

“TORNADO”

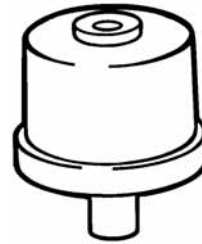
MIST SPRAYER

None-Clogging Mini Sprinkler

MAIN FEATURE

- * Without a bridge, ensuring uninterrupted mist application
- * Vortex mechanism prevents clogging
- * Average droplet size: 0.15 mm

Conic connection

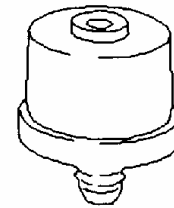


ADDITIONAL FEATURE

- * Available with protective cover accessory

OPERATING FEATURE

- * Working pressure range 2.5- 3.5 bar.
- * Nominal flow rate: 22,27,38 and 45 l/h at 3.0 bar.



Threaded connection

MODELS AND TYPES

- *Conic Press-fit connection 10/32” threaded connection

“TORNADO” MIST SPRAYER FLOW RATE DATA

NOZZIE COLOR (mm)	Q=AxH^B *		%DH ***	FLOW RATE (LPH) AT PRESSURE								
	A	B		20m	22m	24m	25m	26m	28m	30m	32m	35m
BLACK (0.9)	3.6540	0.524	20	17.6	18.5	19.3	19.7	20.1	20.9	21.7	22.5	23.5
BLUE (1.3)	4.7660	0.504	20.8	20.2	21.2	22.2	22.6	23.1	23.9	24.8	25.6	26.8
GREEN (1.7)	6.4770	0.521	20	30.8	32.4	33.9	34.6	35.4	36.8	38.1	39.4	41.3
RED (2.0)	8.9130	0.477	22.1	37.2	38.9	40.6	41.4	42.2	43.7	45.1	46.6	48.6

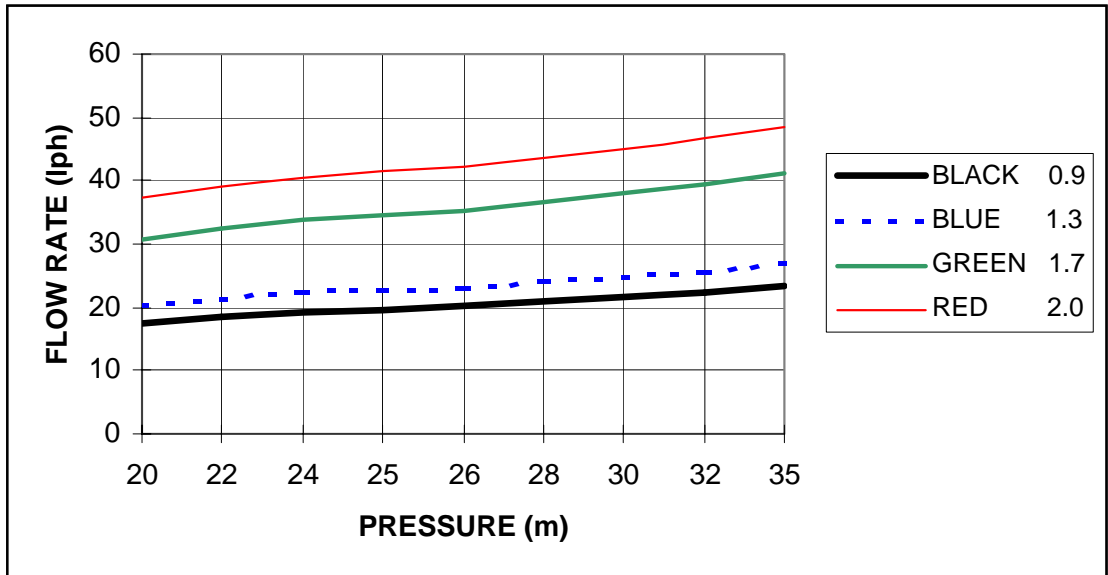
NOTE: TESTED WITHOUT MICRO-TUBE

** Q=LPH H=m.

*** %DH - MAXIMUM ALLOWABLE HEAD LOSS DIFFERENCE.
ALONG A LATERAL (AS PERCENT OF THE WORKING PRESSURE).
TO KEEP FLOW RATE DIFFERENCE $\leq 10\%$
OF WORKING FLOW RATE.

