

Water Supply and Sewerage Approved Products Manual - February 2006

Water Supply – Maintenance Products

Section WO 04

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WO 04-S1A MULTI-PURPOSE UNRESTRAINED MECHANICAL COUPLINGS

STANDARD	WSA 105: 2005 Unrestrained mechanical couplings					
DESIGN	Multi-purpose (or universal) unrestrained mechanical couplings are able to join a pipe of one material to many different material pipes without varying any of the coupling components. The couplings comprise two end rings with each retaining between a central sleeve an elastomeric ring seal. When tie bolts between the end rings are tightened, the wedge face of the ring seals are compressed against the raised ends of the central sleeve, thus deforming the seal downwards onto the outside wall of the adjoining pipes. The wedge design of the elastomeric seals and sleeve ends adjust sealing where adjoining pipes have wide variations in their respective outside diameters. Pipe nominal sizes normally have to be compatible but outside diameters do not. DI, CI, AC, PVC, GRP and steel pipes may be joined to each other.					
MATERIALS	Sleeve (barrels):	Ductile iron to AS 1831 grade 400-15 Carbon steel to AS/NZS 1594 grade HU 250 ABS TO AS 3518 Stainless steel to ASTM A 240M grade 316L or 316				
	End rings (flanges or clips):	Ductile iron to AS 1831 grade 400-15 Carbon steel to AS/NZS 1594 grade HU 250 Gunmetal grade to AS 1565 grade C83600A Stainless steel to ASTM A 240M grade 316L or 316				
	Bolts:	Stainless steel to ASTM F593 grade 316				
	Nuts:	Stainless steel to ASTM AF594 grade 316				
	Washers:	Stainless steel ASTM F84 grade 316				
	Joint seals:	EPDM or NBR to AS 1646				
	Coatings:	Ductile iron and carbon steel components to have thermal bonded polymeric coating to AS/NZS 4158 on internal and external surfaces. Coating on fastener threads to be 50-75 microns thick				
	Anti galling:	Stainless steel threads – Molybdenum disulphide or Teflon dry film lubricant				
FASTENERS DESIGN		Bolts	Nuts	Washers		
	Stainless Steel:	AS 1110.1 grade A	AS 1112.1 grade A	ISO 887 or ISO 7091 gr A		
		Bolt head to be captured in coupling end ring for single spanner operation.				
MINIMUM BARREL LENGTH (long series)	DN	Length(mm)	DN	Length(mm)	DN	Length(mm)
	80	175	225	175	450	215
	100	175	250	175	525	215
	150	175	300	215	600	215
	200	175	375	215	750	215
WORKING PRESSURE	PN16	1.6MPa				
	PN35	3.5MPa				
JOINT DEFLECTIONS	DN 80-300: 6°	DN 375: 5°	DN 450, 500: 4°	DN 600, 750: 3°		
COUPLING MARKINGS	Manufacturer's name or trademark	*Pipe OD range as tested (mm), e.g. OD 109-133				
	Batch identification	*Pipe types & PN rating(s) for which coupling suitable				
	Nominal diameter (DN, e.g. DN100)	*Maximum angle of deflection				
		*The number of this standard, i.e. WSA 105				
MARKING METHOD	Legibly and durably marked or cast.	*legibly marked on adhesive label on body or printed on packaging. Do not apply labels to stainless steel.				

WO 04-S3 MULTI-PURPOSE FLANGED ADAPTORS

STANDARD	WSA 105: 2005 Unrestrained mechanical couplings					
DESIGN	Multi-purpose (or universal) unrestrained flanged adaptors comprise a multi-purpose flange connector at one end and a multi-purpose coupler the other. The multi-purpose flange connects to a variety of flange specifications. The multi-purpose coupler can join to many different material pipe spigots without altering coupler components; it comprises a retaining end ring ahead of a short sleeve (sleeve and multi-purpose flange are one piece). When tie bolts holding the multi-coupler end ring are tightened, the wedge face of the ring seal is compressed against the raised end of the sleeve to deform the seal down onto the inserted pipe. The multi-coupler end can join to DI, CI, AC, PVC, GRP and steel pipe spigots.					
MATERIALS	Sleeve (barrels):	Ductile iron to AS 1831 grade 400-15 Carbon steel to AS/NZS 1594 grade HU 250 ABS TO AS 3518 Stainless steel to ASTM A 240M grade 316L or 316				
	End-ring (or clip):	Ductile iron to AS 1831 grade 400-15 Carbon steel to AS/NZS 1594 grade HU 250 Gunmetal grade to AS 1565 grade C83600A Stainless steel to ASTM A 240M grade 316L or 316				
	Bolts:	Stainless steel to ASTM F593 grade 316				
	Nuts:	Stainless steel to ASTM AF594 grade 316				
	Washers:	Stainless steel ASTM F84 grade 316				
	Joint seals:	EPDM or NBR to AS 1646				
	Coatings:	Ductile iron and carbon steel components to have thermal bonded polymeric coating to AS/NZS 4158 on internal and external surfaces. Coating on fastener threads to be 50-75 microns thick				
	Anti galling:	Stainless steel threads – Molybdenum disulphide or Teflon dry film lubricant				
FASTENERS DESIGN		Bolts		Nuts		Washers
	Stainless Steel:	AS 1110.1 grade A		AS 1112.1 grade A		ISO 887 or ISO 7091 gr A
MINIMUM SEALING LENGTH	DN	Length (mm)	DN	Length (mm)	DN	Length (mm)
	80	55	225	90	450	120
	100	65	250	100	525	130
	150	75	300	110	600	135
	200	85	375	110		
JOINTING	Flange to AS 4087 or equivalent					
WORKING PRESSURE	1.6 MPa (allowable operating pressure)					
JOINT DEFLECTIONS	DN 80-300: 6°		DN 375: 5°		DN 450, 500: 4° DN 600: 3°	
COUPLING MARKINGS	Manufacturer's name or trademark Nominal size and pressure rating Pipe types for which coupling is designed Year of manufacture			Pipe diameter tolerance range (optional) Allowable operating pressure (working pressure) Maximum angle of deflection Type of use, e.g. potable water (optional)		
MARKING METHOD	Legibly and durably marked or cast.					

