

REINKE IRRIGATION SYSTEMS
PIVOT SYSTEM SPRINKLER CHART
E65/60 Std 114"
Reinke Mfg. Co. Inc.
RMCchart0.97c

CASE NUMBER: RP042732

DATE: 14 Jun 2004

DEALER: SOTRAVIC LTEE
NUMBER: 90846

CUSTOMER NAME: NORTHERN PLAINS #4
SERIAL NUMBER: 0604-31943-2060 SG

NUMBER OF TOWERS: 7 NOZZLE FILES: N3000G , R300GG
GAUGE PRESSURE: 5.2 bar NOZZLE SELECTION OPTION: 1
TOTAL SYSTEM FLOW: 1824.6 lpm FRICTION C-FACTOR: 135
TOTAL PIPE LENGTH: 397.8 m COVERAGE WITHOUT GUN: 398.2 m
END GUN TYPE: SR75 ADJ. END GUN RADIUS: 24.6 m
FLOW RATE & RADIUS SPECIFIED-NOT COMPUTED

SYSTEM lpm PER ha: 32.5

LAST TOWER - TIRE SIZE: 14.9 x 24

CENTERDRIVE: 48:1

SYSTEM MANUFACTURER: REINKE

1 194-60 SPAN 1, 60.4 m, 14.73 cm ID PIPE
3 194-60 SPANS 2- 4, 59.1 m, 14.73 cm ID PIPE
3 160-60 SPANS 5- 7, 49.2 m, 14.73 cm ID PIPE
1 42GF OVERHANG, 12.4 m, 14.73 cm ID PIPE

DISCLAIMER

The uniformity of water application obtained with this system can be adversely affected by many variables including, but not limited to, the improper makeup or installation of the nozzle package; obstructed nozzles; tight and/or sloping soils; improper end gun arc settings; incorrect maintenance of pivot pressure; unfavorable climate conditions; and erratic and improper operating speed of the system. Reinke Mfg. Co., Inc. makes no warranty as to the uniformity of the coverage to be obtained from this water application printout other than its mathematical accuracy.

The products, which are specified as a part of this nozzle package design, are covered by the original manufacturer's printed "Warranty and Disclaimer", which applies to the individual components of their own manufacture. Reinke Mfg. Co., Inc. cannot be responsible for the performance of these products and makes no warranties, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, where permitted by law, and does hereby disclaim any liability for damages due to failure of these products to perform as anticipated.

-OUTLET- NO.	LOC.	-SPRINKLER- NO.	SEP.	MODEL	NOZZLE	-REG- MODEL	LPM REQ.	DEL.	PRESSURE INLINE	DROPS
1	2.7			PLUG						
2	5.6			PLUG						
3	8.5	1	8.5	N3000	TN-#12 Gold	LB10	1.6	3.3	5.0	72
4	11.4			PLUG						
5	14.3	2	5.8	N3000	TN-#12 Gold	LB10	2.5	3.3	5.0	78
6	17.2			PLUG						
7	20.1	3	5.8	N3000	TN-#12 Gold	LB10	3.2	3.3	5.0	84
8	23.0			PLUG						
9	25.9	4	5.8	N3000	TN-#13 Gold w/lime	LB10	3.8	3.8	4.9	84
10	28.8			PLUG						
11	31.7	5	5.8	N3000	TN-#14 Lime	LB10	4.2	4.4	4.9	84
12	34.6			PLUG						
13	37.5	6	5.8	N3000	TN-#14 Lime	LB10	4.5	4.4	4.9	84
14	40.4			PLUG						
15	43.3	7	5.8	N3000	TN-#15 Lime w/lav	LB10	5.2	5.1	4.9	78
16	46.2			PLUG						
17	49.1	8	5.8	N3000	TN-#16 Lavender	LB10	5.9	5.8	4.9	72
18	52.0			PLUG						
19	54.9	9	5.8	N3000	TN-#18 Gray	LB10	7.3	7.2	4.9	66
20	57.8			PLUG						

