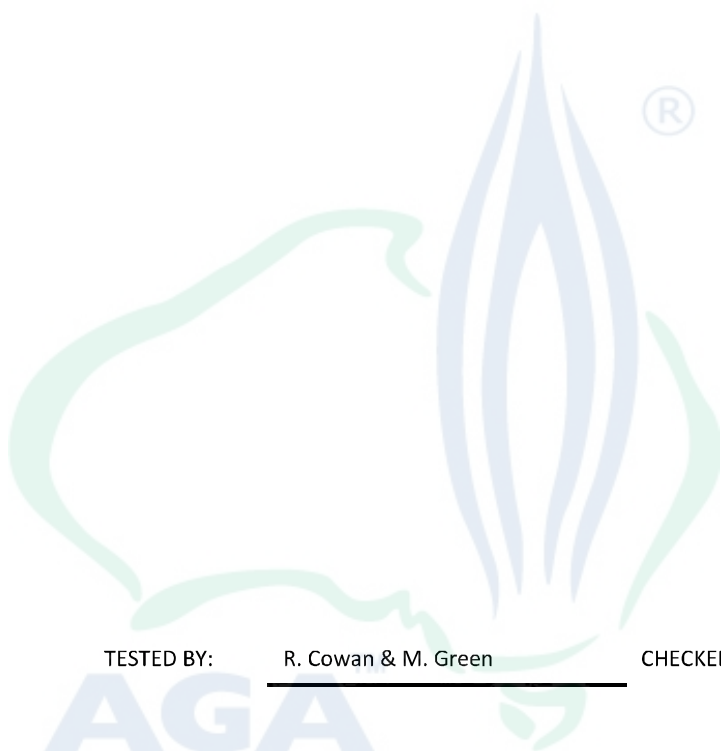
Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 715,  
Series 730,  
Series 515,  
Series 530*

CLAUSE	REQUIREMENT	RESULT	COMPLIES
2.5	<b>INSTRUCTIONS</b>		
2.5.1	<p><b>General</b> Instructions in English shall be available, which shall include:</p> <p>(a) Model designation(s) and alternative forms.</p> <p>(b) Size and rated working pressure in kPa.</p> <p>(c) Flow rate for a given pressure loss.</p> <p>(d) Bypass rate if applicable.</p> <p>(e) Temperature limitations.</p> <p>(f) Mounting limitations.</p> <p>(g) Type of valve.</p> <p>(h) Wiring diagram showing external connections.</p> <p>(i) Electrical ratings i.e. voltage, frequency, current.</p> <p>(j) Method of operation, adjustments and applications.</p> <p>(k) Fault diagnosis and servicing.</p> <p>(l) Thread or flange specifications as applicable or jointing procedure in accordance with the appropriate standard (e.g. AS/NZS 1477, AS 2944.1, AS 2944.2, AS 3723).</p> <p>(m) Type of lubricant and/or sealant as applicable.</p> <p>(n) Details of assembly and/or adjustments to be carried out by installer.</p>		Note 1

**Note 1:** Instruction documentation was not provided for assessment



TESTED BY: R. Cowan & M. Green

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Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 715  
Class 150  
Reduced  
bore*

LEGEND: ✓: Complies ✗: Does Not Comply NA: Not Applicable NR: Not required NT: Not Tested

