

## **Electrofusion Fittings**

Gas, Water and Sewerage Applications





# Maximum fusion integrity for high quality electrofusion jointing

With over 30 years expertise in the innovation and manufacture of polyethylene (PE) pipes and fittings, Radius Systems have established a proven track record of delivering state-of-the-art solutions for our customers pipeline requirements.

Designed to provide optimum efficiency during the welding process, our range of universal black electrofusion fittings offer specifiers and installers a high performance fittings solution for their whole polyethylene pipeline infrastructure.

Suitable for gas, water and sewerage applications, our range of electrofusion fittings are made from high strength black PE100<sup>1</sup>, with long fusion zones and exposed wire technology offering maximum heat transfer and distribution during the welding process. For ease of assembly, our socket fittings are manufactured with insertion stops to ensure the pipe is fully engaged into the fitting during installation.

Manufactured in our ISO 9001:2008 and OHSAS 18001:2007 accredited facilities, our electrofusion fittings are extensively tested in our dedicated laboratories and approved to the most stringent national, international or in-house specifications<sup>3</sup>, providing our customers with the assurance of a high performance pipeline fitting solution.

Saddle fittings and a small range of fittings for gas are manufactured from PE80
Separate range of saddle fittings for gas and water applications
Contact Radius Systems for specific fitting approval

### Features & Benefits

- A range of universal fittings suitable for gas, water and sewerage applications <sup>2</sup>
- Manufactured from high strength polyethylene
- Exposed wire technology for maximum heat transfer during the fusion process
- Patented Easigrip<sup>®</sup> technology for large diameter fittings for ease of handling during installation
- Single fusion operation for all fittings
- Barcode technology for electrofusion control unit programming and fitting traceability
- Corrosion resistant
- End-load bearing jointing system

### Approvals <sup>3</sup>

### <u>Gas</u>

- BS EN 1555-3
- GIS/PL2:4
- GW 335-B2

#### Water and Sewerage

- BS EN 12201-3
- GW 335-B2



### Innovative fitting solutions

Terminal pins

Exposed wire

Profiled body

### Technological and manufacturing know-how

We have extensive industry knowledge in the design and manufacture of electrofusion fittings and are continually developing smarter solutions that help bring installation time savings and efficiencies. Our fittings are technologically advanced to offer maximum joint integrity, are easy to install and robust in operation.

Insertion stops

High strength

PE material

### Electrofusion fittings maximum operating pressure

Our electrofusion fittings are tested for use with PE80 and PE100 pipes in a wide range of SDRs, with maximum operating pressures in accordance with national and international specifications\*:

- BS EN 1555-3
- GIS/PL2:4
  - BS EN 12201-3
- Up to 10 bar
- Up to 5.5 bar or 7 bar
  - Up to 16 bar
- Exposed wire technology for optimum heat transfer between the fitting and the pipe during the electrofusion process
- Available with 4.0 and 4.7 mm (40 Volt) and 5.7 mm (80 Volt)
- Manufactured from high strength PE for increased fitting
- Profiled body for optimum material usage
- Electrofusion fitting with barcode technology

\* Due to our extensive fittings offering, some fittings within our range may have a lower maximum operating pressure. Please refer to the fitting's packaging for the most up to date pressure ratings or contact Radius Systems for more information.



### **Electrofusion fittings**

### Couplers





							Ар	plication:	Gas W	ater Sewerage
Nominal Diameter		Di	mensio mm	ns		Weight	Fuse Time	Cool Time	Product Code - 40V	Product Code - 40V
mm	н	L	L1	L2	W	kg	sec.	min.	4.0 mm pin	4.7 mm pin
20	52	83	40	40	29	0.03	40	4	WA0202	WA0002
25	53	81	40	40	33	0.03	50	5	WA0203	WA0003
32	62	81	40	40	43	0.05	45	6	WA0204	WA0004
40	71	89	43	43	49	0.08	55	5	WA0205	WA0005
50	87	99	48	48	63	0.13	75	9	WA0206	WA0006
55	101	117	58	58	79	0.30	44	5	-	WA0007
63	101	107	53	53	77	0.17	50	6	WA0208	WA0008
75	115	125	62	62	93	0.31	120	14	WA0209	WA0009
90	131	127	63	63	109	0.39	90	10	WA0210	WA0010
110	152	161	79	79	132	0.72	130	13	WA0211	WA0011
125	168	157	77	77	151	0.88	120	15	WA0212	WA0012
140	182	194	96	96	162	1.08	220	18	WA0213	WA0013
160	209	186	92	92	195	1.81	300	22	WA0214	WA0014
180	229	205	102	102	215	2.40	440	20	WA0215	WA0015
200	260	211	106	102	241	3.31	400	16	WA0217	WA0017
8″	282	218	109	105	263	3.60	360	18	-	GA0080
<b>213</b> <sup>4</sup>	266	250	123	123	246	3.40	450	33	-	GA0020
225	285	218	109	105	266	3.59	400	22	WA0221	WA0021
250	312	219	109	105	296	4.44	430	18	WA0223	WA0023
268	326	283	139	139	308	5.50	550	29	-	GA0026
280	335	283	138	138	320	5.86	600	32	WA0227	WA0027
315	387	266	129	129	380	8.75	990	35	WA0229	WA0029
355	415	319	158	158	407	9.20	1150	65	WA0231	-
400	464	340	168	168	455	13.20	1750	55	WA0233	-

<sup>4</sup> Supplied with 2 steel inserts (total fitting weight including inserts is 8.8kg)

Product codes starting with GA are manufactured from yellow PE80 for gas applications

#### Fuse and cool times

Fuse and cool times shown throughout the brochure are correct at the time of publishing. In line with Radius Systems policy of continuous product development, we reserve the right to change these without prior notification. Always refer to the fitting's packaging label for up to date fuse and cool times.

