



Golf Products Catalog

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D31245H



EAGLE™ 500 Series



Specifications

- Radius:** 33'-47' (10,1-14,3 m)
- Flow Rate:** 6.0 to 13.2 gpm (0,38 to 0,83 l/s) (1,36 to 3,00 m³/h)
- Arc:** Full-circle, 360°
- Models:** Full-circle:
EAGLE 500E: Fast rotation, electric
EAGLE 500H: Fast rotation, hydraulic (N.O.)*
EAGLE 500B: Fast rotation, SEAL-A-MATIC™ device
EAGLE 500BRC: Fast rotation, SEAL-A-MATIC device, rubber cover
- Maximum Inlet Pressure:**
Models 500E: 150 psi (10,3 bars)
Models 500H, 500B: 100 psi (6,9 bars)
- Pressure Regulation Range:** 60 to 100 psi (4,1 to 6,9 bars)
- Factory Pressure Settings:** 500E available in 60, 70 and 80 psi (4,1; 4,8 and 5,5 bars)
- Body Height:**
Models 500E, 500H: 12.0" (30,5 cm)
Models 500B: 9.6" (24,5 cm)
Models 500BRC: 10" (25,4 cm)
- Pop-Up Height:**
Models 500E, 500H, 500B: 3.25" (8,3 cm)
Models 500BRC: 2.88" (7,3 cm)
- Top Diameter:**
Models 500E, 500H: 6.25" (15,9 cm)
Models 500B: 4.25" (10,8 cm)
Models 500BRC: 4.75" (12,1 cm)
- Nozzle Trajectory:** 25°
- Inlet Threads:**
Models 500E, 500H: 1.25" (3,2 cm) (33/42) NPT, BSP or ACME, Female Threaded
Models 500B, 500BRC: 1" (2,5 cm) (26/34) NPT, BSP or ACME, Female Threaded
- Holdback:**
Models 500B: 10' (3,1 m) of elevation
- Rotation Time:** 360° in ≤ 120 seconds; 90 seconds nominally
- Maximum Stream Height:** 13' (4,0 m)
- Solenoid:** 24 VAC Solenoid power requirement—
 0.41 amp inrush current (9.8 VA)
 60 cycle—0.25 amp holding current (6.0 VA)
 50 cycle—0.32 amp holding current (7.7 VA)
- Top-Serviceable Rock Screen™ and Replaceable Valve Seat:**
 On models 500E, H

*All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.
 Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.
 * N.O.—Normally open*

Performance Data – U.S.

NOZZLES						
Base Pressure (psi)	#52 BEIGE		#53 GRAY		#54 RED	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
40	33	6.0	41	7.7	45	9.3
50	35	6.6	43	8.6	47	10.3
60	35	7.2	43	9.4	47	11.2
70	35	7.7	45	10.1	47	12.0
80	35	8.3	45	10.8	47	12.8
90	37	8.7	43	10.9	47	12.8
100	35	9.1	43	11.2	47	13.2

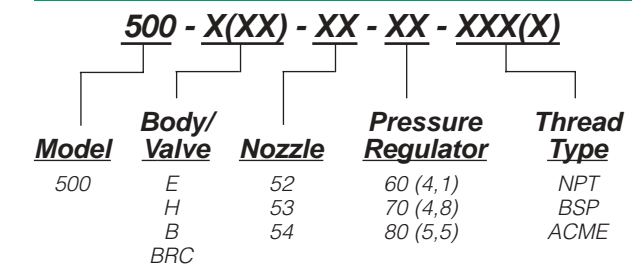
Data reflect no pressure regulation.

Performance Data – Metric

NOZZLES									
Base Pressure (bars)	#52 BEIGE			#53 GRAY			#54 RED		
	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)
2,8	10,1	0,38	1,36	12,5	0,49	1,75	13,7	0,59	2,11
3,0	10,3	0,39	1,41	12,7	0,51	1,82	13,9	0,61	2,19
3,5	10,7	0,42	1,51	13,1	0,55	1,97	14,3	0,65	2,36
4,0	10,7	0,45	1,61	13,1	0,58	2,10	14,3	0,70	2,50
4,5	10,7	0,47	1,70	13,4	0,62	2,22	14,3	0,73	2,64
5,0	10,7	0,50	1,78	13,7	0,65	2,33	14,3	0,77	2,77
5,5	10,7	0,52	1,88	13,7	0,68	2,45	14,3	0,81	2,90
6,0	11,1	0,54	1,95	13,3	0,69	2,47	14,3	0,81	2,91
6,5	11,0	0,56	2,01	13,1	0,70	2,50	14,3	0,82	2,95
6,9	10,7	0,57	2,07	13,3	0,71	2,54	14,3	0,83	3,00

Data reflect no pressure regulation.

How to Specify/Order:



EAGLE™ 550 Series



Specifications

- Radius:** 33'-49' (10,3-14,9 m)
- Flow Rate:** 6.0 to 13.6 gpm (0,38 to 0,86 l/s) (1,41 to 3,09 m³/h)
- Arc:** Adjustable 30° to 345°
- Models:** Part-circle:
EAGLE 550E: Fast rotation, electric
EAGLE 550H: Fast rotation, hydraulic (N.O.)*
EAGLE 550B: Fast rotation, SEAL-A-MATIC™ device
EAGLE 550BRC: Fast rotation, SEAL-A-MATIC device, rubber cover
- Maximum Inlet Pressure:**
Models 550E: 150 psi (10,3 bars)
Models 550H, 550B: 100 psi (6,9 bars)
- Pressure Regulation Range:** 60 to 100 psi (4,1 to 6,9 bars)
- Factory Pressure Settings:** 500E/550E available in 60, 70 and 80 psi (4,1; 4,8 and 5,5 bars)
- Body Height:**
Models 550E, 550H: 12.0" (30,5 cm)
Models 550B: 9.6" (24,5 cm)
Models 550BRC: 10" (25,4 cm)
- Pop-Up Height:**
Models 550E, 550H, 550B: 3.25" (8,3 cm)
Models 550BRC: 2.88" (7,3 cm)
- Top Diameter:**
Models 550E, 550H: 6.25" (15,9 cm)
Models 550B: 4.25" (10,8 cm)
Models 550BRC: 4.75" (12,1 cm)
- Nozzle Trajectory:** 25°
- Inlet Threads:**
Models 550E, 550H: 1.25" (3,2 cm) (33/42) NPT, BSP or ACME, Female Threaded
Models 550B, 550BRC: 1" (2,5 cm) (26/34) NPT, BSP or ACME, Female Threaded
- Holdback:**
Models 550B: 10' (3,1 m) of elevation
- Rotation Time:** 180° in ≤ 60 seconds; 45 seconds nominally
- Maximum Stream Height:** 13' (4,0 m)
- Solenoid:** 24 VAC Solenoid power requirement—
 0.41 amp inrush current (9.8 VA)
 60 cycle—0.25 amp holding current (6.0 VA)
 50 cycle—0.32 amp holding current (7.7 VA)
- Top-Serviceable Rock Screen™ and Replaceable Valve Seat:**
 On models 550E, H

All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.

Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.

** N.O.—Normally open*

Performance Data – U.S.

NOZZLES						
Base Pressure (psi)	#52 BEIGE		#53 GRAY		#54 RED	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
40	33	6.0	41	7.7	45	9.3
50	35	6.6	41	8.6	47	10.3
60	35	7.2	43	9.4	49	11.2
70	35	7.7	43	10.1	49	12.0
80	37	8.3	43	10.8	49	12.8
90	39	8.8	43	11.5	49	12.9
100	39	9.1	45	12.0	49	13.6

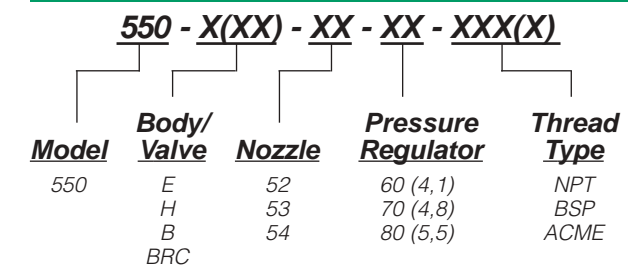
Data reflect no pressure regulation.

Performance Data – Metric

NOZZLES									
Base Pressure (bars)	Radius (m)	#52 BEIGE		Radius (m)	#53 GRAY		Radius (m)	#54 RED	
		Flow (l/s)	Flow (m ³ /h)		Flow (l/s)	Flow (m ³ /h)		Flow (l/s)	Flow (m ³ /h)
2,8	10,1	0,38	1,36	12,5	0,49	1,75	13,7	0,59	2,11
3,0	10,3	0,39	1,41	12,5	0,51	1,82	13,9	0,61	2,19
3,5	10,7	0,42	1,51	12,5	0,55	1,97	14,4	0,65	2,36
4,0	10,7	0,45	1,61	12,9	0,58	2,10	14,8	0,70	2,50
4,5	10,7	0,47	1,70	13,1	0,62	2,22	14,9	0,73	2,64
5,0	10,8	0,50	1,78	13,1	0,65	2,33	14,9	0,77	2,77
5,5	11,3	0,52	1,88	13,1	0,68	2,45	14,9	0,81	2,91
6,0	11,7	0,55	1,96	13,1	0,71	2,56	14,9	0,81	2,92
6,5	11,9	0,56	2,03	13,4	0,74	2,66	14,9	0,83	3,00
6,9	11,9	0,57	2,07	13,7	0,76	2,73	14,9	0,86	3,09

Data reflect no pressure regulation.

How to Specify/Order:



EAGLE™ 700 Series



Specifications

- Radius:** 55'-80' (16,8-24,4 m)
- Flow Rate:** 16.8 to 44.1 gpm (1,06 to 2,78 l/s) (3,82 to 10,02 m³/h)
- Arc:** Full-circle, 360°
- Models:** Full-circle:
 - EAGLE 700E: Electric
 - EAGLE 700H: Hydraulic (N.O.)*
 - EAGLE 700S: Stopamatic (SAM)
 - EAGLE 700B: SEAL-A-MATIC™ device
 - EAGLE 700BRC: SEAL-A-MATIC device, rubber cover top
- Maximum Inlet Pressure:**
 - Models 700E: 150 psi (10,3 bars)
 - Models 700S, 700H, 700B: 100 psi (6,9 bars)
- Pressure Regulation Range:** 60 to 100 psi (4,1 to 6,9 bars)
- Factory Pressure Settings:** 700E available in 60, 70 and 80 psi (4,1; 4,8 and 5,5 bars)
- Body Height:**
 - Models 700E, 700H, 700S: 12.0" (30,5 cm)
 - Models 700B: 9.6" (24,5 cm)
 - Models 700BRC: 10" (25,4 cm)
- Pop-Up Height to Nozzle:**
 - Models 700E, 700S, 700H, 700B: 3.25" (8,3 cm)
 - Models 700BRC: 2.88" (7,3 cm)
- Top Diameter:**
 - Models 700E, 700H, 700S: 6.25" (15,9 cm)
 - Models 700B: 4.25" (10,8 cm)
 - Models 700BRC: 4.75" (12,1 cm)
- Nozzle Trajectory:** 25°
- Nozzle Design:** Dual Spreader™ nozzles
- Inlet Threads:**
 - Models 700E, 700H, 700S: 1.25" (3,2 cm) (33/42) NPT, BSP or ACME, Female Threaded
 - Models 700B, 700BRC: 1" (2,5 cm) (26/34) NPT, BSP or ACME, Female Threaded
- Holdback:**
 - 700B: 10' (3,1 m) of elevation
 - 700S: 15' (4,6 m) of elevation
- Rotation Time:** 360° in ≤ 180 seconds; 150 seconds nominally
- Maximum Stream Height:** 17' (5,2 m)
- Solenoid:** 24 VAC Solenoid power requirement—
 - 0.41 amp inrush current (9.8 VA)
 - 60 cycle—0.25 amp holding current (6.0 VA)
 - 50 cycle—0.32 amp holding current (7.7 VA)
- Top-Serviceable Rock Screen™ and Replaceable Valve Seat:**
 - On models 700E, H, S

*All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.
Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.
* N.O.—Normally open*

Performance Data – U.S.