CLAUSE	REQUIREMENT	RESULT	COMPLIES	
<b>SECTION 3 – PERFORMANCE REQUIREMENTS</b>				
3.1	<b>GENERAL</b>			
3.1.1	<b>Satisfactory performance in all mounting positions</b> The performance shall be satisfactory in all mounting positions declared by the manufacturer.		✓	
3.1.2	<b>Satisfactory performance over declared temperature range</b> The performance shall be satisfactory over the manufacturer's declared temperature range which shall be at least 0 to 60°C.	<b>Temperature range(°C)</b> 0°C – 100°C	✓	
3.2	<b>LEAKAGE</b>			
3.2.1	<b>External leakage</b> The external leakage from the body shall not exceed 1 mL/min at all internal air pressures up to 1.5 times the rated working pressure or 14.0 kPa, whichever is the greater, with the valve open and closed.	(1)	✓	
3.2.2	<b>Internal leakage</b> The leakage past the closed valve shall not exceed the value specified in Table 3.1 at all inlet air pressures up to 1.5 times the rated working pressure or 14.0 kPa, whichever is the greater, and with the outlet open to atmospheric pressure.	(1)	✓	
3.4	<b>OPERATING EFFORT</b>			
3.4.1	<b>Opening and closing of valves</b> Valves shall be capable of opening and closing under the rated working pressure within the limits of maximum continuous torque or force in Table B1.	<b>Nominal Size(mm)</b>	(2)	✓
		<b>Max Torque (Nm)</b>	(2)	
		<b>Opening Torque (Nm)</b>	(2)	
		<b>Closing Torque (Nm)</b>		
3.4.2	<b>Maximum instantaneous torque or force—opening or closing</b> The maximum instantaneous torque or force at the initial opening or closing of the valve shall be no greater than 1.5 times the values given in the Table B1.	<b>Nominal Size(mm)</b>	(2)	✓
		<b>Max Torque (Nm)</b>	(2)	
		<b>Opening Torque (Nm)</b>	(2)	
		<b>Closing Torque (Nm)</b>		
3.4.3	<b>Self-latching valves</b> (2) Self-latching valves shall not unlock from the 'OFF' position when a torque of 4 Nm is applied.		NA	
3.5	<b>MECHANICAL STRENGTH</b>			
3.5.1	<b>Resistance to applied torque</b> Valves shall be capable of withstanding, without permanent deformation or leakage, the torque values in Table B2 as applied to a pipe being connected to the valve.	<b>Nominal Size (mm)</b>	(3)	✓
		<b>Applied Torque (Nm)</b>	(3)	

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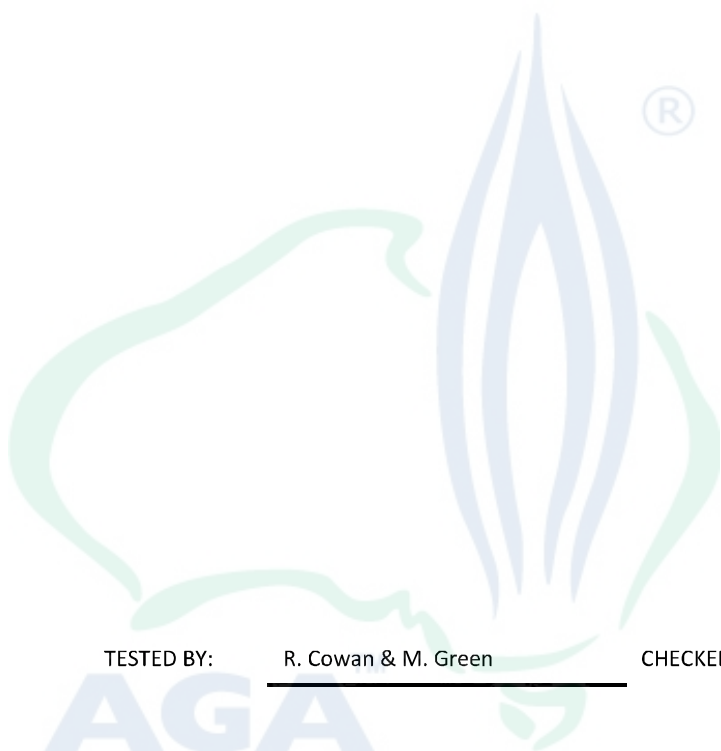


Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 715  
Class 150  
Reduced  
bore*