60.4 TOWER NO. 1

21	61.9	10	7.0	R3000	TN-#16 Lavender	LB20	8.1	7.8	4.9	60
22	64.8			PLUG						
23	67.7	11	5.8	R3000	TN-#16 Lavender	LB20	8.2	7.8	4.9	72
24	70.6			PLUG						
25	73.5	12	5.8	R3000	TN-#17 Lvndr w/gra	LB20	8.9	8.8	4.8	78
26	76.4			PLUG						
27	79.2	13	5.8	R3000	TN-#18 Gray	LB20	9.4	9.7	4.8	84
28	82.1			PLUG						
29	85.0	14	5.8	R3000	TN-#18 Gray	LB20	9.7	9.7	4.8	84
30	87.9			PLUG						
31	90.8	15	5.8	R3000	TN-#19 Gray w/trqu	LB20	10.7	10.9	4.8	64
32	93.7			PLUG						
33	96.6	16	5.8	R3000	TN-#19 Gray w/trqu	LB20	11.2	10.9	4.8	84
34	99.5			PLUG						
35	102.4	17	5.8	R3000	TN-#20 Turquoise	LB20	12.3	12.1	4.8	78
36	105.3			PLUG						
37	108.2	18	5.8	R3000	TN-#21 Trqu w/yllw	LB20	12.9	13.1	4.8	72
38	111.1			PLUG						
39	114.0	19	5.8	R3000	TN-#22 Yellow	LB20	14.8	14.4	4.8	66
40	116.9			PLUG						

-OUTLET- NO.	LOC.	-SPRINKLER- NO.	SEP.	MODEL	NOZZLE	-REG- MODEL	LPM REQ.	DEL.	PRESSURE INLINE
119.6 TOWER NO. 2									
41	121.0	20	7.0	R3000	TN-#23 Yllw w/red	LB20	16.1	15.6	4.8 60
42	123.9		PLUG						
43	126.8	21	5.8	R3000	TN-#23 Yllw w/red	LB20	15.4	15.6	4.7 72
44	129.7		PLUG						
45	132.6	22	5.8	R3000	TN-#23 Yllw w/red	LB20	15.4	15.6	4.7 78
46	135.5		PLUG						
47	138.4	23	5.8	R3000	TN-#23 Yllw w/red	LB20	16.1	15.6	4.7 84
48	141.3		PLUG						
49	144.2	24	5.8	R3000	TN-#24 Red	LB20	17.5	17.2	4.7 84
50	147.1		PLUG						
51	150.0	25	5.8	R3000	TN-#25 Red w/white	LB20	17.9	18.5	4.7 84
52	152.9		PLUG						
53	155.8	26	5.8	R3000	TN-#24 Red	LB20	17.8	17.2	4.7 84
54	158.6		PLUG						
55	161.5	27	5.8	R3000	TN-#26 White	LB20	19.5	20.1	4.7 78
56	164.4		PLUG						
57	167.3	28	5.8	R3000	TN-#25 Red w/white	LB20	19.2	18.5	4.7 72
58	170.2		PLUG						
59	173.1	29	5.8	R3000	TN-#28 Blue	LB20	23.1	23.4	4.7 66
60	176.0		PLUG						
178.7 TOWER NO. 3									
61	180.1	30	7.0	R3000	TN-#28 Blue	LB20	23.2	23.4	4.7 60
62	183.0		PLUG						
63	185.9	31	5.8	R3000	TN-#27 White w/blu	LB20	21.7	21.5	4.7 72
64	188.8		PLUG						
65	191.7	32	5.8	R3000	TN-#28 Blue	LB20	22.8	23.4	4.6 78
66	194.6		PLUG						
67	197.5	33	5.8	R3000	TN-#28 Blue	LB20	22.8	23.4	4.6 84
68	200.4		PLUG						
69	203.3	34	5.8	R3000	TN-#28 Blue	LB20	23.3	23.4	4.6 84
70	206.2		PLUG						
71	209.1	35	5.8	R3000	TN-#29 Blue w/brn	LB20	24.6	24.9	4.6 84
72	212.0		PLUG						
73	214.9	36	5.8	R3000	TN-#29 Blue w/brn	LB20	25.0	24.9	4.6 84
74	217.8		PLUG						
75	220.7	37	5.8	R3000	TN-#30 Drk Brown	LB20	26.1	26.6	4.6 78
76	223.6		PLUG						
77	226.5	38	5.8	R3000	TN-#30 Drk Brown	LB20	26.1	26.6	4.6 72
78	229.4		PLUG						
79	232.3	39	5.8	R3000	TN-#32 Orange	LB20	29.8	30.2	4.6 66