PERFORMANCE CHART

WORKING PRESSURE RANGE 25-35m.



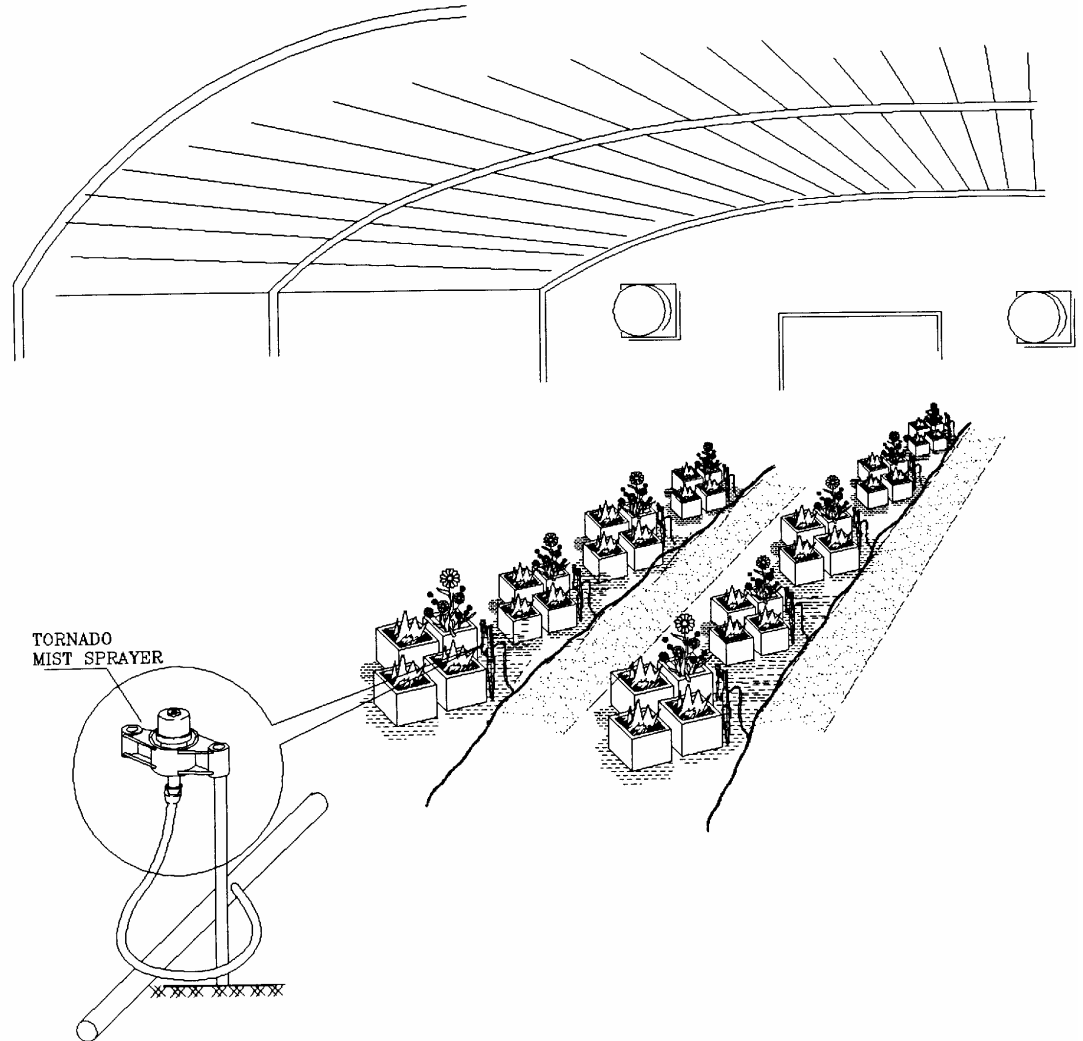
TORNADO - MIST SPRAYER

VOLUMETRIC & AVERAGE WETTING DIAMETER DATA