CLAUSE	REQUIREMENT		RESULT	COMPLIES
3.5.2	<b>Valves with two piece bodies</b> Valves with two-piece bodies shall be capable of withstanding, without permanent deformation or leakage, twice the torque values in Table B2 applied in the most disadvantageous direction, so as to separate the two parts.	Nominal Size (mm)		NA
		Applied Torque (Nm)		
3.5.3	<b>Resistance to applied bending moments</b> Valves shall be capable of withstanding, without permanent distortion, breakage or leakage, the bending moments in Table B3, similar to those applied to a pipe connected to the valve, or an angular displacement of 10°, whichever occurs first.	Nominal Size (mm)	(3)	✓
		Applied Bending Moments (Nm)	(3)	
3.5.4	<b>Resistance to applied impacts</b> Valves shall be capable of withstanding the impacts given in Table B4 without breakage or leakage.	Nominal Size (mm)		✓
		Applied Impact (Nm)	25 Nm	



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CHECKED BY: P. Arnold



Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 715  
Class 150  
Reduced  
bore*

1.

Nominal Size	Sample No.	Maximum Working Pressure (kPa)	Peak Test Pressure (kPa)	Internal leakage		External leakage (stem seals expose to pressure)
				Direction 1	Direction 2	
DN15	15042701/2	2000	3000	No leakage observed	No leakage observed	No leakage observed
DN20	15042701/6	2000	3000	No leakage observed	No leakage observed	No leakage observed
DN40	15042701/10	2000	3000	No leakage observed	No leakage observed	No leakage observed
DN80	15042701/14	2000	3000	No leakage observed	No leakage observed	No leakage observed

2.

Operating Effort

Nominal Size	Sample No.	$\Delta p$ (kPa)	Maximum allowable continuous force (N)	Maximum allowable peak force (N)	Peak force (N) applied to handle end	Result
DN20	15042701/6	2000	100	150	20.1	PASS
DN40	15042701/10	2000	200	300	79.2	PASS
DN80	15042701/14	2000	200	300	157.7	PASS

3.

Mechanical Strength

Nominal Size	Sample No.	Applied Bending Moment	Applied Torque	Applied Impact Energy	Peak Test Pressure (kPa)	Post Mechanical Strength Leakage		External leakage (stem seals expose to pressure)
						Direction 1	Direction 2	
DN15	15042701/2	105Nm	50Nm	25Nm	3000	No leakage observed	No leakage observed	No leakage observed
DN40	15042701/10	610Nm	200Nm	25Nm	3000	No leakage observed	No leakage observed	No leakage observed

TESTED BY: R. Cowan & M. Green

CHECKED BY: P. Arnold

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Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 515  
Class 150  
Full bore*

LEGEND: ✓: Complies ✗: Does Not Comply NA: Not Applicable NR: Not required NT: Not Tested