WO 04-S4 SINGLE PURPOSE RESTRAINED MECHANICAL COUPLINGS

Specification under revision

WO 04-S5 SINGLE PURPOSE UNRESTRAINED MECHANICAL COUPLINGS

Specification under revision

WO 04-S6 STAINLESS STEEL PLAIN REPAIR CLAMPS

STANDARD	AS 4181: 1999 Stainless steel clamps for waterworks purposes	
DESIGN	Stainless steel plain repair clamps are designed for repair of holed or weak pipe. Repair clamps have limited ability to accommodate axial deflection and as such are not to be used to join pipes. They may be used however for repair of full pipe breaks where pipe ends are considered stable. Each clamp nominal size can cover a wide diameter range making them suitable for a number of pipe materials. The clamp is required to be self aligning and locking in its assembly prior to tightening of the retaining system. No contact between the stainless steel clamp and ferrous pipe material is allowed. Clamps may be designed to comprise of one, two or three stainless steel band parts. The clamp elastomeric seal is to be one continuous strip. The clamp design is required to eliminate any crevices between the gasket and mating stainless steel surfaces after tightening. Where applicable the clamp elastomeric seal is to be continuously and uniformly bonded to the inner surface of the clamp band.	
MATERIALS	Band, bolts, nuts, washers:	Specification under review
	Clamp seal:	Specification under review
FASTENING SYSTEM	Specification under review	
ALLOWABLE OPERATING PRESSURE	1.6 MPa	(WS20 has 2 MPa for DN 300 and less and 1.2 MPa for above DN300 – this is based on superceded AS 4181 and is now a redundant reqt)
MARKINGS	Manufacturer's name or trademark Diameter range Allowable operating pressure	StandardsMark certification mark on clamp body. Traceability code (not in AS 4181)
MARKING METHOD	Adhesive labels shall not be used	
COMPATIBLE PIPE OD's	Ductile iron (class K9 or K12), PVC Series 1, GRP (Hobas), grey cast iron (class B), grey cast iron (class C), asbestos cement (class A and B), asbestos cement (class C and D)	

WO 04-S7 STAINLESS STEEL CLAMPS WITH FLANGE OFFTAKES

STANDARD	AS 4181: 1999 Stainless steel clamps for waterworks purposes					
DESIGN	Stainless steel clamps with flange offtakes are an alternative means of tapping a main. The offtake is located centrally along the clamp length. Each clamp nominal size can cover a wide diameter range making them suitable for a number of pipe materials. The clamp is required to be self-aligning and locking in its assembly prior to tightening of the retaining system. No contact between the stainless steel clamp and ferrous pipe material is allowed. Clamps may be designed to comprise of one, two or three stainless steel band parts. The clamp elastomeric seal is to be one continuous strip. The clamp design is required to eliminate any crevices between the gasket and mating stainless steel surfaces after tightening. Where applicable the clamp elastomeric seal is to be continuously and uniformly bonded to the inner surface of the clamp band.					
MATERIALS	Band, bolts, nuts, washers:	Stainless steel grade 316 or 316L to ASTM A240/240M, ASTM A276, ASTM A312/A312M or ANSI B16.3. SS surfaces finished to AS/NZS 1554.6, welding quality to category 2B of AS/NZS 1554.6 and welds meeting intergranular corrosion test in AS 2205.10.1 (electrodes to ANSI/AWS A 5.9)				
	Clamp seal:	Approved elastomer to AS 1646 or BS EN 681-1, e.g. styrene butadiene rubber (SBR) or nitrile butadiene rubber (NBR).				
FASTENING SYSTEM	Bolts to AS/NZS 1111, nuts to AS/NZS 1112 or bolts and nuts to AS/NZS 1252. Screw threads rolled, formed and sized to carry the designed torque and tension loads without user applied lubrication.					
OFFTAKE	Flange to AS 4087. Insulate stainless steel offtake from cast iron, mild steel and copper.					
MINIMUM CLAMP LENGTH	DN 50-80:	300 mm for DN 50 and DN 65 offtake, 400 mm for DN 80 offtake				
	DN 100-150:	400 mm				
	DN 200-250:	400 mm for DN 50 to 150 offtake, 600 mm for DN 200 to 250 offtake				
	DN 350-600:	400 mm for DN 50 to 150 offtake, 600 mm for DN 200 to 250 offtake and 800 mm for DN 300 offtake				
CLAMP OD RANGE	DN	OD range (mm)	DN	OD range (mm)	DN	OD range (mm)
	50	50-70	200	200-245	400	400-480
	65	63-85	225	225-270	450	450-540
	80	76-105	250	250-310	500	500-590
	100	100-150	300	300-380	525	570-650
	125	127-150	350	350-430	600	610-750
	150	150-200	375	400-460		
ALLOWABLE OPERATING PRESSURE	Dependent on allowable operating pressure of flange offtake.					
MARKINGS	Manufacturer's name or trademark Diameter range Allowable operating pressure StandardsMark certification mark on clamp body. Traceability code (not in AS 4181)					
MARKING METHOD	Adhesive labels shall not be used					

