

GRADING RINGS - GENERAL RECOMMENDATIONS



Corona forms when the voltage gradient at the surface of a conducting material exceeds a critical value and ionizes the surrounding air. Corona becomes a great concern at extra high voltages where precautionary measures are necessary. Effects of corona include radio and television interference, voltage loss, and audible noise on the line. PLP manufactures a wide range of grading rings to suit EHV transmission lines for both suspension and tension configurations. Typical designs that are shown below demonstrate of PLP's ability to manufacture to customer requirements. Please contact PLP for further information and design suited to your string configuration.

PROTECTION



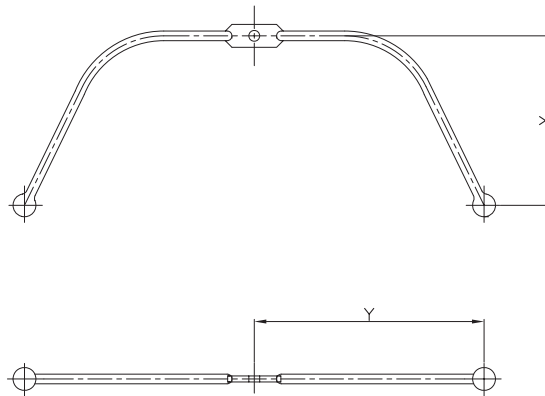
SUSPENSION ARCING HORN: EARTH END - DOUBLE POINT



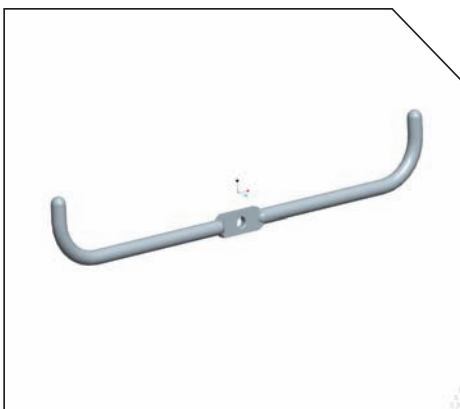
Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
F79567-000	DK90013/01	2.3 SA	617	508	Ball	1-Ø18
E88081-000	C-1895677	2.3 SAC/1	643	508	Ring	1-Ø18
CB9694-000	C-1951871	2.3 SAC/2	767	508	Ring	1-Ø18
F14605-000	DK90013/02	2.3 SB	389	508	Ball	1-Ø18
C51777-000	C-1895678	2.3 SBC/1	443	508	Ring	1-Ø18
CB9696-000	C-1951877	2.3 SBC/2	567	508	Ring	1-Ø18
731854-000	DK90013/04	7 SA	559	381	Ball	1-Ø18
CE6399-000	DK90013/06	7 SB	300	381	Ball	1-Ø18



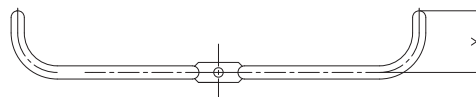
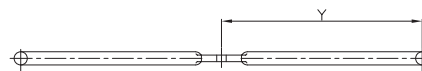
SUSPENSION ARCING HORN: CONDUCTOR END - DOUBLE POINT



Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
838082-000	DK90006/01	4SC	117	381	Round	1-Ø18



PROTECTION



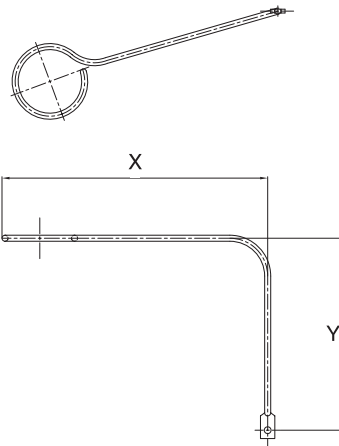
TENSION ARCING HORN : EARTH END - SINGLE POINT



Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
347548-000	DK90012	2 UTA	508	671	Ball	1-Ø18
C55238-000	C-1895686	2 UTAC/1	703	508	Ring	1-Ø18
CF8389-000	C-1984848	2 UTAC/2	634	658	Ring	1-Ø18



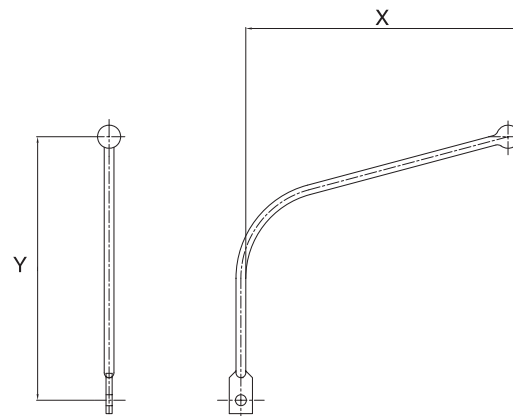
TENSION ARCING HORN: EARTH END - SINGLE POINT LOW DUTY ARCING HORN: EARTH END - SINGLE POINT



Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
509090-000	DK90009/01	2.3 TA	709	508	Ball	1-Ø18
E63859-000	C-1895668	2.3 TAC/1	728	508	Ring	1-Ø18
CB9695-000	C-1951879	2.3 TAC/2	767	508	Ring	1-Ø18
548612-000	DK90009/05	2.3 TAX	1290	508	Ball	1-Ø18
F65870-000	DK90009/07	7 TA	517	432	Ball	1-Ø18
DK90009/03	DK90009/03	2.3 LA	613	508	Ball	1-Ø18
E88943-000	C-1895682	2.3 LAC/1	613	508	Ring	1-Ø18
DK90009/04	DK90009/04	2.3 LAX	1310	508	Ball	1-Ø18
331464-000	DK90009/10	7 LA	457	432	Ball	1-Ø18
D41435-000	DK90009/02	2.3 TB	481	508	Ball	1-Ø18
F96748-000	C-1895669	2.3 TBC/1	528	508	Ring	1-Ø18
836502-000	DK90009/06	7 TB	390	432	Ball	1-Ø18



PROTECTION



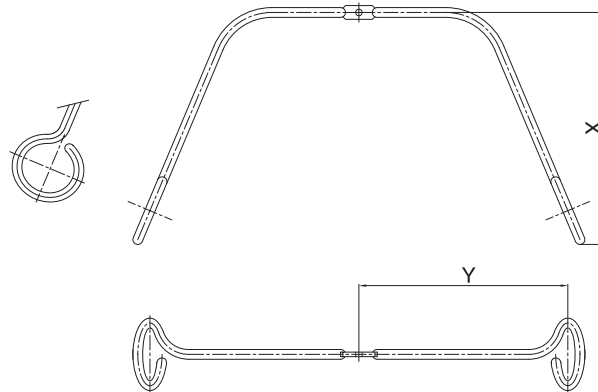
SUSPENSION ARCING HORN: EARTH END - DOUBLE POINT



Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
706126-000	DK90019/01	2 USAX	640	610	Ring	1-Ø18
407764-000	DK90019/02	2 USBX	386	610	Ring	1-Ø18



