



AVK Australia Holding Pty Ltd

PRODUCT APPRAISAL REPORT 1502 Issue 3

AVK Series 600 Unrestrained Universal Mechanical Couplings

AS/NZS 4998:2009 Bolted unrestrained mechanical couplings for waterworks purposes

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Carl Radford, Product Appraisal Manager	WSAA	15 June 2021

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

AVK Australia Holding Pty Ltd is part of the AVK Global Group, an international manufacturer of valves and fittings for the water, gas, sewerage and fire protection industries

This Appraisal is for a range of AVK Series 600 unrestrained universal mechanical couplings manufactured to comply with AS/NZS 4998:2009 *Bolted unrestrained mechanical couplings for water works purposes*.

This Issue 3 is a replacement for the previous version of the appraisal which had reached its 5-year expiry date.

The couplings are designed to suit a wide range of pipe OD's and are suitable for joining spigot ends of pipe manufactured from grey or ductile cast iron, steel, PVC-U, PVC-M, PVC-O and asbestos cement. They are not suitable for joining PE pipes.

The range includes straight couplings and stepped couplings in sizes from DN 80 to DN 225 with short barrel and long barrel configurations. The end rings are thermal bonded polymeric coated ductile iron and the barrels are manufactured from either thermal bonded polymeric coated ductile iron or Grade 316 stainless steel. Options include incorporation of either M12 or M16 Grade 316 stainless steel fasteners.

The AVK Series 600 couplings range incorporates additional sizes and alternative coupling configurations including flange adapters and end caps; however, the Scope of this Appraisal is limited to those products included in the ISO Type 5 product certification schedule. See Section 3 for complete details of the range included.

AVK Australia Holding Pty Ltd holds an ISO 9001 Quality Management System Licence.

The AVK Series 600 couplings have ISO Type 5 StandardsMark product certification.

AVK Series 600 unrestrained mechanical couplings in sizes DN 80 to DN 225, as detailed in this report, are deemed to meet the requirements of WSA PS 270 – *Mechanical Couplings, Non-End Thrust Restraint for Pressure Applications - Drinking Water, Non-Drinking Water Supply and Sewerage* and are considered as 'fit-for-purpose'.

1.1 Recommendations

It is recommended that WSAA members and associates, subject to any specific requirements of the member, accept or authorise AVK Series 600 Couplings in sizes DN 80 to DN 225, as detailed in this report, for use in drinking water, non-drinking water supply and sewerage applications, provided they are installed in accordance with applicable WSAA Codes and the manufacturer's requirements.

2 THE APPLICANT

The Applicant is AVK Holding Australia Pty Ltd.

2.1 The Manufacturer

AVK Australia Pty Ltd is part of the AVK Group, an international manufacturer of valves and fittings, with factories in Australia, Denmark, USA, Saudi Arabia, Netherlands, France, Holland, Poland, Germany, Malaysia, and China. AVK has over 40 years' experience and comprehensive range of products that includes gate valves, butterfly valves, hydrants, couplings (both restrained and non-restrained), penstocks, knife gate valves and fittings. AVK Australia has the overall responsibility for manufacturing, sales and marketing activities in Australia, New Zealand and the Pacific Islands.

AVK Australia is headquartered in Adelaide with five operating companies comprising AVK Valves, AVK Wang, AVK Currumbin, AVK Complete Tapping Service and AVK Flow Control.

AVK assembles and tests the Series 600 range of couplings at its Wingfield facility in Adelaide, South Australia.

Components are sourced from Denmark and China. AVK has requested that the identity of their Chinese suppliers remain “commercial in confidence” however has provided copies of ISO 9001 Quality Management System licences together with typical material test reports for the components.

The ductile iron components are coated by AVK at its Wingfield manufacturing facility.

3 THE PRODUCT

This Appraisal is for a range of AVK Series 600 unrestrained universal mechanical couplings manufactured to comply with AS/NZS 4998:2009 *Bolted unrestrained mechanical couplings for water works purposes*.

The couplings are designed to suit a wide range of pipe OD's and are suitable for joining spigot ends of pipe manufactured from grey or ductile cast iron, steel, PVC-U, PVC-M, PVC-O and asbestos cement. They are not suitable for joining PE pipes.

The range includes straight couplings and stepped couplings in sizes from DN 80 to DN 225 with short barrel and long barrel configurations. The end rings are thermal bonded polymeric coated ductile iron and the barrels are manufactured from either thermal bonded polymeric coated ductile iron or Grade 316 stainless steel. Options include incorporation of either M12 or M16 Grade 316 stainless steel fasteners.

The AVK Series 600 couplings range incorporates additional sizes and alternative coupling configurations including flange adapters and end caps; however, the Scope of this Appraisal is limited to those products included in the ISO Type 5 product certification schedule. See Tables 1, 2 and 3 for complete details of the range included.