CLAUSE	REQUIREMENT	RESULT	COMPLIES	
<b>SECTION 3 – PERFORMANCE REQUIREMENTS</b>				
3.1	<b>GENERAL</b>			
3.1.1	<b>Satisfactory performance in all mounting positions</b> The performance shall be satisfactory in all mounting positions declared by the manufacturer.		✓	
3.1.2	<b>Satisfactory performance over declared temperature range</b> The performance shall be satisfactory over the manufacturer's declared temperature range which shall be at least 0 to 60°C.	Temperature range(°C) 0°C – 100°C	✓	
3.2	<b>LEAKAGE</b>			
3.2.1	<b>External leakage</b> The external leakage from the body shall not exceed 1 mL/min at all internal air pressures up to 1.5 times the rated working pressure or 14.0 kPa, whichever is the greater, with the valve open and closed.	(1)	✓	
3.2.2	<b>Internal leakage</b> The leakage past the closed valve shall not exceed the value specified in Table 3.1 at all inlet air pressures up to 1.5 times the rated working pressure or 14.0 kPa, whichever is the greater, and with the outlet open to atmospheric pressure.	(1)	✓	
3.4	<b>OPERATING EFFORT</b>			
3.4.1	<b>Opening and closing of valves</b> Valves shall be capable of opening and closing under the rated working pressure within the limits of maximum continuous torque or force in Table B1.	Nominal Size(mm)	(2)	✓
		Max Torque (Nm)	(2)	
		Opening Torque (Nm)	(2)	
		Closing Torque (Nm)		
3.4.2	<b>Maximum instantaneous torque or force—opening or closing</b> The maximum instantaneous torque or force at the initial opening or closing of the valve shall be no greater than 1.5 times the values given in the Table B1.	Nominal Size(mm)	(2)	✓
		Max Torque (Nm)	(2)	
		Opening Torque (Nm)	(2)	
		Closing Torque (Nm)		
3.4.3	<b>Self-latching valves</b> (2) Self-latching valves shall not unlock from the 'OFF' position when a torque of 4 Nm is applied.		NA	
3.5	<b>MECHANICAL STRENGTH</b>			
3.5.1	<b>Resistance to applied torque</b> Valves shall be capable of withstanding, without permanent deformation or leakage, the torque values in Table B2 as applied to a pipe being connected to the valve.	Nominal Size (mm)	(3)	✓
		Applied Torque (Nm)	(3)	

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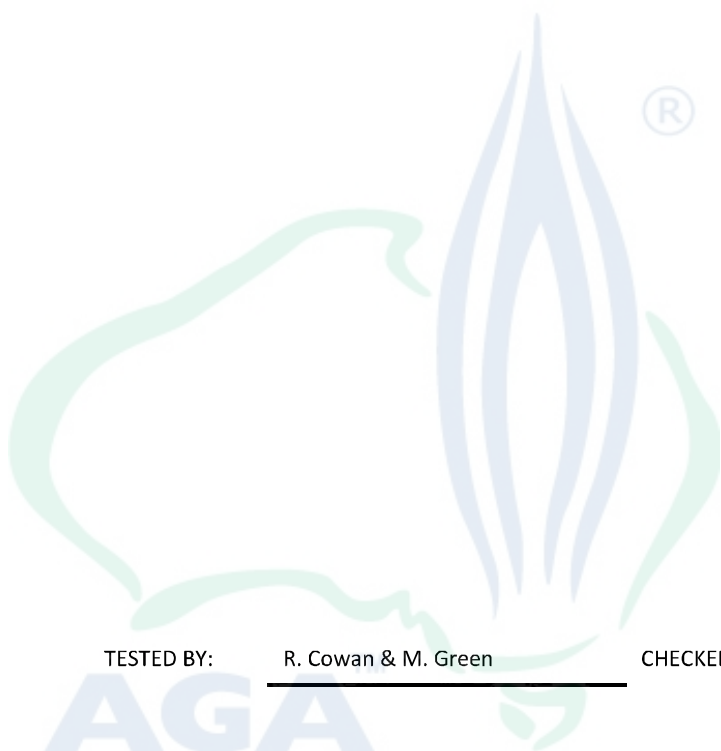


Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 515  
Class 150  
Full bore*

CLAUSE	REQUIREMENT		RESULT	COMPLIES
3.5.2	<b>Valves with two piece bodies</b> Valves with two-piece bodies shall be capable of withstanding, without permanent deformation or leakage, twice the torque values in Table B2 applied in the most disadvantageous direction, so as to separate the two parts.	Nominal Size (mm)		NA
		Applied Torque (Nm)		
3.5.3	<b>Resistance to applied bending moments</b> Valves shall be capable of withstanding, without permanent distortion, breakage or leakage, the bending moments in Table B3, similar to those applied to a pipe connected to the valve, or an angular displacement of 10°, whichever occurs first.	Nominal Size (mm)	(3)	✓
		Applied Bending Moments (Nm)	(3)	
3.5.4	<b>Resistance to applied impacts</b> Valves shall be capable of withstanding the impacts given in Table B4 without breakage or leakage.	Nominal Size (mm)		✓
		Applied Impact (Nm)	25 Nm	



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Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 515  
Class 150  
Full bore*

1.