DUAL SPREADER™ NOZZLES

Base Pressure (psi)	#28 WHITE		#32 BLUE		#36 YELLOW		#40 ORANGE		#44 GREEN		#48 BLACK	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
50	55	16.8	58	19.6	60	22.7	64	25.1	—	—	—	—
60	56	18.7	62	21.9	62	24.9	66	27.3	68	29.6	—	—
70	56	19.5	63	22.6	64	26.4	66	28.6	68	31.6	70	36.0
80	59	20.9	64	24.9	66	28.3	68	30.8	68	33.9	72	38.7
90	60	23.2	64	27.2	66	31.0	68	33.9	74	36.8	78	41.6
100	60	24.5	66	28.5	68	32.7	70	35.8	76	38.8	80	44.1

Data reflect no pressure regulation.

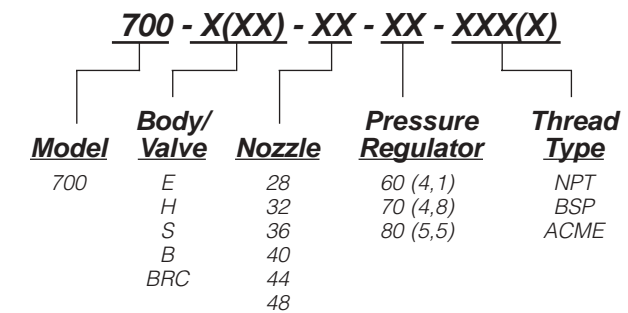
Performance Data – Metric

DUAL SPREADER™ NOZZLES

Base Pressure (bars)	#28 WHITE			#32 BLUE			#36 YELLOW			#40 ORANGE			#44 GREEN			#48 BLACK		
	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)
3,5	16,8	1,06	3,82	17,7	1,24	4,45	18,3	1,43	5,16	19,5	1,58	5,70	—	—	—	—	—	—
4,0	17,0	1,16	4,16	18,7	1,35	4,87	18,8	1,54	5,56	20,0	1,69	6,10	20,5	1,84	6,61	—	—	—
4,5	17,1	1,21	4,34	19,1	1,40	5,06	19,2	1,62	5,83	20,1	1,77	6,36	20,7	1,93	6,96	20,8	2,20	7,91
5,0	17,3	1,25	4,51	19,3	1,46	5,26	19,7	1,70	6,10	20,3	1,84	6,62	20,7	2,03	7,31	21,5	2,31	8,33
5,5	18,0	1,32	4,74	19,5	1,57	5,64	20,1	1,78	6,42	20,7	1,94	6,98	20,7	2,14	7,69	21,9	2,44	8,78
6,0	18,2	1,42	5,11	19,5	1,67	6,02	20,1	1,91	6,86	20,7	2,08	7,49	22,0	2,27	8,16	23,2	2,57	9,25
6,5	18,3	1,50	5,40	19,8	1,75	6,30	20,4	2,00	7,21	21,0	2,19	7,88	22,8	2,38	8,55	24,0	2,69	9,69
6,9	18,3	1,55	5,56	20,1	1,80	6,47	20,7	2,06	7,43	21,3	2,26	8,13	23,2	2,45	8,81	24,4	2,78	10,02

Data reflect no pressure regulation.

How to Specify/Order:



EAGLE™ 750 Series



Specifications

- Radius:** 55'-83' (16,8-25,3 m)
- Flow Rate:** 13.4 to 38.1 gpm (0,85 to 2,40 l/s) (3,04 to 8,64 m³/h)
- Arc:** Adjustable 30 to 345°
- Models:** Part-circle:
EAGLE 750E: Electric
EAGLE 750H: Hydraulic (N.O.)*
EAGLE 750S: Stopmatic (SAM)
EAGLE 750B: SEAL-A-MATIC™ device
EAGLE 750BRC: SEAL-A-MATIC device, rubber cover top
- Maximum Inlet Pressure:**
Models 750E: 150 psi (10,3 bars)
Models 750S, 750H, 750B: 100 psi (6,9 bars)
- Pressure Regulation Range:** 60 to 100 psi (4,1 to 6,9 bars)
- Factory Pressure Settings:** 750E available in 60, 70 and 80 psi (4,1; 4,8 and 5,5 bars)
- Body Height:**
Models 750E, 750H, 750S: 12.0" (30,5 cm)
Models 750B: 9.6" (24,5 cm)
Models 750BRC: 10" (25,4 cm)
- Pop-Up Height to Nozzle:**
Models 750E, 750S, 750H, 750B: 3.25" (8,3 cm)
Models 750BRC: 2.88" (7,3 cm)
- Top Diameter:**
Models 750E, 750H, 750S: 6.25" (15,9 cm)
Models 750B: 4.25" (10,8 cm)
Models 750BRC: 4.75" (12,1 cm)
- Nozzle Trajectory:** 25°
- Inlet Threads:**
Models 750E, 750H, 750S: 1.25" (3,2 cm) (33/42) NPT, BSP or ACME, Female Threaded
Models 750B, 750BRC: 1" (2,5 cm) (26/34) NPT, BSP or ACME
- Holdback:**
750B: 10' (3,1 m) of elevation
750S: 15' (4,6 m) of elevation
- Rotation Time:** 180° in ≤ 90 seconds; 75 seconds nominally
- Maximum Stream Height:** 17' (5,2 m)
- Solenoid:** 24 VAC Solenoid power requirement—
 0.41 amp inrush current (9.8 VA)
 60cycle—0.25 amp holding current (6.0 VA)
 50 cycle—0.32 amp holding current (7.7 VA)
- Top-Serviceable Rock Screen™ and Replaceable Valve Seat:**
 On models 750E, H, S

*All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.
 Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.
 * N.O.—Normally open*

Performance Data – U.S.

DUAL SPREADER™ NOZZLES

Base Pressure (psi)	#28 WHITE		#32 BLUE		#36 YELLOW		#40 ORANGE		#44 GREEN		#48 BLACK	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
50	55	13.4	57	15.0	61	16.9	63	19.7	-	-	-	-
60	57	15.0	59	16.9	63	18.8	67	21.8	69	24.0	-	-
70	59	16.7	61	18.3	65	20.4	69	23.7	73	27.9	77	31.2
80	61	17.8	63	20.0	67	21.8	71	26.5	75	30.1	79	33.6
90	61	19.3	65	21.1	67	23.5	73	28.4	77	32.2	81	35.9
100	61	20.2	65	22.5	67	24.9	75	30.1	77	34.0	83	38.1

Data reflect no pressure regulation.

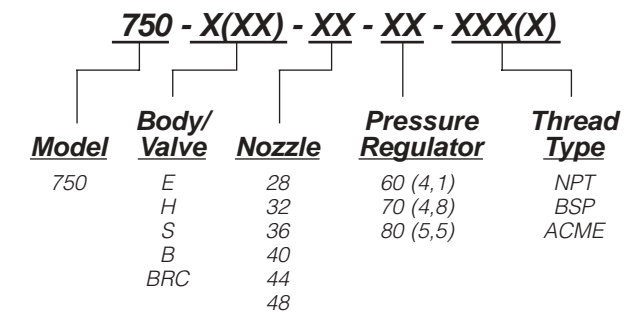
Performance Data – Metric

DUAL SPREADER™ NOZZLES

Base Pressure (bars)	#28 WHITE			#32 BLUE			#36 YELLOW			#40 ORANGE			#44 GREEN			#48 BLACK		
	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)
3,5	16,8	0,85	3,04	17,4	0,95	3,41	18,6	1,07	3,84	19,2	1,24	4,47	-	-	-	-	-	-
4,0	17,3	0,93	3,33	17,9	1,04	3,75	19,1	1,16	4,18	20,2	1,35	4,86	20,8	1,48	5,33	-	-	-
4,5	17,7	1,00	3,61	18,3	1,11	4,01	19,5	1,24	4,46	20,7	1,44	5,18	21,7	1,64	5,92	22,6	1,89	6,82
5,0	18,1	1,07	3,86	18,7	1,18	4,25	20,0	1,31	4,71	21,2	1,54	5,54	22,4	1,80	6,46	23,6	2,01	7,23
5,5	18,6	1,12	4,05	19,2	1,26	4,53	20,4	1,37	4,94	21,6	1,67	6,00	22,8	1,90	6,82	24,1	2,12	7,61
6,0	18,6	1,19	4,28	19,6	1,31	4,72	20,4	1,45	5,22	22,1	1,76	6,32	23,3	1,99	7,17	24,5	2,22	8,00
6,5	18,6	1,24	4,46	19,8	1,37	4,93	20,4	1,52	5,47	22,5	1,84	6,62	23,5	2,08	7,49	24,9	2,32	8,37
6,9	18,6	1,27	4,59	19,8	1,42	5,11	20,4	1,57	5,66	22,9	1,90	6,84	23,5	2,15	7,72	25,3	2,40	8,64

Data reflect no pressure regulation.

How to Specify/Order:



EAGLE'S NEST™ 500/550 and 700/750 Rotor Adaptor



Specifications

- Models:**
EAGLE'S NEST 500/700: Full-circle
EAGLE'S NEST 550/750: Part-circle
- Retrofit:** Fits inside a 47/51 Impact Series rotor body for EAGLE™ 500/550 or EAGLE™ 700/750 performance
- Radius:**
EAGLE'S NEST 500: 33'-47' (10,1-14,3 m)
EAGLE'S NEST 550: 33'-49' (10,1-14,9 m)
EAGLE'S NEST 700: 55'-80' (16,8-24,4 m)
EAGLE'S NEST 750: 55'-83' (16,8-25,3 m)
- Arc:**
EAGLE'S NEST 500/700: Full-circle, 360°
EAGLE'S NEST 550/750: Adjustable, 30° to 345°
- Maximum Pressure:** 100 psi (6,9 bars)
- Pop-Up Height to Nozzle:** 3.25" (8,3 cm)
- Nozzle Trajectory:** 25°
- Rotation Time:**
EAGLE'S NEST 700: 360° in ≤ 180 seconds;
 150 seconds nominally
EAGLE'S NEST 750: 180° in ≤ 90 seconds;
 75 seconds nominally
- Maximum Stream Height:** 17' (5,2 m)

*All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.
 Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.*

For performance data, please see EAGLE™ 500/550 and EAGLE 700/750 Performance Charts.

How to Specify/Order:

EAGLE'S NEST XXX - XX

Model	500 Nozzle	550 Nozzle
500	52	52
550	53	53
	54	54

How to Specify/Order:

EAGLE'S NEST XXX - XX

Model	700 Nozzle	750 Nozzle
700	28	28
750	32	32
	36	36
	40	40
	44	44
	48	48

EAGLE'S TAIL KITS FOR EAGLE™ 550, 750, 950



Specifications

- Models:**
EAGLE'S TAIL KIT 550: Part-circle
EAGLE'S TAIL KIT 750: Part-circle
EAGLE'S TAIL KIT 950: Part-circle
- Description:** EAGLE™ Tail Kits replace the nozzle housing and use the close-in spreader nozzle at the back of the part-circle rotor. EAGLE™ Tail Kits are designed for areas behind part-circle rotors where the rotor is offset from the edge of a lake, stream or slope.
- Radius:**
EAGLE'S TAIL KIT 550: 29'-31' (9,0-9,4 m)
EAGLE'S TAIL KIT 750: 29'-31' (9,0-9,4 m)
EAGLE'S TAIL KIT 950: 35'-39' (10,7-11,9 m)

All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.