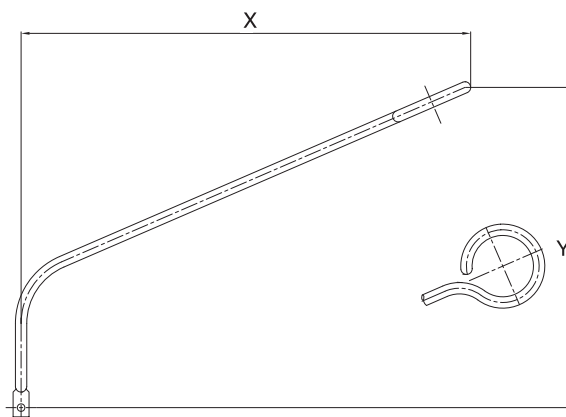
SUSPENSION ARCING HORN: EARTH END - DOUBLE POINT LOW DUTY ARCING HORN: EARTH END - SINGLE POINT



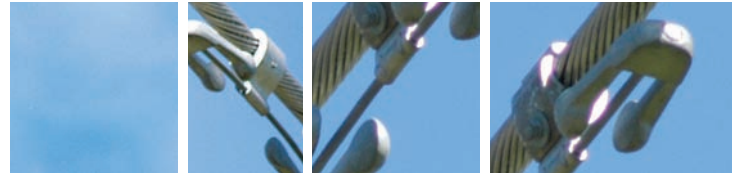
Material: Galvanized Steel

BRITISH STANDARD (BS)

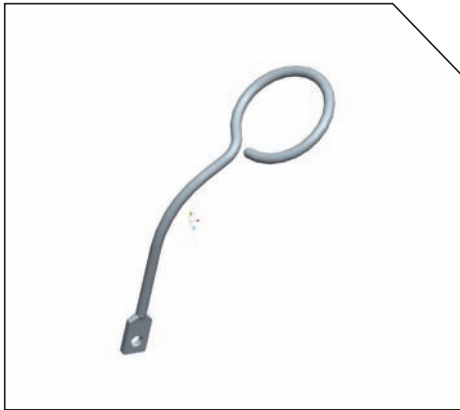
Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
129724-000	DK90010/04	2 ULA	367	762	Ring	1-Ø18
982642-000	DK90010/01	6 SA	1070	762	Ring	1-Ø18
972826-000	DK90010/02	6 SB	818	762	Ring	1-Ø18
E00592-000	DK90033	6 LA	1167	762	Ring	1-Ø18



PROTECTION



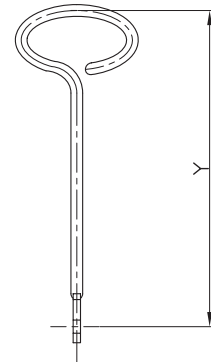
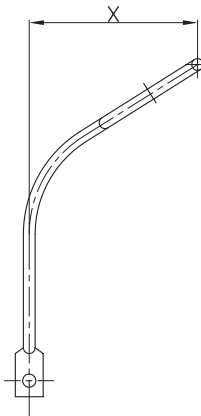
TENSION ARCING HORNS: CONDUCTOR END - SINGLE POINT



Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
033192-000	DK90003	7 TC	230	432	Ring	1-Ø18



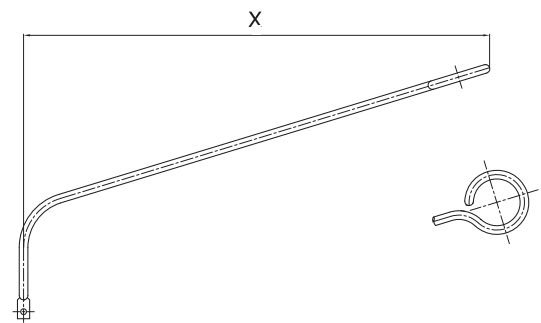
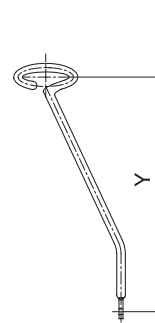
TENSION ARCING HORN: EARTH END - SINGLE POINT



Material: Galvanized Steel

BRITISH STANDARD (BS)

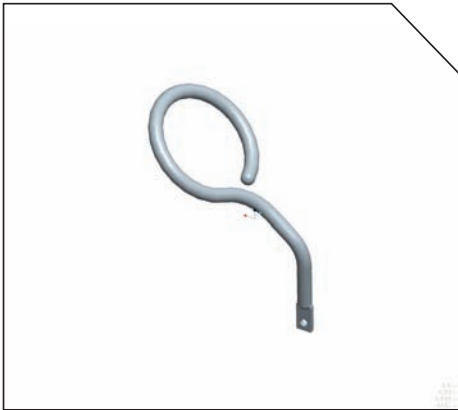
Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
A85325-000	DK90031	6 TA	1455	762	Ring	1-Ø18
913598-000	DK90032	6 TB	1200	762	Ring	1-Ø18



PROTECTION



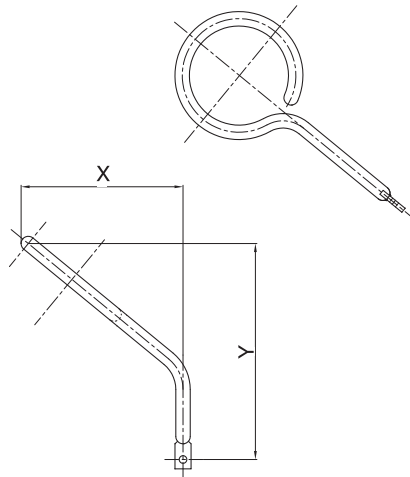
TENSION ARCING HORN: CONDUCTOR END - SINGLE POINT



Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type	Hole Dia (mm)
148948-000	DK90022	2.3 TC	381	508	Ring	1-Ø18



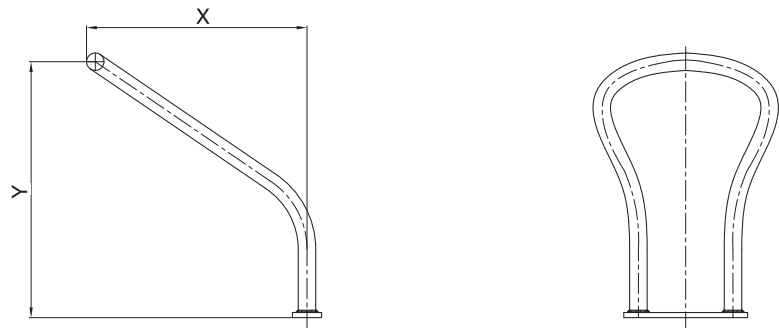
SUSPENSION ARCING HORN: CONDUCTOR END LOW DUTY TENSION ARCING HORN: CONDUCTOR END