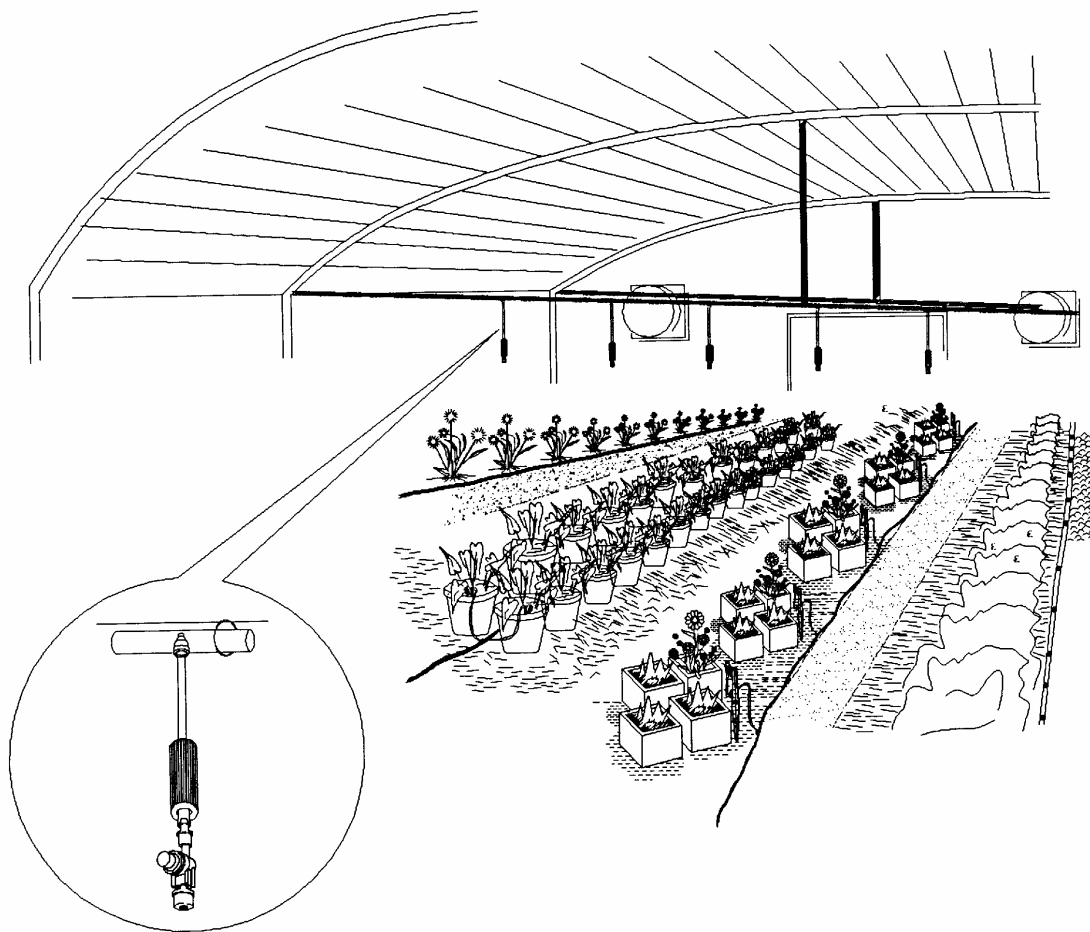
COLOR CODE	NOMINAL PRESSURE (bar)	NOMINAL FLOW (L/H)	DROP * SIZE (UM)	DIAMETER (mt.)
BLACK	3	22	165	2.3
BLUE	3	25	130	2.1
GREEN	3	38	145	1.9
RED	3	45	135	1.7

