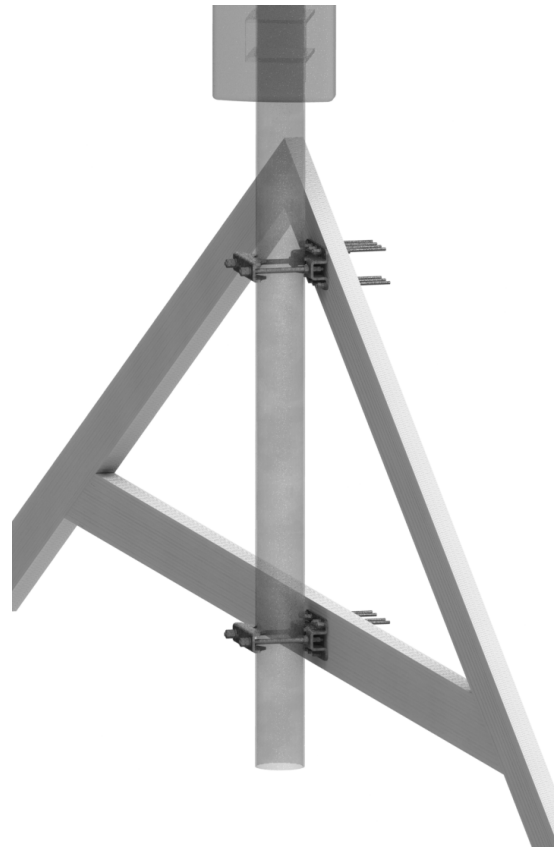


MAFI 3510

Rafter Bracket Kit



Designed to provide a pole mount on to rafters or roof trusses for tubes of Ø 60.3–114.3 mm (2.4–4.5 in).

Flexibility

The product can be mounted directly on to the wooden structure using through-mounts with large square washers on the back. The kit consist of high quality steel parts with hot dip galvanization treatment.

Additional Data

For more detailed product data see sections *Rotational Slip Table* and *Package Data*.

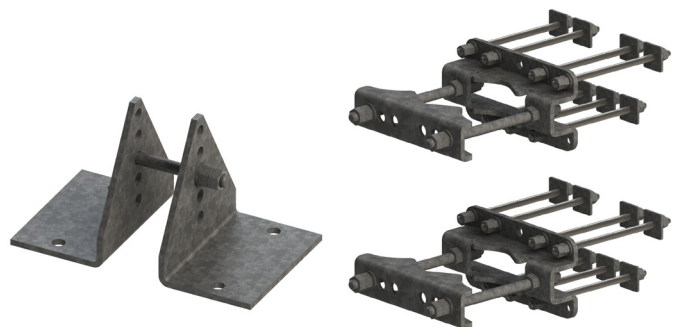
Additional information for this product can be found at www.mafigroup.com, or use the QR-code on next page.

How to Order

To order this kit, please contact MAFI quoting article number:

3510 or E-order number (SEG): **6000882**

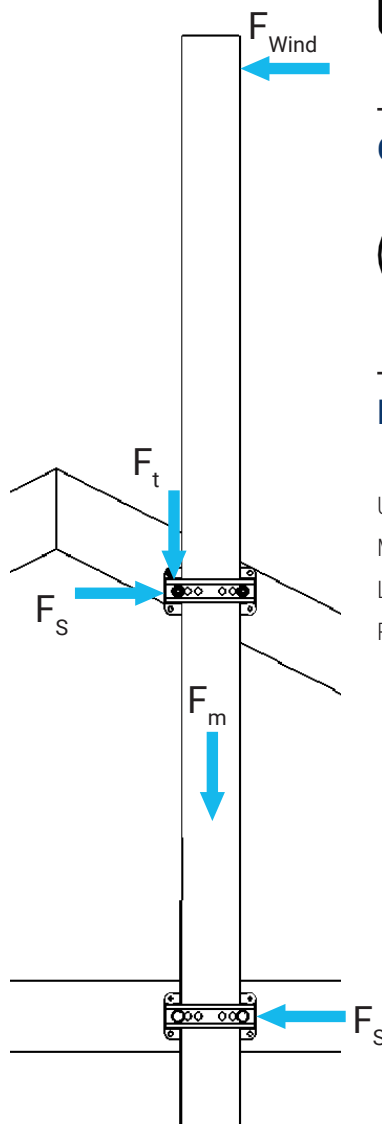
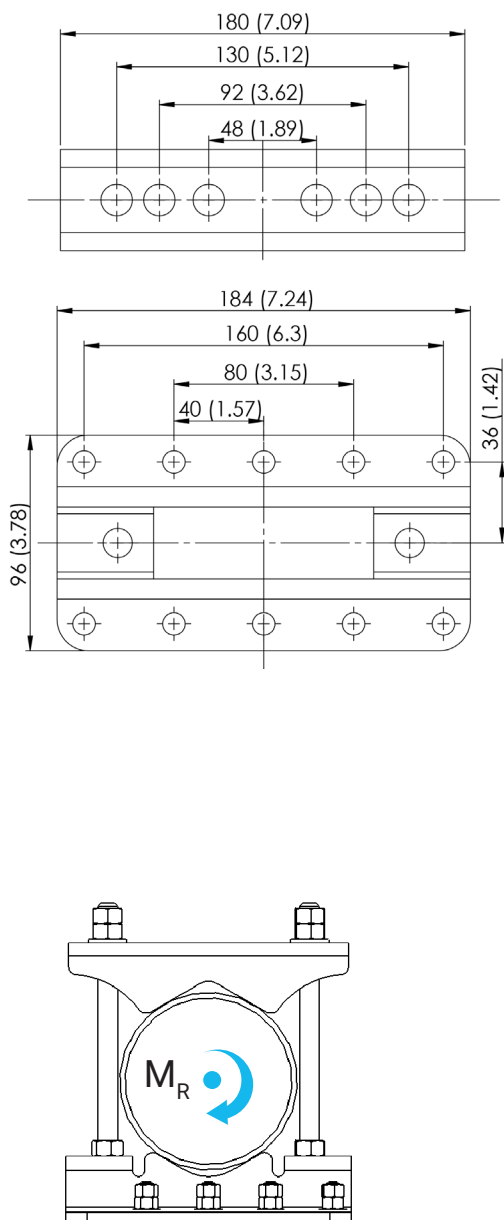
Contact information can be found at www.mafigroup.com.