Couplers - 80V								Ap	plication	i: Gas	s Wa	iter Sewerage
	Nominal Diameter mm	Н	Di	mensio mm L1	ns L2	W	Weight kg	Warm-up Time sec.	Soak Time sec.	Fuse Time sec.	Cool Time min.	Product Code - 80V 5.7 mm pin
	355	415	319	158	158	407	9.20	-	-	700	35	WA0131
E	400	465	340	169	169	456	13.30	-	-	800	44	WA0133
	<b>450</b> ⁵	526	376	187	187	517	17.00	180	600	700	45	WA0135
<u> </u>	<b>469</b> <sup>5</sup>	525	376	186	186	515	12.00	10	10	1050	68	GA0136
	<b>500</b> ⁵	581	374	186	186	574	21.50	180	600	800	55	WA0137
H $L1$ $L2$ $$	<b>560</b> ⁵	647	398	197	197	647	35.00	500	900	2100	140	WA0139
	<b>630</b> ⁵	720	407	202	202	720	32.50	600	900	2250	100	WA0140
<u>                                     </u>	<b>710</b> <sup>5</sup>	814	393	195	195	814	50.00	600	900	2350	100	WA0142

<sup>5</sup> Couplers use a 3-part 80V electrofusion process. Please refer to the Easigrip<sup>®</sup> instruction details within this brochure GA0136 is manufactured from black PE100 for gas applications

### Equal tees - spigot off-take





Application: Gas Water													
Nominal Diameter			Dii	mensic mm	ons			Weight	Fuse Time	Cool Time	Product Code - 40V	Product Code - 40V	
mm	Н	L	L1	L2	ØS	SL	W	kg	sec.	min.	4.0 mm pin	4.7 mm pin	
20	51	100	39	39	20	58	98	0.06	40	3	WA2202	WA2002	
25	54	100	41	41	25	58	98	0.07	48	4	WA2203	WA2003	
32	62	109	42	42	32	58	109	0.09	50	6	WA2204	WA2004	
40	71	128	46	46	40	65	119	0.14	70	7	WA2205	WA2005	
50	86	143	50	50	50	70	140	0.24	70	6	WA2206	WA2006	
63	98	158	61	61	63	70	159	0.49	50	6	WA2208	WA2008	
75	115	200	59	59	75	118	220	0.67	120	14	WA2209	WA2009	
90	131	200	77	77	90	85	206	0.83	90	9	WA2210	WA2010	
110	155	251	80	80	110	135	282	1.74	180	13	WA2211	WA2011	
125	169	247	86	86	125	95	256	2.45	120	10	WA2212	WA2012	
140	185	305	73	73	140	145	325	3.10	260	16	-	WA2113	
160	217	342	105	105	160	150	350	4.39	300	21	WA2214	WA2014	
180	240	240 362 106 106 180		180	130	371	6.21	280	19	WA2215	WA2015		

### Reducing tees - spigot off-take





e							Ар	plication:	Gas	vvat	er Sewerage
Nominal Diameter				Dimer m	nsions m		Weight	Fuse Time	Cool Time	Product Code - 40V	
mm	Н	L	L1	L2	ØS	SL	W	kg	sec.	min.	4.7 mm pin
25 x 25 x 32	50	100	40	40	32	55	100	0.08	48	4	WB5010
90 x 90 x 63 <sup>6</sup>	131	200	77	77	63	158 <sup>7</sup>	279 <sup>7</sup>	1.83 <sup>8</sup>	90	9	WB5026
110 x 110 x 90 <sup>6</sup>	131	200	77	77	90	237 <sup>7</sup>	384 <sup>7</sup>	2.58 <sup>8</sup>	180	13	WB5030
125 x 125 x 90 <sup>6</sup>	155	251	80	80	90	186 <sup>7</sup>	345 <sup>7</sup>	3.47 <sup>8</sup>	120	10	WB5033
160 x 160 x 90	220	340	100	100	90	95	290	3.91	300	21	WA5100
160 x 160 x 110 <sup>6</sup>	217	342	105	105	110	275 <sup>7</sup>	475 <sup>7</sup>	6.23 <sup>8</sup>	300	21	WB5037
180 x 180 x 90	230	361	105	105	90	110	345	6.21	280	19	WA5102

<sup>6</sup> Supplied as a kit with a reducer

<sup>7</sup>Measurements include length of reducer when fitted to the spigot end of the equal tee

<sup>8</sup> Weight includes all fittings in the kit

Always refer to the fitting's packaging label for up to date fuse and cool times.



## Electrofusion fittings

45° elbows								Applic	cation:	Gas Wat	er Sewerage
0	Nominal Diameter mm	Н	D	imensioi mm L1	ns L2	W	Weight kg	Fuse Time sec.	Cool Time min.	Product Code - 40V 4.0 mm pin	Product Code - 40V 4.7 mm pin
	63	100	167	58	58	128	0.32	60	8	WA3316	WA3066
	75	116	180	59	59	143	0.43	120	14	WA3317	WA3067
	90	132	222	77	77	176	0.82	80	9	WA3318	WA3068
	110	152	243	80	80	201	1.17	180	14	WA3319	WA3069
	125	175	269	82	82	228	1.84	90	7	WA3320	WA3070
. Н	140	183	284	92	92	236	1.53	260	22	-	WA3071
	160	216	326	100	100	280	3.39	300	21	WA3322	WA3072
	180	240	350	101	101	308	4.11	260	16	WA3323	WA3073

### 90° elbows

0



		cation:	Gas vvat	er Sewerage						
Nominal Diameter		Di	imensio mm	ns		Weight	Fuse Time	Cool Time	Product Code - 40V	Product Code - 40V
mm	Н	L	L1	L1 L2		kg	sec.	min.	4.0 mm pin	4.7 mm pin
20	43 74		41	41	74	0.04	44	4	WA3339	WA3089
25	54 78		41	41	78	0.05	25	5	WA3340	WA3090
32	63	85	40	40	85	0.08	55	7	WA3341	WA3091
40	72	99	45	45	99	0.12	74	6	WA3342	WA3092
50	88	114	50	50	114	0.22	75	8	WA3343	WA3093
63	100	143	58	58	143	0.40	60	8	WA3345	WA3095
75	115	158	59	59	158	0.54	120	13	WA3346	WA3096
90	133	195	77	77	195	0.98	80	9	WA3347	WA3097
110	154	218	80	80	218	1.39	180	14	WA3348	WA3098
125	178	246	82	82	246	2.14	90	7	WA3349	WA3099
140	185	266	92	92	266	1.85	260	20	-	WA3100
160	217	307	100	100	307	3.86	300	21	WA3351	WA3101
180	240 329		101	101	329	5.16	260	16	WA3352	WA3102