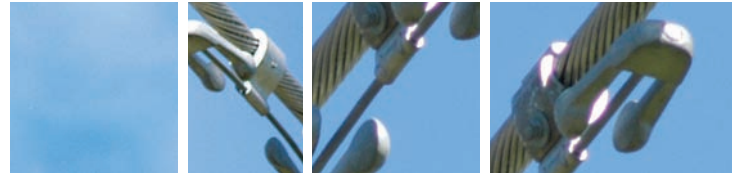


Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Hole Dia (mm)
F41154-000	DK90014/02	2.3 LC	429	498	1-Ø18
C64825-000	DK90014/01	2.3 SC	429	498	2-Ø18





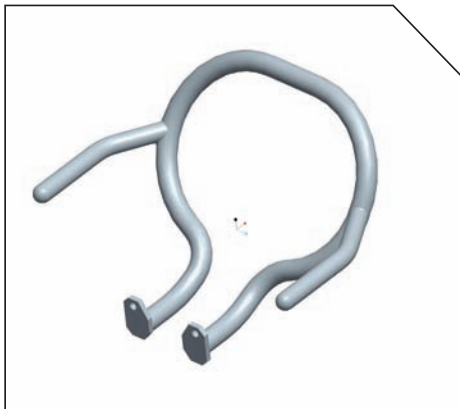
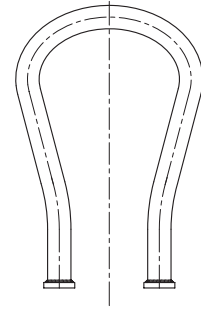
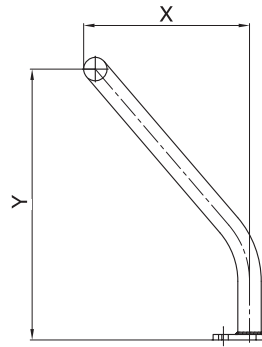
SUSPENSION ARCING HORN: CONDUCTOR END



Material: Galvanized Steel

BRITISH STANDARD (BS)

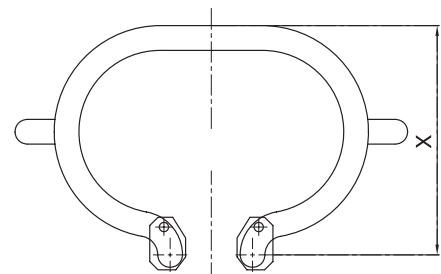
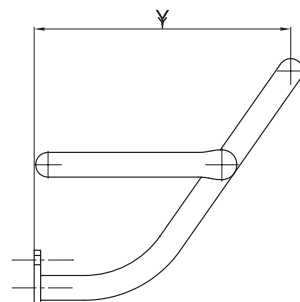
Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Hole Dia (mm)
CB9699-000	DK90021	2 USC	305	498	2-Ø18



Material: Galvanized Steel

BRITISH STANDARD (BS)

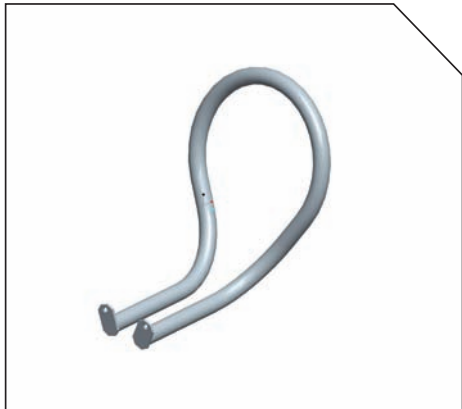
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771788-000	DK90024	2 USCXW	445	498	2-Ø18



PROTECTION



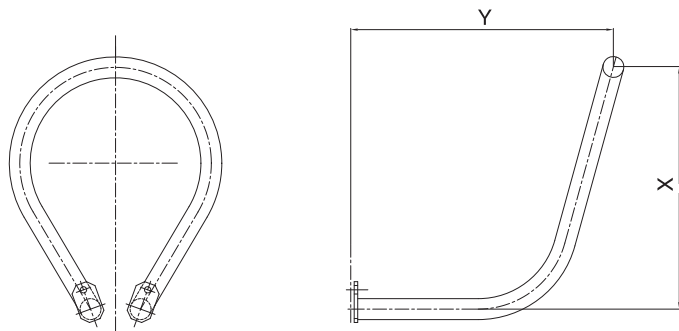
SUSPENSION ARCING HORN: CONDUCTOR END (CONT.)



Material: Galvanized Steel

BRITISH STANDARD (BS)

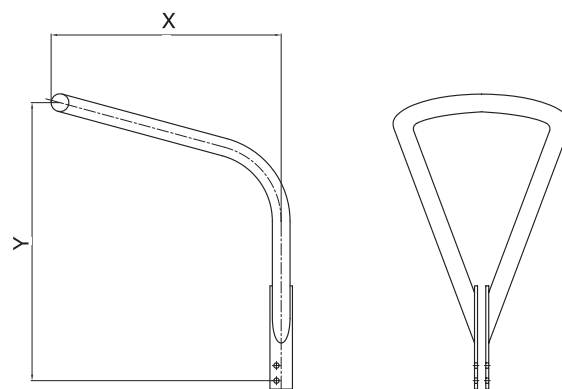
Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Hole Dia (mm)
408506-000	DK90030	2.6 SC	724	762	2-Ø18



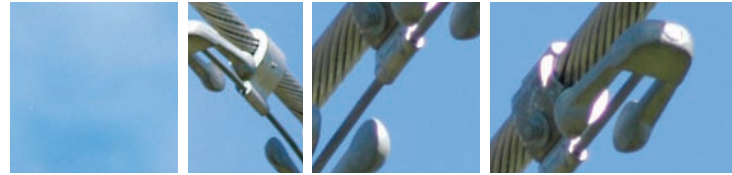
Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Hole Dia (mm)
319330-000	DK90017	6 SC	778	940	2-Ø18



PROTECTION



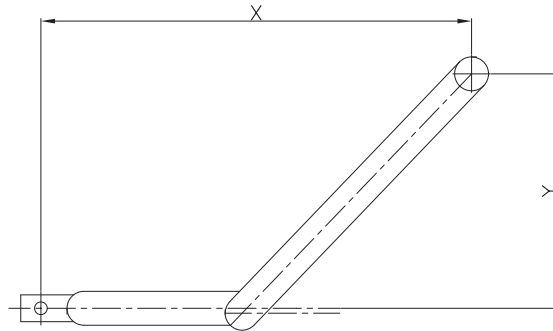
SUSPENSION ARCING HORN: CONDUCTOR END (CONT.)



Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Hole Dia (mm)
998654-000	DK90015/01	2 UTC	610	356	1-Ø18
C63419-000	C-1895684	2 UTC/1	610	356	1-Ø18



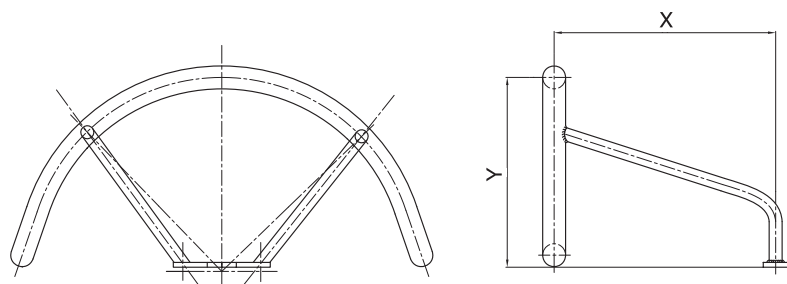
LOW DUTY TENSION ARCING HORN: CONDUCTOR END



Material: Galvanized Steel

BRITISH STANDARD (BS)

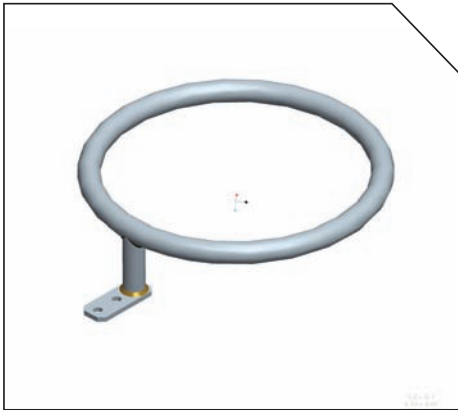
Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Hole Dia (mm)
599174-000	DK90016	2 ULC	610	497	1-Ø18



PROTECTION



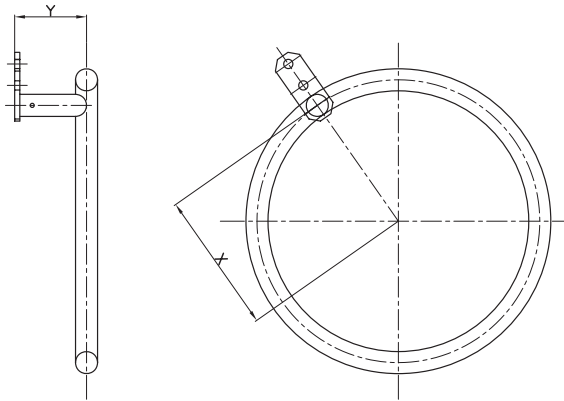
CORONA SCREEN FOR SAG ADJUSTERS



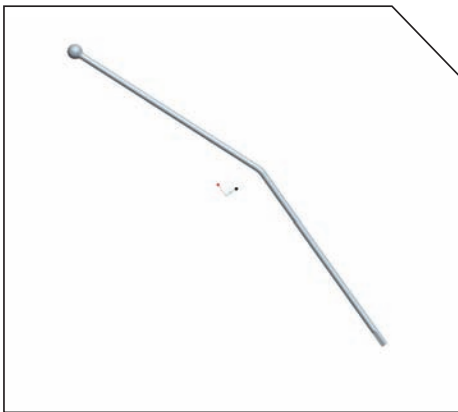
Material: Galvanized Steel

BRITISH STANDARD (BS)

Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Hole Dia (mm)
D37438-000	DK90062	6 MTD	297	140	1-Ø18



EXTENSION ARCING HORN

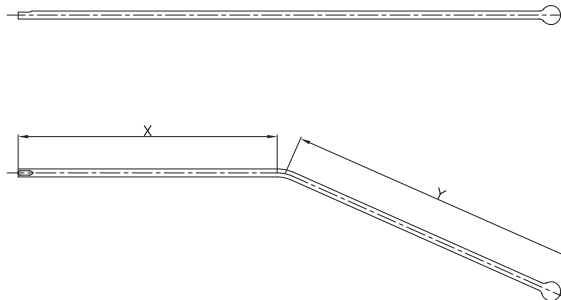


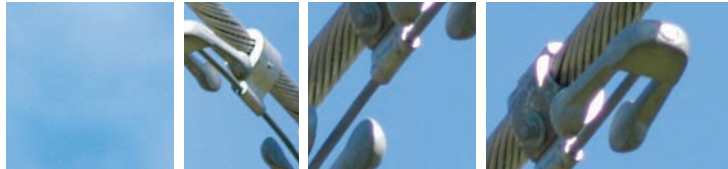
Material: Galvanized Steel

BRITISH STANDARD (BS)

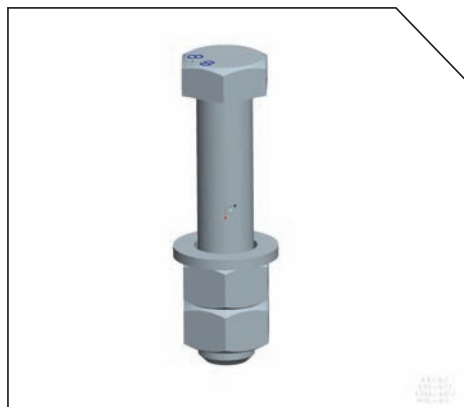
Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)	Ended Type
096782-000	DK90004	2 UD	635	-	Ball
912632-000	DK90001	6 D	533	584	Ball
CA3403-000	C-1923453	6 D	533	503	Ring
925786-000	DK90026	-	533	615	Ball
033756-000	DK90034	2.3 TE	419	914	Ball
D84838-000	DK90049*	6 A	-	-	-

* Clip Bolt





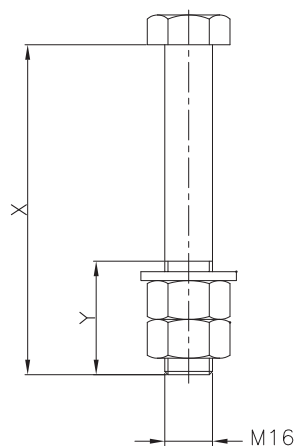
M16 BOLT ASSEMBLY FOR ARCHING HORN



Material: Galvanized Steel

BRITISH STANDARD (BS)

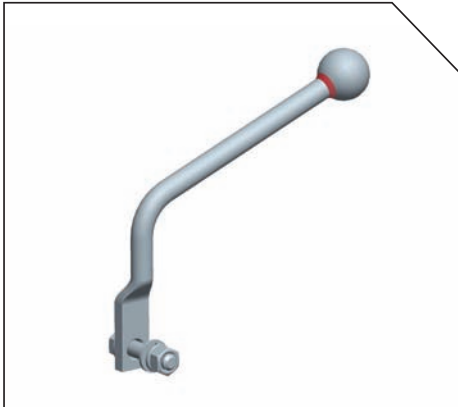
Part Number	Drawing Number	Ref Code	X (mm)	Y (mm)
676328-000	DK98144-XX	DK98144	50	38
049812-000	DK98144-XX	DK98145	55	38
F00682-000	DK98144-XX	DK98146	60	38
577956-000	DK98144-XX	DK98147	65	38
392502-000	DK98144-XX	DK98148	70	38
746986-000	DK98144-XX	DK98149	75	38
018726-000	DK98144-XX	DK98150	80	38
027226-000	DK98144-XX	DK98151	90	38
292514-000	DK98144-XX	DK98152	85	3
906136-000	DK98144-XX	DK98153	160	44
650814-000	DK98144-XX	DK98154	230	57
D54814-000	DK98144-XX	DK98155	140	44
202700-000	DK98144-XX	DK98156	210	57
666070-000	DK98144-XX	DK98157	235	57
598180-000	DK98144-XX	DK98158	130	44
819774-000	DK98144-XX	DK98159	95	38
CG4209-000	DK98144-XX	DK98160	110	38
691032-000	DK98144-XX	DK98161	120	38
541314-000	DK98144-XX	DK98162	100	38
080862-000	DK98144-XX	DK98163	115	38