* - Volumetric diameter

GREENHOUSE
“TORNADO”
MIST SPRAYER
UPRIGHT POSITION



GREENHOUSE
MIST/FOG GENERATION
"TORNADO" MIST SPRAYER
INVERTED POSITION



TORNADO MIST SPRAYER

Christiansen Uniformity Coef. (Cu) %

Nozzle Height - **100 cm Upright**

Spacing (m)	Working Pressure (m)	Nozzle Code / CU(%)			
		Black 21.7 lph	Blue 26.5 lph	Green 38.1 lph	Red 45.1 lph
0.7x0.7	25	100	99	97	97
	30	99	98	96	97
0.75x0.75	25	99	98	96	96
	30	99	97	95	96
0.8x0.8	25	99	98	96	96
	30	99	97	95	96
0.9x0.9	25	100	99	98	98
	30	99	99	97	98
1x1	25	99	98	97	97
	30	100	98	94	96
1.1x1.1	25	98	97	91	92
	30	98	95	87	91
1.2x1.2	25	100	93	86	86
	30	98	91	81	85
1.25x1.25	25	99	92	83	84
	30	96	88	74	81
1.3x1.3	25	99	89	79	80
	30	95	86	70	77
1.4x1.4	25	98	84	71	72
	30	92	79	60	68
1.5x1.5	25	95	78	63	64
	30	88	72	52	60

*Coefficient Of Uniformity (standards)

-Overlapping sprinklers standard equal to or greater than 84%

-Single sprinkler- no standard established. uniformity increases with the value.

TORNADO MIST SPRAYER

Christiansen Uniformity Coef. (Cu) %

Nozzle Height - **100 cm Inverted**

Spacing (m)	Working Pressure (m)	Nozzle Code / CU(%)			
		Black 21.7 lph	Blue 26.5 lph	Green 38.1 lph	Red 45.1 lph
0.7x0.7	25	99	99	97	97
	30	99	97	96	96
0.75x0.75	25	98	98	97	97
	30	98	97	96	96
0.8x0.8	25	97	97	97	96
	30	96	97	96	96
0.9x0.9	25	96	96	98	98
	30	97	98	97	98
1x1	25	95	94	97	97
	30	96	98	95	95
1.1x1.1	25	95	95	93	93
	30	95	93	89	89
1.2x1.2	25	96	95	87	87
	30	92	87	84	82
1.25x1.25	25	95	94	84	84
	30	90	83	79	78
1.3x1.3	25	92	90	80	80
	30	86	79	75	74
1.4x1.4	25	85	83	71	72
	30	79	71	67	64
1.5x1.5	25	78	76	62	63
	30	71	62	59	56