Reducers								Applic	cation:	Gas Wat	er Sewerage
	Nominal		Di	imensio	ns		Weight	Fuse	Cool	Product	Product
	Diameter			mm				Time	Time	Code - 40V	Code - 40V
	mm	Н	L	L1	L2	W	kg	sec.	min.	4.0 mm pin	4.7 mm pin
i di	20 x 16	49	81	42	37	29	0.04	43	6	-	WA4002
	20 x 3/4"	56	80	39	40	38	0.05	32	3	-	WA4004
	25 x 20	54	82	43	38	33	0.04	48	5	WA4258	WA4008
	25 x 3/4"	56	80	39	40	38	0.05	30	4	-	WA4007
-	32 x 16	62	82	44	37	43	0.05	35	3	-	WA4009
	32 x 20	62	89	44	39	43	0.05	36	6	WA4262	WA4012
	32 x 25	62	89	46	42	43	0.05	40	5	WA4263	WA4013
	32 x 3/4"	63	83	42	40	44	0.05	48	4	-	WA4011
	32 x 1"	62	83	42	40	45	0.06	60	5	-	WA4014
	40 x 32	73	89	45	43	52	0.07	55	8	WA4269	WA4142
	50 x 32	84	98	48	44	64	0.10	60	9	WA4270	WA4019
	63 x 32	98	117	51	42	77	0.16	55	10	WA4273	WA4023
	63 x 40	98	116	58	48	78	0.19	85	9	WA4274	WA4024
L	63 x 50	99	117	56	47	78	0.20	90	9	WA4275	WA4025
<del>≪</del>	63 x 55	99	117	57	58	80	0.28	40	5	-	WA4027
	63 x 2″	98	117	57	58	79	0.25	85	12	-	WA4026
	75 x 63	113	124	60	60	95	0.26	90	14	WA4280	WA4030
	90 x 63	133	154	79	60	117	0.50	120	10	WA4281	WA4031
	90 x 75	129	154	77	62	108	0.67	135	18	WA4282	WA4032
	90 x 3″	136	154	75	77	110	0.60	90	14	-	WA4033
	110 x 63	153	188	77	57	136	0.81	100	15	WA4284	WA4034
	110 x 90	154	188	85	79	136	0.84	120	10	WA4286	WA4036
	125 x 63	177	164	91	63	159	0.96	160	18	WA4287	WA4037
	125 x 90	170	180	89	75	155	1.04	120	18	WA4289	WA4039
	125 x 110	177	169	85	76	158	1.38	140	12	WA4291	WA4041
	125 x 4"	176	164	80	80	156	1.33	140	13	-	WA4040
	140 x 125	185	190	92	89	158	1.54	250	35	WA4293	WA4043
	160 x 110	218	231	96	85	197	1.84	180	18	WA4294	WA4044
	180 x 125	231	200	93	79	216	1.90	280	24	WA4297	WA4047
	180 x 140	230	200	90	81	212	1.42	320	22	-	WA4049
	180 x 6"	238	202	99	99	220	2.82	360	31	-	WA4050
	200 x 160	262	240	113	106	246	3.22	360	27	WA4303	WA4053
225 x 160		285	240	115	106	270	3.65	330	18	WA4311	WA4061
	250 x 180	314	240	110	99	300	4.73	440	22	WA4319	WA4069
	315 x 250	380	275	133	220	378	8.26	520	21	WA4332	WA4207

GA4110 is manufactured from yellow PE80 for gas applications

264

315 x 280

378

Always refer to the fitting's packaging label for up to date fuse and cool times.

122

123

362

6.10

600

32

Images of fittings are for illustration purposes only

GA4110



### **Electrofusion fittings**

### End caps

End caps are supplied as 'couplercaps' or 'reducer-caps'









						Appli	cation:	Gas Wat	er Sewerage
Nominal Diameter		Dimer m	nsions m		Weight	Fuse Time	Cool Time	Product Code - 40V	Product Code - 40V
mm	Н	L	L1	W	kg	sec.	min.	4.0 mm pin	4.7 mm pin
<b>20</b> <sup>10</sup>	52	92	40	29	0.04	40	4	WA1202	WA1002
25	53	97	40	33	0.04	48	5	WA1203	WA1003
32 <sup>9</sup>	62	106	40	43	0.07	45	6	WA1204	WA1004
40	73	112	45	52	0.10	55	8	WA1205	WA1005
50	84	120	48	64	0.11	60	9	WA1206	WA1006
55	99	147	58	80	0.30	40	4	-	WA1007
63 <sup>9</sup>	101	147	53	77	0.27	50	6	WA1208	WA1008
75	113	165	60	95	0.36	90	14	WA1209	WA1009
90 <sup>9</sup>	131	185	63	109	0.67	90	10	WA1210	WA1010
110	154	242	77	136	1.13	120	10	WA1211	WA1011
125	168	157	77	151	1.05	160	18	WA1212	WA1012
140	185	269	92	158	1.82	250	35	WA1213	WA1013
160 <sup>9</sup>	209	300	92	195	3.13	300	22	WA1214	WA1014
180	229	320	102	215	2.57	280	24	WA1215	WA1015
200	262	350	113	246	4.63	360	27	WA1217	WA1017
225	285	350	115	270	5.03	330	18	WA1221	WA1021
250	312	365	109	296	6.57	440	22	WA1223	WA1023

<sup>9</sup> 'Coupler cap'



Mater Courses

### Available soon

Radius Systems are introducing a new range of dedicated 1-piece electrofusion end caps for gas and water applications. The new 1-piece caps offer increased fusion integrity as well as installation and time savings and will replace the current range of 2-piece 'coupler caps' and 'reducer caps' in diameters 63, 75, 90, 125, 140 and 180 mm.

Please contact us for more details on t: +44 (0)1773 811112 or e: sales@radius-systems.com.

Our range of tapping saddle fittings have been specifically designed for water and wastewater applications, with an integral cutter to tap the main when carrying out a service connection. They are fitted with a water approved EPDM seal to provide a leak-tight solution.

Manufactured from black PE100 our saddle fittings are designed with a Unifit<sup>™</sup> base to suit a range of pipe diameters, considerably reducing the need to carry additional stocks of fittings.