**TABLE 1
STRAIGHT COUPLINGS - SHORT BARREL**

Part Number	DN	Reach		SS Fasteners	Barrel Material
601-106000-4312	80	84	106	4 x M12	DIFC
601-106002-4312	80	84	106	3 x M16	DIFC
601-119000-4312	100	99	119	4 x M12	DIFC
601-133000-4312	100	109	133	4 x M12	DIFC
601-133002-4312	100	109	133	3 x M16	DIFC
601-133005-4312	100	109	133	3 x M16	SS
601-157000-4312	125	132	157	4 x M12	DIFC
601-183000-4312	150	157	183	4 x M12	DIFC
601-183002-4312	150	157	183	3 x M16	DIFC
601-183005-4312	150	157	183	3 x M16	SS
601-201000-4312	150	176	201	4 x M12	DIFC
601-215000-4312	200	193	215	4 x M12	DIFC
601-242000-4312	200	218	242	4 x M12	DIFC
601-268000-4312	225	242	268	6 x M12	DIFC

**TABLE 2
STRAIGHT COUPLINGS - LONG BARRELS**

Part Number	DN	Reach		SS Fasteners	Barrel Material
601-106001-4312	80	84	106	4 x M12	DIFC
601-106003-4312	80	84	106	3 x M16	DIFC
601-133001-4312	100	109	133	4 x M12	DIFC
601-133003-4312	100	109	133	3 x M16	DIFC
601-133004-4312	100	109	133	3 x M16	SS
601-183001-4312	150	157	183	4 x M12	DIFC
601-183003-4312	150	157	183	3 x M16	DIFC
601-183004-4312	150	157	183	3 x M16	SS
601-242001-4312	200	218	242	4 x M12	DIFC
601-268001-4312	225	242	268	6 x M12	DIFC

**TABLE 3
STEPPED COUPLINGS – SHORT DIFC BARRELS**

Part Number	DN	Reach		SS Fasteners
602-106119-4312	80 - 100	84-106	99-119	4 x M12
602-106133-4312	80 - 100	84-106	109 - 133	4 x M12
602-119133-4312	100 - 100	99-119	109 - 133	4 x M12
602-119157-4312	100 - 125	99-119	132-157	4 x M12
602-133157-4312	100 - 125	109 - 133	132-157	4 x M12
602-133183-4312	100 - 150	109 - 133	157-183	4 x M12
602-157183-4312	125 - 150	132-157	157-183	4 x M12
602-183201-4312	150 - 150	157-183	176-201	4 x M12
602-201215-4312	150 - 200	176-201	193-215	4 x M12
602-201242-4312	150 - 200	176-201	218-242	4 x M12
602-215242-4312	200 - 200	193-215	218-242	4 x M12
602-242268-4312	200 - 225	218-242	242-268	6 x M12

4 SCOPE OF THE APPRAISAL

This appraisal includes AVK Series 601 unrestrained universal straight couplings and series 602 stepped couplings with ductile iron fusion coated (DIFC) or Grade 316 stainless steel (SS) barrels in long and short options with Grade 316 fasteners, as detailed in Tables 1 to 3 and included in the ISO Type 5 StandardsMark product certification schedule included in Appendix B.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The WSAA Product Appraisal Technical Advisory Group accepts bolted unrestrained mechanical couplings manufactured in compliance with AS/NZS 4998:2009 *Bolted unrestrained mechanical couplings for water works purposes* and duly certified by means of an ISO Type 5 product certification scheme undertaken by a JAS-ANZ accredited

Conformity Assessment Body (CAB) or by an international accreditation system recognised by JAS-ANZ.

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 as a prerequisite to undergoing a product certification audit.

The ISO Type 5 Product Certification Scheme shall meet the criteria described in WSA TN-08.

5.2 Performance Requirements

AVK Series 600 couplings have been appraised for compliance with AS/NZS 4998:2009 *Bolted unrestrained mechanical couplings for water works 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 relevant to this application:

WSA PS 270 – *Mechanical Couplings, Non-End Thrust Restraint for Pressure Applications - Drinking Water, Non-Drinking Water Supply and Sewerage*.

A copy of the Product Specification is available at the following link:

<https://www.wsaa.asn.au/shop/product/35716>

6 COMPLIANCE WITH APPRAISAL CRITERIA

6.1 Compliance with Quality Assurance Requirements

AVK Australia has submitted the following quality certificates:

- ISO 9001:2015 Certificate of Registration No. QEC 13894 issued to AVK Australia Holding Pty Ltd by SAI-Global.
- AS/NZS 4998:2009 ISO Type 5 StandardsMark Product Certification Licence No. SMK40397 issued by SAI-Global.

Copies of ISO 9001 licences have also been submitted for the various component suppliers however their identity has been requested to remain “commercial in confidence”.

Copies of relevant quality certificates are attached in Appendix A.

6.2 Compliance with Performance Requirements

6.2.1 Material Requirements

The Series 600 Coupling range is manufactured using materials conforming to Table 6 of AS/NZS 4998:2009. AVK has provided copies of typical test certificates to demonstrate compliance.

TABLE 4 MATERIALS

Component	Material	Grade	Standard
Barrel	Ductile Iron	400-15	AS1831
	Stainless Steel	316 / 316L	ASTM A240/A240M
End Rings	Ductile Iron	400-15	AS1831
Seals	Elastomer	EPDM	AS1646
Fasteners	Stainless Steel	316	ASTM

6.2.2 Type tests

Type test reports were submitted for the original appraisal to demonstrate compliance with the requirements of AS/NZS 4998:2009 for DN 80 to DN 225 couplings.

The tests include hydrostatic leak-tightness, joint infiltration and assembly.

The University of South Australia, Australian Irrigation Technology and Hydraulics Centre, a NATA certified laboratory, conducted the tests.

6.2.3 Polymeric Coating

AVK coupling ductile iron components are coated with Akzo Nobel Resicoat R4, a thermosetting epoxy powder coating, applied by the fluidized bed technique.

Akzo Nobel Resicoat R4 has StandardsMark product certification to AS/NZS 4158:2003 *Thermal-bonded polymeric coatings on valves and fittings for water industry purposes*, issued by SAI-Global. A copy of the certification is held on file by WSAA.

The coating is applied in-house by AVK at their Adelaide facility.

Application procedures are audited by SAI-Global in conjunction with StandardsMark certification procedures.