EAGLE's Tail Performance Charts for EAGLE 550/750 or 950 Rotor – U.S.

EAGLE 550 & 750 Rotors				EAGLE 950 Rotors		
Pressure (psi)	Decrease in Range (ft)	EAGLE's Tail Radius (ft)	Increase in Flow (gpm)	Decrease in Range (ft)	EAGLE's Tail Radius (ft)	Increase in Flow (gpm)
50	4.0	29	2.3	-	-	-
60	5.0	30	2.4	3.5	35	2.5
70	5.5	30	2.9	4.0	35	3.0
80	6.0	31	3.0	5.0	37	3.0
90	6.5	31	3.1	5.0	37	3.5
100	6.5	31	3.2	5.5	39	3.5

EAGLE's Tail Performance Charts for EAGLE 550/750 or 950 Rotor – Metric

EAGLE 550 & 750 Rotors				EAGLE 950 Rotors		
Pressure (bars)	Decrease in Range (m)	EAGLE's Tail Radius (m)	Increase in Flow (l/s) (m³/h)	Decrease in Range (m)	EAGLE's Tail Radius (m)	Increase in Flow (l/s) (m³/h)
3,5	1,2	9,0	0,15 0,52	-	-	-
4,0	1,5	9,1	0,15 0,54	1,1	10,7	0,16 0,57
4,5	1,6	9,2	0,17 0,60	1,1	10,7	0,17 0,63
5,0	1,7	9,3	0,18 0,66	1,3	10,8	0,19 0,68
5,5	1,8	9,3	0,19 0,68	1,5	11,3	0,19 0,68
6,0	1,9	9,4	0,19 0,70	1,5	11,3	0,21 0,76
6,5	2,0	9,4	0,20 0,71	1,6	11,5	0,22 0,79
6,9	2,0	9,4	0,20 0,73	1,7	11,9	0,22 0,79

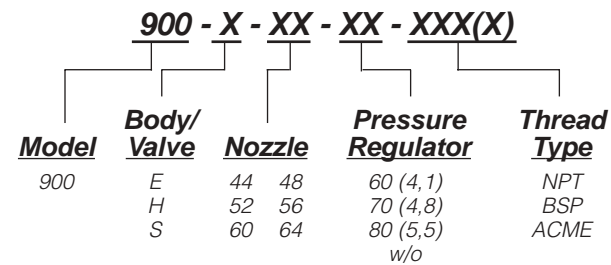
EAGLE™ 900 Series



Specifications

Radius: 63'-97' (19,2-29,6 m)	Inlet Threads: 1.5" (3,8 cm) (15/21) NPT, BSP or ACME, Female Threaded
Flow Rate: 21.4 to 57.1 gpm (1,35 to 3,60 l/s) (4,85 to 12,97 m ³ /h)	Holdback: 900S 15' (4,6 m) elevation
Arc: Full-circle, 360°	Rotation Time: 360° in ≤ 240 seconds; 210 seconds nominally
Models: Full-circle: EAGLE 900E: Electric EAGLE 900H: Hydraulic (N.O.)* EAGLE 900S: Stopmatic (SAM)	Maximum Stream Height: 20' (6,1 m)
Maximum Inlet Pressure: Models 900E: 150 psi (10,3 bars) Models 900S, 900H: 100 psi (6,9 bars)	Solenoid: 24 VAC Solenoid power requirement— 0.41 amp inrush current (9.8 VA) 60 cycle—0.25 amp holding current (6.0 VA) 50 cycle—0.32 amp holding current (7.7 VA)
Pressure Regulation Range: 60 to 100 psi (4,1 to 6,9 bars)	Top-Serviceable Rock Screen™ and Replaceable Valve Seat: All 900 models
Factory Pressure Settings: 900E available in 60, 70, 80 psi and wide open (4,1; 4,8; 5,5 bars and wide open)	<i>All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions. Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection. * N.O.—Normally open</i>
Body Height: 13.4" (34,0 cm)	
Pop-Up Height to Nozzle: 3.25" (8,3 cm)	
Top Diameter: 7" (17,8 cm)	
Nozzle Trajectory: 25°	

How to Specify/Order:



Performance Data – U.S.

HIGH PERFORMANCE NOZZLES

Base	#44 BLUE		#48 YELLOW		#52 ORANGE		#56 GREEN	
Pressure (psi)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	63	21.4	73	28.9	75	31.9	-	-
70	67	23.5	73	31.0	79	34.6	83	40.7
80	71	24.7	75	34.1	81	37.1	85	43.5
90	71	26.5	77	35.0	81	39.5	87	46.4
100	73	27.9	77	36.2	83	41.8	89	49.1

Data reflect no pressure regulation.

Performance Data – Metric

HIGH PERFORMANCE NOZZLES

Base	#44 BLUE			#48 YELLOW			#52 ORANGE			#56 GREEN		
Pressure (bars)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)
4,1	19,2	1,35	4,85	22,3	1,89	6,56	22,9	2,01	7,25	-	-	-
4,5	19,8	1,42	5,11	22,3	1,89	6,81	23,5	2,10	7,57	25,0	2,48	8,94
5,0	20,7	1,50	5,40	22,4	2,00	7,22	24,2	2,22	8,00	25,5	2,61	9,40
5,5	21,6	1,55	5,59	22,8	2,14	7,72	24,7	2,34	8,41	25,9	2,74	9,87
6,0	21,6	1,64	5,90	23,3	2,19	7,88	24,7	2,45	8,81	26,3	2,87	10,34
6,5	21,9	1,71	6,16	23,5	2,24	8,06	24,9	2,55	9,19	26,8	3,00	10,80
6,9	22,3	1,76	6,35	23,5	2,28	8,22	25,3	2,64	9,49	27,1	3,10	11,15

Data reflect no pressure regulation.

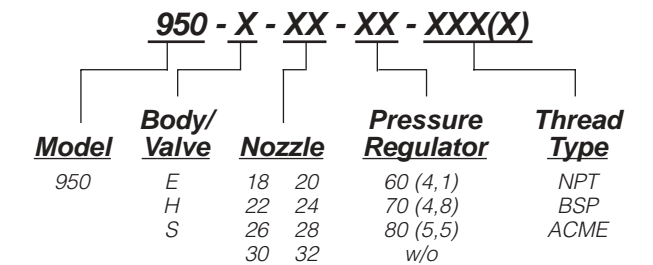
EAGLE™ 950 Series



Specifications

Radius: 70'-92' (21,3-28,0 m)	Inlet Threads: 1.5" (3,8 cm) (15/21) NPT, BSP or ACME, Female Threaded
Flow Rate: 19.5 to 59.4 gpm (1,23 to 3,75 l/s) (4,43 to 13,49 m ³ /h)	Holdback: 950S 15' (4,6 m) elevation
Arc: Adjustable 40° to 345°	Rotation Time: 180° in ≤ 120 seconds; 105 seconds nominally
Models: Part-circle: EAGLE 950E: Electric EAGLE 950H: Hydraulic (N.O.)* EAGLE 950S: Stopmatic (SAM)	Maximum Stream Height: 20' (6,1 m)
Maximum Inlet Pressure: Models 950E: 150 psi (10,3 bars) Models 950S, 950H: 100 psi (6,9 bars)	Solenoid: 24 VAC Solenoid power requirement— 0.41 amp inrush current (9.8 VA) 60 cycle—0.25 amp holding current (6.0 VA) 50 cycle—0.32 amp holding current (7.7 VA)
Pressure Regulation Range: 60 to 100 psi (4,1 to 6,9 bars)	Top-Serviceable Rock Screen™ and Replaceable Valve Seat: All 950 models
Factory Pressure Settings: 950E available in 60, 70, 80 psi and wide open (4,1; 4,8; 5,5 bars and wide open)	<i>All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions. Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection. * N.O.—Normally open</i>
Body Height: 13.4" (34,0 cm)	
Pop-Up Height to Nozzle: 3.25" (8,3 cm)	
Top Diameter: 7" (17,8 cm)	
Nozzle Trajectory: 25°	

How to Specify/Order:



Performance Data – U.S.

NOZZLES

Base	#18 WHITE-C		#20 GRAY-C		#22 BLUE-C		#24 YELLOW-C		#26 ORANGE		#28 GREEN		#30 BLACK		#32 BROWN	
Pressure (psi)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	70	19.5	72	23.0	74	26.5	76	30.8	78	36	-	-	-	-	-	-
70	72	21.3	74	25.1	76	28.8	80	33.5	82	38.7	84	42.9	84	47.3	84	50.4
80	74	22.9	76	27.0	80	30.9	84	36.0	84	41.5	86	47.3	86	50.4	85	53.1
90	75	24.4	78	28.7	82	32.9	88	38.4	86	43.4	89	48.5	90	52.9	88	55.6
100	76	25.8	80	30.5	84	34.6	90	40.5	88	46.7	91	52.2	92	55.8	92	59.4

Data reflect no pressure regulation.

Performance Data – Metric

NOZZLES

Base	#18 WHITE-C			#20 GRAY-C			#22 BLUE-C			#24 YELLOW-C			#26 ORANGE			#28 GREEN			#30 BLACK			#32 BROWN		
Pressure (bars)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)
4,1	21,3	1,23	4,43	21,9	1,45	5,22	22,6	1,67	6,02	23,2	1,94	7,00	23,8	2,27	8,18	-	-	-	-	-	-	-	-	-
4,5	21,7	1,29	4,64	22,3	1,52	5,48	22,9	1,75	6,29	23,8	2,03	7,32	24,4	2,36	8,50	25,2	2,62	9,44	25,2	2,90	10,44	25,3	3,10	11,17
5,0	22,1	1,37	4,93	22,7	1,61	5,81	23,5	1,85	6,66	24,7	2,15	7,75	25,1	2,49	8,95	25,8	2,78	10,00	25,8	3,03	10,92	25,7	3,22	11,60
5,5	22,5	1,44	5,19	23,2	1,70	6,12	24,4	1,95	7,01	25,6	2,27	8,16	25,6	2,61	9,41	26,2	2,98	10,72	26,2	3,18	11,43	25,9	3,35	12,05
6,0	22,8	1,51	5,44	23,6	1,78	6,40	24,8	2,04	7,34	26,5	2,38	8,56	26,0	2,70	9,73	26,9	3,04	10,93	27,1	3,29	11,85	26,6	3,46	12,46
6,5	23,0	1,58	5,68	24,0	1,86	6,69	25,3	2,12	7,64	27,1	2,48	8,93	26,5	2,83	10,18	27,4	3,16	11,37	27,7	3,42	12,30	27,3	3,61	13,00
6,9	23,2	1,63	5,86	24,4	1,92	6,93	25,6	2,18	7,86	27,4	2,56	9,20	26,8	2,95	10,61	27,7	3,29	11,86	28,0	3,52	12,67	28,0	3,75	13,49

Data reflect no pressure regulation.