Nominal Size	Sample No.	Maximum Working Pressure (kPa)	Peak Test Pressure (kPa)	Internal leakage		External leakage (stem seals expose to pressure)
				Direction 1	Direction 2	
DN15	15042701/1	2000	3000	No leakage observed	No leakage observed	No leakage observed
DN20	15042701/5	2000	3000	No leakage observed	No leakage observed	No leakage observed
DN40	15042701/9	2000	3000	No leakage observed	No leakage observed	No leakage observed
DN80	15042701/13	2000	3000	No leakage observed	No leakage observed	No leakage observed

2.

Operating Effort

Nominal Size	Sample No.	$\Delta p$ (kPa)	Maximum allowable continuous force (N)	Maximum allowable peak force (N)	Peak force (N) applied to handle end	Result
DN20	15042701/5	2000	100	150	34.6	PASS
DN40	15042701/9	2000	200	300	99.7	PASS
DN80	15042701/13	2000	200	300	184.8	PASS

3.

Mechanical Strength

Nominal Size	Sample No.	Applied Bending Moment	Applied Torque	Applied Impact Energy	Peak Test Pressure (kPa)	Post Mechanical Strength Leakage		
						Internal leakage		External leakage (stem seals expose to pressure)
						Direction 1	Direction 2	
DN15	15042701/1	105Nm	50Nm	25Nm	3000	No leakage observed	No leakage observed	No leakage observed
DN40	15042701/9	610Nm	200Nm	25Nm	3000	No leakage observed	No leakage observed	No leakage observed

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Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 730  
Class 300  
Reduced  
bore*

LEGEND: ✓: Complies ✗: Does Not Comply NA: Not Applicable NR: Not required NT: Not Tested

CLAUSE	REQUIREMENT	RESULT	COMPLIES	
<b>SECTION 3 – PERFORMANCE REQUIREMENTS</b>				
3.1	<b>GENERAL</b>			
3.1.1	<b>Satisfactory performance in all mounting positions</b> The performance shall be satisfactory in all mounting positions declared by the manufacturer.		✓	
3.1.2	<b>Satisfactory performance over declared temperature range</b> The performance shall be satisfactory over the manufacturer's declared temperature range which shall be at least 0 to 60°C.	<b>Temperature range(°C)</b> 0°C – 100°C	✓	
3.2	<b>LEAKAGE</b>			
3.2.1	<b>External leakage</b> The external leakage from the body shall not exceed 1 mL/min at all internal air pressures up to 1.5 times the rated working pressure or 14.0 kPa, whichever is the greater, with the valve open and closed.	(1)	✓	
3.2.2	<b>Internal leakage</b> The leakage past the closed valve shall not exceed the value specified in Table 3.1 at all inlet air pressures up to 1.5 times the rated working pressure or 14.0 kPa, whichever is the greater, and with the outlet open to atmospheric pressure.	(1)	✓	
3.4	<b>OPERATING EFFORT</b>			
3.4.1	<b>Opening and closing of valves</b> Valves shall be capable of opening and closing under the rated working pressure within the limits of maximum continuous torque or force in Table B1.	<b>Nominal Size(mm)</b>	(2)	✓
		<b>Max Torque (Nm)</b>	(2)	
		<b>Opening Torque (Nm)</b>	(2)	
		<b>Closing Toque (Nm)</b>	(2)	
3.4.2	<b>Maximum instantaneous torque or force—opening or closing</b> The maximum instantaneous torque or force at the initial opening or closing of the valve shall be no greater than 1.5 times the values given in the Table B1.	<b>Nominal Size(mm)</b>	(2)	✓
		<b>Max Torque (Nm)</b>	(2)	
		<b>Opening Torque (Nm)</b>	(2)	
		<b>Closing Toque (Nm)</b>	(2)	
3.4.3	<b>Self-latching valves</b> Self-latching valves shall not unlock from the 'OFF' position when a torque of 4 Nm is applied.		NA	
3.5	<b>MECHANICAL STRENGTH</b>			
3.5.1	<b>Resistance to applied torque</b> Valves shall be capable of withstanding, without permanent deformation or leakage, the torque values in Table B2 as applied to a pipe being connected to the valve.	<b>Nominal Size (mm)</b>	(3)	✓
		<b>Applied Toque (Nm)</b>	(3)	