6.2.4 Elastomeric Seals

AVK Gummi, a member of the AVK group, manufactures the elastomeric seals from EPDM EUW-60. A test report from an accredited laboratory has been submitted to demonstrate compliance of the EPDM material with EN 681-1.

6.2.5 Effect on Water

The elastomeric seal and the FBE coated surfaces of the coupling are in contact with the water.

A copy of the AS/NZS 4020:2005 test report No MAT/ASN 014C by NSF International Laboratories (UKAS Accreditation No 0626) dated 22nd February 2018 for Akzo Nobel Resicoat R4 is held on file by WSAA.

A copy of the AS/NZS 4020:2005 test report No 233905 from Australian Water Quality Centre (NATA Accreditation No 1115) dated 26 September 2018 for EUW -70 EPDM supplied by AVK Gummi has been submitted to demonstrate compliance of the EPDM seal material to AS/NZS 4020:2018.

6.2.6 Design

The AVK Series 600 range of couplings is a global design manufactured by the AVK Group on a worldwide basis.

6.2.6.1 Coupling Barrel Lengths

AS/NZS 4998 nominates minimum barrel lengths for both short and long barrel couplings. The AVK Series 600 couplings comply with these requirements. Details of barrel length for each coupling is nominated in the Data Sheets attached in Appendix A.

6.2.6.2 Nominal Joint deflection

AS/NZS 4998 requires the manufacturer to nominate the maximum joint deflection allowable at each coupling end, for both minimum and maximum pipe ODs within the nominated coupling reach. See Table 5 for allowable deflections.

TABLE 5. ALLOWABLE JOINT DEFLECTIONS FOR EACH COUPLING END

Nominal Pipe Size	Maximum Deflection, degrees, at:	
	DN	Max Pipe OD
80-225	4	4

6.2.6.3 Nominal Pipe Setting Gap

The maximum pipe setting gap for AVK Couplings is nominated as 20mm for DN 40 to DN 200 and 37mm for DN 225.

6.2.6.4 Leak tightness

When installed in accordance with the installation manual the couplings are designed to hold pressure with maximum deflection.

6.2.6.5 Fasteners

Grade 316 stainless steel fasteners, coated with a galling prevention compound, Delta®-Seal, are utilised in the couplings.

6.2.6.6 Welding

Welding of AVK stainless steel barrels is carried out in accordance with AS/NZS 1554.6 and is capable of meeting the requirements of the inter-granular corrosion test specified in AS 2205.10.1. All stainless steel barrels are passivated in accordance with ASTM A380. Qualification records have been provided to demonstrate compliance.

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

The AVK Installation Manual for Series 600 couplings is attached in Appendix A and is also available on the AVK website at <https://www.avkcivil.com.au/en-au>

8 PRODUCT MARKING

AVK Series 600 couplings have cast-in markings and adhesive label in accordance with the requirements of AS/NZS 4998:2009. Stainless Steel barrels are marked using a stencil.

- Manufacturers Name: AVK
- Batch Identification: e.g., W007598
- Nominal size: e.g., DN100
- PN Rating: PN16
- Reach in millimetres: e.g., 109 - 133
- The standard number: AS/NZS 4998
- Maximum angle of deflection: 4°
- StandardsMark logo and No.

9 PACKAGING AND TRANSPORTATION

AVK couplings are packaged on wooden pallets, protected by corrugated cardboard packing and shrink wrapping.



FIGURE 1 AVK COUPLING PACKAGING

10 PRODUCT WARRANTY

The products are covered by the normal commercial and legal requirements of the *Competition and Consumer Act 2010 (Cth)*. Details of AVK Australia's warranty are included in their terms and conditions of sale.

11 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD TESTING REPORT

AVK Series 601 couplings were first appraised in 2004 and have been approved and used by most Australian Water Utilities for more than a decade.

12 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

There are no outstanding issues.

13 FUTURE WORKS

No future work items have been identified

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.

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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 indemnify 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.

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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



AVK UNIVERSAL STRAIGHT COUPLING PN 16

601

Universal straight couplings PN 16
For cast iron, ductile iron, steel, PVC-U, PVC-M, PVC-O, AC and copper pipes.

Use:

- For water and sewage applications to max. 40°C
- Angular deflection of ± 4 degrees (total 8 degrees)
- 16 bar / 160 metres allowable operating pressure (AOP)
- Non tensile
- This product provides no longitudinal joint restraint

Standards and Approvals:

- All materials are AS/NZS 4020 compliant
- Fully conforming to AS/NZS 4998:2009 Bolted unrestrained mechanical couplings for waterworks purposes
- DN80 to DN225 Standards Mark Licence SMK40397 to AS4998:2009