EAGLE™ 1100 Series



Specifications

- Radius:** 85'-115' (25,9-35,1 m)
- Flow Rate:** 40.6-72.9 gpm (2,6-4,6 l/s) (9,22-16,56 m³/h)
- Arc:** Full-circle, 360°
- Models:** Full-circle:
 - EAGLE 1100E: Electric
 - EAGLE 1100H: Hydraulic (N.O.)*
 - EAGLE 1100S: Stopamatic (SAM)
- Maximum Inlet Pressure:**
 - Models 1100E: 175 psi (12,1 bars)
 - Models 1100S, 1100H: 130 psi (9,0 bars)
- Pressure Regulation Range:** 80 to 110 psi (5,5 to 7,6 bars)
- Factory Pressure Settings:** 1100E/1150E available in 80, 100 psi, full open
- Body Height:** 13.4" (34,0 cm)
- Pop-Up Height to Nozzle:** 4.25" (10,8 cm)
- Top Diameter:** 7" (17,78 cm)
- Nozzle Trajectory:** 25°
- Inlet Threads:** 1.5" (3,8 cm) (15/21) NPT, BSP or ACME female threaded
- Holdback:** 1100S/1150S 15' (4,6 m) elevation
- Rotation Time:**
 - EAGLE 1100: 360° in ≤ 220 seconds; 240 seconds nominally
 - EAGLE 1150: 180° in ≤ 135 seconds; 120 seconds nominally
- Maximum Stream Height:** 24' (7,3 m)
- Solenoid:** 24 VAC 60 cycle solenoid power requirement—0.41 amp inrush current (9.9 VA), 0.28 amp holding current (6.7 VA)
- Top-Serviceable Rock Screen™ and Replaceable Valve Seat:** All 1100 models

All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.

Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.

* N.O.—Normally open

TG-25 Series



Specifications

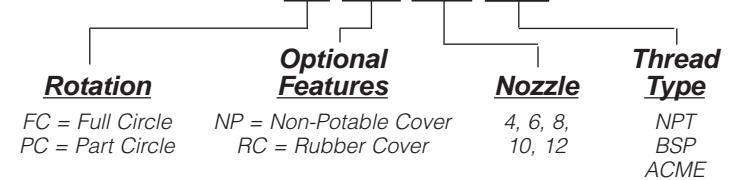
- Radius:** 31' to 59' (9,4 to 18,0 m)
Built-in diffuser screw can be adjusted to reduce the radius by 25%.
- Flow Rate:** 3.5 to 14.1 gpm (0,22 to 0,89 l/s) (0,79 to 3,21 m³/h)
- Arc:**
 - Part-circle:** Adjustable 40° to 360°
 - Full-circle:** 360°
- Models:**
 - TG-25 FC: Full-circle
 - TG-25 PC: Part-circle
 - TG-25 FC NP: Full-circle, non-potable plastic cover
 - TG-25 PC NP: Part-circle, non-potable plastic cover
 - TG-25 FC RC: Full-circle, black rubber cover
- Operating Pressures:** 40 to 80 psi (2,8 to 5,5 bars)
- Body Height:** 9.6" (24,5 cm)
- Pop-Up Height to Nozzle:** 4" (10,2 cm)
- Top Diameter:** 4.25" (10,8 cm)
- Nozzle Trajectory:** 25°
- TG-25 Nozzles:** 04-black; 06-light blue; 08-green; 10-gray; 12-beige
- Inlet Threads:** 1" (26/34) female NPT, BSP or ACME
- Holdback:** 10' (3,1 m) elevation
- Rotation Time:** 180° in ≤ 100 seconds; 80 seconds nominally
- Maximum Stream Height:** 13' (4,0 m)
- Case Type:** Block case in reinforced polypropylene with snap-cover accessibility

All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.

Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection.

How to Specify/Order:

TG-25-XX-(XX)-X(X)-XXX



EAGLE™ 1100 Performance Data – U.S.

DUAL SPREADER™ NOZZLES

Base Pressure (psi)	#48 BLUE		#57 YELLOW		#63 ORANGE		#66 GREEN	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
70	85	40.6	88	46.9	94	51.1	—	—
80	89	43.7	91	50.3	99	56.3	101	59.0
90	91	46.5	93	53.7	101	58.4	104	62.9
100	95	48.3	94	56.9	105	62.9	109	66.4
110	96	50.8	96	60.0	107	64.8	111	69.9
120	97	53.1	97	62.7	109	69.3	115	72.9

Data reflect no pressure regulation.

EAGLE™ 1100 Performance Data – Metric

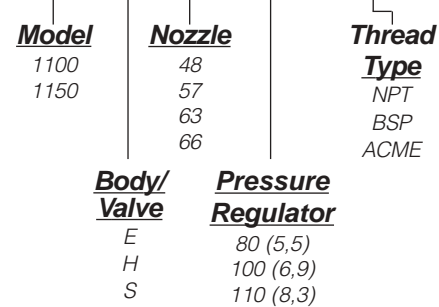
DUAL SPREADER™ NOZZLES

Base Pressure (bars)	#48 BLUE		#57 YELLOW		#63 ORANGE		#66 GREEN		
	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)
4,83	25,9	2,56	9,22	26,8	2,96	10,65	28,7	3,22	11,61
5	26,2	2,61	9,4	27,1	3,01	10,85	29,0	3,31	11,9
5,5	27,1	2,75	9,91	27,7	3,17	11,41	30,1	3,54	12,76
6,0	27,6	2,88	10,37	28,2	3,32	11,97	30,6	3,65	13,12
6,5	28,3	2,98	10,74	28,5	3,47	12,51	31,3	3,81	13,7
7,0	29,0	3,07	11,06	28,7	3,62	13,03	32,1	3,99	14,35
7,5	29,2	3,19	11,47	29,2	3,76	13,54	32,5	4,07	14,66
8,0	29,4	3,29	11,85	29,4	3,89	14,0	33,0	4,26	15,33
8,27	29,6	3,35	12,06	29,6	3,96	14,24	33,2	4,37	15,74

Data reflect no pressure regulation.

How to Specify/Order:

11XX - X - XX - XXX - XXXX



Performance Data – U.S.

RAIN CURTAIN™ NOZZLES

Base Pressure (psi)	BLACK #4		LT. BLUE #6		GREEN #8		GRAY #10		BEIGE #12	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
40	39	3.5	43	5.0	47	6.5	49	8.0	51	9.8
50	39	3.9	45	5.6	49	7.4	51	9.1	53	11.0
60	39	4.2	45	6.2	49	8.1	53	10.0	55	12.2
70	41	4.6	47	6.6	49	8.8	53	10.8	57	13.3
80	39	4.8	47	7.1	49	9.4	53	11.6	59	14.1

Data reflect no pressure regulation.

Performance Data – Metric

RAIN CURTAIN™ NOZZLES

Base Pressure (bars)	BLACK #4		LT. BLUE #6		GREEN #8		GRAY #10		BEIGE #12						
	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)			
2,8	11,9	0,22	0,79	13,1	0,32	1,14	14,3	0,41	1,49	14,9	0,51	1,82	15,5	0,61	2,21
3,0	11,9	0,23	0,82	13,3	0,33	1,18	14,5	0,43	1,55	15,1	0,53	1,90	15,8	0,64	2,32
3,5	11,9	0,25	0,89	13,7	0,36	1,28	14,9	0,47	1,69	15,6	0,58	2,07	16,2	0,70	2,52
4,0	11,9	0,26	0,94	13,7	0,38	1,38	14,9	0,50	1,81	16,0	0,62	2,23	16,6	0,76	2,72
4,5	12,2	0,28	1,00	14,0	0,41	1,46	14,9	0,54	1,93	16,2	0,66	2,37	17,1	0,81	2,90
5,0	12,3	0,29	1,05	14,3	0,43	1,53	14,9	0,56	2,03	16,2	0,69	2,50	17,5	0,85	3,06
5,5	11,9	0,31	1,10	14,3	0,45	1,61	14,9	0,59	2,14	16,2	0,73	2,63	18,0	0,89	3,21

Data reflect no pressure regulation.

NOTE: Built-in diffuser screw can be adjusted to reduce the radius by 25%.

ESR 70/75



Specifications

Operating pressure: 50 to 100 psi

Models:
ESR 70: Electric valve-in-head, Full-circle
ESR 75: Electric valve-in-head, Part-circle

Arc:
ESR 70: Full-circle, 360°
ESR 75: Adjustable, 30° to 345°

Maximum stream height: 17' (5,2 m)
Molded-in rock screen

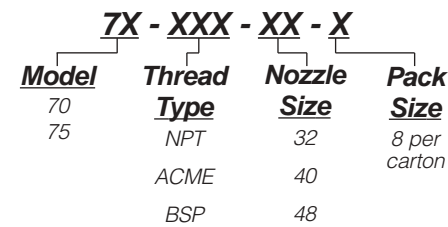
Body height: 12.0" (30,5 cm)
Top diameter: 5.75" (14,6 cm)
Pop-up height to nozzle: 3.25" (8,3 cm)

Nozzle trajectory: 25°

Inlet threads: 1.25" (3,2 cm) (33/42) NPT, BSP or ACME

Rotation time:
ESR 70: 360° in ≤ 180 seconds; 150 seconds nominally
ESR 75: 180° in ≤ 90 seconds; 75 seconds nominally

How to Specify/Order:



ESR 90/95



Specifications

Operating pressure: 60 to 100 psi (6,9 bars)

Models:
ESR 90: Electric valve-in-head, Full-circle
ESR 95: Electric valve-in-head, Part-circle

Arc:
ESR 90: Full-circle, 360°
ESR 95: Part-circle, 40° to 345°

Maximum stream height: 20' (6,1 m)
Molded-in rock screen

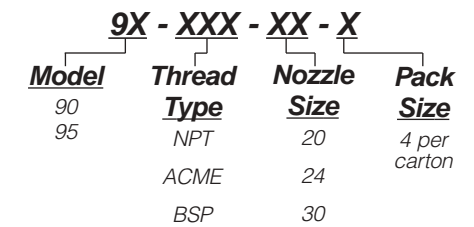
Body height: 13.4" (34,0 cm)
Top diameter: 7" (17,8 cm)
Pop-up height to nozzle: 3.25" (8,3 cm)

Nozzle trajectory: 25°

Inlet threads: 1.5" (3,8 cm) (15/21) NPT, BSP or ACME female threaded

Rotation time:
ESR 90: 360° in ≤ 240 seconds; 210 seconds nominally
ESR 95: 180° in ≤ 120 seconds; 105 seconds nominally

How to Specify/Order:



70 & 75 Performance Data – U.S.

Base Pressure (psi)	#32 BLUE		#40 ORANGE		#48 BLACK	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
50	57	15.0	63	19.7	—	—
60	59	16.9	67	21.8	—	—
70	61	18.3	69	23.7	77	31.2
80	63	20.0	71	26.5	79	33.6
90	65	21.1	73	28.4	81	35.9
100	65	22.5	75	30.1	83	38.1

All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.

90 & 95 Performance Data – U.S.

Base Pressure (psi)	#20 GRAY		#24 YELLOW		#30 BLACK	
	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	73	23.0	77	30.8	—	—
70	75	25.1	81	33.5	85	47.3
80	77	27.0	85	36.0	87	50.4
90	79	28.7	89	38.4	91	52.9
100	81	30.5	91	40.5	95	55.8

All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions.