WATER	SEWERAGE
Black PE100	Black PE100
EPDM seal	EPDM seal
White barcode label	White barcode label
Unifit™ base	Unifit™ base

#### **Tapping tees**

32 mm outlet



2 mm outlet Application: Water													
Nominal Diameter			Dim	iensio mm	ns			Weight	Fuse Time	Cool Time	Product Code - 40V	Product Code - 40V	
mm	ØВ	Н	HC	HS	L	ØS	W	kg	sec.	min.	4.0 mm pin	4.7 mm pin	
40	20	125	110	70	115	32	71	0.30	40	4	-	WA6083	
63	20	125	110	70	115	32	77	0.30	55	4	WA6336	WA6086	
75	20	125	110	70	115	32	75	0.30	55	4	-	WA6087	
90	20	125	110	70	115	32	90	0.30	55	4	WA6338	WA6088	
110	20	125	110	70	115	32	83	0.30	55	4	WA6339		
110 - 140	20	125	110	70	115	32	83	0.30	55	4	-	WA6091	
160 - 180	20	125	110	70	115	32	88	0.30	55	4	-	WA6097	
200 - 250 <sup>10</sup>	20	125	110	70	115	32	90	0.30	55	4	-	WA6103	
280 - 355 <sup>10</sup>	20	125	110	70	115	32	90	0.30	55	4	-	WA6109	
400 - 500 <sup>10</sup>	20	125	110	70	115	32	90	0.30	60	4	-	WA6113	

<sup>10</sup> Fitted with a thread follower which must be removed after tapping the main

Note: WA6113 is not suitable for SDR11 pipe. For connection solutions on SDR11 pipe, contact RadiusPLUS ØB = cut hole diameter



### 63 mm outlet

Nominal Diameter			D	imensi mm	ons			Weight	Fuse Time	Cool Time	Product Code - 40V
mm	ØВ	Н	HC	HS	L	ØS	W	kg	sec.	min.	4.7 mm pin
63	34	170	140	112	170	63	77	0.76	55	4	WA6211
90	34	156	125	96	170	63	100	0.76	60	4	WA6213
110 - 125	34	165	140	112	170	63	105	0.76	70	4	WA6216
140	34	142	125	96	170	63	106	0.76	70	4	WA6217
160 - 180	34	152	140	112	170	63	110	0.76	70	4	WA6221
20010	34	156	145	112	170	63	110	0.76	70	4	WA6222
225 - 280 <sup>10</sup>	34	136	125	96	170	63	110	0.76	75	5	WA6226
315 - 355 <sup>10</sup>	34	148	140	112	170	63	110	0.76	80	4	WA6232
400 - 450 <sup>10</sup>	34	132	125	96	170	63	110	0.76	75	4	WA6236

<sup>10</sup> Fitted with a thread follower which must be removed after tapping the main

Note: WA6236 is not suitable for SDR11 pipe. For connection solutions on SDR11 pipe, contact RadiusPLUS ØB = cut hole diameter

Always refer to the fitting's packaging label for up to date fuse and cool times.

### QuickTee - 25mm outlet

QuickTee is one of Radius Systems' innovative tapping tee solutions, manufactured with an integrated clamp mechanism and a readyto-weld socket on the outlet, which removes the need for additional electrofusion fittings when carrying out a service connection. Our QuickTee fitting enables two joints to be made in a single operation - a time and cost saving solution for all your mains to service pipe connections.

								Ар	plication	Wate	er Sewerage
Nominal Diameter			Di	mensio mm	ns	Weight	Fuse Time	Cool Time	Product Code - 40V		
mm	ØВ	ID	Н	HC	HS	L	W	kg	sec.	min.	4.7 mm pin
63	20	25	130	110	70	100	80	0.27	55	5	WA7045
75	20	25	130	110	70	100	80	0.27	55	5	WA7046
90	20	25	130	110	70	100	80	0.27	55	5	WA7047
110 - 140	20	25	125	110	70	100	80	0.27	70	6	WA7049
160 - 180	20	25	120	110	70	100	80	0.27	70	6	WA7054

ØB = cut hole diameter

#### Application: Water Underclamp tapping tees Sewerage 20 mm outlet Nominal Product Dimensions Weight Fuse Cool Code - 40V Diameter mm Time Time mm ØВ Н HC HS L ØS W kg sec. min. 4.0 mm pin 20 172 107 115 20 92 0.60 WB6251 40 135 45 4 192 20 107 20 0.60 WB6252 50 135 115 99 55 4 63 20 204 135 107 115 20 110 0.64 55 4 WB6254 75 20 216 135 107 115 20 124 0.67 55 4 WB6255 90 20 232 135 107 115 20 139 0.71 55 4 WB6256 110 20 252 107 115 20 159 0.78 55 4 WB6257 135

135

107

115

20

209

0.91

55

4

WB6261

ØB = cut hole diameter

20

302

160







### Underclamp tapping tees 25 mm outlet



25 mm outl	et				Applicatio	n: Wate	er Sewerage				
Nominal Diameter		Di	mensio mm	ins			Weight	Fuse Time	Cool Time	Product Code - 40V	
mm	ØВ	Н	HC	HS	L	ØS	W	kg	sec.	min.	4.0 mm pin
40	20	182	135	107	115	25	92	0.60	45	4	WB6292
50	20	192	135	107	115	25	99	0.60	55	4	WB6293
63	20	204	135	107	115	25	110	0.64	55	4	WB6295
75	20	216	135	107	115	25	124	0.67	55	4	WB6296
90	20	232	135	107	115	25	139	0.71	55	4	WB6297
110	20	252	135	107	115	25	159	0.78	55	4	WB6298
160	20	302	135	107	115	25	209	0.91	55	4	WB6303

### 32 mm outlet

Nominal Diameter			Di	mensio mm	ins			Weight	Fuse Time	Cool Time	Product Code - 40V
mm	ØВ	Н	HC	HS	L	ØS	W	kg	sec.	min.	4.0 mm pin
40	20	182	135	107	115	32	92	0.60	45	4	WB6333
50	20	192	135	107	115	32	99	0.62	55	4	WB6334
63	20	204	135	107	115	32	110	0.64	55	4	WB6336
75	20	216	135	107	115	32	124	0.66	55	4	WB6337
90	20	232	135	107	115	32	139	0.71	55	4	WB6338
110	20	252	135	107	115	32	159	0.75	55	4	WB6339
160	20	302	135	107	115	32	209	0.75	55	4	WB6344

ØB = cut hole diameter

Always refer to the fitting's packaging label for up to date fuse and cool times.

Our range of tapping saddle fittings have been specifically designed for gas applications with an integral cutter to tap the main when carrying out a service connection. They are fitted with a gas approved NBR seal to provide a leak-tight solution.

Manufactured from black PE80 our saddle fittings are designed with a Unifit<sup>™</sup> base to suit a range of pipe diameters, considerably reducing the need to carry additional stocks of fittings.