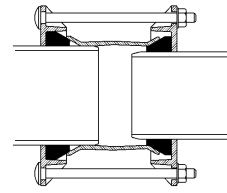
WO 04-S8 STAINLESS STEEL CLAMPS WITH THREADED OFFTAKES

STANDARD	AS 4181: 1999 Stainless steel clamps for waterworks purposes					
DESIGN	Stainless steel clamps with threaded offtakes are a means of repairing a damaged main tapping. The offtake is located centrally along the clamp length. Each clamp nominal size can cover a wide diameter range making them suitable for a number of pipe materials. The clamp is required to be self-aligning and locking in its assembly prior to tightening of the retaining system. No contact between the stainless steel clamp and ferrous pipe material is allowed. Clamps may be designed to comprise of one, two or three stainless steel band parts. The clamp elastomeric seal is to be one continuous strip. The clamp design is required to eliminate any crevices between the gasket and mating stainless steel surfaces after tightening. Where applicable the clamp elastomeric seal is to be continuously and uniformly bonded to the inner surface of the clamp band.					
MATERIALS	Band, bolts, nuts, washers:	Stainless steel grade 316 or 316L to ASTM A240/240M, ASTM A276, ASTM A312/A312M or ANSI B16.3. SS surfaces finished to AS/NZS 1554.6, welding quality to category 2B of AS/NZS 1554.6 and welds meeting intergranular corrosion test in AS 2205.10.1 (electrodes to ANSI/AWS A 5.9)				
	Clamp seal:	Approved elastomer to AS 1646 or BS EN 681-1, e.g. styrene butadiene rubber (SBR) or nitrile butadiene rubber (NBR)				
FASTENING SYSTEM	Bolts to AS/NZS 1111, nuts to AS/NZS 1112 or bolts & nuts to AS/NZS 1252. Screw threads rolled, formed and sized to carry the designed torque and tension loads without user applied lubrication.					
OFFTAKE	DN 20 and DN 25. Internal thread of tapping boss to AS 1722.1, RP series. Insulate stainless steel offtake from copper water service.					
MINIMUM CLAMP LENGTH	DN 50-80:	150 mm				
	DN 100-150:	200 mm				
	DN 200	200 mm for DN 15 to DN 50 offtake, 300 mm for DN 65 to DN 100				
	DN 225-250:	300 mm				
	DN 350-600:	400 mm				
CLAMP OD RANGE	DN	OD range	DN	OD range	DN	OD range
	50	50-70	200	200-245	400	400-480
	65	63-85	225	225-270	450	450-540
	80	76-105	250	250-310	500	500-590
	100	100-150	300	300-380	525	570-650
	125	127-150	350	350-430	600	610-750
	150	150-200	375	400-460		
ALLOWABLE OPERATING PRESSURE	1.6 Mpa					
MARKINGS	Manufacturer's name or trademark Diameter range Allowable operating pressure StandardsMark certification mark on clamp body. Traceability code (not in AS 4181)					
MARKING METHOD	Adhesive labels shall not be used					

WO 04-S9 POLYETHYLENE PIPE FITTINGS

STANDARD	AS/NZS 4129: 2000 Fittings for polyethylene (PE) pipes for pressure applications
DESIGN	Fittings are to be plastic body mechanical compression sealing. The fittings comprise nut ends which contain a pipe gripper or split ring. The pipe spigot is pushed hard into the socketed ends of the fittings. Either the nuts, grippers and O-rings are pushed on the pipe or the nuts are loosened on the fitting to allow insertion of the pipe into the fitting. Tightening of the nuts on the fitting body tightens the gripper on the pipe, and compresses the O-rings so they seal against the pipe outer wall and the fitting inner wall.
MATERIALS	<p>Body and nuts: Polypropylene homopolymer (PPH) Polypropylene block copolymer (PPB) Polypropylene random copolymer (PPR) POM (homopolymer) POM (random copolymer)</p> <p>Split ring: Acetal</p> <p>O-rings: Approved elastomers to AS 1646 and SP15</p>
JOINTING	Mechanically compressed elastomeric O-ring seal
PRESSURE CLASS	PN 12.5 minimum (PN 12.5 means nominal working pressure of 1.25 MPa at 20°C)
MARKINGS	Manufacturer's name or registered trademark. Date or batch code. Nominal size (DN) of the pipe to which the fitting is suited. Identification including grade and type of material, of the plastics material used for the body of the fitting, abbreviated in accordance with ISO 1043.1 or ASTM D1600 or AS/NZS 4131. Classification, in accordance with the pipe classification for which the fitting is to be used. The standard number AS/NZS 4129 StandardsMark product certification mark
MARKING METHOD	Legibly and permanently on the outside of the body of the fitting or the end caps.