-OUTLET- NC.	LOC.	-SPRINKLER- NO.	SEP.	MODEL	NOZZLE	-REG- MODEL	LPM REQ.	DEL.	PRESSURE INLINE
80	235.2		PLUG						
237.8 TOWER NO. 4									
81	239.3	40	7.0	R3000	TN-#32 Orange	LB20	30.7	30.2	4.6 60
82	242.2		PLUG						
83	245.1	41	5.8	R3000	TN-#32 Orange	LB20	29.4	30.2	4.6 66
84	248.0		PLUG						
85	250.9	42	5.8	R3000	TN-#31 Brwn w/orng	LB20	28.7	28.1	4.6 72
86	253.7		PLUG						
87	256.6	43	5.8	R3000	TN-#31 Brwn w/orng	LB20	28.6	28.1	4.6 72
88	259.5		PLUG						
89	261.6	44	5.0	R3000	TN-#30 Drk Brown	LB20	26.8	26.6	4.6 72
90	263.7		PLUG						
91	266.5	45	5.0	R3000	TN-#32 Orange	LB20	29.3	30.2	4.6 72
92	269.4		PLUG						
93	272.3	46	5.8	R3000	TN-#33 Ornge w/grn	LB20	31.2	32.1	4.6 72
94	275.2		PLUG						
95	278.1	47	5.8	R3000	TN-#33 Ornge w/grn	LB20	31.8	32.1	4.6 66
96	281.0		PLUG						
97	283.9	48	5.8	R3000	TN-#32 Orange	LB20	29.5	30.2	4.5 60
287.0 TOWER NO. 5									
98	288.5	49	4.5	R3000	TN-#32 Orange	LB20	29.7	30.2	4.5 60
99	291.4		PLUG						
100	294.3	50	5.8	R3000	TN-#34 Drk Green	LB20	34.1	34.1	4.5 66
101	297.2		PLUG						
102	300.1	51	5.8	R3000	TN-#35 Green w/prp	LB20	35.4	35.9	4.5 72
103	302.9		PLUG						
104	305.8	52	5.8	R3000	TN-#33 Ornge w/grn	LB20	32.9	32.1	4.5 72
105	308.7		PLUG						
106	310.8	53	5.0	R3000	TN-#33 Ornge w/grn	LB20	32.0	32.1	4.5 72
107	312.9		PLUG						
108	315.7	54	5.0	R3000	TN-#34 Drk Green	LB20	34.4	34.1	4.5 72
109	318.6		PLUG						
110	321.5	55	5.8	R3000	TN-#36 Purple	LB20	38.2	37.7	4.5 72
111	324.4		PLUG						
112	327.3	56	5.8	R3000	TN-#37 Prpl w/blck	LB20	39.0	40.2	4.5 66
113	330.2		PLUG						
114	333.1	57	5.8	R3000	TN-#34 Drk Green	LB20	33.8	34.1	4.5 60
336.2 TOWER NO. 6									
115	337.7	58	4.5	R3000	TN-#35 Green w/prp	LB20	35.2	35.9	4.5 60

-OUTLET- NO.	LOC.	-SPRINKLER- NO.	SEP.	MODEL	NOZZLE	-REG- MODEL	LPM REQ.	DEL.	PRESSURE INLINE
116	340.6			PLUG					
117	343.5	59	5.8	R3000	TN-#37 Prpl w/blck	HB20	39.8	40.1	4.5 66
118	346.4			PLUG					
119	349.3	60	5.8	R3000	TN-#37 Prpl w/blck	HB20	40.8	40.1	4.5 72
120	352.1			PLUG					
121	355.0	61	5.8	R3000	TN-#37 Prpl w/blck	HB20	39.5	40.1	4.5 72
122	357.9			PLUG					
123	360.0	62	5.0	R3000	TN-#35 Green w/prp	HB20	35.7	35.9	4.5 72
124	362.1			PLUG					
125	364.9	63	5.0	R3000	TN-#37 Prpl w/blck	HB20	39.6	40.1	4.5 72
126	367.8			PLUG					
127	370.7	64	5.8	R3000	TN-#38 Black	HB20	43.2	42.3	4.5 72
128	373.6			PLUG					
129	376.5	65	5.8	R3000	TN-#34 Drk Green	HB20	34.1	34.2	4.5 66
130	379.4	66	2.9	R3000	TN-#27 White w/blu	HB20	22.2	21.8	4.5 66
131	382.3	67	2.9	R3000	TN-#29 Blue w/brn	HB20	25.7	25.2	4.5 60