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Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 730  
Class 300  
Reduced  
bore*

CLAUSE	REQUIREMENT	RESULT	COMPLIES	
3.5.2	<b>Valves with two piece bodies</b> Valves with two-piece bodies shall be capable of withstanding, without permanent deformation or leakage, twice the torque values in Table B2 applied in the most disadvantageous direction, so as to separate the two parts.	Nominal Size (mm)	NA	
		Applied Toque (Nm)		
3.5.3	<b>Resistance to applied bending moments</b> Valves shall be capable of withstanding, without permanent distortion, breakage or leakage, the bending moments in Table B3, similar to those applied to a pipe connected to the valve, or an angular displacement of 10°, whichever occurs first.	Nominal Size (mm)	(3)	✓
		Applied Bending Moments (Nm)	(3)	
3.5.4	<b>Resistance to applied impacts</b> Valves shall be capable of withstanding the impacts given in Table B4 without breakage or leakage.	Nominal Size (mm)	25 Nm	✓
		Applied Impact (Nm)		
3.6	<b>DURABILITY</b>			
3.6.1	<b>Cycling tests for valves</b>			
	Valves shall satisfy the leakage requirements of Clause 3.2 and the torque or force requirements of Clause 3.4 before and after the appropriate number of cycles (one cycle is from 'OFF' to 'ON' to 'OFF') given in Table B5.		✓	
	Half the cycles shall be carried out at 60°C or the maximum declared working temperature, whichever is higher, for a minimum period of 24 h. The remainder of the cycles shall be carried out at normal ambient temperatures; or the minimum declared working temperature for a minimum period of 24 h, if declared below 0°C.	Maximum Temp (°C)	100	✓
		Number of Cycles	1000	
	The cycle period shall be no shorter than that declared by the manufacturer. Valves with provision for in situ lubrication shall be lubricated during the cycling test according to the manufacturer's recommendations.	Minimum Temp (°C)	Ambient	✓
Number of Cycles		1000		

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Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 730  
Class 300  
Reduced  
bore*

1.

Nominal Size	Sample No.	Maximum Working Pressure (kPa)	Peak Test Pressure (kPa)	Internal leakage		External leakage (stem seals expose to pressure)
				Direction 1	Direction 2	
DN15	15042701/4	5100	7560	No leakage observed	No leakage observed	No leakage observed
DN20	15042701/8	5100	7560	No leakage observed	No leakage observed	No leakage observed
DN40	15042701/12	5100	7560	No leakage observed	No leakage observed	No leakage observed
DN80	15042701/16	5100	7560	No leakage observed	No leakage observed	No leakage observed

2.

Operating Effort

Nominal Size	Sample No.	$\Delta p$ (kPa)	Maximum allowable continuous force (N)	Maximum allowable peak force (N)	Peak force (N) applied to handle end	Result
DN20	15042701/8	5100	100	150	35.3	PASS
DN40	15042701/12	5100	200	300	62.8	PASS
DN80	15042701/16	5100	200	300	200.3	PASS

3.