**MULTI-PURPOSE UNRESTRAINED
MECHANICAL COUPLINGS**
(FOR DI/ CI/ AC/ PVC)

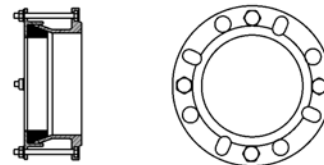


Nominal Size DN	Viking (Maxifit)			Tyco (Vari-Gib)			AVK (Series 601)		
	Clamp Range ID (mm)	No of Bolts	Sleeve Length (mm)	Clamp Range ID (mm)	No of Bolts	Sleeve Length (mm)	Clamp Range ID (mm)	No of Bolts	Sleeve Length (mm)
80							84-106	4	175
100	109.6-127.8	4	245	109-133	3	176	109-133	4	175
150	159.2-181.6	4	245	158-182	3	176	157-183	4	175
200	218.1-235.0	4	245	214-238	5	176	218-242	4	175
225	250.0-267.0	6	185	240-264	5	176	242-268	6	175
250	272.0-289.0	6	185	272-296	5	176	266-292	6	175
300				310-334	5	216			
300				330-354 ¹	5	216	324-350 ¹	6	215
375	394.3-411.3 ¹	8	310	410-434 ¹	8	216			
375	418.2-435.2	8	310						
450				488-512	10	216			
450	501.9-518.9	10	310	498-522	10	216			
500				542-566	12	216			
500	555.3-572.3	12	310	552-576	12	216			
600	662.0-679.0	14	310	648-672	14	216			
750									

NOTES

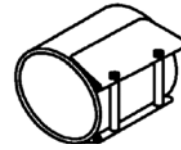
1. Not suitable for Series 1 PVC OD

**MULTI-PURPOSE FLANGED
ADAPTORS**
(FOR DI/ CI/ AC/ PVC)



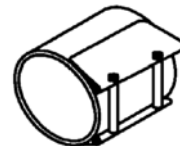
Nominal Size DN
80
100
150
200
225
250

**SINGLE PURPOSE RESTRAINED
MECHANICAL COUPLINGS
(FOR DI/CI)**



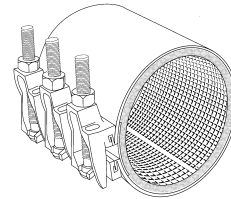
Nominal Size
DN
26.9
30.0
33.7
38.0
42.4
44.5
48.3
54.0
57.0
60.3
73.0
76.1
84.0
88.9
100.6
101.6
104.0
104.8
108.0
114.3
127.0
129.0
130.2
133.0
139.7
141.3
154.0
159.0
168.3
193.7
200.0
204.0
219.1
244.5
250.0
254.0
267.0
273.0
304.0
323.9
355.6
406.4
457.2
508.0
558.8
609.6

**SINGLE PURPOSE UNRESTRAINED
MECHANICAL COUPLINGS
(FOR DI/CI/PE/AC/GRP/CONCRETE)**



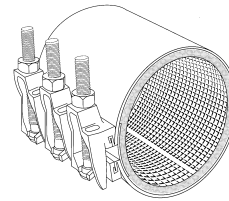
Nominal Size (DN)
48.3
54.0
57.0
60.3
73.0
76.1
84.0
88.9
100.6
101.6
104.0
104.8
108.0
114.3
127.0
129.0
130.2
133.0
139.7
141.3
154.0
159.0
168.3
180.0
200.0
219.1
250.0
267.0
273.0
304.0
323.9
355.6
406.4
457.2
508.0
558.8
609.6
711.2
762.0
812.8
914.4
1016.0
1117.6
1219.2
1320.8
1422.4
1524.0
1625.0