70 & 75 Performance Data – Metric

Base Pressure (bars)	#32 BLUE		#40 ORANGE			#48 BLACK			
	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)
3,5	17,4	0,95	3,41	19,2	1,24	4,47	—	—	—
4,0	17,9	1,04	3,75	20,2	1,35	4,85	—	—	—
4,5	18,3	1,11	4,01	20,7	1,44	5,18	12,4	1,04	3,74
5,0	18,7	1,18	4,25	21,2	1,54	5,54	23,6	2,01	7,23
5,5	19,2	1,26	4,53	21,6	1,67	6,00	24,1	2,12	7,61
6,0	19,6	1,31	4,72	22,1	1,76	6,32	24,5	2,22	8,00
6,5	19,8	1,37	4,93	22,5	1,84	6,62	24,9	2,32	8,37
6,9	19,8	1,42	5,11	22,9	1,90	6,84	25,3	2,40	8,64

90 & 95 Performance Data – Metric

Base Pressure (bars)	#20 GRAY		#24 YELLOW			#30 BLACK			
	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)	Radius (m)	Flow (l/s)	Flow (m³/h)
4,1	22,3	1,45	5,22	23,5	1,94	7,00	—	—	—
4,5	22,6	1,52	5,48	24,1	2,03	7,32	25,5	2,90	10,44
5,0	23,0	1,61	5,81	25,0	2,15	7,75	26,1	3,03	10,92
5,5	23,5	1,70	6,12	25,9	2,27	8,16	26,5	3,18	11,43
6,0	23,9	1,78	6,40	26,8	2,38	8,56	27,4	3,29	11,85
6,5	24,3	1,86	6,69	27,4	2,48	8,93	28,3	3,42	12,30
6,9	24,7	1,92	6,93	27,7	2,56	9,20	29,0	3,52	12,67

Impact 51D Series



Specifications

Radius: 53'-77' (16,2-23,5 m)
Flow Rate: 14.8 to 45.1 gpm (0,73 to 2,85 l/s) (3,36 to 10,24 m³/h)
Arc: Full-circle, 360°
Models - Full-circle:
51DR: Electric
51DH: Hydraulic (N.O.)*
51DS: Stopamatic (SAM)
Maximum Inlet Pressure:
Models 51DR: 120 psi (8,3 bars)
Models 51DS, 51DH: 100 psi (6,9 bars)
Pressure Regulation Range: 60 to 100 psi (4,1 to 6,9 bars)
Factory Pressure Settings: Available in 60, 70 and 80 psi (4,1; 4,8 and 5,5 bars)
Body Height: 12.7" (33,3 cm)
Top Diameter: 8.5" (21,6 cm)
Nozzle Trajectory: 23°

Inlet Threads: 1.5" (3,8 cm) NPT or BSP female threaded
Holdback: 51DS: 15' (4,6 m)
Maximum Stream Height: 15' (4,6 m)
Solenoid: 24 VAC Solenoid power requirement—0.41 amp inrush current (9.8 VA)
 60 cycle—0.25 amp holding current (6.0 VA)
 50 cycle—0.32 amp holding current (7.7 VA)
Top-Serviceable Rock Screen™ and Replaceable Valve Seat: All 51D models

*All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions. Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection. * N.O.—Normally open*

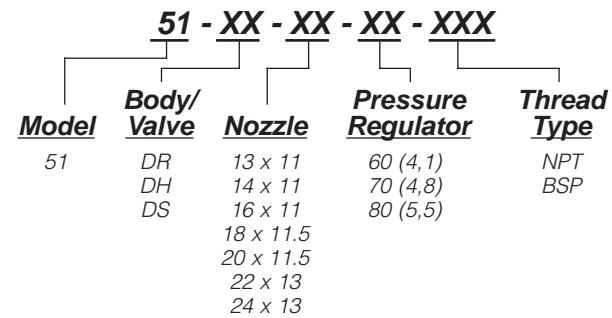
Performance Data – U.S.

NOZZLES	RED			WHITE			BLUE			YELLOW			ORANGE			GREEN			BLACK			
	Base	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	Radius	Flow	
	13 x 11	14 x 11	16 x 11	18 x 11.5	20 x 11.5	22 x 13	24 x 13															
	Rec.	Rec.	Rec.	Rec.	Rec.	Rec.	Rec.															
Pressure (psi)	Radius (ft)	Spacing (ft)	Flow (gpm)	Radius (ft)	Spacing (ft)	Flow (gpm)	Radius (ft)	Spacing (ft)	Flow (gpm)	Radius (ft)	Spacing (ft)	Flow (gpm)	Radius (ft)	Spacing (ft)	Flow (gpm)	Radius (ft)	Spacing (ft)	Flow (gpm)	Radius (ft)	Spacing (ft)	Flow (gpm)	
50	53	57	14.8	51	55	15.4	59	64	18.8	61	66	22.2	-	-	-	-	-	-	-	-	-	-
60	53	57	16.1	53	57	16.9	59	64	20.5	63	68	24.1	67	72	27.4	-	-	-	-	-	-	-
70	55	59	17.3	55	59	18.2	61	66	22.2	65	70	26.0	69	75	29.5	67	72	34.3	69	75	37.8	
80	55	59	18.4	55	59	19.7	63	68	23.7	69	75	27.9	71	77	31.8	71	77	36.6	73	79	40.3	
90	57	62	19.7	57	62	20.7	65	70	24.9	69	75	29.5	71	77	33.5	73	79	38.9	73	79	42.8	
100	57	62	20.7	59	64	21.8	67	72	26.4	71	77	31.0	75	81	35.3	77	83	41.8	75	81	45.1	

Performance Data – Metric

NOZZLES	RED			WHITE				
	Base	Radius	Flow	Radius	Flow	Flow		
	13 x 11	14 x 11						
	Rec.	Rec.						
Pressure (bars)	Radius (m)	Spacing (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Spacing (m)	Flow (l/s)	Flow (m ³ /h)
3,5	16,2	17,4	0,93	3,36	15,5	16,8	0,97	3,50
4,0	16,2	17,4	1,00	3,60	16,0	17,3	1,05	3,77
4,5	16,5	17,8	1,06	3,80	16,5	17,8	1,11	3,99
5,0	16,8	18,1	1,11	3,99	16,8	18,1	1,17	4,22
5,5	16,8	18,1	1,16	4,17	16,8	18,1	1,24	4,47
6,0	17,2	18,6	1,22	4,39	17,2	18,6	1,29	4,63
6,5	17,4	18,8	1,27	4,57	17,6	19,0	1,34	4,81
6,9	17,4	18,8	1,31	4,70	18,0	19,4	1,38	4,95

How to Specify/Order:



NOZZLES	BLUE			YELLOW			ORANGE			GREEN			BLACK			
	Base	Radius	Flow	Radius	Flow	Flow	Radius	Flow	Flow	Radius	Flow	Flow	Radius	Flow	Flow	
	16 x 11	18 x 11.5	20 x 11.5	22 x 13	24 x 13											
	Rec.	Rec.	Rec.	Rec.	Rec.											
Pressure (bars)	Radius (m)	Spacing (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Spacing (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Spacing (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Spacing (m)	Flow (l/s)	Flow (m ³ /h)
3,5	18,0	19,4	1,19	4,27	18,6	20,1	1,40	5,04	-	-	-	-	-	-	-	-
4,0	18,0	19,4	1,27	4,58	19,1	20,6	1,50	5,39	20,3	21,9	1,70	6,12	-	-	-	-
4,5	18,3	19,8	1,35	4,86	19,5	21,1	1,58	5,70	20,7	22,4	1,80	6,47	20,0	21,6	2,10	7,54
5,0	18,7	20,2	1,42	5,13	20,1	21,7	1,67	6,01	21,2	22,9	1,90	6,83	20,7	22,4	2,20	7,92
5,5	19,2	20,7	1,49	5,37	21,0	22,7	1,76	6,33	21,6	23,4	2,00	7,21	21,6	23,3	2,31	8,30
6,0	19,6	21,2	1,55	5,57	21,0	22,7	1,83	6,59	21,6	23,4	2,08	7,49	22,1	23,8	2,41	8,68
6,5	20,1	21,7	1,61	5,80	21,3	23,0	1,90	6,85	22,2	23,9	2,16	7,78	22,8	24,6	2,53	9,12
6,9	20,4	22,1	1,67	6,00	21,6	23,4	1,96	7,04	22,9	24,7	2,23	8,02	23,5	25,3	2,64	9,49

Impact 47D Series



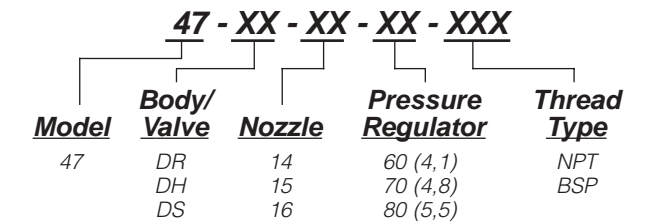
Specifications

Radius: 45'-59' (13,7-18,0 m)
Flow Rate: 9.2 to 17.0 gpm (0,61 to 1,07 l/s) (2,20 to 3,86 m³/h)
Arc: Adjustable 20° to 340°
Models: Part-circle:
47DR: Electric
47DH: Hydraulic (N.O.)*
47DS: Stopamatic (SAM)
Maximum Inlet Pressure:
Models 47DR: 120 psi (8,3 bars)
Models 47DS, 47DH: 100 psi (6,9 bars)
Pressure Regulation Range: 60 to 100 psi (4,1 to 6,9 bars)
Factory Pressure Settings: Available in 60, 70 and 80 psi (4,1; 4,8 and 5,5 bars)
Body Height: 12.7" (33,3 cm)
Top Diameter: 8.5" (21,6 cm)
Nozzle Trajectory: 23°

Inlet Threads: 1.5" (3,8 cm) NPT or BSP female threaded
Holdback: 47DS: 15' (4,6 m)
Maximum Stream Height: 15' (4,6 m)
Solenoid: 24 VAC Solenoid power requirement—0.41 amp inrush current (9.8 VA)
 60 cycle—0.25 amp holding current (6.0 VA)
 50 cycle—0.32 amp holding current (7.7 VA)
Top-Serviceable Rock Screen™ and Replaceable Valve Seat: All 47D models

*All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions. Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection. * N.O.—Normally open*

How to Specify/Order:



Performance Data – U.S.

NOZZLES	14		15		16	
	Pressure	Flow	Radius	Flow	Radius	Flow
Base	Radius	Flow	Radius	Flow	Radius	Flow
50	45	9.7	51	10.8	49	12.2
60	49	10.6	51	11.8	53	13.3
70	51	11.4	55	12.7	53	14.4
80	51	12.2	55	13.6	55	15.4
90	55	12.9	57	14.4	57	16.2
100	57	13.6	57	15.2	59	17.0

Performance Data – Metric

NOZZLES	14		15		16	
	Pressure	Flow	Radius	Flow	Radius	Flow
Base	Radius	Flow	Radius	Flow	Radius	Flow
3,5	13,7	0,61	2,20	15,5	0,68	2,45
4,0	14,7	0,66	2,37	15,5	0,73	2,63
4,5	15,3	0,70	2,50	16,2	0,77	2,79
5,0	15,5	0,73	2,64	16,8	0,82	2,94
5,5	15,5	0,77	2,77	16,8	0,86	3,08
6,0	16,4	0,80	2,88	17,2	0,89	3,22
6,5	17,0	0,83	3,00	17,4	0,93	3,35
6,9	17,4	0,86	3,09	17,4	0,96	3,45

Impact 91D Series

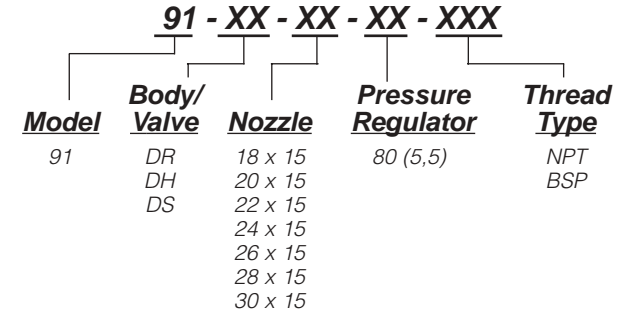


Specifications

Radius: 66'-98' (20,1-29,9 m)
Flow Rate: 22.7 to 69.6 gpm (1,43 to 4,39 l/s) (5,16 to 15,81 m³/h)
Arc: Full-circle, 360°
Models: Full-circle:
91DR: Electric
91DH: Hydraulic (N.O.)*
91DS: Stopamatic (SAM)
Maximum Inlet Pressure:
Models 91DR: 120 psi (8,3 bars)
Models 91DS, 91DH: 100 psi (6,9 bars)
Pressure Regulation Range: 60 to 100 psi (4,1 to 6,9 bars)
Factory Pressure Setting: Available in 80 psi (5,5 bars)
Body Height: 14.5" (37,1 cm)
Top Diameter: 10.1" (25,7 cm)
Nozzle Trajectory: 23°

Inlet Threads: 1.5" (3,8 cm) NPT or BSP female threaded
Holdback: 15' (4,6 m)
Maximum Stream Height: 17' (5,2 m)
Solenoid: 24 VAC Solenoid power requirement—0.41 amp inrush current (9.8 VA) 60 cycle—0.25 amp holding current (6.0 VA) 50 cycle—0.32 amp holding current (7.7 VA)
Valve Seat: Replaceable
*All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions. Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection. * N.O.—Normally open*

How to Specify/Order:



Performance Data – U.S.