## Anaconda

ROM RADIUS

A unique innovative flexible solution for gas service pipe connections, Anaconda is Radius Systems latest tapping tee innovation. Combining a PE80 tapping tee with a factory connected flexible PE80, 25 mm service pipe outlet, Anaconda minimises the number of electrofusion fittings and associated joints required to connect a service pipe to a gas main.

Approved to the UK gas specification GIS:PL2, Anaconda is capable of accommodating horizontal and vertical changes between the main and the service pipe connection and offers a wide range of additional benefits over a traditional service pipe construction:

GAS	
Black PE80	
NBR seal	
Yellow barcode label	
Unifit™ base	

Application: Gas

- Reduction in the number of site made service pipe joints
- Increased on-site operational efficiencies
- Reduction in plant usage
- Reduction in network downtime

Estimates show that the use of Anaconda significantly reduces the time required to make a service pipe connection.



#### Anaconda



### 25 mm outlet - MOP 2 bar

Nominal Diameter				Dir	nensio mm	ons		Weight	Fuse Time	Cool Time	Product Code - 40V		
mm	ØВ	н	HC	HS	L1	A1	A2	ØS	W	kg	Sec.	Min.	4.7 mm pin
40	20	125	110	70	546	366	46	25	72	0.43	40	3	GB9083
55	20	125	110	70	546	366	46	25	72	0.43	50	4	GB9085
63 & 2"	20	125	110	70	548	366	46	25	77	0.43	50	4	GB9086
75	20	125	110	70	547	366	46	25	75	0.43	50	5	GB9087
90 & 3"	20	125	110	70	555	366	46	25	90	0.43	50	4	GB9088
110-140 & 4"	20	125	110	70	552	366	46	25	83	0.43	50	4	GB9091
160-213 & 6"	20	125	110	70	554	366	46	25	88	0.43	50	4	GB9097
225 - 280 <sup>10</sup>	20	125	110	70	555	366	46	25	90	0.43	50	4	GB9103
315 -40010	20	125	110	70	555	366	46	25	90	0.43	50	4	GB9109

 $^{10}$  Fitted with a thread follower which must be removed after tapping the main  $\not OB$  = cut hole diameter

### Tapping tees



H E	
E	

32 mm outlet Application: Gas												
Nominal Diameter			Dir		Weight	Fuse Time	Cool Time	Product Code - 40V				
mm	ØВ	Н	HC	HS	L	ØS	W	kg	sec.	min.	4.7 mm pin	
40	20	125	110	70	115	32	72	0.30	40	4	GA9083	
55	20	125	110	70	115	32	72	0.30	50	4	GA9085	
63 & 2"	20	125	110	70	115	32	77	0.30	50	4	GA9086	
75	20	125	110	70	115	32	75	0.30	50	4	GA9087	
90 & 3"	20	125	110	70	115	32	90	0.30	50	4	GA9088	
110-140 & 4"	20	125	110	70	115	32	83	0.30	50	4	GA9091	
160-213 & 6"	20	125	110	70	115	32	88	0.30	50	4	GA9097	
8″	20	125	110	70	115	32	90	0.30	50	4	GA9123	
225 - 280 <sup>10</sup>	20	125	110	70	115	32	90	0.30	50	4	GA9103	
315 - 400 <sup>10</sup>	20	125	110	70	115	32	90	0.30	50	4	GA9109	
440 - 560 <sup>10</sup>	20	125	110	70	115	32	90	0.30	55	4	GA9114	

### 63 mm outlet

Nominal Diameter			Dir	nensio mm	ons			Weight	Fuse Time	Cool Time	Product Code - 40V
mm	ØВ	н	HC	HS	L	ØS	W	kg	Sec.	Min.	4.7 mm pin
63 & 2"	34	170	140	112	170	63	77	0.76	50	3	GA9211
75	34	156	125	96	170	63	100	0.76	50	4	GA9212
90 & 3"	34	156	125	96	170	63	100	0.76	60	4	GA9213
110-125 & 4"	34	165	140	112	170	63	105	0.76	70	5	GA9216
140-160 & 6"	34	157	140	112	170	63	110	0.76	60	4	GA9219
180 - 200	34	152	140	112	170	63	110	0.76	70	4	GA9222
213-250 & 8″ <sup>10</sup>	34	152	145	112	170	63	110	0.76	70	4	GA9226
268 - 315 <sup>10</sup>	34	148	140	112	170	63	110	0.76	70	4	GA9232
355 - 469 <sup>10</sup>	34	148	140	112	170	63	110	0.76	70	4	GA9236
500 - 560 <sup>10</sup>	34	144	140	112	170	63	110	0.76	75	5	GA9243

 $^{\rm 10}\,$  Fitted with a thread follower which must be removed after tapping the main ØB = cut hole diameter

Always refer to the fitting's packaging label for up to date fuse and cool times.



### Purge, pressure test & bypass tees

Specifically designed to offer a more efficient and cost effective solution to gas operators, our purge, pressure test and bypass tees are easy to install using the standard electrofusion installation technique. Factory

fabricated, to reduce the number of joints made in the field using our Unifit range rated tapping tees, the purge, pressure test and bypass tee is supplied ready to fuse to the main, allowing contractors to complete their operations on time.

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	~	Y	11

32 mm outlet Application: Ga												
Nominal Diameter		Dimer m	nsions m		Weight	Fuse Time	Cool Time	Product Code - 40V				
mm	ØВ	Н	L	W	kg	Sec.	Min.	4.7 mm pin				
40	20	163	115	160	0.45	40	4	GA8783				
55	20	163	115	160	0.45	50	4	GA8785				
63 & 2"	20	163	115	165	0.45	50	4	GA8786				
75	20	163	115	165	0.45	50	4	GA8787				
90 & 3"	20	163	115	170	0.45	50	4	GA8788				
110-140 & 4"	20	163	115	165	0.45	50	4	GA8791				
160-213 & 6"	20	163	115	170	0.45	50	4	GA8797				
225 - 280 <sup>10</sup>	20	163	115	170	0.52	50	4	GA8703				
315 - 400 <sup>10</sup>	20	163	115	170	0.52	50	4	GA8709				
440 - 560 <sup>10</sup>	20	163	115	170	0.52	55	4	GA8715				

Weight

kg

1.27

1.27

1.27

1.27

1.27

1.27

1.51

1.51

Fuse Time

Sec.

50

50

60

70

60

70

70

70

**Cool Time** 

Min.