**SINGLE PART
STAINLESS STEEL REPAIR CLAMPS**



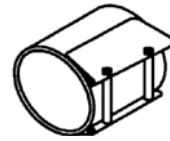
Nominal Size Pipe DN x Clamp length	Clamp Range ID (mm)	Crevet Compatible Pipeline Systems	Clamp Range ID (mm)	Wang Compatible Pipeline Systems
40 x 150			47 - 52	UPVC/ GST
50 x 150			47 - 52	Cu
50 x 150	59 - 64	UPVC/ GST	59 - 64	UPVC/ GST
50 x 200	59 - 64	UPVC/ GST		
50 x 300	59 - 64	UPVC/ GST		
50 x 400	59 - 64	UPVC/ GST		
50 x 150			69 - 74	AC
65 x 150			63 - 69	Cu
65 x 200				
65 x 300				
65 x 400				
65 x 150	69 - 74	UPVC/ GST	75 - 80	UPVC/ GST
65 x 200	69 - 74	UPVC/ GST		
65 x 300	69 - 74	UPVC/ GST		
65 x 400	69 - 74	UPVC/ GST		
80 x 150	75 - 80	Cu	75 - 80	Cu
80 x 200	75 - 80	Cu		
80 x 300	75 - 80	Cu		
80 x 400	75 - 80	Cu		
80 x 150	88 - 95	UPVC/ GST	85 - 95	UPVC/ GST
80 x 200	88 - 95	UPVC/ GST	85 - 95	UPVC/ GST
80 x 300	88 - 95	UPVC/ GST	85 - 95	UPVC/ GST
80 x 400	88 - 95	UPVC/ GST		
80 x 150	95 - 105	DI/ CI/ AC/ GRP	95 - 105	DI/ CI/ AC/ GRP
80 x 200	95 - 105	DI/ CI/ AC/ GRP	95 - 105	DI/ CI/ AC/ GRP
80 x 300	95 - 105	DI/ CI/ AC/ GRP	95 - 105	DI/ CI/ AC/ GRP
80 x 400	95 - 105	DI/ CI/ AC/ GRP		
100 x 200			95 - 105	Cu
100 x 300			95 - 105	Cu
100 x 400				
100 x 200	110 - 120	UPVC/ GST		
100 x 300	110 - 120	UPVC/ GST		
100 x 400	110 - 120	UPVC/ GST		
100 x 200			114 - 124	UPVC/ GST
100 x 300			114 - 124	UPVC/ GST
100 x 400				
100 x 200	120 - 130	DI/ CI/ AC/ GRP	120 - 130	DI/ CI/ AC/ GRP
100 x 300	120 - 130	DI/ CI/ AC/ GRP	120 - 130	DI/ CI/ AC/ GRP
100 x 400	120 - 130	DI/ CI/ AC/ GRP	120 - 130	DI/ CI/ AC/ GRP
125 x 200				
125 x 300				
125 x 400				
125 x 200			140 - 150	UPVC/ GST/ CI
125 x 300			140 - 150	UPVC/ GST/ CI
125 x 400			140 - 150	UPVC/ GST/ CI
150 x 200	150 - 160	UPVC		
150 x 300	150 - 160	UPVC		

**SINGLE PART
STAINLESS STEEL REPAIR CLAMPS**



Nominal Size Pipe DN x Clamp length	Crevet		Wang	
	Clamp Range ID (mm)	Compatible Pipeline Systems	Clamp Range ID (mm)	Compatible Pipeline Systems
150 x 400	150 – 160	UPVC		
150 x 200	160 – 170	UPVC/ GST	160 – 170	UPVC/ GST
150 x 300	160 – 170	UPVC/ GST	160 – 170	UPVC/ GST
150 x 400	160 – 170	UPVC/ GST	160 – 170	UPVC/ GST
150 x 200		GST		
150 x 300		GST		
150 x 400		GST		
150 x 200	175 – 185	DI/ CI/ AC/ GRP	175 – 185	DI/ CI/ AC/ GRP
150 x 300	175 – 185	DI/ CI/ AC/ GRP	175 – 185	DI/ CI/ AC/ GRP
150 x 400	175 – 185	DI/ CI/ AC/ GRP	175 – 185	DI/ CI/ AC/ GRP
200 x 200				
200 x 300				
200 x 400				
200 x 200				
200 x 300				
200 x 400				
200 x 200	215 – 225		215 – 225	UPVC
200 x 300	215 – 225		215 – 225	UPVC
200 x 400	215 – 225		215 – 225	UPVC
200 x 200	225 – 240	DI/ CI/ AC/ GRP	230 – 240	DI/ CI/ AC/ GRP
200 x 300	225 – 240	DI/ CI/ AC/ GRP	230 – 240	DI/ CI/ AC/ GRP
200 x 400	225 – 240	DI/ CI/ AC/ GRP	230 – 240	DI/ CI/ AC/ GRP
225 x 300	245 – 255	UPVC/ DI/ CI/ AC/ GRP	250 – 260	UPVC/ DI/ CI/ AC/ GRP
225 x 400	245 – 255	UPVC/ DI/ CI/ AC/ GRP	250 – 260	UPVC/ DI/ CI/ AC/ GRP
225 x 300	255 – 265			
225 x 400	255 – 265			
250 x 300	270 – 285	UPVC	275 – 285	UPVC
250 x 400	270 – 285	UPVC	275 – 285	UPVC
250 x 300	285 – 295	DI/ CI/ AC/ GRP	285 – 295	DI/ CI/ AC/ GRP
250 x 400	285 – 295	DI/ CI/ AC/ GRP	285 – 295	DI/ CI/ AC/ GRP
300 x 300			310 – 325	UPVC
300 x 400			310 – 325	UPVC
300 x 400			340 – 350	DI/ CI/ AC/ GRP
300 x 400			340 – 350	UPVC/ DI/ CI/ AC/ GRP

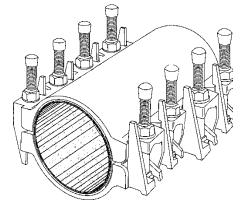
**SINGLE PART
STAINLESS STEEL REPAIR CLAMPS
(FOR DI/CI/PVC/VC/PE/AC/GRP/CONCRETE)**



Nominal Size (DN)
48.3
54.0
57.0
60.3
73.0
76.1
84.0
88.9
100.6
101.6
104.0
104.8
108.0
114.3
127.0
129.0
130.2
133.0
139.7
141.3
154.0
159.0
168.3
180.0
200.0
219.1
250.0
267.0
273.0
304.0
323.9
355.6
406.4
457.2
508.0
558.8
609.6
711.2
762.0
812.8
914.4
1016.0
1117.6
1219.2