NOZZLES	WHITE	GRAY	BLUE	YELLOW	ORANGE	GREEN	BLACK	
Base	18 x 15	20 x 15	22 x 15	24 x 15	26 x 15	28 x 15	30 x 15	
Pressure (psi)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	66	22.7	71	34.1	72	36.3	-	-
70	68	29.9	73	36.6	76	39.1	80	43.0
80	71	33.6	75	39.3	80	43.0	85	48.5
90	72	34.0	77	41.5	81	44.5	86	49.0
100	73	35.9	79	44.0	82	46.0	87	50.6

Performance Data – Metric

NOZZLES	WHITE	GRAY	BLUE	YELLOW	ORANGE	GREEN	BLACK		
Base	18 x 15	20x15	22 x 15	24 x 15	26 x 15	28 x 15	30 x 15		
Pressure (bars)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)
4,1	20,1	1,43	5,16	21,6	2,15	7,74	21,9	2,29	8,24
4,5	20,4	1,67	6,02	22,0	2,23	8,04	22,6	2,38	8,58
5,0	21,0	1,95	7,00	22,4	2,35	8,47	23,5	2,53	9,10
5,5	21,6	2,11	7,61	22,8	2,48	8,91	24,4	2,71	9,75
6,0	21,9	2,14	7,70	23,3	2,58	9,28	24,6	2,78	10,01
6,5	22,1	2,20	7,91	23,7	2,69	9,67	24,8	2,85	10,25
6,9	22,3	2,26	8,15	24,1	2,78	9,99	25,0	2,90	10,45

* Normally open hydraulic valve

Impact 95D Series

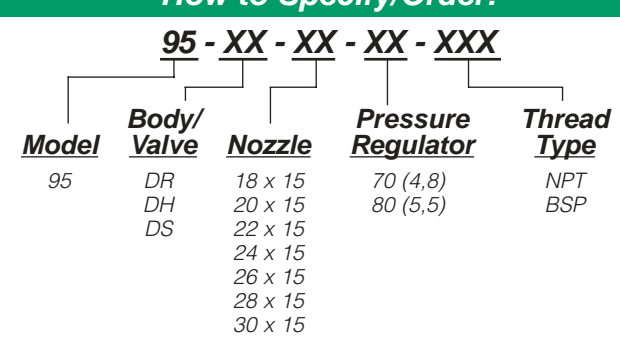


Specifications

Radius: 66'-98' (20,1-29,9 m)
Flow Rate: 26.1 to 67.2 gpm (1,60 to 4,23 l/s) (5,77 to 15,24 m³/h)
Arc: Adjustable 20° to 340°
Models: Part-circle:
95DR: Electric
95DH: Hydraulic (N.O.)*
95DS: Stopamatic (SAM)
Maximum Inlet Pressure:
Models 95DR: 120 psi (8,3 bars)
Models 95DS, 95DH: 100 psi (6,9 bars)
Pressure Regulation Range: 60 to 100 psi (4,1 to 6,9 bars)
Factory Pressure Settings: Available in 70 and 80 psi (4,8 and 5,5 bars)
Body Height: 14.5" (37,1 cm)
Top Diameter: 10.1" (25,7 cm)

Nozzle Trajectory: 23°
Inlet Threads: 1.5" (3,8 cm) NPT or BSP female threaded
Holdback: 15' (4,6 m)
Maximum Stream Height: 17' (5,2 m)
Solenoid: 24 VAC Solenoid power requirement—0.41 amp inrush current (9.8 VA) 60 cycle—0.25 amp holding current (6.0 VA) 50 cycle—0.32 amp holding current (7.7 VA)
Valve Seat: Replaceable
*All data is generated from tests conducted in accordance with ASAE Standard S398.1 for at least 30 minutes in zero-wind conditions. Rain Bird recommends the use of SPACE for Windows, equivalent program or derived performance data to optimize nozzle selection. * N.O.—Normally open*

How to Specify/Order:



Performance Data – U.S.

NOZZLES	WHITE	GRAY	BLUE	YELLOW	ORANGE	GREEN	BLACK	
Base	18 x 15	20x15	22 x 15	24 x 15	26 x 15	28 x 15	30 x 15	
Pressure (psi)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)	Radius (ft)	Flow (gpm)
60	66	26.1	71	29.8	72	33.8	-	-
70	68	28.3	73	32.5	76	36.6	80	40.3
80	71	31.7	75	34.8	80	41.3	85	45.4
90	72	31.9	77	37.2	81	41.8	86	46.0
100	73	33.7	79	39.0	82	44.1	87	48.5

Performance Data – Metric

NOZZLES	WHITE	GRAY	BLUE	YELLOW	ORANGE	GREEN	BLACK		
Base	18 x 15	20x15	22 x 15	24 x 15	26 x 15	28 x 15	30 x 15		
Pressure (bars)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)	Radius (m)	Flow (l/s)	Flow (m ³ /h)
4,1	20,1	1,65	5,93	21,6	1,88	6,77	21,9	2,13	7,68
4,5	20,4	1,72	6,19	22,0	1,97	7,09	22,6	2,23	8,01
5,0	21,0	1,84	6,62	22,4	2,09	7,51	23,5	2,38	8,58
5,5	21,6	1,99	7,18	22,8	2,19	7,89	24,4	2,60	9,36
6,0	21,9	2,01	7,23	23,3	2,30	8,29	24,6	2,63	9,46
6,5	22,1	2,06	7,42	23,7	2,40	8,62	24,8	2,70	9,72
6,9	22,3	2,13	7,65	24,1	2,46	8,86	25,0	2,78	10,02

100PESB, 150PESB & 200PESB

Electric Remote Control Plastic Scrubber Valve With Optional PRS-D Pressure Regulating Feature



Specifications

Models: 100PESB (1"), 150PESB (1.5") and 200PESB (2") (Plastic)

Flow: 0.25-200 gpm (0,02-12,60 l/s)

Flow with PRS-D: 5-200 gpm (0,32-12,60 l/s)

Pressure: 20-200 psi (1,38-13,8 bars)

Pressure with PRS-D: 15-100 psi

Pressure Requirements using PRS-D: 15 psi (1,0 bar) inlet pressure above desired outlet pressure

Dimensions:

100PESB (1")

Height: 6.5" (16,5 cm)

Length: 4" (10,2 cm)

Width: 4" (10,2 cm)

150PESB (1.5")

Height: 8" (20,3 cm)

Length: 6" (15,2 cm)

Width: 6" (15,2 cm)

200PESB (2")

Height: 8" (20,3 cm)

Length: 6" (15,2 cm)

Width: 6" (15,2 cm)

Temperature: 150°F (66°C) maximum

Electrical Specifications:

- Power: 24 VAC 50/60 cycle solenoid
- Inrush current: 0.41 A (9.84 VA) @ 60 Hz
- Holding current: 0.23 A (5.52 VA) @ 60 Hz
- Coil resistance: 24 ohms, nominal

How to Specify/Order:

XXX - XXX-X - XXX-X
 | | |
Size Model Optional Feature
 100 PESB PRS-D

This specifies a 1" (26/34) female thread PESB scrubber valve with optional pressure regulating module.

Note: For non-U.S. applications it is necessary to specify NPT or BSP thread type.

PESB Series Valves – U.S.

Flow (gpm)	Pressure Loss * (psi)		
	100 PESB 1"	150 PESB 1.5"	200 PESB 2"
0.25	0.8	0.06	0.02
0.5	1.0	—	—
1	1.3	—	—
5	1.7	—	—
10	1.8	—	—
20	2.9	4.0	—
30	5.6	3.6	—
40	10.0	2.7	—
50	15.6	2.4	3.1
75	—	4.2	2.9
100	—	8.5	3.9
125	—	14.6	6.8
150	—	21.2	10.0
175	—	—	13.3
200	—	—	17.5

*Loss values are with flow control fully open using the brown solenoid retainer.

1) Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2,29 m/s) in order to reduce the effects of water hammer.

2) For flows below 5 gpm (0,32 l/s) Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm.

3) For flows below 10 gpm (0,63 l/s) Rain Bird recommends that the flow control stem be turned down two full turns from the fully open position.

4) PRS-D recommended for use in shaded area only.

PESB Series Valves – Metric

Flow M ³ /H	Flow l/s	Pressure Loss * (bars)		
		100 PESB 2,5 cm	150 PESB 3,8 cm	200 PESB 5,1 cm
0,06	0,02	0,05	—	—
1	0,28	0,11	—	—
2	0,56	0,12	—	—
3	0,83	0,15	—	—
4	1,11	0,18	—	—
5	1,39	0,24	0,27	—
6	1,67	0,32	0,26	—
7	1,94	0,41	0,24	—
8	2,22	0,54	0,21	—
9	2,50	0,68	0,19	—
10	2,78	0,84	0,18	—
12	3,33	—	0,18	0,21
14	3,89	—	0,22	0,21
16	4,44	—	0,26	0,20
22	6,11	—	0,55	0,26
28	7,78	—	0,98	0,46
34	9,45	—	1,46	0,69
40	11,11	—	—	0,95
45	12,50	—	—	1,18

100EFB-CP, 125EFB-CP, 150EFB-CP & 200EFB-CP

Electric Remote Control Brass Valve With Optional PRS-D Pressure Regulating Feature



Specifications

Models: 100EFB-CP (1"), 125EFB-CP (1.25"), 150EFB-CP (1.5") and 200EFB-CP (2") (Brass)

Flow with or without PRS-D: 5-200 gpm (0,32-12,60 l/s)

Pressure: 15-200 psi (1,0-13,8 bars)

Pressure with PRS-D: 15-100 psi (1,0-7,0 bars)

Pressure Requirements using PRS-D: 15 psi (1,0 bar) inlet pressure above desired outlet pressure

Dimensions:

100EFB-CP (1")

Height: 6" (15,2 cm)

Length: 4.5" (11,4 cm)

Width: 3.25" (8,3 cm)

125EFB-CP (1.5")

Height: 5.75" (14,6 cm)

Length: 5" (12,7 cm)

Width: 3.25" (8,3 cm)

150EFB-CP (1.25")

Height: 6.5" (16,5 cm)

Length: 5.5" (14,0 cm)

Width: 4.5" (11,4 cm)

200EFB-CP (2")

Height: 7" (17,8 cm)

Length: 6.75" (17,1 cm)

Width: 5.75" (14,6 cm)

Temperature: 150°F (66°C) maximum

Electrical Specifications:

- Power: 24 VAC 50/60 cycle solenoid
- Inrush current: 0.41 A (9.84 VA) @ 60 Hz
- Holding current: 0.23 A (5.52 VA) @ 60 Hz
- Coil resistance: 24 ohms, nominal

How to Specify/Order:

XXX - XXX-XX - XXX-X
 | | |
Size Model Optional Feature
 100 EFB-CP PRS-D

This specifies a 100 EFB-CP valve with optional pressure regulating module; 1" (26/34) female threads with flow control, brass body; contamination-resistant feature to protect solenoid inlet water supply.

Note: For non-U.S. applications it is necessary to specify NPT or BSP thread type.

EFB-CP Series Valves – U.S.