PROTECTION

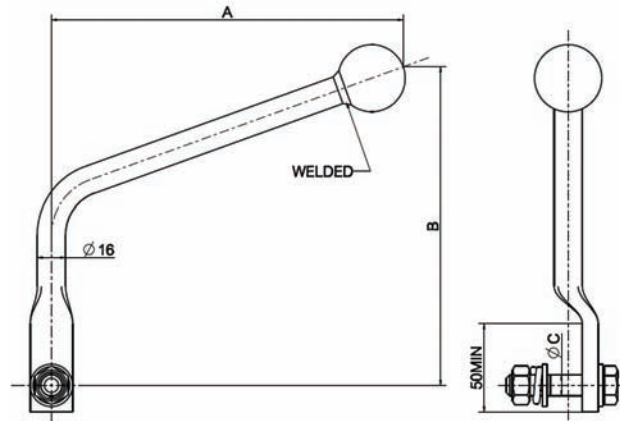


ARCING HORN - SINGLE POINT



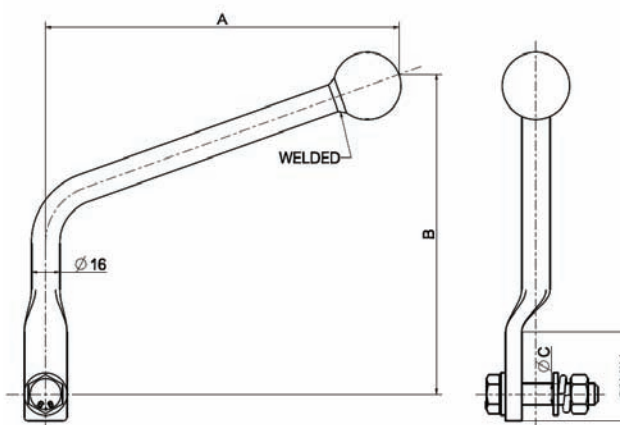
Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)
086078-000	A4DD16299T	210	350	Ø12
F36253-000	A4DD14671T	319	350	Ø12
D84936-000	A4DD11998T	350	380	Ø12
125616-000	A3DD4503T	526	380	Ø12

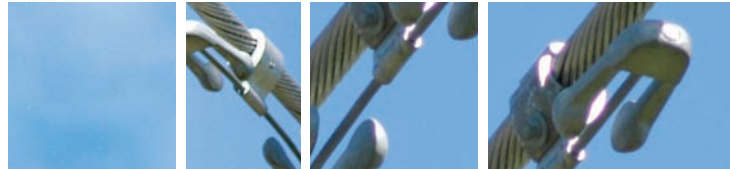


Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)
062058-000	A4DD17183T	239	350	Ø12
103246-000	A4DD17044T	247	350	Ø12
246688-000	A3DD4297T	392	350	Ø12



PROTECTION

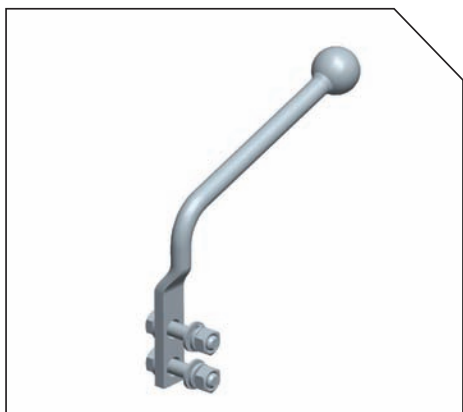
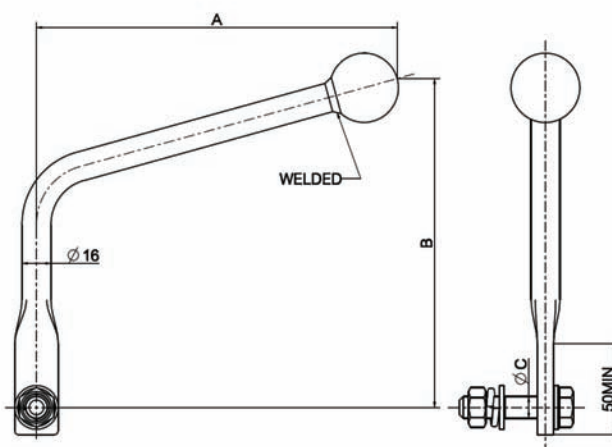


ARCING HORN - SINGLE POINT (CONT.)



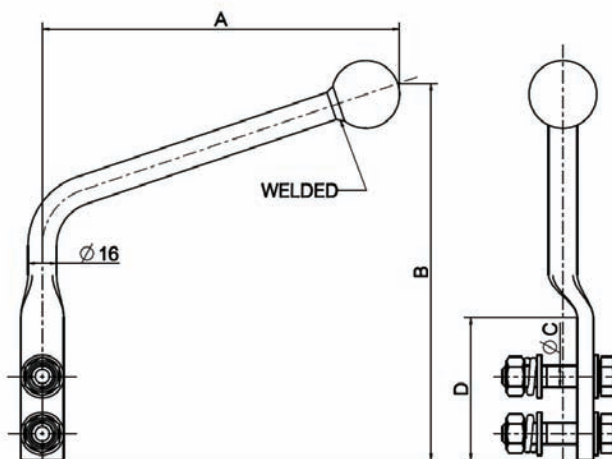
Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)
CK0711-000	A4DD16260T	120	300	Ø12
614106-000	A4DD10416T	137	350	Ø12
118456-000	A4DD10695T	150	350	Ø12
C20378-000	A4DD10418T	193	350	Ø12
145942-000	A4DD08128T	319	350	Ø12



Material: Galvanized Steel

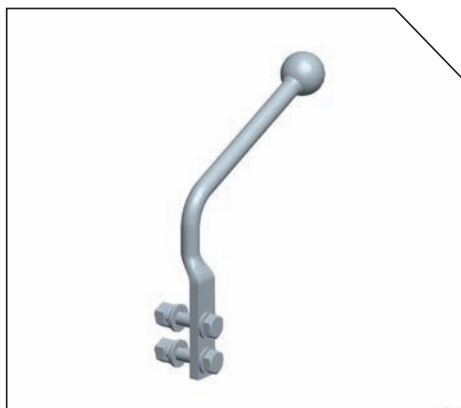
Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)	D (mm)
404940-000	A4DD16300T	132	381	Ø12	85
537312-000	A4DD14748T	200	381	Ø12	85
459736-000	A4DD17874T	207	381	Ø12	85
C58433-000	A4DD14673T	241	381	Ø12	85
701542-000	A4DD17875T	279	381	Ø12	85
027964-000	A3DD4299T	314	381	Ø12	85
D56007-000	A4DD15333T	546	431	Ø12	85
597906-000	A4DD17291T	212	412	Ø12	125
962930-000	A4DD17920T	504	412	Ø12	125
270340-000	A4DD17250T	450	477	Ø12	125