4 Bolt M12 short Ductile Iron barrel



4 Bolt M12 long Ductile Iron barrel



3 Bolt M16 short Ductile Iron barrel



3 Bolt M16 long Ductile Iron barrel



3 Bolt Long Stainless Steel barrel



4 Bolt Short Stainless Steel barrel



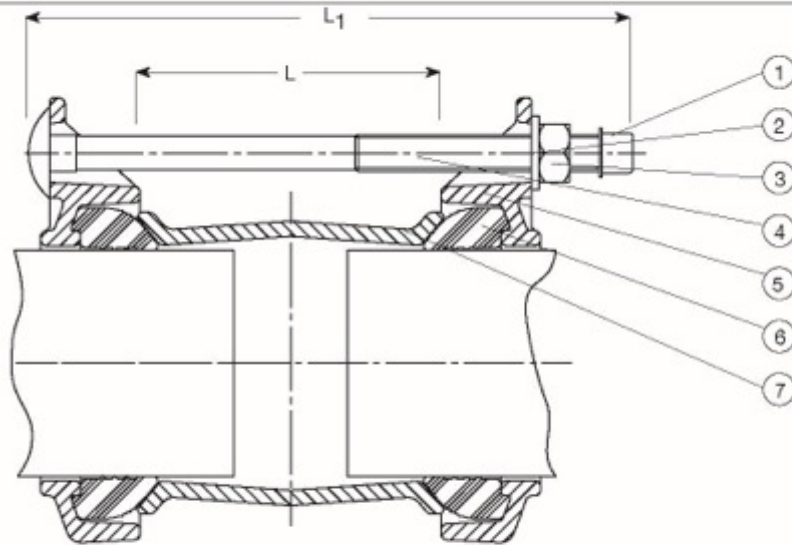
3 Bolt Short Stainless Steel barrel



6 Bolt Short Stainless Steel barrel

Expect... **AVK**

AVK UNIVERSAL STRAIGHT COUPLING PN 16 **601**



Component list

1. End cap	PVC
2. Washers	Stainless Steel 316
3. Nuts	316 Stainless Steel, PTFE Coated
4. Bolts	316 Stainless Steel, PTFE Coated
5. Bracket	DI to AS 1831
6. Rubber Seal	EPDM to AS 1646, AS/NZS 4020
	Compliant
7. Barrel	Ductile Iron or 316 Stainless steel
	* Ductile Iron FBE coated to AS4158

Components can be substituted with equivalent or higher class materials.

Reference nos. and dimensions

AVK ref. nos.	DN	Barrel Material	L mm	L1 mm	Sealing Range mm	Bolts	Theoretical weight kg
Short Barrel							
601-063000-4312	40	Ductile Iron	100	190	41-63	2	2.90
601-074000-4312	50	Ductile Iron	100	190	57-74	2	2.90
601-085000-4312	65	Ductile Iron	100	190	68-85	4	3.90
601-106000-4312	80	Ductile Iron	100	190	84-106	3	4.90
601-119000-4312	100	Ductile Iron	100	190	99-119	4	5.20
601-133005-4312	100	Stainless Steel	100	190	109-133	3	5.50
601-157000-4312	125	Ductile Iron	100	190	132-157	4	6.50
601-183005-4312	150	Stainless Steel	115	210	157-183	3	7.50
601-201000-4312	150	Ductile Iron	115	210	176-201	4	9.0
601-215000-4312	200	Ductile Iron	115	210	193-215	4	9.40
601-242000-4312	200	Ductile Iron	140	230	218-242	4	11.30
601-268000-4312	225	Ductile Iron	140	230	242-268	6	13.40
601-292000-4312	250	Ductile Iron	160	250	266-292	6	15.50
601-306000-4312	250	Ductile Iron	160	250	280-306	6	14.60
601-327000-4312	300	Ductile Iron	160	250	301-327	6	16.40
601-350000-4312	300	Ductile Iron	160	250	324-350	6	16.50
601-378000-4312	350	Ductile Iron	160	250	352-378	6	24.10
601-396000-4312	350	Ductile Iron	160	250	372-396	8	25.0
601-410000-4312	375	Ductile Iron	160	250	384-410	8	25.10
601-436000-4312	400	Ductile Iron	160	250	410-436	8	27.20
601-462000-4312	400	Ductile Iron	160	250	436-462	8	27.65
Long Barrel							
601-106004-4312	80	Stainless Steel	175	270	84-106	3	5.0
601-133004-4312	100	Stainless Steel	175	270	109-133	3	6.35
601-183004-4312	150	Stainless Steel	175	270	157-183	3	8.95
601-242004-4312	200	Stainless Steel	175	270	218-242	4	9.0
601-268004-4312	225	Stainless Steel	175	270	242-268	6	10.5
601-292004-4312	250	Stainless Steel	175	270	266-292	6	13.0
601-350001-4312	300	Ductile Iron	215	305	324-350	6	27.05
601-436001-4312	400	Ductile Iron	215	305	410-436	8	33.2

For further details see section "Technical Information".
The designs, materials and specifications shown are subject to change without notice due to the continuous development of our product programme.

**AVK UNIVERSAL STEP COUPLING PN16****602**

Universal step coupling PN16
For Cast Iron, Ductile Iron, Steel, PVC-U, PVC-M, PVC-O, AC and copper pipes

Use:

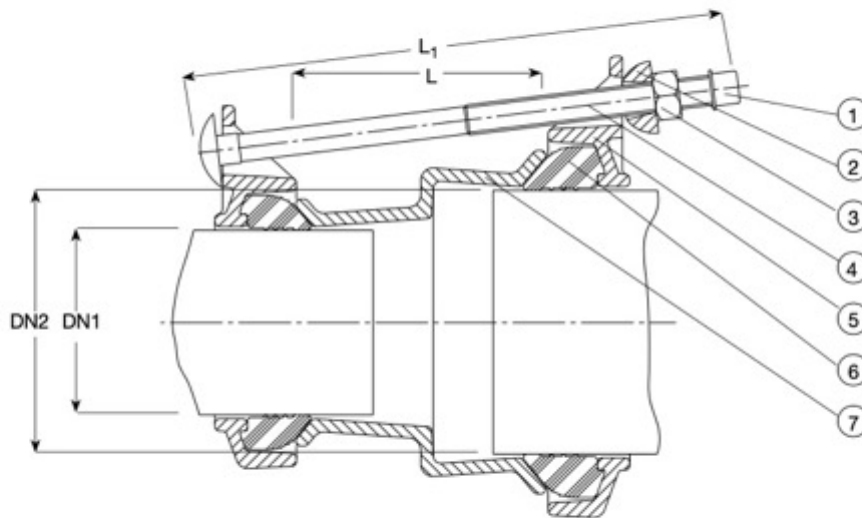
- For water and sewage application to max. 40°C
- Angular deflection of ± 4 degrees (total 8 degrees)
- 16 bar / 160 metres allowable operating pressure (AOP)
- Non tensile
- This product provides no longitudinal joint restraint