385.4 TOWER NO. 7

132	385.9	68	3.6	R3000	TN-#29 Blue w/brn	HB20	25.9	25.2	4.5 60
133	387.4			PLUG					
134	388.8	69	2.9	R3000	TN-#28 Blue	HB20	23.6	23.7	4.5 66
135	390.3			PLUG					
136	391.7	70	2.9	R3000	TN-#27 White w/blu	HB20	22.0	21.8	4.5 60
137	393.0			PLUG					
138	394.4	71	2.6	R3000	TN-#27 White w/blu	HB20	21.3	21.8	4.5 66
139	395.7			PLUG					
140	397.0	72	2.6	R3000	TN-#25 Red w/white	HB20	19.6	18.8	4.5 72

END GUN: (NOZZLE SELECTED BASED ON RECOMMENDED 170 DEGREE ARC.) *11.5*
 397.8 SR75 .50" NOZZLE 203.8 207.6 4.5

2 INCH DIAPHRAM END GUN VALVE PRESSURE LOSS: 0.1 bar
 RESULTING END GUN PRESSURE: 4.5 bar

SYSTEM INLINE END PRESSURE: 3.1 bar, INCLUDING PLUS 14 m ELEVATION

TOTAL lpm DELIVERED: 1823.8

SYSTEM lpm PER ha: 32.5

SPRINKLER SPACING LIMITS HAVE BEEN EXTENDED AT SOME OF THE TOWERS.

9 MOUNTING ASSEMBLIES: First outlet= 3, Last outlet= 19
 Blk Combo Tube/Hose 151892 (Length=152.44 cm)
 U-PIPE- 3/4"Male x Female Galv 008100
 DROP- 3/4"M Tube/Hose <Vari> 143894 (Length=152.44 cm)
 Standard Tee 000100 (as needed)
 Standard Regulator 0000-000 (as needed)

63 MOUNTING ASSEMBLIES: First outlet= 21, Last outlet= 140
 Black Plastic Semi-Rigid 151870 (Length=152.44 cm)
 U-PIPE- 3/4"Male x Female Galv 008100
 DROP- 3/4"M Blk.Plastic <Vari> 143874 (Length=152.44 cm)
 Standard Tee 000100 (as needed)
 Standard Regulator 0000-000 (as needed)

===== NOZZLE SELECTION VERIFICATION =====

SPAN #	1	2	3	4	5	6	7	OH+EG
lpm REQ.	38.0	106.2	178.0	245.4	266.0	309.5	355.9	316.2
lpm DEL.	40.5	105.3	177.2	248.1	267.8	310.4	355.6	318.9
% DEV.	6%	-1%	-0%	1%	1%	0%	-0%	1%

DATA FILE IDENTIFICATION

File	Sprinkler	Plate	SprNo	ID	Regulator	Flow	Duty	PSI	Outlet	ID
N3000G	Nutator	Green	1-	9 4E91	LB10	LO	BLUE	10	Squr	7549
R3000G	Rotator	Green	10-	72 E425	LB20	LO	BLUE	20	Squr	7628
					HB20	HI	BLUE	20	Squr	748B

===== WATER APPLICATION DEPTH PER REVOLUTION =====							
APPLICATION DEPTH (mm)	2.84	6.35	12.70	19.05	25.40	31.75	38.10
% TIMER SETTING	100	45	22	15	11	9	7
REVOLUTION TIME	15HRS	33HRS	65HRS	98HRS	130HRS	163HRS	196HRS

GROUND SPEED AT 100% TIMER SETTING: 2.77 m/min

The revolution time may vary some from the values indicated above. This may be due to generator speed, slippage, or over/under inflated tires.

Power frequency is 50 Hertz.
Loaded radius of tires is 59.7 cm.

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This computer printout is a mathematical calculation based upon information provided to Reinke Mfg. Co., Inc. This information concerns pipe length and inside diameter; surface finish; outlet spacing; water flow and pressure. The calculations are based upon this data and other applicable data being furnished as accurate. All figures are also based on 100% water application efficiency (zero wind velocity and no evaporation). The PRESSURE @ TOP OF INLET is measured at the first outlet on the main horizontal distribution pipe just after the top pivot elbow, while the GAUGE PRESSURE is measured on the vertical distribution pipe six feet below the top pivot elbow. The main pipe pressure is calculated as if the pipe is always level. The flow rate is based on the nozzle pressure, which may differ from the main pipe pressure due to the use of pressure regulators and/or drop pipes.

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