Mechanical Strength

Nominal Size	Sample No.	Applied Bending Moment	Applied Torque	Applied Impact Energy	Peak Test Pressure (kPa)	Post Mechanical Strength Leakage		External leakage (stem seals expose to pressure)
						Direction 1	Direction 2	
DN15	15042701/4	105Nm	50Nm	25Nm	7560	No leakage observed	No leakage observed	No leakage observed
DN40	15042701/12	610Nm	200Nm	25Nm	7560	No leakage observed	No leakage observed	No leakage observed

TESTED BY: R. Cowan & M. Green

CHECKED BY: P. Arnold



Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 530  
Class 300  
Full bore*

V

LEGEND: ✓: Complies ✗: Does Not Comply NA: Not Applicable NR: Not required NT: Not Tested

CLAUSE	REQUIREMENT	RESULT	COMPLIES	
<b>SECTION 3 – PERFORMANCE REQUIREMENTS</b>				
3.1	<b>GENERAL</b>			
3.1.1	<b>Satisfactory performance in all mounting positions</b> The performance shall be satisfactory in all mounting positions declared by the manufacturer.		✓	
3.1.2	<b>Satisfactory performance over declared temperature range</b> The performance shall be satisfactory over the manufacturer's declared temperature range which shall be at least 0 to 60°C.	Temperature range(°C) 0°C – 100°C	✓	
3.2	<b>LEAKAGE</b>			
3.2.1	<b>External leakage</b> The external leakage from the body shall not exceed 1 mL/min at all internal air pressures up to 1.5 times the rated working pressure or 14.0 kPa, whichever is the greater, with the valve open and closed.	(1)	✓	
3.2.2	<b>Internal leakage</b> The leakage past the closed valve shall not exceed the value specified in Table 3.1 at all inlet air pressures up to 1.5 times the rated working pressure or 14.0 kPa, whichever is the greater, and with the outlet open to atmospheric pressure.	(1)	✓	
3.4	<b>OPERATING EFFORT</b>			
3.4.1	<b>Opening and closing of valves</b> Valves shall be capable of opening and closing under the rated working pressure within the limits of maximum continuous torque or force in Table B1.	<b>Nominal Size(mm)</b>	(2)	✓
		<b>Max Torque (Nm)</b>	(2)	
		<b>Opening Torque (Nm)</b>	(2)	
		<b>Closing Toque (Nm)</b>	(2)	
3.4.2	<b>Maximum instantaneous torque or force—opening or closing</b> The maximum instantaneous torque or force at the initial opening or closing of the valve shall be no greater than 1.5 times the values given in the Table B1.	<b>Nominal Size(mm)</b>	(2)	✓
		<b>Max Torque (Nm)</b>	(2)	
		<b>Opening Torque (Nm)</b>	(2)	
		<b>Closing Toque (Nm)</b>	(2)	
3.4.3	<b>Self-latching valves</b> Self-latching valves shall not unlock from the 'OFF' position when a torque of 4 Nm is applied.		NA	
3.5	<b>MECHANICAL STRENGTH</b>			
3.5.1	<b>Resistance to applied torque</b> Valves shall be capable of withstanding, without permanent deformation or leakage, the torque values in Table B2 as applied to a pipe being connected to the valve.	<b>Nominal Size (mm)</b>	(3)	✓
		<b>Applied Toque (Nm)</b>	(3)	