4328 Option

Content of kit


Measurements in mm (in)



Parent member

 Wooden beams minimum:
 120 × 45 mm
 4.7 × 1.8 in.

Offset member

 Ø 60.3–114.3 mm
 Ø 2.4–4.5 in

Performance

Ultimate transient man-load (F_t): 2.4 kN
 Maximum side force (F_s): 10 000 N
 Load capacity (F_m): 300 kg (661 lb)
 Rot. slip resistance (M_R): See *Rotational Slip Table*

Parts list

Part	Material	Quantity
Bracket	S355MC HDG	4
Threaded rod M12	8.8 HDG	4
Threaded rod M8	A4	14
Fasteners	8.8 HDG	Incl.

Product options

4328: Foot for equipment pole.

53001G: Rubber roof flashing Ø 80–160 mm (3.1–6.3 in).

53003G: Rubber roof flashing Ø 60–125 mm (2.4–4.9 in).

Tubes of various lengths, diameters and wall thicknesses can be ordered from MAFI.



Rotational Slip Table

Design resistance data

Use the table below to check for rotational slip when mounting brackets on a circular member.

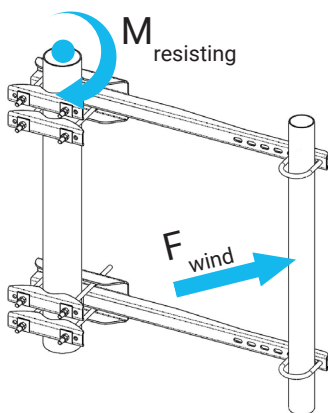
Use the unfactored wind load on the equipment multiplied by the actual offset dimension from the centreline of the parent tube to the centroid of the equipment to calculate the applied torque. The unfactored load is to be used because rotational slip is regarded as a serviceability failure and not a strength failure.

The values shown in the table are for a single bracket, so for a normal pair of brackets, the total torque resistance would be double that shown in the table.

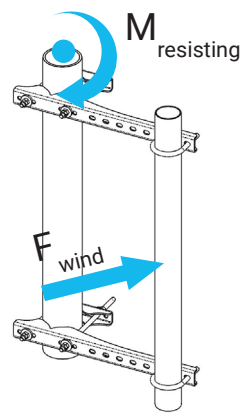
Each bracket added to the offset pole increases rotational slip resistance by the figure shown in the table. The resistance increases linearly with the diameter of the parent pole.