Flow (gpm)	Pressure Loss * (psi)			
	100 EFB-CP 1"	125 EFB-CP 1.25"	150 EFB-CP 1.5"	200 EFB-CP 2"
5	2.7	—	—	—
10	3.5	—	—	—
15	4.3	—	—	—
20	6.2	2.5	2.8	1.2
30	10.6	2.9	3.7	1.4
40	12.5	4.8	3.3	1.4
50	19.3	7.8	3.9	1.3
60	—	11.2	5.1	1.6
80	—	19.8	8.4	2.7
100	—	—	12.2	3.6
120	—	—	18.5	5.7
140	—	—	—	7.5
160	—	—	—	10.7
180	—	—	—	13.1
200	—	—	—	16.3

*Loss values are with flow control fully open using the brown solenoid retainer.

1) Rain Bird recommends flow rates in the supply line not to exceed 7.5 ft/sec (2,29 m/s) in order to reduce the effects of water hammer.

2) For flows below 5 gpm (0,32 l/s) Rain Bird recommends use of upstream filtration to prevent debris from collecting below the diaphragm.

3) For flows below 10 gpm (0,63 l/s) Rain Bird recommends that the flow control stem be turned down two full turns from the fully open position.

4) PRS-D recommended for all flow ranges.

EFB-CP Series Valves – Metric

Flow m ³ /h	Flow l/s	Pressure Loss * (bars)			
		100 EFB-CP 2,5 cm	125 EFB-CP 3,1 cm	150 EFB-CP 3,8 cm	200 EFB-CP 5,1 cm
1	0,28	0,18	—	—	—
2	0,56	0,23	—	—	—
3	0,83	0,28	—	—	—
4	1,11	0,37	—	—	—
5	1,39	0,49	0,18	0,21	0,08
6	1,67	0,62	0,19	0,23	0,09
7	1,94	0,74	0,21	0,25	0,09
8	2,22	0,80	0,27	0,24	0,09
9	2,50	0,86	0,33	0,23	0,10
10	2,78	1,05	0,42	0,25	0,10
12	3,33	1,46	0,60	0,29	0,10
14	3,89	—	0,82	0,37	0,12
16	4,44	—	1,08	0,47	0,15
22	6,11	—	1,08	0,47	0,24
28	7,78	—	—	1,80	0,42
34	9,45	—	—	1,36	0,63
40	11,11	—	—	—	0,87
45	12,50	—	—	—	1,10

Quick Coupling Valves



Specifications

Models:

- 3RC:** .75" (20/27)
Rubber cover, one-piece body
- 33DRC:** .75" (20/27)
Double track key lug, rubber cover, two-piece body
- 33DLRC:** .75" (20/27)
Double track key lug, locking rubber cover, two-piece body
- 33DNP:** .75" (20/27) non-potable, purple locking rubber cover, two-piece body
- 44RC:** 1" (26/34)
Rubber cover, two-piece body
- 44LRC:** 1" (26/34)
Locking rubber cover, two-piece body
- 44NP:** 1" (26/34) non-potable, purple locking rubber cover, two-piece body
- 5RC:** 1" (26/34)*
Rubber cover, one-piece body
- 5LRC:** 1" (26/34)*
Locking rubber cover, one-piece body
- 5NP:** 1" (26/34) non-potable, purple locking rubber cover, one-piece body
- 7:** 1.50" (40/49)* metal cover, one-piece body

Flow:

- Models: 3RC, 33DRC, 33DLRC, 33DNP, 44RC, 44LRC, 44NP, 5RC, 5LRC, 5NP, 7
10-125 gpm
(22,71-28,39 m³/h; 0,63-7,89 l/s)
- Models: 33DNP, 44NP, 5NP
10-70 gpm
(2,28-15,89 m³/h; 0,83-4,42 l/s)

Pressure:

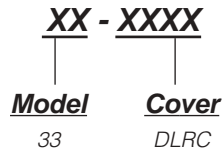
5-125 psi (0,4-8,6 bars)

Height:

- 3RC: 4.3" (10,8 cm)
- 33DRC: 4.4" (11,1 cm)
- 33DLRC: 4.6" (11,8 cm)
- 33DNP: 4.4" (11,1 cm)
- 44RC: 6.0" (15,2 cm)
- 44LRC: 6.0" (15,2 cm)
- 44NP: 6.0" (15,2 cm)
- 5RC: 5.5" (14,0 cm)
- 5LRC: 5.5" (14,0 cm)
- 5NP: 5.5" (14,0 cm)
- 7: 5.8" (14,6 cm)

*Available in BSP model.

How to Specify/Order:



This specifies a 33DLRC valve; 3/4" (20/27) quick coupling type; optional locking cover.
Note: For non-U.S. applications it is necessary to specify NPT or BSP thread type (for 5RC, 5LRC, 7 only).

Quick Coupling Valves – U.S.

Flow	Valve Pressure Loss (psi)				
	3RC	33DRC	44RC	5RC	7
		33DLRC	44LRC	5LRC	
		33DNP	44NP	5NP	
(gpm)	0.75"	0.75"	1"	1"	1.50"
10	1.8	2.0	—	—	—
15	4.7	4.3	2.2	—	—
20	7.2	7.6	4.4	—	—
30	—	—	11.5	4.1	—
40	—	—	—	7.3	—
50	—	—	—	11.0	1.7
60	—	—	—	15.7	2.5
70	—	—	—	21.5	3.6
80	—	—	—	—	4.9
90	—	—	—	—	8.4
100	—	—	—	—	14.0

Quick Coupling Valves – Metric

Flow	Flow	Valve Pressure Loss (bars)				
		3RC	33DRC	44RC	5RC	7
			33DLRC	44LRC	5LRC	
			33DNP	44NP	5NP	
(m ³ /h)	(l/s)	0.75"	0.75"	1"	1"	1.50"
3	0,83	0,25	0,23	—	—	—
4	1,11	0,42	0,41	0,22	—	—
5	1,39	—	—	0,37	—	—
6	1,67	—	—	0,57	—	—
7	1,94	—	—	0,84	0,30	—
8	2,22	—	—	—	0,40	—
9	2,50	—	—	—	0,50	—
10	2,78	—	—	—	0,61	—
12	3,33	—	—	—	0,85	0,13
14	3,89	—	—	—	1,15	0,18
16	4,44	—	—	—	1,48	0,25
22	6,11	—	—	—	—	0,72
28	7,78	—	—	—	—	0,97

Quick Coupling Valve Keys



55K-1

Valve Keys

Valve	Key	Top Pipe Threads	
		Male	Female
3RC	33DK	0.75"	0.50"
33DRC	33DK	0.75"	0.50"
33NP	33DK	0.75"	0.50"
44NP	44K	1"	0.75"
44RC	44K	1"	0.75"
5RC	55K-1*	1"	—
5NP	55K-1*	1"	—
7	7K*	1.50"	—

* Available in BSP models.



Stratus™ LT



Specifications

Installation and Design

- Stratus™ LT software—PC computer, Pentium 4 (or higher) microprocessor, 2.4 GHz (min) clock speed, 512 megabytes (min) RAM, 20 GB hard drive, 1.44 MB floppy disk drive, Microsoft® PS2 mouse, 56K (min) modem, DVD/CD–RW combo drive, 32 MB (min) video card, sound card, speakers, keyboard, additional serial port for expansion and color monitor.
- Voltage: 120 or 240 VAC, 50/60 Hz
- TWI, TWI LINK or SDI Interface Unit—indoor mount

Functional

- Operates up to 19 golf holes.
- Basic software operates hard-wired satellite system, radio operated or decoder-based system.
- Satellites per system: 28 maximum.
- Decoders per system: up to 200 single decoder addresses and 400 solenoids.
- Communication medium: two wire, 24 VAC, voltage-regulated signal for hard-wired satellite system and decoder-based system.
- All programming, execution of field commands, station timing and data logging done at the central computer.
- Continuous on-line communication between central and field units—provides true central control.
- All data logging maintained at the computer for instant review and retrieval.
- QuickIRR™ programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.

Programming

- Program-/schedule-/satellite-/area-based system providing maximum flexibility in programming.
- Nine languages to select from—English, French, German, Italian, Spanish, Swedish, Japanese, Chinese and Korean.
- Pump capacities and priority settings.
- Three flow measurement units to select from—U.S. gallons per minute, metric cubic meters per hour and metric liters per second.
- Automatic Rain Shut-Down with integration of a Rain Sensor.
- Watersaver feature provides water budgeting in 1 percent increments from 0 to 300 percent at the system level, program level or at the schedule level.
- Built-in Flo-Manager® feature automatically distributes and limits flow within the system, to eliminate hydraulic overload while maintaining maximum system efficiency.
- Full system remote control with The FREEDOM™ System (optional).
- Direct manual access of any stations, at any time.
- Add a FREEDOM-Pad™ for optimum field control and Database Management (optional).

System Features and Brief Definitions

Standard Features

- Capable of controlling one 18-hole golf course.
- Programming and control of other areas such as driving range, chipping green, putting green, club house, nursery and miscellaneous areas.
- Graphic display of entire course—indicating areas to be irrigated—such as: green, tee, fairway, approach, perimeter, rough and miscellaneous areas.
- Easy table selection of sprinkler type, nozzle size and operating pressure for each area and the gpm demand providing precise, consistent flow information and resulting in reliable, efficient irrigation management.
- Station detail screens show a complete analysis of all databases associated with individual holes.
- System Flo-Bar continuously indicates flow conditions.
- Direct manual access and system monitoring of entire course at all times.
- Course daily and seasonal logs for record keeping and easy compliance with regulatory requirements regarding water usage.
- Decoder-based system automatic diagnostic testing.
- Built-in database utilities provide for easy backup and management of system and program data files.
- DMA Express allows the user the ability to manually operate any stations on the course.
- Satellite View provides immediate view of stations in either area or satellite orientations.
- Station data table gives complete database information for each individual station.
- Multistation programming and operation for satellites.
- Programs may be set to adhere to manual water budgeting; by system, by programs and/or by schedules.

Unique Features

- **QuickIRR** programming feature allows programming by specific areas and designating sequence of operation.
- Exclusive **CYCLE + SOAK™** feature provides for control of the application of water to each area, to be consistent with the infiltration rate of the soil. Total application of water is precisely controlled regardless of number of cycles, each cycle time and/or soak time specified.
- **Course monitor** screens provide a graphical, real-time view of the course with the ability to monitor activities at a glance.
- **Pump Profiling** feature limits power consumption during peak periods.
- Industry's only innovative, guided initialization and start-up programming resulting in customized **Quick Start** program.
- **Dry Run** feature provides for test of a program and making necessary adjustments before actually operating it in the field.

Software Options

- Smart Sensors allow a sensor condition to activate an alarm and turn on/off the system, programs and schedules or pause/resume the same.
- Smart Pump™ links your pump station to your central control system providing real-time communication and optimizing your irrigation cycle. Smart Pump also has the ability to monitor and react to changes in station capacity. Should pump capacity increase or decrease, the software adjusts the irrigation cycle based on this change.
- FREEDOM™ System lets you operate your central while you are out on the course.
- FREEDOM-Pad™ works with the FREEDOM System to give you remote graphical control of the system.

Stratus™ LT		Stratus LT Central Control System
Satellite Two-Wire System with TWI	110 VAC 220 VAC	H40015-X H40010
Decoder System with SDI	110 VAC 220 VAC	H40115-X H40110
Radio LINK System with TWI LINK* w/o Radio Modem Kit (RMK)	110 VAC	H40215-X

X=01 is 1 year Global Service Plan

X=05 is 5 year Global Service Plan

*Radio Modem Kit (RMK) must be purchased separately.