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CHECKED BY: P. ARNOLD

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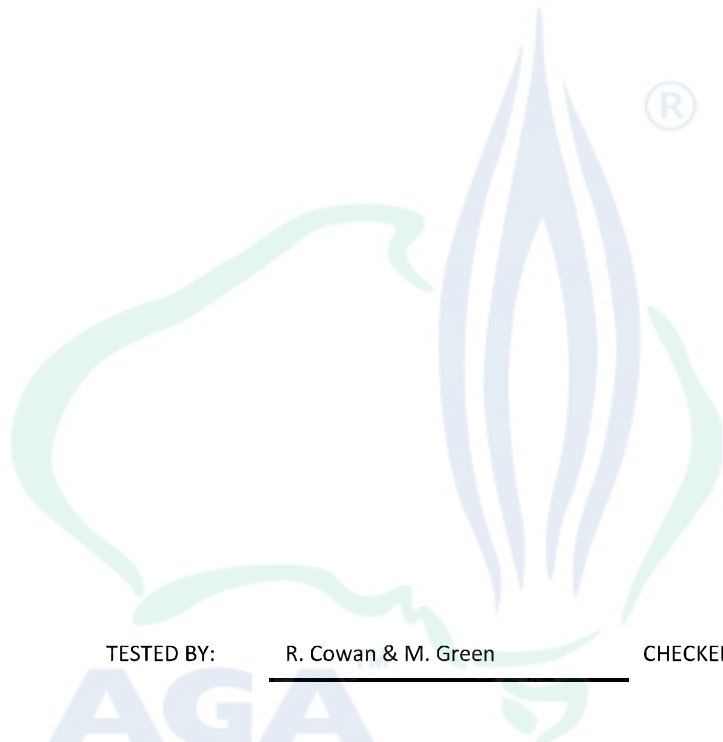


Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 530  
Class 300  
Full bore*

CLAUSE	REQUIREMENT		RESULT	COMPLIES
3.5.2	<b>Valves with two piece bodies</b> Valves with two-piece bodies shall be capable of withstanding, without permanent deformation or leakage, twice the torque values in Table B2 applied in the most disadvantageous direction, so as to separate the two parts.	Nominal Size (mm)		NA
		Applied Toque (Nm)		
3.5.3	<b>Resistance to applied bending moments</b> Valves shall be capable of withstanding, without permanent distortion, breakage or leakage, the bending moments in Table B3, similar to those applied to a pipe connected to the valve, or an angular displacement of 10°, whichever occurs first.	Nominal Size (mm)	(3)	✓
		Applied Bending Moments (Nm)	(3)	
3.5.4	<b>Resistance to applied impacts</b> Valves shall be capable of withstanding the impacts given in Table B4 without breakage or leakage.	Nominal Size (mm)		✓
		Applied Impact (Nm)	25 Nm	



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CHECKED BY: P. ARnold



Test Report Sheets for AS4617-2004 (Inc Amd 1) - Manual shut-off gas valves

REPORT NUMBER: R15042701

SAMPLE MODEL: *Series 530  
Class 300  
Full bore*

1.

Nominal Size	Sample No.	Maximum Working Pressure (kPa)	Peak Test Pressure (kPa)	Internal leakage		External leakage (stem seals expose to pressure)
				Direction 1	Direction 2	
DN15	15042701/3	5100	7560	No leakage observed	No leakage observed	No leakage observed
DN20	15042701/7	5100	7560	No leakage observed	No leakage observed	No leakage observed
DN40	15042701/11	5100	7560	No leakage observed	No leakage observed	No leakage observed
DN80	15042701/15	5100	7560	No leakage observed	No leakage observed	No leakage observed

2.

Operating Effort

Nominal Size	Sample No.	$\Delta p$ (kPa)	Maximum allowable continuous force (N)	Maximum allowable peak force (N)	Peak force (N) applied to handle end	Result
DN20	15042701/7	5100	100	150	50.7	PASS
DN40	15042701/11	5100	200	300	66.5	PASS
DN80	15042701/15	5100	200	300	230.7	PASS

3.

Mechanical Strength

Nominal Size	Sample No.	Applied Bending Moment	Applied Torque	Applied Impact Energy	Peak Test Pressure (kPa)	Post Mechanical Strength Leakage		External leakage (stem seals expose to pressure)
						Direction 1	Direction 2	
DN15	15042701/3	105Nm	50Nm	25Nm	7560	No leakage observed	No leakage observed	No leakage observed
DN40	15042701/11	610Nm	200Nm	25Nm	7560	No leakage observed	No leakage observed	No leakage observed

TESTED BY: R. Cowan & M. Green

CHECKED BY: P. ARNOLD