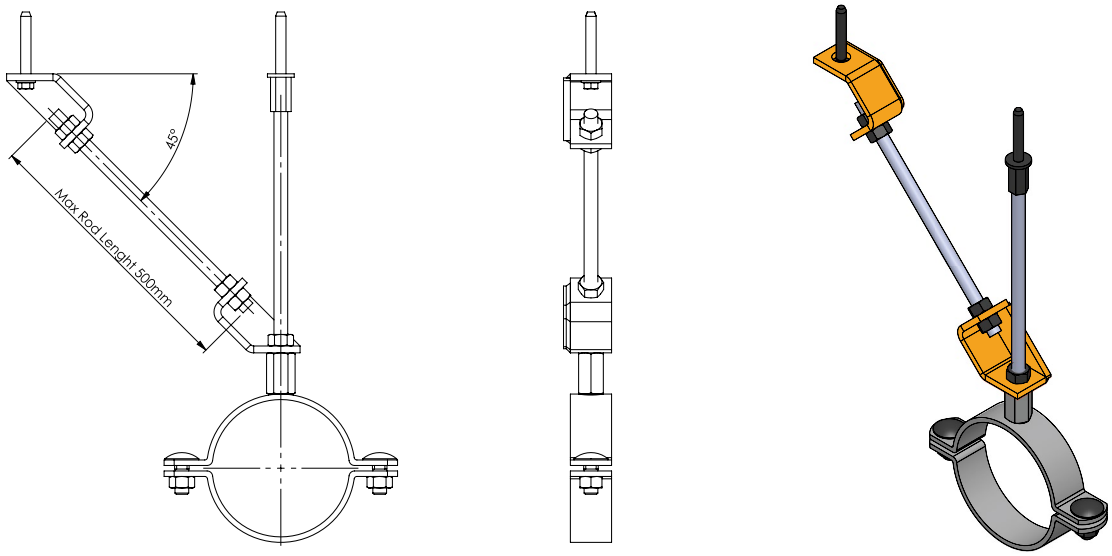
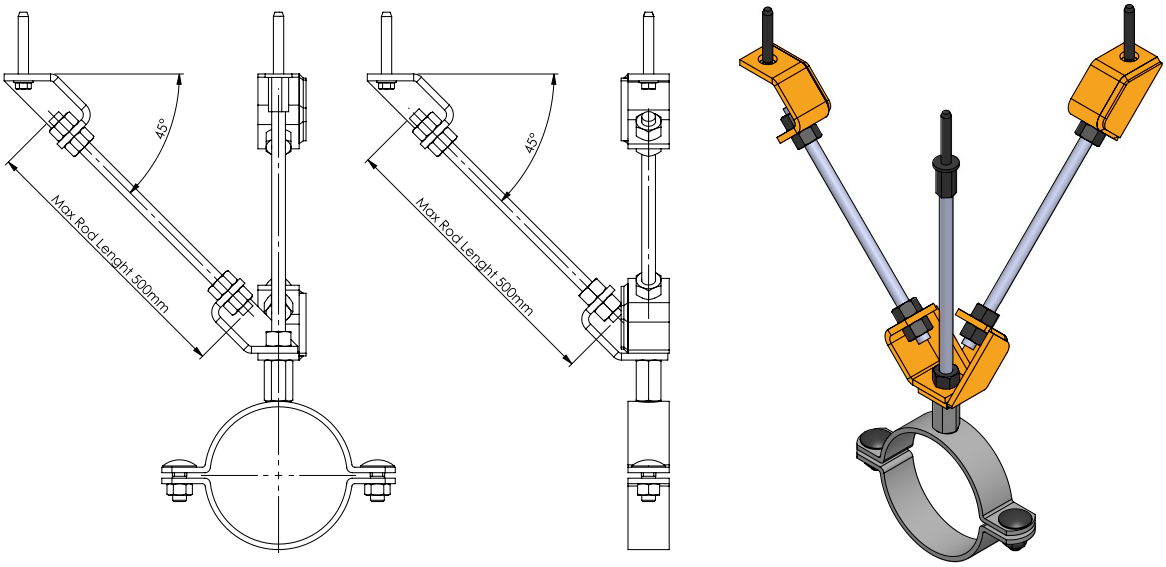
2020 Approved Threaded Rod Bracing System

- Tested in accordance with NZS 4541:2020 and FM Testing Requirements.
- Hot Dip Galvinised Finish.
- M10 4.6 Grade Rod is suitable to be used.
- Max rod length 500mm, and max gravity rod length 350mm.
- Must be used as a complete system from Orbital Fire. RBG bracket, HCDB clamps and Seismic Anchors.
- For Braces longer than 500mm, rod braces have to be stiffened with Orbital Strut Channel and Threaded Rod Stiffeners (HTRS) placed at 300mm centers.