Approvals:

- All materials are AS/NZS 4020 compliant
- Fully conforming to AS/NZS 4998:2009 bolted unrestrained mechanical coupling for waterworks purposes



Expect... **AVK**

AVK UNIVERSAL STEP COUPLING PN16**602****Component list**

1. End cap	Ductile Iron, AS 1831 Gr. 400-12 min.
2. Washer	Stainless Steel 316
3. Nut	Stainless Steel 316, PTFE coated
4. Bolt	Stainless Steel 316
5. Bracket	Ductile Iron, AS 1831 Gr. 400-12 min.
6. Rubber seal	Water: EPDM to AS/NZS 1646, AS/NZS 4020 compliant
7. Stepped barrel	Ductile Iron, AS 1831 Gr. 400-12 min.

Components can be substituted with equivalent or higher class materials.

Reference nos. and dimensions

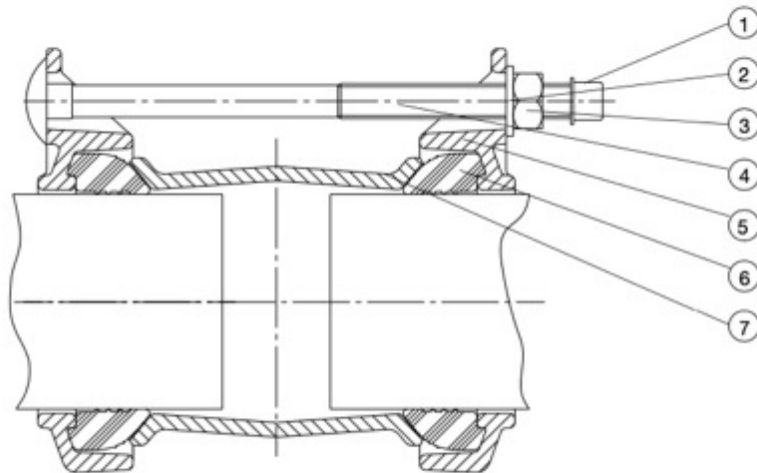
AVK ref. nos.	Pipe		Sealing Range mm		L mm	L1 mm	Bolts	Weight kg
	DN1	DN2	DN1	DN2				
602-063074-4-312	40-50		46-63	57-74	100	190	2	3.2
602-063085-4-312	40-65		46-63	68-85	100	190	4	4.2
602-074085-4-312	50-65		57-74	68-85	100	210	4	4.2
602-074106-4-312	50-80		57-74	84-106	100	210	4	4.5
602-085106-4-312	65-80		68-85	84-106	100	210	4	4.9
602-106119-4-312	80-100		84-106	99-119	100	210	4	5.3
602-106133-4-312	80-100		84-106	109-133	100	210	4	5.3
602-119133-4-312	100-100		99-119	109-133	100	210	4	5.6
602-119157-4-312	100-125		99-119	132-157	100	210	4	6.4
602-133157-4-312	100-125		109-133	132-157	100	210	4	6.4
602-133183-4-312	100-150		109-133	157-183	115	230	4	7.4
602-157183-4-312	125-150		132-157	157-183	115	230	4	7.7
602-183201-4-312	150-150		157-183	176-201	115	230	4	8.9
602-201215-4-312	150-200		176-201	193-215	115	230	4	9.6
602-201242-4-312	150-200		176-201	218-242	140	250	4	11.2
602-215242-4-312	200-200		193-215	218-242	140	250	4	11.0
602-215268-4-312	200-225		193-215	242-268	140	250	6	13.0
602-242268-4-312	200-225		218-242	242-268	140	250	6	13.5
602-268292-4-312	225-250		242-268	266-292	160	270	6	14.5
602-292306-4-312	250-250		266-292	280-306	160	270	6	15.8
602-292327-4-312	250-300		266-292	301-327	160	270	6	16.3
602-327350-4-312	300-300		301-327	324-350	160	270	6	17.3
602-327378-4-312	300-350		301-327	352-378	160	270	8	19.4
602-350378-4-312	300-350		324-350	352-378	160	270	8	20.3
602-378396-4-312	350-350		352-378	372-396	160	270	8	20.7
602-396410-4-312	350-350		372-396	384-410	160	270	8	21.1
602-410436-4-312	350-400		384-410	410-436	160	270	8	21.9
602-436462-4-312	400-400		410-436	436-462	160	270	8	22.7

The designs, materials and specifications shown are subject to change without notice due to the continuous development of our product program.