PROTECTION

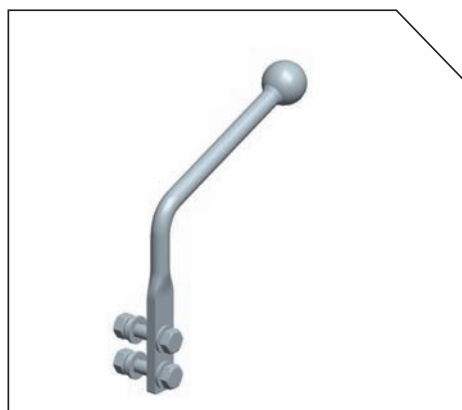
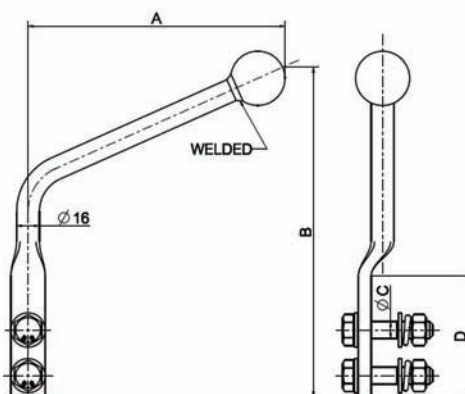


ARCING HORN - SINGLE POINT (CONT.)



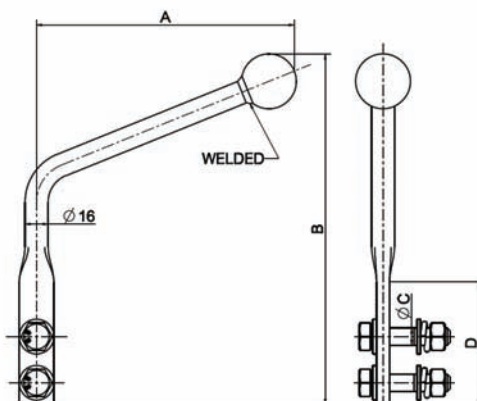
Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)	D (mm)
108066-000	A3DD3421T	119	381	Ø12	85
269646-000	A4DD10415T	120	381	Ø12	85
961662-000	A4DD17184T	241	381	Ø12	75
998152-000	A3DD4506T	421	411	Ø12	85
179192-000	A3DD4712T	392	381	Ø12	75
586608-000	A4DD17025T	199	381	Ø12	75
449156-000	A3DD3423T	272	381	Ø12	75
283170-000	A4DD07408T	1253	478	Ø12	85
249870-000	A4DD17305T	223	381	Ø12	85
703418-000	A4DD17303T	218	481	Ø12	125
409356-000	A3DD4296T	295	481	Ø12	125
D94199-000	A4DD11997T	119	411	Ø12	125
031980-000	A3DD3419T	166	465	Ø12	125
719150-000	A4DD16298T	282	481	Ø12	125
265314-000	A3DD4502T	451	490	Ø12	125
545456-000	A4DD07390T	1221	497	Ø12	130



Material: Galvanized Steel

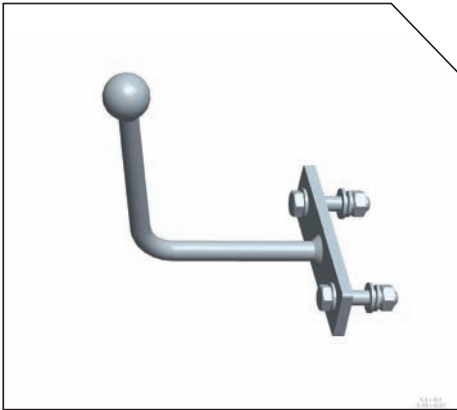
Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)	D (mm)
527140-000	A3DD4742T	526	411	Ø12	85
E79836-000	A3DD4740T	470	497	Ø12	120
475392-000	A3DD4747T	494	411	Ø12	80
541926-000	A4DD10868T	258	381	Ø12	75
C35518-000	A4DD09498T	200	381	Ø12	125
184456-000	A4DD08129T	295	465	Ø12	125
CE0091-000	A4DD14617T	412	482	Ø12	132
D95621-000	A4DD09499T	497	381	Ø12	125



PROTECTION

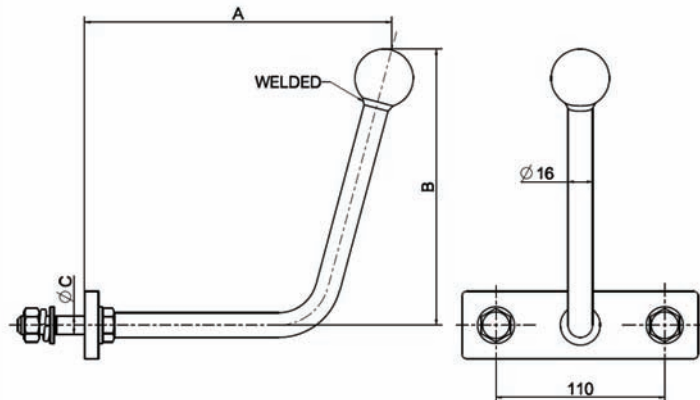


ARCING HORN - SINGLE POINT (CONT.)



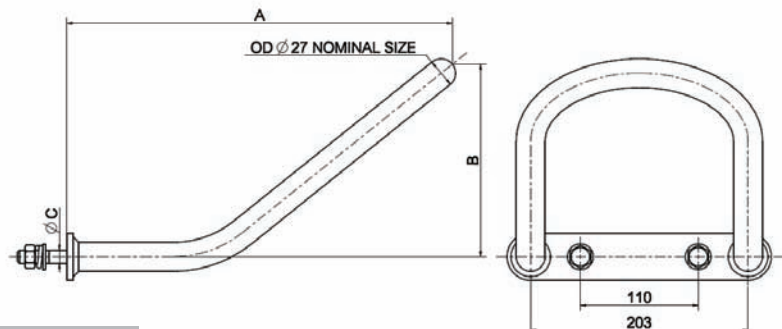
Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)
110968-000	A4DD10417T	342	118	Ø12
D70441-000	A4DD10750T	342	174	Ø12
645288-000	A3DD4713T	342	190	Ø12
614064-000	A4DD17877T	342	205	Ø12
C84292-000	A4DD11064T	342	216	Ø12
559640-000	A4DD10420T	342	220	Ø12
058578-000	A4DD17273T	342	224	Ø12
427604-000	A3DD4933T	342	240	Ø12
554176-000	A4DD08245T	342	249	Ø12
507150-000	A3DD4716T	340	310	Ø12
C13159-000	A4DD14674T	342	342	Ø12
447202-000	A4DD17257T	342	358	Ø12
256578-000	A3DD4298T	342	415	Ø12
171964-000	A3DD4508T	372	491	Ø12
388670-000	A4DD08288T	342	499	Ø12
668880-000	A4DD17919T	342	516	Ø12
C16913-000	A4DD08859T	372	547	Ø12
A13628-000	A4DD14938T	369	570	Ø12



Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)
455952-000	A3DD3812T	437	120	Ø12
213746-000	A3DD4509T	437	176	Ø12
586158-000	A3DD4744T	437	190	Ø12
F63720-000	A4DD15082T	342	200	Ø12
355652-000	A3DD4746T	434	205	Ø12
C75963-000	A3DD4739T	435	227	Ø12
099330-000	A4DD07407T	437	238	Ø12
185614-000	A4DD07388T	370	250	Ø12
928372-000	A3DD4748T	437	258	Ø12



PROTECTION

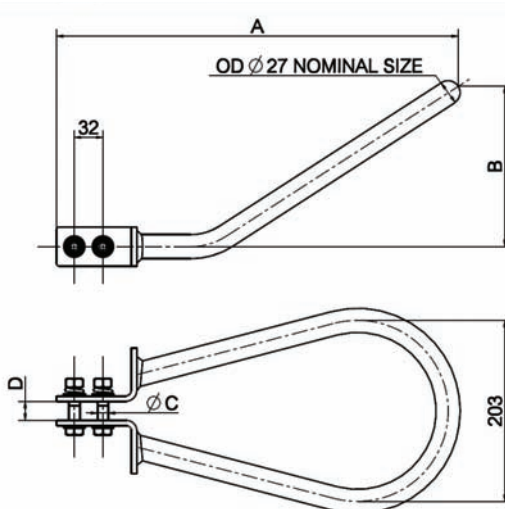


ARCING HORN - SINGLE POINT (CONT.)

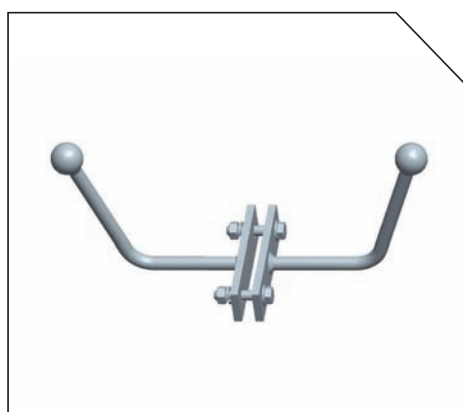


Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)	D (mm)
901246-000	A3DD4504T	481	119	Ø12	18
F42866-000	A3DD4741T	570	197	Ø12	21
D88990-000	A4DD15080T	386	200	Ø12	22
441644-000	A3DD4507T	481	226	Ø12	22
633552-000	A4DD07389T	570	250	Ø12	20
P00833-000	A4DD17404T	481	330	Ø12	24

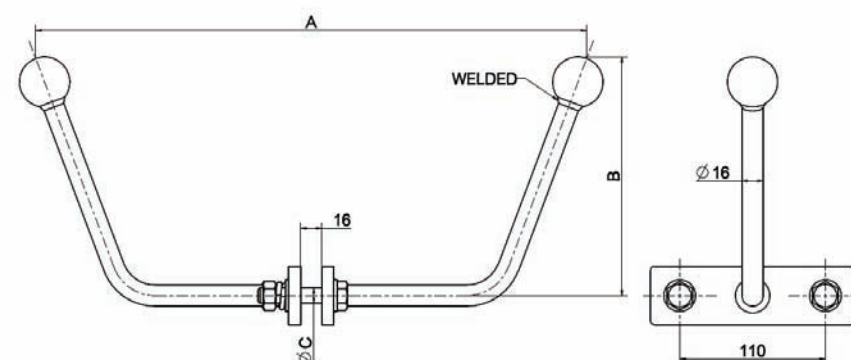


ARCING HORN - DOUBLE POINT

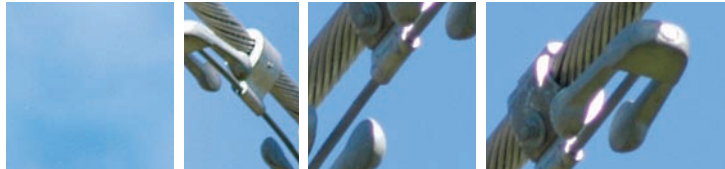


Material: Galvanized Steel

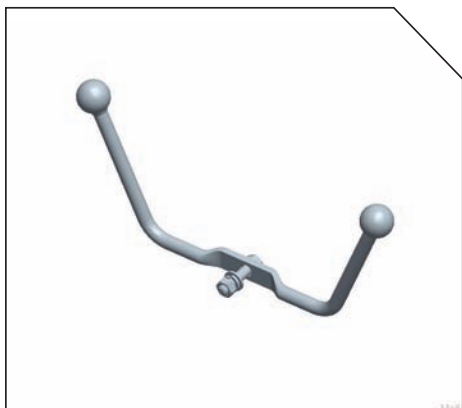
Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)
E50510-000	A4DD18069T	700	181	Ø12
F23602-000	A4DD15173T	700	300	Ø12



PROTECTION

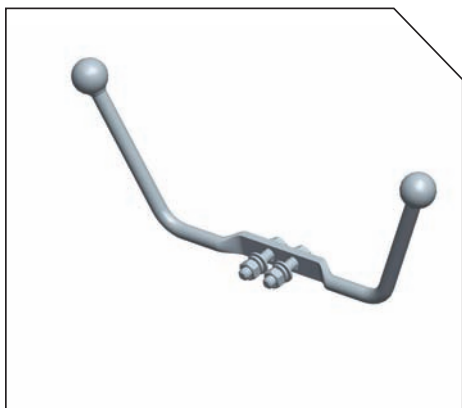
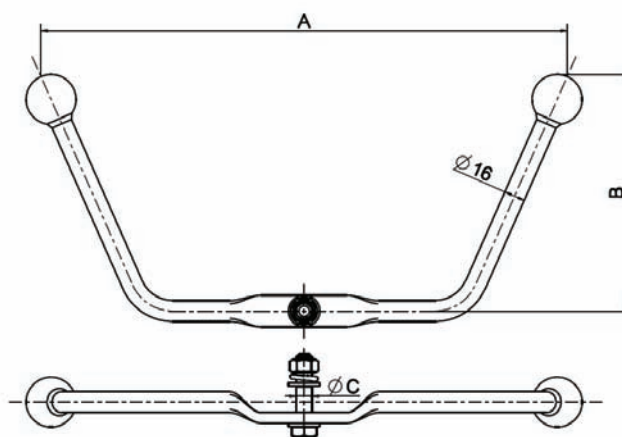


ARCING HORN - DOUBLE POINT (CONT.)