3

4

4

5

4

4

4

4

4

5

Product Code - 40V

4.7 mm pin

GA8711

GA8712

GA8713

GA8716

GA8717

GA8722

GA8726

GA8732

GA8734

GA8742



### Tooling (sold separately)

Short tee key

- 32 mm x 1" BSP-F adaptor
- 63 mm x 2" BSP-F adaptor

355 - 46910 34 220 63 270 1.51 70 500 - 560<sup>1</sup> 34 215 63 270 1.51 75 <sup>10</sup> Fitted with a thread follower which must be removed after tapping the main ØB = cut hole diameter

Dimensions

mm

L

63

63

63

63

63

63

63

63

W

270

270

270

270

270

270

270

270

Н

240

226

226

235

227

222

222

220

ØВ

34

34

34

34

34

34

34

34

For simple purge operations, please refer to the purge, pressure test and by-pass tees instruction details within this brochure.

## 63 mm outlet

mm 63 & 2"

75

90 & 3"

110-125 & 4"

140-160 & 6"

180 - 200

213-250 & 8"10

268 - 315<sup>10</sup>

### Electrofusion fittings for up to 7 bar gas applications approved to GIS PL2:4

Our 7 bar range of electrofusion fittings have been tested and are approved to the UK gas industry specification GIS PL2:4 for use with PE100 SDR11, 7 bar pipe. An orange label is used to identify these fittings.



Application: Gas

### Couplers

	Nominal Diameter		D	imension mm	S		Weight	Fuse Time	Cool Time	Product Code - 40V
	mm	Н	L	L1	L2	W	kg	Sec.	Min.	4.7 mm pin
	63	101	107	53	53	77	0.17	50	6	WB8208
	75	115	125	62	62	93	0.31	120	14	WB8209
	90	131	127	63	63	109	0.39	90	10	WB8210
	125	168	157	77	77	151	0.88	120	15	WB8212
	180	229	205	102	102	215	2.40	440	20	WB8215
<u> </u>	250	312	219	109	105	296	4.44	430	18	WB8223
<u>₊</u>	315	387	266	129	129	380	8.75	990	35	WB8229

### Couplers - 80V

E				
н	L1	L2	[0]	w

										Applicati	on: Gas
Nominal Diameter mm	Dimensions mm H L L1 L2 W				W	Weight kg	Warm- up Time Sec.	Soak Time Sec.	Fuse Time Sec.	Cool Time Min.	Product Code - 80V 5.7 mm pin
355	415	319	158	158	407	9.20	-	-	700	35	WA0331
400	465	340	168	169	456	13.30	-	-	800	44	WA0333
<b>450</b> ⁵	526	376	187	186	517	17.00	180	600	700	45	WA0335
<b>500</b> ⁵	581	374	186	186	574	21.50	180	600	800	55	WA0337

<sup>5</sup> Couplers use a 3-part 80V electrofusion process. Please refer to the Easigrip® instruction details within this brochure

Always refer to the fitting's packaging label for up to date fuse and cool times.



## Electrofusion fittings for up to 7 bar gas applications approved to GIS PL2:4

### Equal Tees - spigot off-take



	Application:									
Nominal Diameter mm	Dimensions mm H L L1 & L2 ØS SL W						Weight kg	Fuse Time Sec.	Cool Time Min.	Product Code - 40V 4.7 mm pin
63	98	158	61	63	70	159	0.49	50	6	WB8408
90	131	200	77	90	85	206	0.83	90	9	WB8410
125	169	247	86	125	95	256	2.45	120	10	WB8412
180	240	362	106	180	130	371	6.21	280	19	WB8415

### End Caps

nd Caps								Applicat	ion: Gas
	Nominal Diameter		Dimei m	nsions m		Weight	Fuse Time	Cool Time	Product Code - 40V
	mm	Н	L	L1	W	kg	Sec.	Min.	4.7 mm pin
	63	101	147	53	77	0.27	50	6	WB8308
	90	131	185	63	109	0.67	90	10	WB8310
	125	168	157	77	151	1.05	160	18	WB8312
	180	229	320	102	215	2.57	280	24	WB8315
	250	312	365	109	296	6.57	440	22	WB8323
	315	380	420	133	378	10.20	990	35	WB8329

For tapping tees please contact us on +44 (0)1773 811112 or email us at e: sales@radius-systems.com.

## Electrofusion fittings for up to 7 bar gas applications approved to GIS PL2:4

### Reducers



				Application:							
Nominal Diameter		D	imensior mm	าร		Weight	Fuse Time	Cool Time	Product Code - 40V		
mm	Н	L	L1	L2	W	kg	Sec.	Min.	4.7 mm pin		
90 x 63	133	154	79	60	117	0.50	120	10	WB8681		
125 x 63	177	164	91	63	159	0.96	160	18	WB8687		
125 x 90	170	180	89	75	155	1.04	120	18	WB8689		
180 x 125	231	200	93	79	216	1.90	280	24	WB8697		
250 x 180	314	240	110	99	300	4.73	440	22	WB8619		

45°	El	bo	WS
45°	ΕI	bo	WS



								Applica	tion: Gas
Nominal Diameter mm	н	D	imensior mm L1	ns L2	W	Weight kg	Fuse Time Sec.	Cool Time Min.	Product Code - 40V 4.7 mm pin
63	100	167	58	58	128	0.32	60	8	WB8515
90	132	222	77	77	176	0.82	80	9	WB8518
125	175	269	82	82	228	1.84	90	7	WB8520
180	240	350	101	101	308	4.11	260	16	WB8523

90° Elbows									Applica	ition: Gas
0	Nominal Diameter		D	imensior mm	is	147	Weight	Fuse Time	Cool Time	Product Code - 40V
	mm	н	L	LI	LZ	VV	кд	Sec.	iviin.	4.7 mm pin
	63	100	143	58	58	143	0.40	60	8	WB8545
	90	133	195	77	77	195	0.98	80	9	WB8547
н	125	178	246	82	82	246	2.14	90	7	WB8549
	180	240	329	101	101	329	5.16	260	16	WB8552

Always refer to the fitting's packaging label for up to date fuse and cool times.



### What's on the packaging label?

### **Electrofusion fittings information**

### Confidence through traceability

An important design feature of our electrofusion fittings is their traceability giving our customers the confidence in our ability to provide visibility on each of our fittings within our supply chain.

All our fittings are supplied with a traceability barcode label placed on the packaging. It identifies information such as the fitting type, the diameter, the manufacturer, the polyethylene compound, the material type, production batch etc.