Configuration: **1 Way Brace**



Configuration: **2 Way Brace**



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Transverse Bracing

Pipe Dia (mm)	Pipe Weight (kN/m)	Pipe Weight (kg/m)
15	0.02	1.50
20	0.02	1.95
25	0.03	3.05
32	0.04	4.19
40	0.05	5.03
50	0.07	7.37
65	0.10	10.30
80	0.14	13.70
100	0.21	21.10
150	0.39	38.80

Pipe Dia (mm)	Bracket/rod Capacity (kN)	RBG/Rod Capacity
15	1.35	2.55
20	1.35	2.25
25	1.35	2.18
32	1.35	2.18
40	1.35	2.18
50	1.35	2.18
65	1.35	2.18
80	1.35	2.10
100	1.35	1.73
150	1.35	1.43

Horizontal Load (kN)									
Pipe Dia (mm)	Seismic Acceleration (g)								
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.60
15	0.04	0.07	0.09	0.12	0.15	0.18	0.21	0.24	0.27
20	0.05	0.09	0.12	0.15	0.20	0.23	0.28	0.32	0.35
25	0.07	0.13	0.19	0.23	0.31	0.37	0.43	0.49	0.55
32	0.10	0.19	0.26	0.32	0.43	0.50	0.60	0.68	0.75
40	0.12	0.22	0.31	0.39	0.52	0.60	0.72	0.81	0.91
50	0.17	0.33	0.46	0.57	0.76	0.88	1.05	1.19	1.33
65	0.31	0.57	0.77	0.93	1.16	1.24	1.35	1.35	1.35
80	0.41	0.75	1.03	1.23	1.35	1.35	1.35	1.35	1.35
100	0.63	1.16	1.35	1.35	1.35	1.35	1.35	1.35	1.35
150	1.16	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35

Max Transverse Spacing In Meters									
Pipe Dia (mm)	Seismic Acceleration (g)								
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.60
15	9.4	8.8	8.3	7.7	6.9	6.0	5.7	5.4	5.0
20	9.4	8.8	8.3	7.7	6.9	6.0	5.7	5.4	5.0
25	9.4	8.8	8.3	7.7	6.9	6.0	5.7	5.4	5.0
32	9.4	8.8	8.3	7.7	6.9	6.0	5.7	5.4	5.0
40	9.4	8.8	8.3	7.7	6.9	6.0	5.7	5.4	5.0
50	9.4	8.8	8.3	7.7	6.9	6.0	5.7	5.4	5.0
65	12.0	11.0	10.0	9.0	7.5	6.0	5.2	4.4	3.6
80	12.0	11.0	10.0	9.0	6.6	4.9	3.9	3.3	2.7
100	12.0	11.0	8.5	6.4	4.3	3.2	2.6	2.1	1.8
150	12.0	7.0	4.6	3.5	2.3	1.7	1.4	1.2	1.0

Longitudinal Bracing

Pipe Dia (mm)	Pipe Weight (kN/m)	Pipe Weight (kg/m)
15	0.02	1.50
20	0.02	1.95
25	0.03	3.05
32	0.04	4.19
40	0.05	5.03
50	0.07	7.37
65	0.10	10.30
80	0.14	13.70
100	0.21	21.10
150	0.39	38.80

Pipe Dia (mm)	Bracket/rod Capacity (kN)	RBG/Rod Capacity
15	1.35	2.55
20	1.35	2.25
25	1.35	2.18
32	1.35	2.18
40	1.35	2.18
50	1.35	2.18
65	1.35	2.18
80	1.35	2.10
100	1.35	1.73
150	1.35	1.43

Horizontal Load (kN)									
Pipe Dia (mm)	Seismic Acceleration (g)								
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.60
15	0.09	0.18	0.27	0.36	0.54	0.72	0.90	1.08	1.30
20	0.12	0.23	0.35	0.47	0.70	0.94	1.17	1.35	1.35
25	0.18	0.37	0.55	0.73	1.10	1.35	1.35	1.35	1.35
32	0.25	0.50	0.75	1.01	1.35	1.35	1.35	1.35	1.35
40	0.30	0.60	0.91	1.21	1.35	1.35	1.35	1.35	1.35
50	0.44	0.88	1.33	1.35	1.35	1.35	1.35	1.35	1.35
65	0.62	1.24	1.35	1.35	1.35	1.35	1.35	1.35	1.35
80	0.82	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
100	1.27	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
150	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35

Max Longitudinal Spacing In Meters									
Pipe Dia (mm)	Seismic Acceleration (g)								
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.60
15	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
20	24.0	24.0	24.0	24.0	24.0	24.0	24.0	23.1	19.2
25	24.0	24.0	24.0	24.0	24.0	22.1	17.7	14.8	12.3
32	24.0	24.0	24.0	24.0	21.5	16.1	12.9	10.7	9.0
40	24.0	24.0	24.0	24.0	17.9	13.4	10.7	8.9	7.5
50	24.0	24.0	24.0	18.3	12.2	9.2	7.3	6.1	5.1
65	24.0	24.0	17.5	13.1	9.4	6.6	5.2	4.4	3.6
80	24.0	19.7	13.1	9.9	6.8	4.9	3.9	3.3	2.7
100	24.0	12.8	8.5	6.4	3.6	3.2	2.6	2.1	1.8
150	13.9	7.0	4.6	3.5	1.6	1.7	1.4	1.2	1.0

Transverse Bracing - Running at 90 degrees to the direction of the pipe work.
Longitudinal Bracing - Running in the same direction of the pipe work.
(g) Seismic Coefficient - Caculate using Formula Provided in NZS4541:2020

= Governed by Bracket Capacity