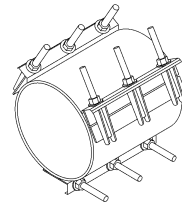
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**DOUBLE PART
STAINLESS STEEL REPAIR CLAMPS**



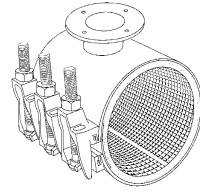
Nominal Size		Wang	Crevet	
Pipe DN x Clamp length	Clamp Range ID (mm)	Compatible Pipeline Systems	Clamp Range ID (mm)	Compatible Pipeline Systems
200 x 300	215-235	UPVC/ DI/ CI/ AC		
200 x 400	215-235	UPVC/ DI/ CI/ AC		
200 x 500				
200 x 600				
225 x 300	250-270	UPVC/ DI/ CI/ AC		
225 x 400	250-270	UPVC/ DI/ CI/ AC		
225 x 500				
225 x 600				
250 x 300	275-290	UPVC/ DI/ CI/ AC		
250 x 400				
250 x 500				
250 x 600				
300 x 300	310-330	UPVC		
300 x 400	310-330	UPVC	310-340	UPVC
300 x 500				
300 x 600	310-330	UPVC		
300 x 300	330-350	DI/ CI/ AC		
300 x 400	330-350	DI/ CI/ AC	330-345	DI/ CI/ AC
300 x 500				
300 x 600	330-350	DI/ CI/ AC		
350 x 400				
350 x 500				
350 x 600				
375 x 400	400-420	UPVC		
375 x 500				
375 x 600	400-420	UPVC		
375 x 400	410-430	DI/ CI/ AC		
375 x 500				
375 x 600	410-430	DI/ CI/ AC		
400 x 400	440-465	UPVC		
400 x 500				
400 x 600	440-465	UPVC		
450 x 400	490-510	DI/ CI/ AC		
450 x 500				
450 x 600	490-510	DI/ CI/ AC		
500 x 400				
500 x 500				
500 x 600				
500 x 400				
500 x 500				
500 x 600				
600 x 400				
600 x 500				
600 x 600				

**MULTI PART
STAINLESS STEEL REPAIR CLAMPS**



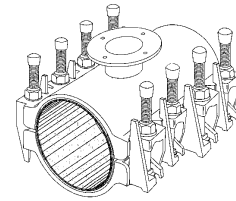
Nominal Size		Wang
Pipe DN x Clamp length	Clamp Range ID (mm)	Compatible Pipeline Systems
375 x 400	400-430	UPVC/ DI/ CI/ AC/ GRP
375 x 500		
375 x 600	400-430	UPVC/ DI/ CI/ AC/ GRP
400 x 400	430-460	GRP
400 x 500		
400 x 600	430-460	GRP
450 x 400	490-520	DI/ CI/ AC/ GRP
450 x 500		
450 x 600	490-520	DI/ CI/ AC/ GRP
500 x 400	560-590	DI/ CI/ GRP
500 x 500		
500 x 600	560-590	DI/ CI/ GRP
500 x 800		
525 x 400	570-600	AC/ GRP
525 x 500		
525 x 600	570-600	AC/ GRP
525 x 800		
600 x 400	620-650	AC
600 x 500		
600 x 600	620-650	AC
600 x 800		
600 x 400	650-680	DI/ CI/ AC/ GRP
600 x 500		
600 x 600	650-680	DI/ CI/ AC/ GRP
600 x 800		

**SINGLE PART WITH FLANGED OFFTAKE
STAINLESS STEEL CLAMPS**



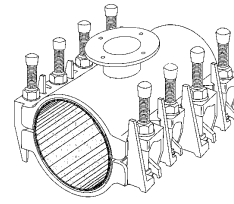
Nominal Size DN x Length x Offtake	Clamp Range ID (mm)	Compatible Pipeline Systems
100 x 400 x 80		
100 x 400 x 100		
150 x 400 x 80		
150 x 400 x 100		
150 x 400 x 150		
200 x 400 x 80		
200 x 400 x 100		
200 x 400 x 150		
225 x 400 x 80		
225 x 400 x 100		
225 x 400 x 150		
250 x 400 x 80		
250 x 400 x 100		
250 x 400 x 150		
300 x 400x 80		
300 x 400 x 100		
300 x 400 x 150		