In addition to the traceability label, we have included permanent markings on our fittings, at the manufacturing stage, which meet with industry manufacturing standards and regulations to enable us to improve our quality control systems.

#### Electrofusion fitting type

- Maximum operating pressures. This depends on the pipe with which the fitting is approved for use and its application
- 6 character product code
- Pipe compatibility table: identifies the fitting to pipe compatibility (pipe diameter, SDR and material)
- Terminal pin diameter
- Voltage for electrofusion process
- Fuse and cool times for manual input
- Manufacturing date
- Product batch number
- Individual fitting weight in kilograms
- Product approval(s)
- Fusion barcode for automatic programming of the control box by using a barcode scanner
- Traceability barcode
- Manufacturer's contact details

### Example of a fitting packaging label



The electrofusion fittings for export markets include adjusted fuse and cool times to cater for temperature extremes

### What's on the Radius fittings?



Tapping saddle fittings for gas applications: Identified by a yellow barcode label

# Handling and storing electrofusion fittings

All our electrofusion fittings are supplied individually packaged in a plastic bag to protect them from contamination. They should remain in their sealed bag until they are ready to be installed. Large diameter Easigrip® couplers are supplied in a 'double-bag' which gives additional protection from site contaminants. The external bag can be used as ground covering during the fitting's installation.

Electrofusion fittings should be stored away from all chemicals as these may cause degradation or may be absorbed by the

polyethylene material. If polyethylene products become contaminated, they should not be used and should be discarded immediately.

Electrofusion fittings should be stored in a dry environment, away from direct sunlight and excessive heat.



### Electrofusion jointing guidance

The following general guidance provides an overview of the method used for making joints using the electrofusion jointing technique.

Installers of electrofusion fittings must be competent and must have undertaken the appropriate training and assessment and have acquired the necessary knowledge and experience of the jointing procedure.

# Requirements to achieve a successful electrofusion joint

- The electrofusion process must be carried out as one continuous process from pipe surface preparation to fitting cooling
- Electrofusion jointing should be undertaken in a clean, dry and dust-free environment. A shelter must be used to protect the surfaces to be joined from contamination
- Where there is evidence of pipe ovality, the pipe must be rerounded using industry approved equipment. Pipe ovality is more commonly found in coiled pipes, in pipes with higher SDRs and in diameters above 400mm
- The electrofusion control box and power supply must be calibrated and capable of providing the correct fusion voltage for the full duration of the electrofusion cycle
- Clamps are used to ensure that there is no movement between the pipe and fitting during the jointing process
- For socket fittings, alignment clamps must be used during the full electrofusion heating and cooling cycles. For large diameter Easigrip<sup>®</sup> couplers, combined hydraulic re-rounding

and alignment clamps must be used. For more guidance, please refer to the Easigrip instruction details within this brochure

• For saddle fittings, where a top loading clamp is used, this should be calibrated and capable of applying the correct clamping force.



### Cleanliness

- The electrofusion fitting must remain in its protective packaging until it is placed on the prepared pipe surface. Do not touch the pipe and fitting jointing surfaces
- The clean pipe surface must be correctly prepared without excessive scraping. Industry approved pipe surface preparation tools must be used
- Once prepared, the joint must be made promptly to prevent contamination of the pipe surface
- Do not touch or wipe the pipe surface
- If the prepared pipe surface becomes contaminated, it should be wiped clean and must be re-prepared using the approved tools and procedure, without excessive scraping.

### Heat

- The electrofusion equipment must be capable of providing the correct fitting input voltage for the full duration of the fusion cycle, without interruption
- For Easigrip couplers 450 mm and above, Easigrip compatible equipment must be used. Please refer to the Easigrip instruction details within this brochure
- The electrofusion alignment or top loading clamp must be left in place for the full duration of the fusion and cooling cycles
- If the electrofusion process is interrupted before the fusion cycle is completed, do not re-heat the fitting. The fitting must not be commissioned.

#### **Pressure**

- The pipe surface must be correctly prepared without excessive scraping, as this may lead to a poor quality fusion joint
- When making a socket joint, the pipe ends must be cut square and must be fully inserted into the fitting's socket until it reaches the insertion stops
- Where there is evidence of pipe ovality, the pipe must be rerounded before the electrofusion fitting is placed on the pipe
- Alignment clamps must be used for all socket fittings
- A calibrated tapping tee top loading clamp capable of applying the correct force must be used for top loading saddle fittings.

### **Quality assessment**

- Following the electrofusion process, the fitting should be inspected to ensure that the fusion indicator(s) is (are) raised. The fusion indicator identifies that the electrofusion process has taken place. It is not confirmation of a quality joint
- For a good quality joint, there should be no visible melted material outside the fitting's fusion zone
- At the end of the electrofusion cycle, the control box should be checked to confirm that the cycle has completed without error
- Each joint should be marked with the joint reference details
- Follow industry approved pressure test procedures before commissioning the joint





### Electrofusion jointing guidance

### Safety

Minimum personal protection equipment





The surface of the fitting will become hot during the electrofusion process. Do not touch the fitting until it has fully cooled

4

- Before carrying out an electrofusion joint
- For socket fittings: the inside and outside of the pipe must be completely dry
- For saddle fittings: the outside of the pipe must be completely dry

Visually check all electrical components including the generator, electrofusion control box and all cables to ensure that they are in good working order and fit for use. Follow the supplier's recommendations.

Do not use the electrofusion fitting if the electrical terminal connections are damaged.

### Socket fitting jointing overview



Ensure the pipe to be joined is free from damage and is cut square. The pipe's exterior and interior must be dry. Re-round the pipe if necessary



Using an approved marker pen, mark the fitting insertion depth on the pipe



Prepare the pipe surface using an industry approved rotary or hand scraping tool. For ProFuse pipe, remove the outer skin using the ProFuse PET tool



Do not remove excessive material during pipe preparation, as this may lead to a poor quality joint

(cont'd...)

### Socket fitting jointing overview (...cont'd)



Inspect the pipe surface and ensure it is correctly prepared, clean and free from contaminant over the area to be fused



Place the fitting on the pipe up to the insertion stops. Mark the pipe as shown



Follow steps 1 to 5 for the preparation of the connecting pipe surface and fully insert into the fitting's socket. Mark the pipe as shown in step 6



Clamp the fitting in place and connect the electrofusion control box terminal leads to the fitting



Follow the instructions on the electrofusion control box



Scan or manually enter the fitting's fusion details in the control box and start the welding process



Melt indicators show that the fusion process has taken place. It is not confirmation of a quality joint. Clamps must remain in place during the full cooling period



Remove the clamps after the cooling period has elapsed. The joint is complete. Follow industry approved pressure test procedures before commissioning the joint.