**AVK SERIES 601, 602, 603 & 605 UNIVERSAL COUPLINGS, ADAPTORS & END CAPS
INSTALLATION, OPERATION & MAINTENANCE MANUAL**

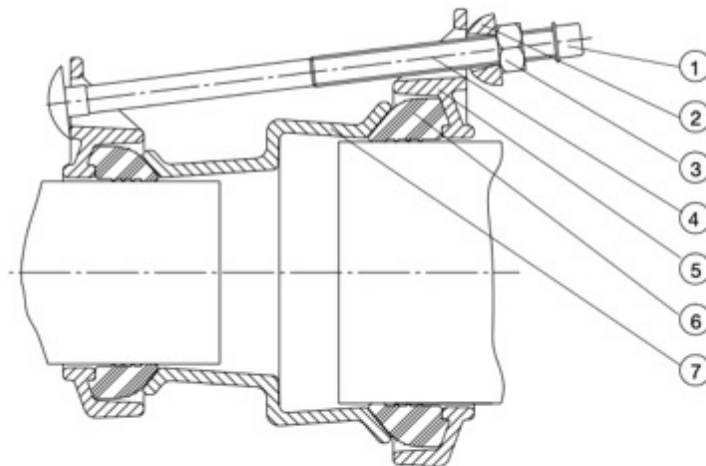
Component list - Series 601

- | | | | |
|------------|---------|----------------|-----------|
| 1. End cap | 3. Nut | 5. Gland ring | 7. Barrel |
| 2. Washer | 4. Bolt | 6. Rubber seal | |



Component list - Series 602

- | | | | |
|------------|---------|----------------|-------------------|
| 1. End cap | 3. Nut | 5. Gland ring | 7. Stepped barrel |
| 2. Washer | 4. Bolt | 6. Rubber seal | |



AVK SERIES 601, 602, 603 & 605 UNIVERSAL COUPLINGS, ADAPTORS & END CAPS INSTALLATION, OPERATION & MAINTENANCE MANUAL

2. Installation

- All of the Series 600 mechanical fittings are supplied as an assembled unit ready for use, dismantling of the parts is unnecessary.
- Examine the fitting before assembling to ensure that no damage has occurred during transit.
- Check that the sealing range indicated on the label of the fitting is compatible with the actual pipe diameter/s.
- When assembling Universal Flange Adaptors, check that the Nominal flange size and pressure ratings are compatible with the valve.
- Check that the sealing element supplied is suitable for the medium conveyed in the pipeline.
- Examine pipe ends to which the fitting is to be assembled, ensuring that they are round and square and free from dents, bulges and score marks.
- When assembling to a steel pipe which has longitudinal seam welds, the weld seam must be removed by grinding. Care should be taken to ensure that the pipe surface profile is maintained.
- Pipe end(s) must be cleaned by wire brushing, to remove all rust, scale or debris etc...
- Align pipe end(s) maintaining the correct level and concentricity, whilst leaving sufficient gap between pipe ends to allow installation of the fitting. Ensure deflection does not exceed $\pm 4^\circ$ per connection.

COUPLINGS

- To provide indication that the coupling has been assembled central over the pipe ends, mark both pipe ends at a distance equal to half the length of the barrel + half the setting gap.

$$\text{DISTANCE OF MARK FROM EACH PIPE END} = \frac{\text{BARREL LENGTH OF FITTING} + \text{SETTING GAP}}{2}$$

Example: 601-133000-4312, Barrel length = 100mm
Setting gap = 20mm (see below)

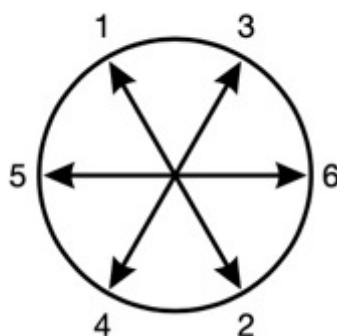
$$\text{DISTANCE OF MARK FROM EACH PIPE END} = \frac{100+20}{2} = 60\text{mm}$$

RECOMMENDED GAP SETTINGS

DN40 to DN200 Maximum setting gap = 20mm
DN250 to DN400 Maximum setting gap = 37mm

- Slide coupling onto the fixed pipe end (use necessary lubricant as appropriate).
- Slide free pipe end into coupling, ensuring that the markings on both pipe ends line up with the ends of the fitting.
- Tighten diametrically opposed bolts as indicated on label, to ensure that the sealing element is loaded evenly. It is essential that all bolts are torqued using a torque wrench evenly as indicated on the label.

Bolt Torquing Sequence



Torque Setting:
3 bolt couplings 60-70Nm
4 bolt or more 40-50Nm

Note: S/S fasteners should not be reused.

Expect... **AVK**

AVK SERIES 601, 602, 603 & 605 UNIVERSAL COUPLINGS, ADAPTORS & END CAPS INSTALLATION, OPERATION & MAINTENANCE MANUAL

- On completion of the bolt tightening, the radial gap between the pipe and inside diameter of the glandring should be even all around the fitting. Some evidence of rubber extruding between the pipe and glandring might be evident.

Notes !

- These couplings will not provide end restraint, this must be proved by other means, especially when using the stepped type couplings.
- External loading action on the fittings might have serious effects upon its performance such as weights of pipelines, spool pieces, back fill etc... All pipes should be supported independently on each side of the fitting.
- It is advisable to replace all stainless steel fasteners in the event of having to reposition the fitting.

FLANGE CONNECTIONS

- When installing flange adaptors ensure the flange faces are clean.
- To ensure adequate sealing it is important to select the correct type of gasket for the medium concerned, gaskets with the correct flange size must be used.
- Tighten flange bolts loosely.
- Tighten bolts in a diagonal sequence to ensure flanges are pulled up parallel.
- Finally tighten bolts to correct torque levels as recommended in WSA 109 specification.

Flange bolt size

The following table shows the bolt sizes you should use for the DN flange dimensions.

DN	AS 4087 Table B5		AS 2129 Table E	
	Bolts	Quantity	Bolts	Quantity
50	M16	4	M16	4
80	M16	4	M16	4
100	M16	4	M16	8
150	M16	8	M20	8
200	M16	8	M20	8
225	M16	8	-	-
250	M16	8	M20	12
300	M20	12	M24	12
375	M24	12	M24	12
400	M24	12	M24	12

APPENDIX B - QUALITY CERTIFICATIONS

Copies of the following Quality Certification Certificates are available from WSAA.