**DOUBLE PART WITH FLANGED OFFTAKE
STAINLESS STEEL CLAMPS**



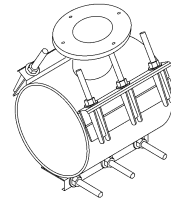
Nominal Size DN x Length x Offtake	Clamp Range ID (mm)	Wang Compatible Pipeline Systems	Clamp Range ID (mm)	Crevet Compatible Pipeline Systems
100 x 400 x 80	120-125	DI/ CI/ AC		
100 x 400 x 100	120-125	DI/ CI/ AC		
150 x 400 x 80	160-170	UPVC	160-170	UPVC
150 x 400 x 100	160-170	UPVC	160-170	UPVC
150 x 400 x 150	160-170	UPVC	160-170	UPVC
150 x 400 x 80	175-180	DI/ CI/ AC	175-190	DI/ CI/ AC
150 x 400 x 100	175-180	DI/ CI/ AC	175-190	DI/ CI/ AC
150 x 400 x 150	175-180	DI/ CI/ AC	175-190	DI/ CI/ AC
200 x 400 x 80	215-235	UPVC/ DI/ CI/ AC	215-235	UPVC/ DI/ CI/ AC
200 x 400 x 100	215-235	UPVC/ DI/ CI/ AC	215-235	UPVC/ DI/ CI/ AC
200 x 400 x 150	215-235	UPVC/ DI/ CI/ AC	215-235	UPVC/ DI/ CI/ AC
200 x 400 x 80			230-250	
200 x 400 x 100			230-250	
200 x 400 x 150			230-250	
200 x 600 x 200	220-230	UPVC		
200 x 600 x 200	230-240	DI/ CI/ AC		
225 x 400 x 80	250-270	UPVC/ DI/ CI/ AC	245-255	
225 x 400 x 100	250-270	UPVC/ DI/ CI/ AC	245-255	
225 x 400 x 150	250-270	UPVC/ DI/ CI/ AC	245-255	
225 x 600 x 200	250-270	UPVC/ DI/ CI/ AC		
225 x 600 x 225	250-270	UPVC/ DI/ CI/ AC		
250 x 400 x 80	275-295	UPVC/ DI/ CI/ AC	275-290	UPVC/ DI/ CI/ AC
250 x 400 x 100	275-295	UPVC/ DI/ CI/ AC	275-290	UPVC/ DI/ CI/ AC
250 x 400 x 150	275-295	UPVC/ DI/ CI/ AC	275-290	UPVC/ DI/ CI/ AC
250 x 400 x 80			285-305	
250 x 400 x 100			285-305	
250 x 400 x 150			285-305	
250 x 600 x 200	285-295	DI/ CI/ AC		
250 x 600 x 225	285-295	DI/ CI/ AC		
250 x 600 x 250	285-295	DI/ CI/ AC		
300 x 400 x 80	310-330	UPVC	310-340	UPVC
300 x 400 x 100	310-330	UPVC	310-340	UPVC
300 x 400 x 150	310-330	UPVC	310-340	UPVC
300 x 400 x 80			320-330	
300 x 400 x 100			320-330	
300 x 400 x 150			320-330	
300 x 400 x 80	330-350	DI/ CI/ AC	330-360	DI/ CI/ AC
300 x 400 x 100	330-350	DI/ CI/ AC	330-360	DI/ CI/ AC
300 x 400 x 150	330-350	DI/ CI/ AC	330-360	DI/ CI/ AC
300 x 600 x 200	310-320	UPVC		
300 x 600 x 225	310-320	UPVC		
300 x 600 x 250				
300 x 400 x 80	330-350	DI/ CI/ AC		
300 x 400 x 100	330-350	DI/ CI/ AC		
300 x 400 x 150	330-350	DI/ CI/ AC		
300 x 600 x 200	345-355	DI/ CI/ AC		
300 x 600 x 225	345-350	DI/ CI/ AC		

**DOUBLE PART WITH FLANGED OFFTAKE
STAINLESS STEEL CLAMPS**



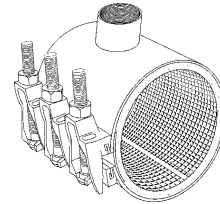
Nominal Size DN x Length x Offtake	Clamp Range ID (mm)	Wang Compatible Pipeline Systems	Clamp Range ID (mm)	Crevet Compatible Pipeline Systems
300 x 600 x 250	345-350	DI/ CI/ AC		
375 x 400 x 80	400-420	UPVC		
375 x 400 x 100	400-420	UPVC		
375 x 400 x 150	400-420	UPVC		
375 x 600 x 200	400-410	UPVC		
375 x 600 x 225	400-405	UPVC		
375 x 600 x 250	400-405	UPVC		
375 x 400 x 80	410-430	DI/ CI/ AC		
375 x 400 x 100	410-430	DI/ CI/ AC		
375 x 400 x 150	410-430	DI/ CI/ AC		
375 x 600 x 200				
375 x 600 x 225				
375 x 600 x 250				
400 x 400 x 80	440-460	GRP		
400 x 400 x 100	440-460	GRP		
400 x 400 x 150	440-460	GRP		
400 x 600 x 200				
400 x 600 x 225				
400 x 600 x 250				
400 x 600 x 300				
450 x 400 x 80	490-510	DI/ CI/ AC/ GRP		
450 x 400 x 100	490-510	DI/ CI/ AC/ GRP		
450 x 400 x 150	490-510	DI/ CI/ AC/ GRP		
450 x 600 x 200	500-510	DI/ CI/ AC/ GRP		

**MULTI PART WITH FLANGED OFFTAKE
STAINLESS STEEL CLAMPS**



Nominal Size		Wang	
DN x Length x Offtake	Clamp Range ID (mm)	Compatible Pipeline Systems	
500 x 400 x 80	560-580	DI/ CI/ GRP	
500 x 400 x 100	560-580	DI/ CI/ GRP	
500 x 400 x 150	560-580	DI/ CI/ GRP	
500 x 600 x 200	560-580	DI/ CI/ GRP	
500 x 600 x 225	560-570	DI/ CI/ GRP	
500 x 600 x 250	560-570	DI/ CI/ GRP	
525 x 400 x 80			
525 x 400 x 100			
525 x 400 x 150			
525 x 600 x 200			
525 x 600 x 225			
525 x 600 x 250			
600 x 400 x 80	650-670	DI/ CI/ AC/ GRP	
600 x 400 x 100	650-670	DI/ CI/ AC/ GRP	
600 x 400 x 150	650-670	DI/ CI/ AC/ GRP	
600 x 600 x 200	650-670	DI/ CI/ AC/ GRP	
600 x 600 x 225			
600 x 600 x 250			