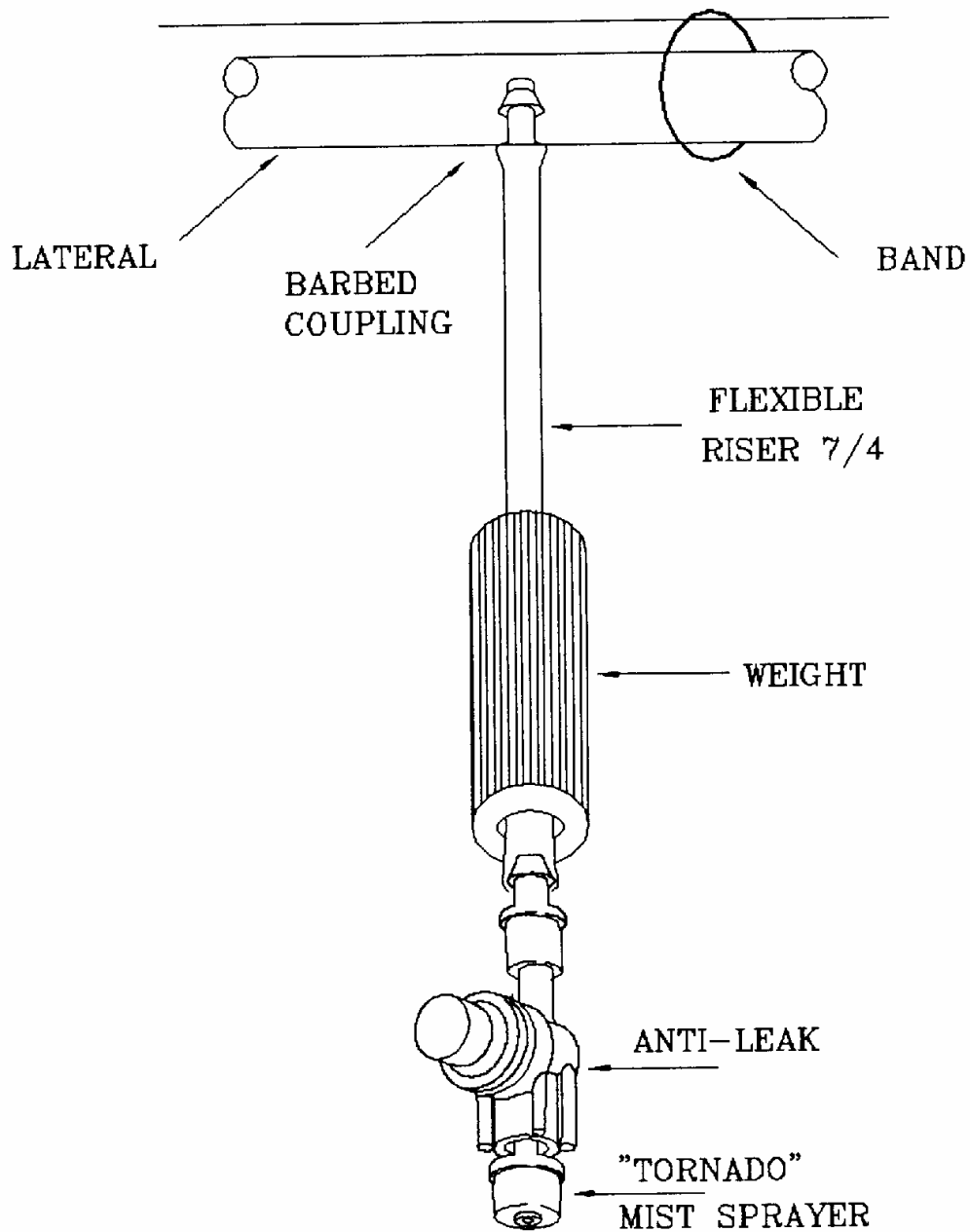
*Coefficient Of Uniformity (standards)