**TABLE B1
AVK AUSTRALIA HOLDING PTY LTD - MANAGEMENT SYSTEMS**

559A Grand Junction Road Wingfield South Australia	
Quality Systems Standard	ISO: 9001:2015
Certification Licence No.	QEC 13894
Certifying Agency	SAI Global
First Date of Certification	30 April 2001
Current Date of Certification	10 February 2021
Expiry Date of Certification	14 February 2024

**TABLE B2
AVK AUSTRALIA PTY LTD - PRODUCT CERTIFICATION**

559A Grand Junction Road Wingfield South Australia	
Product Standard/Spec.	AS/NZS 4998:2009
Certificate No.	SMK40397
Issuing Certification Body	SAI Global
First Date of Certification	25 November 2014
Current Date of Certification	13 May 2019
Expiry Date of Certification	24 November 2024



CERTIFICATE OF REGISTRATION

This is to certify that:

AVK Australia Holding Pty Ltd

ABN 11 081 236 777

AVK Valves Pty Ltd

ABN 25 615 247 544

AVK Flow Control Pty Ltd

ABN 80 153 707 398

AVK CTS Pty Ltd

Trading as Complete Tapping Service

ABN 59 621 126 207

AVK Wang Pty Ltd

ABN 29 605 784 343

AVK Currumbin Pty Ltd

ABN 24 615 602 250

559A Grand Junction Road Wingfield SA 5013 AUSTRALIA

(Refer to Attachment to Certificate of Registration dated 12 February 2021 for additional certified sites)

operates a

QUALITY MANAGEMENT SYSTEM

which complies with the requirements of

ISO 9001:2015

for the following scope

The manufacture, marketing and sale of valves and associated products including stainless steel pipe couplings, tapping saddles and flange off take clamps and the provision of under pressure tapping, line stopping and valve insertion services.

Certificate No: QEC13894

Issued: 12 February 2021

Originally Certified: 30 April 2001

Expires: 14 February 2024

Current Certification: 10 February 2021

Frank Camasta
Global Head of Technical Services
SAI Global Assurance



Registered by:
SAI Global Certification Services Pty Ltd (ACN 108 716 669) 680 George Street Sydney NSW 2000 Australia with SAI Global Pty Limited 680 George Street Sydney NSW 2000 Australia ("SAI Global") and subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line Certification register at <http://register.saiglobal.com/>





STANDARDSMARK LICENCE

SAI Global hereby grants:

AVK Australia Holding Pty Ltd

ABN 11 081 236 777

559A Grand Junction Road, Wingfield, SA 5013, Australia

And

Cnr Sanford Road and Gibson Street, Wangaratta, VIC 3677, Australia

StandardsMark Licence

Manufactured to:

AS/NZS 4998:2009 - Bolted unrestrained mechanical couplings for waterworks purposes

"the StandardsMark Licensee" the right to use the STANDARDSMARK as shown below only in respect of the goods described and detailed in the Schedule which are produced by the Licensee or on behalf of the Licensee* and which comply with the appropriate Standard referred to above as from time to time amended. The Licence is granted subject to the rules governing the use of the STANDARDSMARK and the Terms and Conditions for certification and licence. The Licensee covenants to comply with all the Rules and Terms and Conditions.

Licence No: SMK40397

Issued : 19 May 2021

Expires : 24 November 2024

Originally Certified : 25 November 2014

Current Certification : 13 May 2019

Frank Camasta
Global Head of Technical Services
SAI Global Assurance



* For details of manufacture, refer to the licensee

The STANDARDSMARK is a registered certification trademark of SAI Global Pty Limited (A.C.N. 050 644 642) and is issued under licence by SAI Global Certification Services Pty Limited (ACN 108 716 669) ("SAI Global") 680 George Street, Sydney NSW 2000, GPO Box 5420 Sydney NSW 2001. This certificate remains the property of SAI Global and must be returned to SAI Global upon its request. Refer to www.saiglobal.com, for the list of product models.



SCHEDULE TO STANDARDSMARK LICENCE

SAI Global hereby grants:

AVK Australia Holding Pty Ltd

559A Grand Junction Road, Wingfield, SA 5013, Australia

And

Cnr Sanford Road and Gibson Street, Wangaratta, VIC 3677, Australia

StandardsMark Licence

Manufactured to:

AS/NZS 4998:2009 - Bolted unrestrained mechanical couplings for waterworks purposes

Model identification of the goods on which the STANDARDSMARK may be used:

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
601-106000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 84 mm - 106 mm. Short DI Barrel, 4 x M12 Bolts.	80	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-106001-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 84 mm - 106 mm. Long DI Barrel, 4 x M12 Bolts.	80	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016

Licence No: SMK40397

Issued Date: 19 May 2021

This schedule supersedes all previously issued schedules



* For details of manufacture, refer to the licensee

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SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
601-106002-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 84 mm - 106 mm. Short DI Barrel, 3 x M16 Bolts.	80	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-106003-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 84 mm - 106 mm. Long DI Barrel, 3 x M16 Bolts.	80	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-119000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 99 mm - 119 mm. Short DI Barrel, 4 x M12 Bolts.	100	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-133000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 109 mm - 133 mm. Short DI Barrel, 4 x M12 Bolts.	100	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-133001-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 109 mm - 133 mm. Long DI Barrel, 4 x M12 Bolts.	100	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016