### Top loading saddle fitting jointing overview



Inspect the pipe and ensure it is free from damage and the pipe's exterior is dry



Using the electrofusion fitting as a guide, mark the area of the pipe to prepare for electrofusion jointing, using an approved marker pen



Mark the area to prepare as shown



Prepare the pipe using an industry approved hand scraping tool. For ProFuse pipe, remove the outer skin using the ProFuse PET tool

(cont'd...)



### Top loading saddle fitting jointing overview (...cont'd)



Inspect the pipe surface and ensure it is clean and free from contamination



Using an approved calibrated clamp, secure the saddle fitting in place. Ensure the correct clamping force is applied (check clamp indicator)



Connect the electrofusion control box terminal leads to the fitting



Follow the instructions on the control box. Scan or manually enter the fitting's fusion details and start the welding process



Melt indicators show that the fusion process has taken place. It is not confirmation of a quality joint. Clamps must remain in place during the full cooling period



Prepare the outlet of the tapping tee and place the socket fitting onto the outlet. Prepare the service pipe and make the socket joint following the socket fitting jointing procedure.

Pressure test the service before tapping the main.



#### 1. Tapping the main

Use a 12mm hexagonal T key and turn in a clockwise direction until the cutter cuts through the top of the main

#### 2. Retracting the cutter

Turn the T key in an anticlockwise direction until the cutter is flush with the top of the stack. Do not remove the cutter from the stack. If the tapping tee contains a thread follower, remove before replacing the cap



Check the o'ring seal is in place at the top of the stack and adequately tighten the cap. Check for leakage using industry best practice. The connection is complete.

For complete jointing guidance and jointing videos, please visit our website www.radius-systems.com or contact our technical support team on e: techsupport@radius-systems.com.

### Easigrip<sup>®</sup> couplers electrofusion jointing guidance and compatible equipment

The Radius Systems Easigrip electrofusion couplers (450mm to 710mm) must be installed using approved Easigrip compatible equipment, which is capable of delivering the 3 stage electrofusion heating cycle: 'warm-up', 'soak' and 'weld' (fuse), followed by the cooling cycle

Always refer to the fitting's packaging label for up to date fuse and cool times.

### Safety

Minimum recommended personal protection equipment







The weight of the electrofusion coupler is detailed on the packaging label. Please follow published safety practices when handling Easigrip couplers



The surface of the fitting will become hot during the electrofusion process. Do not touch the fitting until it has fully cooled



#### Before carrying out an electrofusion joint The inside and outside of the pipe must be

completely dry

Visually check all electrical components including the generator, electrofusion control box and all cables to ensure that they are in good working order and fit for use. Follow the supplier's recommendations.

Do not use the electrofusion fitting if the electrical terminal connections are damaged.

#### EQUIPMENT EASIGRIP\* Exstants Business Basiness B

### 3 stage electrofusion heating Cycle



during the full duration of the cooling cycle



## Recommended jointing equipment for Easigrip<sup>®</sup> couplers

For successful jointing of the Easigrip couplers, an Easigrip<sup>®</sup> compatible electrofusion control box and matching generator capable of delivering a minimum constant power of 4.8kW for the duration of the electrofusion cycle are required (the fitting supply shall be 78V to 80V AC rms).

- 1. Easigrip compatible 80V electrofusion control box
- 2. Generator capable of providing the required power for the full duration of the electrofusion cycle. A 7.5-10 kVA generator will be required depending on the manufacturer
- 3. Easigrip compatible re-rounding clamps and alignment bars
- 4. Recommended pipe preparation tools (eg. PET tool for ProFuse pipe or rotary scraping tool for solid wall pipe)
- 5. Approved marker pen
- 6. Measuring equipment



ONLY fusion equipment bearing the Easigrip compatible label should be used with Easigrip couplers.

Compatible electrofusion control boxes can be obtained through a wide range of pipe jointing equipment suppliers. Please contact Radius Systems for more details.

### Purge, pressure test & by-pass tees

### Principle of operation

Fuse the purge tee onto the PE main, using the same procedure for saddle fittings in this document

1

Remove the outlet cap and carry out a pressure test to prove weld integrity



Open the valve on the purge tube to allow the gas / air to escape through the purge tee

4





adaptor (sold separately)

Fit the purge tube to the purge tee's

elbow outlet using the reusable thread



When the purging operation is complete, close the valve and wind the cutter down, so that it plugs the cut hole in the crown of the PE pipe

5



Using a short arm tee key, cut a hole into the PE main, as shown. Wind the cutter back to the top of the stack. Do not remove the cutter

3



Now that the flow of gas is controlled, remove the purge tube and adaptor. Check the o'ring seal is in place at the top of the stack and adequately tighten the cap. Check for leakage using industry best practice.

6



### **Radius Systems**

Radius Systems are a market leader in the innovation and manufacture of plastic pipe systems for the utilities and construction industries. With extensive research and development at the heart of our products and systems, we take care of the entire pipe life cycle - from design and manufacture through to installation, repair and rehabilitation. We strive to improve industry practices, with good health and safety policies at the forefront of our philosophy of 'getting it right first time'. Our continuous customer inspired research and development, combined with successful customer partnerships represent our total dedication to the plastic piping industry.

#### O Manufacturing facilities

With 3 production sites in the UK, we have complete control over quality and the ability to meet the expectations of our customers

#### O Innovative approach

We are leaders in our field with a history of research and new product development. Practicality, durability and adaptability are all high on our agenda to meet our clients' needs

#### ○ Flexible product and service provision

Our comprehensive range of services is designed to fit the variable demands of our clients' developments in pipes, fittings, training and support services

#### O Reliability and safety

With over 40 years experience of design and manufacture, our clients know that they can count on us to meet not just their product and service needs, but also their delivery and safety requirements

#### O Outstanding customer service

We have a dedicated Customer Services team to answer queries from our customers in the UK and overseas. Our service is not just about the delivery of products - contact our team if you have a product or installation enquiry or a post-delivery query



For more information please visit our website: www.radius-systems.com or contact us:

#### UK Head Office

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