-Overlapping sprinklers standard equal to or greater than 84%

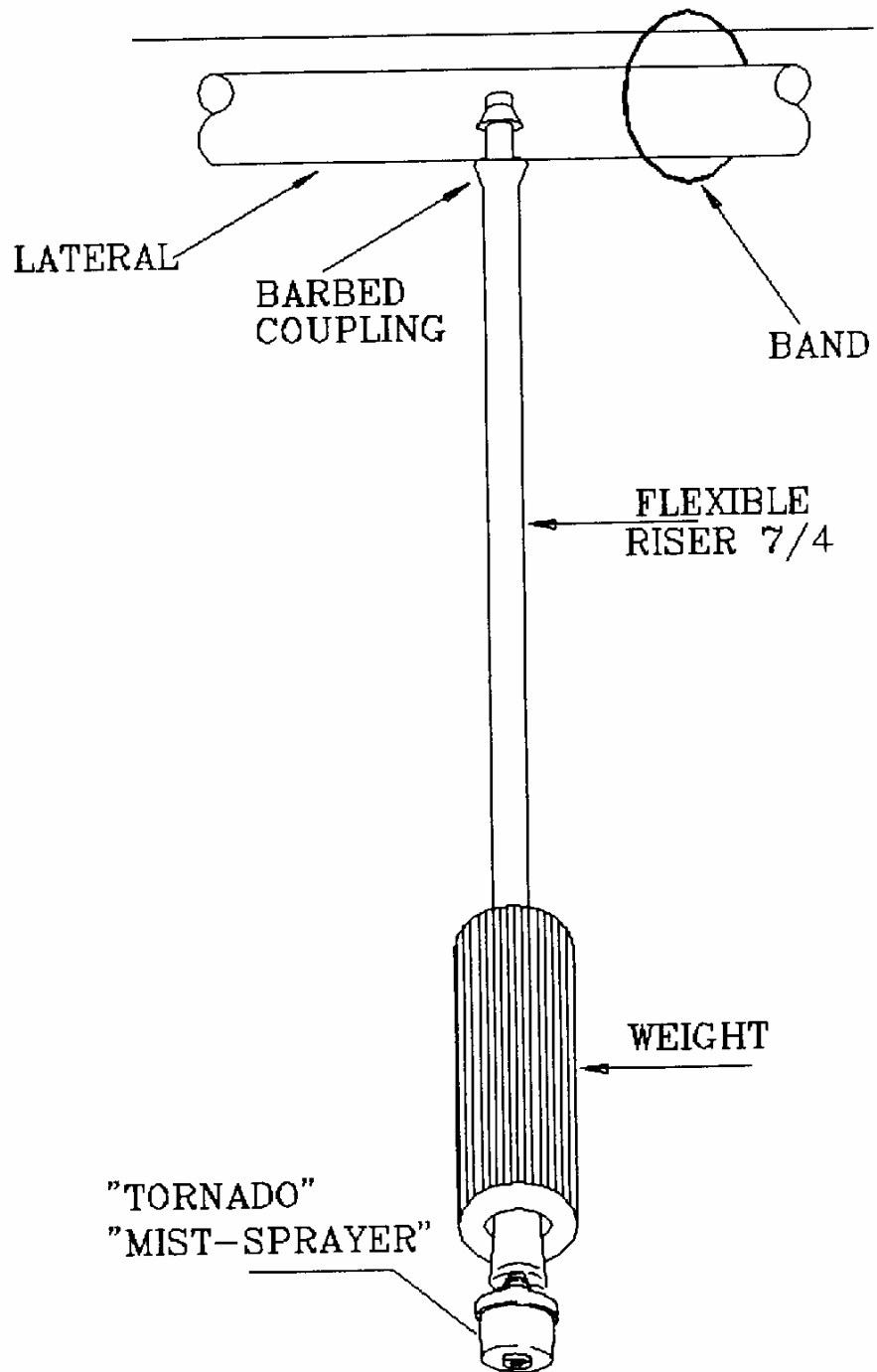
-Single sprinkler- no standard established. uniformity increases with the value.

"TORNADO" MIST SPRAYER

INVERTED POSITION



"TORNADO" MIST SPRAYER
INVERTED POSITION



TORNADO - MIST SPRAYER

Black Nozzle - 22 lph

Maximum No of Emitters Per Lateral
(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%
0.5	-1	25	28	27	30	32	36	39	43	40	45
	0	26	29	27	30	33	37	40	45	42	47
	1	27	29	28	31	34	38	42	46	43	48
0.7	-1	31	34	32	36	39	44	48	53	49	55
	0	32	35	34	37	41	46	50	55	52	57
	1	33	36	34	39	42	47	52	57	54	60
0.9	-1	36	41	38	42	46	51	55	62	57	64
	0	37	41	40	43	48	53	58	65	60	68
	1	39	42	41	45	50	55	61	68	64	70
1	-1	38	43	41	45	49	54	59	66	61	68
	0	40	44	42	47	51	57	62	69	65	72
	1	41	45	43	48	53	59	65	72	68	75
1.2	-1	43	48	45	50	54	61	65	73	67	76
	0	44	49	47	53	58	64	70	77	72	80
	1	47	52	49	54	60	66	73	82	77	85
1.4	-1	46	53	49	55	59	67	71	80	74	84
	0	49	55	52	57	63	70	77	85	80	88
	1	52	56	55	60	66	73	81	90	85	94
1.5	-1	50	56	51	57	62	69	74	84	77	87
	0	51	57	54	60	66	74	80	89	84	93
	1	54	59	57	63	69	77	86	95	89	98