Resisting torque per single bracket

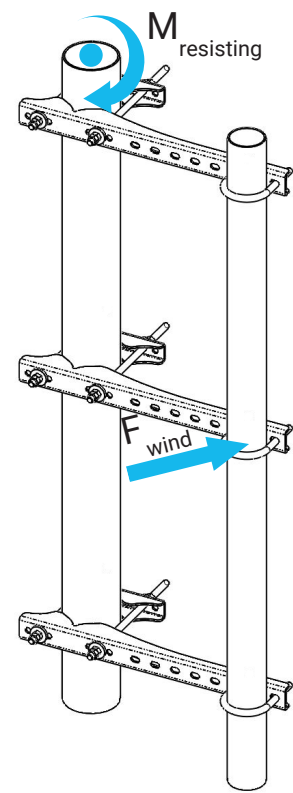
Parent member ø mm (in)	Torque (Nm) General	Torque (Nm) Product: 3272	Torque (Nm) Product: 3541	Torque (Nm) Product: 3544	Torque (Nm) Product: 2414
25 (1)	77	-	-	-	-
42.3 (1.7)	152	-	-	-	-
48.3 (1.9)	178	356	-	-	-
60.3 (2.4)	230	460	115	172	-
76.1 (3)	298	596	159	223	-
88.9 (3.5)	353	706	176	264	-
101.6 (4)	408	816	204	306	816
114.3 (4.5)	462	924	231	346	924
139.7 (5.5)	572	1144	-	-	-
152.4 (6)	627	1254	-	-	-
168.9 (6.6)	698	1396	-	-	-
193 (7.6)	802	1396	-	-	-
244.5 (9.6)	1025	-	-	-	-



Example using two brackets with double clamps. Parent member is ø 114.3 mm (4.5 in). Maximum torque is then $2 \times 924 = 1848$ Nm.



Example using two brackets with single clamps. Parent member is ø 114.3 mm (4.5 in). Maximum torque is then $2 \times 462 = 924$ Nm.

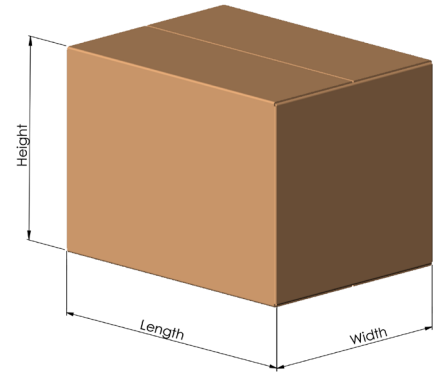


Example using three brackets with single clamps. Parent member is ø 114.3 mm (4.5 in). Maximum torque is then $3 \times 462 = 1386$ Nm.

Package data

Package data

Product	Length mm (in)	Width mm (in)	Height mm (in)	Weight kg (lb)
1234	300 (11.8)	300 (11.8)	30 (1.2)	2.4 (5.3)
1236	200 (7.9)	50 (2)	50 (2)	0.5 (1.1)
1237	460 (18.1)	110 (4.3)	40 (1.6)	1.5 (3.3)
1241	200 (7.9)	180 (7.1)	140 (5.5)	2.9 (6)
1242	570 (22.4)	125 (4.9)	25 (1)	1.6 (3.5)
2230	1100 (43.3)	160 (6.3)	100 (3.9)	13.8 (30.4)
2231	2100 (82.7)	160 (6.3)	100 (3.9)	20.3 (44.8)
2232	3100 (122)	160 (6.3)	100 (3.9)	26.8 (59.1)
2233	1100 (43.3)	160 (6.3)	100 (3.9)	14.8 (32.6)
2234	2100 (82.7)	160 (6.3)	100 (3.9)	21.3 (47)
2235	3100 (122)	160 (6.3)	100 (3.9)	27.8 (61.3)
2414	385 (15.2)	295 (11.6)	200 (7.9)	17 (37.5)
3022	1040 (40.9)	170 (6.7)	95 (3.7)	21 (46.3)
3058	420 (16.5)	100 (3.9)	110 (4.3)	2.6 (5.7)
3115	250 (9.8)	150 (5.9)	100 (3.9)	4 (8.8)
3116	178 (7)	175 (6.9)	82 (3.2)	3.2 (7.1)
3117	280 (11)	180 (7.1)	120 (4.7)	6.2 (13.7)
3263	640 (25.2)	115 (4.5)	65 (2.6)	7.3 (16.1)
3265	640 (25.2)	150 (5.9)	70 (2.8)	7.5 (16.5)
3268	1050 (41.3)	170 (6.7)	65 (2.6)	12.1 (26.7)
3270	2000 (78.7)	160 (6.3)	160 (6.3)	40 (88.2)
3272	1050 (41.3)	170 (6.7)	65 (2.6)	19.4 (42.8)
3273	460 (18.1)	115 (4.5)	60 (2.4)	6.2 (13.7)
3274	410 (16.1)	110 (4.3)	50 (2)	5.8 (12.8)
3510	210 (8.3)	160 (6.3)	120 (4.7)	6 (13.2)
3541	385 (15.2)	300 (11.8)	90 (3.5)	4.9 (10.8)
3544	590 (23.2)	450 (17.7)	150 (5.9)	13.8 (30.4)
3610	440 (17.3)	280 (11)	80 (3.1)	12.1 (26.7)
3611	500 (19.7)	280 (11)	80 (3.1)	12.9 (28.4)
3612	500 (19.7)	280 (11)	80 (3.1)	11.2 (24.7)
3613	500 (19.7)	400 (15.7)	100 (3.9)	16.5 (36.4)
3614	440 (17.3)	400 (15.7)	100 (3.9)	17.5 (38.6)
3615	440 (17.3)	400 (15.7)	100 (3.9)	16.1 (35.5)
4019-2	360 (14.2)	230 (9.1)	90 (3.5)	5.8 (12.8)
4019-3	430 (16.9)	360 (14.2)	60 (2.4)	10.6 (23.4)
4019-4	810 (31.9)	260 (10.2)	60 (2.4)	11.5 (25.4)
4020	230 (9.1)	210 (8.3)	85 (3.3)	4.3 (9.5)
4036	405 (15.9)	105 (4.1)	100 (3.9)	5.7 (12.6)
4037	395 (15.6)	105 (4.1)	60 (2.4)	1.9 (4.2)