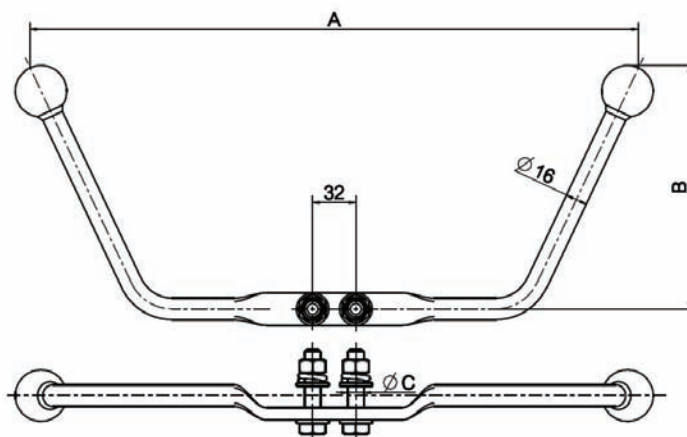
Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)
505510-000	A4DD16297T	700	211	Ø12
688570-000	A3DD3558T	700	224	Ø12
587422-000	A4DD17253T	760	327	Ø12
664938-000	A3DD4501T	760	380	Ø12
P00460-000	A4DD17513T	760	446	Ø12
025276-000	A4DD17279T	760	454	Ø12



Material: Galvanized Steel

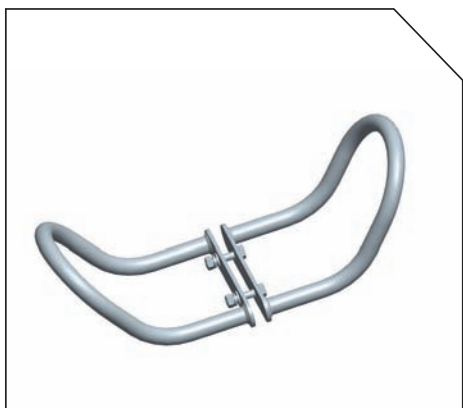
Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)
549440-000	A3DD1235T	700	119	Ø12
F85222-000	A4DD15336T	800	138	Ø12
133462-000	A4DD17296T	760	238	Ø12
011758-000	A3DD4743T	760	380	Ø12
C45662-000	A3DD4738T	760	402	Ø12



PROTECTION

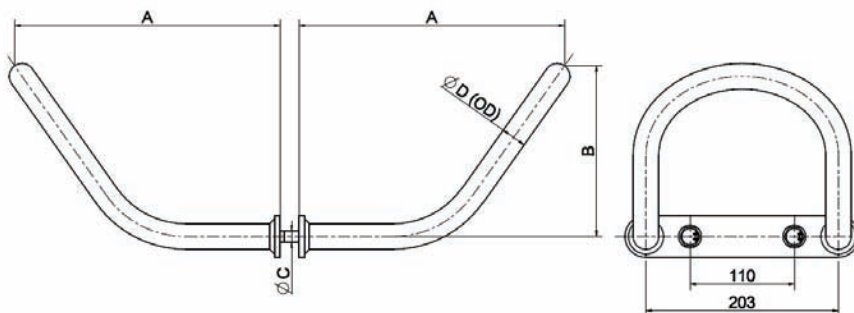


ARCING HORN - DOUBLE POINT (CONT.)



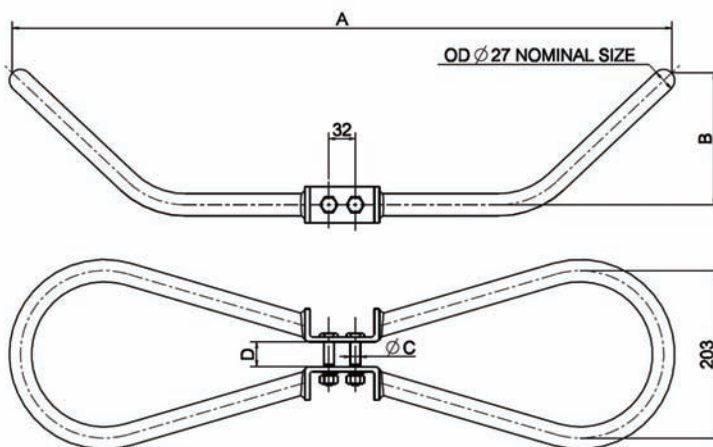
Material: Galvanized Steel

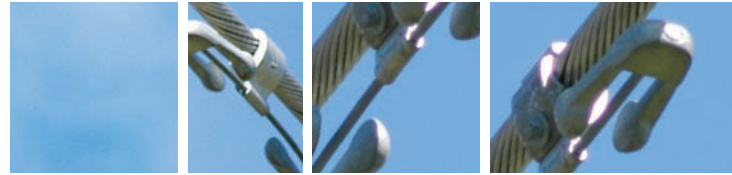
Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)	D (mm)
167854-000	A4DD16998T	400	180	Ø12	Ø34
268848-000	A4DD17015T	435	227	Ø12	Ø27
586638-000	A4DD16969T	400	250	Ø12	Ø34



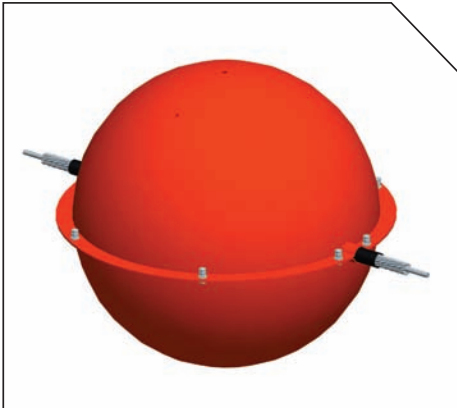
Material: Galvanized Steel

Part Number	Drawing Number	A (mm)	B (mm)	C Bolt Size (mm)	D (mm)
149038-000	A3DD1936T	890	119	Ø12	18
P00170-000	A4DD17418T	890	119	Ø12	20
E70950-000	A4DD15081T	700	123	Ø12	18





AERIAL WARNING SPHERE



Material: Fiberglass Reinforced Polyester Resin + Stainless Steel

Part Number	Drawing Number	A (mm)	C Conductor (mm)	Colour
CB2802-000	A4DD13068T	508.0	9.0 - 16.0	White & Orange
F66699-000	A4DD13068T	609.6	9.0 - 16.0	Orange & Orange
A12628-000	A4DD13068T	609.6	9.0 - 16.0	White & Orange
599478-000	A4DD13068T	609.6	9.0 - 16.0	White & Red
C62561-000	A4DD13068T	914.4	9.0 - 16.0	White & White
C66828-000	A4DD13068T	914.4	9.0 - 16.0	White & Orange
C91612-000	A4DD13068T	914.4	9.0 - 16.0	White & Red
D86135-000	A4DD13366T	609.6	16.1 - 23.0	Orange & Orange
837386-000	A4DD17477T	609.6	23.1 - 30.0	Orange & Orange

Note: complete with Armour Rods