**SINGLE PART WITH THREADED OFFTAKE
(DN 20, 25 and 50)
STAINLESS STEEL CLAMPS**

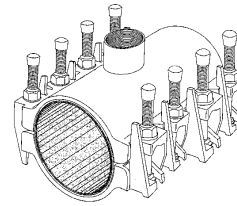


Nominal Size Pipe DN x Clamp length	Clamp Range ID (mm)	Wang Compatible Pipeline Systems	Clamp Range ID (mm)	Crevet ¹ Compatible Pipeline Systems
100 x 200	114 - 124	UPVC	110 - 120	UPVC
100 x 300	114 - 124	UPVC		
100 x 400				
100 x 200	120 - 130	DI/ CI/ AC/ GRP	120 - 130	DI/ CI/ AC/ GRP
100 x 300	120 - 130	DI/ CI/ AC/ GRP		
100 x 400	120 - 130	DI/ CI/ AC/ GRP		
125 x 200	140 - 150	UPVC/ GST/ CI	140 - 150	UPVC/ GST/ CI
125 x 300	140 - 150	UPVC/ GST/ CI		
125 x 400	140 - 150	UPVC/ GST/ CI		
150 x 200	160 - 170	UPVC/ GST	160 - 170	UPVC/ GST
150 x 300	160 - 170	UPVC/ GST		
150 x 400	160 - 170	UPVC/ GST		
150 x 200	175 - 185	DI/ CI/ AC/ GRP	175 - 185	DI/ CI/ AC/ GRP
150 x 300	175 - 185	DI/ CI/ AC/ GRP		
150 x 400	175 - 185	DI/ CI/ AC/ GRP		
200 x 200	215 - 225	UPVC		
200 x 300	215 - 225	UPVC	215 - 225	UPVC
200 x 400	215 - 225	UPVC		
200 x 200	230 - 240	DI/ CI/ AC/ GRP		
200 x 300	230 - 240	DI/ CI/ AC/ GRP	225 - 240	DI/ CI/ AC/ GRP
200 x 400	230 - 240	DI/ CI/ AC/ GRP		
225 x 300	250 - 260	UPVC/ DI/ CI/ AC/ GRP	245 - 255	UPVC
225 x 400	250 - 260	UPVC/ DI/ CI/ AC/ GRP		
225 x 300			255 - 265	DI/ CI/ AC/ GRP
225 x 400				
250 x 300	275 - 285	UPVC	270 - 280	UPVC
250 x 400	275 - 285	UPVC		
250 x 300	285 - 295	DI/ CI/ AC/ GRP	285 - 290	DI/ CI/ AC/ GRP
250 x 400	285 - 295	DI/ CI/ AC/ GRP		
250 x 300	285 - 295	DI/ CI/ AC/ GRP		
250 x 400	285 - 295	DI/ CI/ AC/ GRP		
300 x 300	310 - 320	UPVC		
300 x 400	310 - 320	UPVC		
300 x 400	340 - 350	DI/ CI/ AC/ GRP		
300 x 400	340 - 350	DI/ CI/ AC/ GRP		

NOTE:

1. DN20 and DN25 threaded offtakes only
2. DN 32 and DN 40 threaded offtakes also available

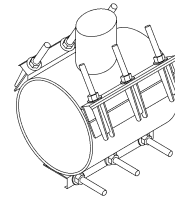
**DOUBLE PART WITH THREADED OFFTAKE
(DN 20, 25 and 50)
STAINLESS STEEL CLAMPS**



Nominal Size	Wang	
Pipe DN x Clamp length	Clamp Range ID (mm)	Compatible Pipeline Systems
300 x 400	310-330	UPVC
300 x 500		
300 x 600		
300 x 400	330-350	DI/ CI/ AC
300 x 500		
300 x 600		
350 x 400		
350 x 500		
350 x 600		
375 x 400	400-420	UPVC
375 x 500		
375 x 600		
375 x 400	410-430	DI/ CI/ AC
375 x 500		
375 x 600		
450 x 400	490-515	DI/ CI/ AC
450 x 500		
450 x 600		

NOTE: DN 32, DN 40, DN 65, DN 80 and DN 100 threaded offtakes also available

**MULTI PART WITH THREADED OFFTAKE
(DN 20, 25 and 50)
STAINLESS STEEL CLAMPS**



Nominal Size		Wang
Pipe DN x Clamp length	Clamp Range ID (mm)	Compatible Pipeline Systems
500 x 400	560-590	DI/ CI/ GRP
500 x 500		
500 x 600		
525 x 400	570-600	AC/ GRP
525 x 500		
525 x 600		
600 x 400	650-680	DI/ CI/ AC/ GRP
600 x 500		
600 x 600		

NOTE: DN 32, DN 40, DN 65, DN 80 and DN 100 threaded offtakes also available