(-) Uphill

(+) Downhill

TORNADO - MIST SPRAYER

Blue Nozzle - 25 lph

Maximum No of Emitters Per Lateral
(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%
0.5	-1	23	25	24	26	29	32	35	38	36	40
	0	23	25	24	27	30	32	36	39	38	41
	1	24	26	25	27	30	33	37	40	39	42
0.7	-1	27	30	29	32	35	39	43	47	44	48
	0	28	31	30	33	36	40	44	48	46	50
	1	29	32	31	34	37	41	46	50	48	52
0.9	-1	32	35	34	37	41	45	50	55	51	57
	0	33	36	35	39	42	47	52	57	54	59
	1	34	37	36	40	44	48	54	59	57	61
1	-1	34	38	36	40	44	48	53	58	55	60
	0	35	39	37	41	45	50	55	61	58	63
	1	37	40	39	42	47	51	58	63	60	66
1.2	-1	38	42	41	44	49	54	59	65	61	67
	0	40	43	42	46	52	55	62	68	65	71
	1	41	44	43	47	53	58	65	71	68	74
1.4	-1	42	46	45	49	53	59	64	71	67	74
	0	43	48	46	50	56	62	69	74	71	78
	1	45	49	48	52	59	64	73	78	76	81
1.5	-1	44	48	47	51	56	62	68	74	69	77
	0	45	50	48	53	59	65	72	78	75	81
	1	48	51	50	54	62	68	75	83	80	86

(-) Uphill

(+) Downhill

TORNADO - MIST SPRAYER

Green Nozzle - 38 lph

Maximum No of Emitters Per Lateral

(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%
0.5	-1	18	20	19	21	23	25	28	31	29	32
	0	18	20	19	21	23	26	28	31	30	32
	1	19	20	20	21	24	26	29	32	30	33
0.7	-1	22	24	23	25	28	31	34	37	35	39
	0	22	25	23	26	29	32	35	39	36	40
	1	22	25	24	27	29	32	36	39	37	41
0.9	-1	25	28	27	30	32	36	40	43	41	45
	0	26	29	27	31	33	37	41	45	42	47
	1	27	29	28	31	34	38	42	46	44	48
1	-1	27	30	28	32	34	38	42	46	43	48
	0	28	31	29	32	36	39	43	48	45	50
	1	28	31	30	33	37	40	45	49	47	52
1.2	-1	30	34	31	35	38	43	47	52	48	54
	0	31	35	32	36	40	44	49	54	50	56
	1	32	35	34	37	41	46	50	55	53	58
1.4	-1	34	36	35	39	42	48	50	57	53	59
	0	34	38	36	39	43	49	53	59	56	62
	1	35	39	38	41	46	50	56	62	59	64
1.5	-1	35	39	36	41	44	50	53	59	56	62
	0	36	39	38	42	47	51	56	62	59	65
	1	38	41	39	44	48	53	59	65	62	68

(-) Uphill

(+) Downhill

TORNADO - MIST SPRAYER

Red Nozzle - 45 lph

Maximum No of Emitters Per Lateral

(Max. Flow Rate Variation - 7.5% or 10%)

Emitter Spacing (m)	Slope (%)	Pipe Diameter in mm (OD/ID)									
		16/13.2		16/13.6		17.8/15.2		20/17		20/17.4	
		7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%	7.5%	10%
0.5	-1	16	19	17	20	21	25	25	30	26	31
	0	17	20	18	21	21	25	26	30	27	32
	1	17	20	18	21	22	25	26	31	28	32
0.7	-1	20	24	21	25	25	30	31	36	32	38
	0	20	24	22	25	26	31	32	37	33	39
	1	20	24	22	25	27	31	33	38	34	40
0.9	-1	23	27	24	29	30	35	36	42	38	44
	0	23	28	25	30	31	36	37	43	39	45
	1	24	28	25	30	32	37	39	45	40	47
1	-1	25	29	26	31	32	37	38	45	40	47
	0	25	30	27	31	33	38	40	47	41	49
	1	26	30	27	32	33	39	41	48	43	50
1.2	-1	28	32	29	35	35	42	43	50	44	53
	0	29	34	30	35	36	43	44	53	47	54
	1	29	34	31	36	37	44	46	54	48	56
1.4	-1	31	36	32	38	39	46	48	56	49	57
	0	31	36	32	39	41	48	49	57	50	60
	1	32	38	34	39	42	49	50	59	53	62
1.5	-1	32	38	33	39	41	48	50	59	51	60
	0	33	39	35	41	42	50	51	60	54	63
	1	33	39	36	42	44	51	53	62	56	65

(-) Uphill

(+) Downhill