Licence No: SMK40397

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SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
601-133002-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 109 mm - 133 mm. Short DI Barrel, 3 x M16 Bolts.	100	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-133003-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 109 mm - 133 mm. Long DI Barrel, 3 x M16 Bolts.	100	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-133004-4312	Series 601	AVK	Universal OD coupling, SS Barrel and Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 109 mm - 133 mm. Long SS Barrel, 3 x M16 Bolts.	100	16	FBE - Brackets	4	Stainless Steel Barrel, FBE Coated Brackets EPDM Seals Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-133005-4312	Series 601	AVK	Universal OD coupling, SS Barrel and Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 109 mm - 133 mm. Short SS Barrel, 3 x M16 Bolts.	100	16	FBE - Brackets	4	Stainless Steel Barrel, FBE Coated Brackets EPDM Seals Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-157000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 132 mm - 157 mm. Short DI Barrel, 4 x M12 Bolts.	125	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016

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SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
601-183000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 157 mm - 183 mm. Short DI Barrel, 4 x M12 Bolts.	150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-183001-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 157 mm - 183 mm. Long DI Barrel, 4 x M12 Bolts.	150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-183002-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 157 mm - 183 mm. Short DI Barrel, 3 x M16 Bolts.	150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-183003-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 157 mm - 183 mm. Long DI Barrel, 3 x M16 Bolts.	150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-183004-4312	Series 601	AVK	Universal OD coupling, SS Barrel and Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 157 mm - 183 mm. Long SS Barrel, 3 x M16 Bolts.	150	16	FBE - Brackets	4	Stainless Steel Barrel, FBE Coated Brackets EPDM Seals Stainless Steel Bolts	Water and Sewage	21 Jan 2016

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SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
601-183005-4312	Series 601	AVK	Universal OD coupling, SS Barrel and Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 157 mm - 183 mm. Short SS Barrel, 3 x M16 Bolts.	150	16	FBE - Brackets	4	Stainless Steel Barrel, FBE Coated Brackets EPDM Seals Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-201000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 176 mm - 201 mm. Short DI Barrel, 4 x M12 Bolts.	150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-215000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 193 mm - 215 mm. Short DI Barrel, 4 x M12 Bolts.	200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-242000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 218 mm - 242 mm. Short DI Barrel, 4 x M12 Bolts.	200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-242001-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 218 mm - 242 mm. Long DI Barrel, 4 x M12 Bolts.	200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016

Licence No: SMK40397

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SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
601-183005-4312	Series 601	AVK	Universal OD coupling, SS Barrel and Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 157 mm - 183 mm. Short SS Barrel, 3 x M16 Bolts.	150	16	FBE - Brackets	4	Stainless Steel Barrel, FBE Coated Brackets EPDM Seals Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-201000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 176 mm - 201 mm. Short DI Barrel, 4 x M12 Bolts.	150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-215000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 193 mm - 215 mm. Short DI Barrel, 4 x M12 Bolts.	200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-242000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 218 mm - 242 mm. Short DI Barrel, 4 x M12 Bolts.	200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-242001-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 218 mm - 242 mm. Long DI Barrel, 4 x M12 Bolts.	200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016

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* For details of manufacture, refer to the licensee

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SCHEDULE TO STANDARDSMARK LICENCE

Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
601-268000-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 242 mm - 268 mm. Short DI Barrel, 6 x M12 Bolts.	225	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
601-268001-4312	Series 601	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 242 mm - 268 mm. Long DI Barrel, 6 x M12 Bolts.	225	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-106119-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 84 mm - 106 mm and 99 mm - 119 mm. DI Barrel, 4 x M12 Bolts.	80/100	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-106133-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 84 mm - 106 mm and 109 mm - 133 mm. DI Barrel, 4 x M12 Bolts.	80/100	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-119133-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 99 mm - 119 mm and 109 mm - 133 mm. DI Barrel, 4 x M12 Bolts.	100/100	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016

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Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
602-119157-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 99 mm - 119 mm and 132 mm - 157 mm. DI Barrel, 4 x M12 Bolts.	100/125	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-133157-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 109 mm - 133 mm and 132 mm - 157 mm. DI Barrel, 4 x M12 Bolts.	100/125	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-133183-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 109 mm - 133 mm and 157 mm - 183 mm. DI Barrel, 4 x M12 Bolts.	100/150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-157183-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 132 mm - 157 mm and 157 mm - 183 mm. DI Barrel, 4 x M12 Bolts.	125/150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-183201-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 157 mm - 183 mm and 176 mm - 201 mm. DI Barrel, 4 x M12 Bolts.	150/150	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016

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Model Identification	Model Name	Brand Name	Product Description	Product Type	Nominal Size	Pressure Classification PN	Coating	Maximum angle of deflection (°)	Materials	Application	Date Endorsed
602-201215-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 176 mm - 201 mm and 193 mm - 215 mm. DI Barrel, 4 x M12 Bolts.	150/200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-201242-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 176 mm - 201 mm and 218 mm - 242 mm. DI Barrel, 4 x M12 Bolts.	150/200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-215242-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 193 mm - 215 mm and 218 mm - 242 mm. DI Barrel, 4 x M12 Bolts.	200/200	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016
602-242268-4312	Series 602	AVK	Universal OD coupling, SS Bolts	Unrestrained Mechanical Coupling. Sealing range: Pipe OD 218 mm - 242 mm and 242 mm - 268 mm. DI Barrel, 6 x M12 Bolts.	200/225	16	Fusion Bonded Epoxy	4	FBE coated Ductile Iron Barrel and Brackets, EPDM Seals, Stainless Steel Bolts	Water and Sewage	21 Jan 2016

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APPENDIX C - SUPPLIER CONTACTS

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