Package data

Product	Length mm (in)	Width mm (in)	Height mm (in)	Weight kg (lb)
4112	1200 (47.2)	800 (31.5)	340 (13.4)	122 (269)
4120	1130 (44.5)	310 (12.2)	130 (5.1)	16.7 (36.8)
4309	1200 (47.2)	800 (31.5)	340 (13.4)	111 (244.7)
4310	1200 (47.2)	800 (31.5)	340 (13.4)	65.7 (144.8)
4316	1850 (72.8)	350 (13.8)	230 (9.1)	27 (59.5)
4415	390 (15.4)	230 (9.1)	120 (4.7)	13.5 (29.8)
4418	390 (15.4)	275 (10.8)	120 (4.7)	15.3 (33.7)
4600	1250 (49.2)	350 (13.8)	350 (13.8)	65 (143.3)
4601	1750 (68.9)	350 (13.8)	350 (13.8)	105 (231.5)
4602	2300 (90.6)	350 (13.8)	350 (13.8)	137 (302)
5012	300 (11.8)	255 (10)	65 (2.6)	5.2 (11.5)
5013	265 (10.4)	240 (9.4)	65 (2.6)	4.4 (9.7)
5022	300 (11.8)	255 (10)	65 (2.6)	5.7 (12.6)
5023	265 (10.4)	240 (9.4)	65 (2.6)	4.4 (9.7)
5030	390 (15.4)	240 (9.4)	130 (5.1)	12.5 (27.6)
5031	260 (10.2)	230 (9)	75 (2.9)	8 (17.6)
5110	540 (21.3)	345 (13.6)	20 (0.8)	3.3 (7.3)
5310	150 (5.9)	110 (4.3)	40 (1.6)	2.8 (6.2)
5311	180 (7.1)	110 (4.3)	40 (1.6)	3.1 (6.8)
5312	180 (7.1)	110 (4.3)	40 (1.6)	3.1 (6.8)
5320	220 (8.7)	140 (5.5)	50 (2)	2.4 (5.3)
5321	250 (9.8)	150 (5.9)	50 (2)	2.7 (6)
6029	500 (19.7)	100 (3.9)	70 (2.8)	4.9 (10.8)
6030	215 (8.5)	155 (6.1)	70 (2.8)	1.5 (3.3)
7000	390 (15.4)	370 (14.6)	50 (2)	0.5 (1.1)
8051	1400 (55.1)	800 (31.5)	350 (13.8)	86 (189.6)
8057	1400 (55.1)	800 (31.5)	350 (13.8)	57 (125.7)
32655/57/58	400 (15.7)	100 (3.9)	50 (2)	1.2 (2.6)
32660/63	550 (21.7)	100 (3.9)	70 (2.8)	2 (4.4)
32664	550 (21.7)	100 (3.9)	70 (2.8)	2.7 (6)
41121	1200 (47.2)	800 (31.5)	340 (13.4)	118 (260.1)
43091	1200 (47.2)	800 (31.5)	340 (13.4)	94.9 (209.2)
43092	1200 (47.2)	800 (31.5)	340 (13.4)	100.7 (222)
43246	210 (8.3)	210 (8.3)	75 (2.9)	3.2 (7.1)
43247	230 (9.1)	230 (9.1)	75 (2.9)	4.4 (9.7)
43248	280 (11)	280 (11)	100 (3.9)	6.9 (15.2)
43249	280 (11)	280 (11)	100 (3.9)	7.8 (17.2)
43692	800 (31.5)	600 (23.6)	340 (13.4)	12.5 (27.6)
91100	1640 (64.6)	450 (17.7)	310 (12.2)	105 (231.5)
91101	2140 (84.2)	450 (17.7)	310 (12.2)	120 (264.6)
91110	2300 (90.6)	300 (11.8)	200 (7.9)	22 (48.5)