Stratus™ II



Specifications

Installation and Design

- Stratus™ II software—PC computer, Pentium 4 (or higher) microprocessor, 2.4 GHz (min) clock speed, 512 megabytes (min) RAM, 20 GB hard drive, 1.44 MB floppy disk drive, Microsoft® PS2 mouse, 56K (min) modem, DVD/CD-RW combo drive, 32 MB (min) video card, sound card, speakers, keyboard, additional serial port for expansion and color monitor.
- Voltage: 120 or 240 VAC, 50/60 Hz
- MIM, MIM LINK or LDI Interface Unit—indoor mount

Functional

- Operates up to 27 golf holes.
- Basic software operates hard-wired satellite system, radio-operated (LINK) satellite system or decoder-based system.
- Satellites per system: 56 maximum in standard configuration. 168 with hybrid module.
- Decoders per system: up to 500 single decoder addresses and 1,000 solenoids.
- Communication medium: two-wire, 24 VAC, voltage-regulated signal for hard-wired satellite system and decoder-based system. Two-way radio communication for radio-operated (LINK) system.
- All programming, execution of field commands, station timing and data logging done at the central computer.
- Continuous on-line communication between central and field units—provides true central control.

- All data logging maintained at the computer for instant review and retrieval.
- QuickIRR™ programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.

Programming

- Program-/schedule-/satellite-/area-based system providing maximum flexibility in programming.
- Nine languages to select from—English, French, German, Italian, Spanish, Swedish, Japanese, Chinese and Korean.
- Pump capacities and priority settings.
- Three flow measurement units to select from—U.S. gallons per minute, metric cubic meters per hour and metric liters per second.
- Automatic Rain Shut-Down with integration of a Rain Sensor.
- Watersaver feature provides water budgeting in 1 percent increments from 0 to 300 percent at the system level, program level or at the schedule level.
- Built-in Flo-Manager® feature automatically distributes and limits flow within the system, to eliminate hydraulic overload while maintaining maximum system efficiency.
- Full system remote control with The FREEDOM™ System (optional).
- Direct manual access of any stations, at any time.
- Add a FREEDOM-Pad™ for optimum field control and Database Management (optional).

System Features and Brief Definitions

Standard Features

- Capable of controlling two (2) individual golf courses, one 18-hole and one 9-hole, (for a total of 27 holes) each with its own database information.
- Programming and control of other areas such as driving range, chipping green, putting green, club house, nursery and miscellaneous areas.
- Graphic display of entire course—indicating areas to be irrigated—such as: green, tee, fairway, approach, perimeter, rough and miscellaneous areas.
- Easy table selection of sprinkler type, nozzle size and operating pressure for each area and the gpm demand providing precise, consistent flow information and resulting in reliable, efficient irrigation management.
- Station detail screens show a complete analysis of all databases associated with individual holes.
- System Flo-Bar continuously indicates flow conditions.
- Direct manual access and system monitoring of entire course at all times.
- Course daily and seasonal logs for record keeping and easy compliance with regulatory requirements regarding water usage.
- Decoder-based system automatic diagnostic testing.
- Built-in database utilities provide for easy backup and management of system and program data files.
- DMA Express allows the user the ability to manually operate any stations on the course.
- Satellite View provides immediate view of stations in either area or satellite orientations.
- Station data table gives complete database information for each individual station.
- Multi-station programming and operation for satellites.
- Programs may be set to adhere to manual water budgeting; by system, by programs and/or by schedules.

Unique Features

- **QuickIRR** programming feature allows programming by specific areas and designating sequence of operation.
- Exclusive **CYCLE+SOAK™** feature provides for control of the application of water to each area, to be consistent with the infiltration rate of the soil. Total application of water is precisely controlled regardless of number of cycles, each cycle time and/or soak time specified.
- **Course monitor** screens provide a graphical, real-time view of the course with the ability to monitor activities at a glance.
- **Pump Profiling** feature limits power consumption during peak periods.
- Industry's only innovative, guided initialization and start-up programming resulting in customized **Quick Start** program.
- **Dry Run** feature provides for test of a program and making necessary adjustments before actually operating it in the field.

Software Options

- Smart Sensors allow a sensor condition to activate an alarm and turn on/off the system, programs and schedules or pause/resume the same.
- Station Layers-Map/Operation allows for the turning on/off of different map layers, and also the station resolution for monitoring, altering station properties or programming.
- Weather Software allows central to communicate with Rain Bird weather station, being able to monitor, receive, update and calculate ET value for establishing run times.
- Smart Weather Software allows the same communication as regular Weather Software, but also allows user to set and reprogram the data logger of the weather station to activate alarms based on user-defined conditions for any of the instruments, i.e., rainfall, windspeed, temperature, humidity, etc.
- Hybrid allows multiple field interface devices on a central. These are a combination of two of these devices, therefore allowing the possibility of having a decoder system in addition to a satellite system operate from the same central.
- Smart Pump™ links your pump station to your central control system providing real-time communication and optimizing your irrigation cycle. Smart Pump also has the ability to monitor and react to changes in station capacity. Should pump capacity increase or decrease, the software adjusts the irrigation cycle based on this change.
- Map Utilities make the irrigation map useful for measurement and area calculations.

Stratus™ II		Stratus II Central Control System
Satellite Two-Wire System with MIM	110 VAC 220 VAC	H52100-X H52110
Decoder System with LDI	110 VAC 220 VAC	H52200-X H52210
Radio LINK System with MIM LINK* w/o Radio Modem Kit (RMK)	110 VAC	H52300-X

X=01 is 1 year Global Service Plan

X=03 is 3 year Global Service Plan

*Radio Modem Kit (RMK) must be purchased separately.

Nimbus™ II



Specifications

Installation and Design

- Nimbus™ II software—PC computer, Pentium 4 (or higher) microprocessor, 2.4 GHz (min) clock speed, 512 megabytes (min) RAM, 20 GB hard drive, 1.44 MB floppy disk drive, Microsoft® PS2 mouse, 56K (min) modem, DVD/CD-RW combo drive, 32 MB (min) video card, sound card, speakers, keyboard, additional serial port for expansion and color monitor.
- Voltage: 120 or 240 VAC, 50/60 Hz
- MIM, MIM LINK or LDI Interface Unit—indoor mount

Functional

- Operates up to 54 golf holes.
- Basic software operates hard-wired satellite system, radio-operated (LINK) satellite system or decoder-based system.
- Satellites (two-wire) per system: 224 maximum in standard, 336 in hybrid mode. Satellites (LINK) per station: 112 maximum in standard, 224 in hybrid mode.
- Decoders per system: 1,500 single decoder addresses and 3,000 solenoids in hybrid mode. Systems greater than 500 single decoder address require additional: LDIs and hybrid system.
- Communication medium: two-wire, 24 VAC, voltage-regulated signal for hard-wired satellite system and decoder-based system. Two-way radio communication for radio-operated (LINK) system.
- All programming, execution of field commands, station timing, and data logging done at the central computer.
- Continuous on-line communication between central and field units—provides true central control.

- All data logging maintained at the computer for instant review and retrieval.
- QuickIRR™ programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.

Programming

- Program-/schedule-/satellite-/area-based system providing maximum flexibility in programming.
- Nine languages to select from—English, French, German, Italian, Spanish, Swedish, Japanese, Chinese and Korean.
- Three flow measurement units to select from—U.S. gallons per minute, metric cubic meters per hour and metric liters per second.
- Automatic Rain Shut-Down with integration of a Rain Sensor.
- Fully automatic ET implementation of selected programs.
- Watersaver feature provides water budgeting in 1 percent increments from 0 to 300 percent at the system level, program level or at the schedule level.
- Accepts pump capacity data and priority of operation settings.
- Built in Flo-Manager® feature balances system demand at maximum capacity with the efficiency of the pump station and delivery network by staging pumps to reduce wear and tear on the hydraulic system.
- Accepts full flow management data for system piping network flow zones, branches and pump station data.
- Full system remote control with The FREEDOM™ System (optional).
- Direct manual access of any stations, at any time.
- Add a FREEDOM-Pad™ for optimum field control and Database Management (optional).

System Features and Brief Definitions

Standard Features

- Capable of controlling three (3) individual golf courses with a maximum of 54 holes, each with its own database information, irrigation programming and flow management data.
- Programming and control of other areas such as driving range, chipping green, putting green, club house, nursery and miscellaneous areas.
- Easy table selection of sprinkler type, nozzle size and operating pressure for each area and the gpm demand providing precise, consistent flow information and resulting in reliable, efficient irrigation management.
- Automatic calculation and entry of precipitation rates for each station with selection of sprinkler model, pattern and spacing.
- Complete flow management database for up to six (6) independent pump stations; up to 250 branches and 500 flow zones for each pump station. This results in highly efficient pump station operation, shortest watering cycle time and conservation of energy.
- Individual flow graphs generated for each of the three courses that are possible to be programmed with individual station activity. Information presented in colorful charts.
- Flow graphs are automatically maintained on file for future access and reference.
- Programs may be set to automatically track Weather Station ET value.
- Programs may be set to adhere to manual water budgeting; by system, by programs and/or by schedules.
- Individual station ET adjustment possible to adjust for individual area microclimates.
- Graphic display of each hole you have defined—indicating areas to be irrigated—such as: green, tee, fairway, approach, perimeter, rough and miscellaneous areas.
- Multi-Station programming and operation for satellites.
- Station Data Table gives complete database information for each individual station.
- System Flo-Bar continuously indicates flow conditions.
- Course Graphic Overview provides visual indication of all areas being irrigated.
- Direct manual access and system monitoring of entire course at all times.
- Course daily and seasonal logs for record keeping and easy compliance with regulatory requirements regarding water usage.
- Decoder-based system automatic diagnostic testing.
- Built-in database utilities provide for easy backup and management of system and program data files.
- Exclusive design, programming and operational informational data bank provides quick, easy reference for the system programmer or operator.
- DMA Express allows the user the ability to manually operate any stations on the course.
- Satellite View provides immediate view of stations in either area or satellite orientations.
- Weather Software allows central to communicate with Rain Bird weather station, being able to monitor and receive an updated and calculated ET value for establishing run times.

Unique Features

- QuickIRR programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.
- Exclusive CYCLE + SOAK™ feature provides for control of the application of water to each area, to be consistent with the infiltration rate of the soil. Total application of water is precisely controlled regardless of number of cycles, each cycle time and/or soak time specified.

- Course monitor screens provide a graphical, real-time view of the course with the ability to monitor activities at a glance.
- Pump Profiling feature limits power consumption during peak periods.
- Innovative industry first, guided initialization and start-up programming resulting in customized Quick Start program.
- Dry Run feature provides for test of a program and making necessary adjustments before actually operating it in the field.
- Virtual Weather™ mode allows calculation of ET value based on manual data entry.
- Unique Cost Estimator™ feature projects your water and power costs for an irrigation cycle. Can greatly assist you in establishing your budget requirements.

Software Options

- Smart Weather Software allows the same communication as regular Weather Software, but also allows user to set and reprogram the data logger of the weather station to activate alarms based on user-defined conditions for any of the instruments, i.e., rainfall, windspeed, temperature, humidity, etc.
- Smart Sensors allow a sensor condition to activate an alarm and turn on/off the system, programs and schedules, or pause/resume the same.
- Station Layers-Map/Operation—allows for the turning on/off of different map layers, and also the station resolution for monitoring, altering station properties, or programming.
- Hybrid allows multiple field interface devices on a central. These could be multiple MIMs or LDIs, or a combination of these devices, therefore allowing the possibility of having a decoder system in addition to a satellite system operate from the same central.
- Multiple Weather Stations allows the central to communicate with up to 5 different weather stations throughout the golf course to assign different weather stations.
- Smart Pump™ links your pump station to your central control system providing real-time communication and optimizing your irrigation cycle. Smart Pump also has the ability to monitor and react to changes in station capacity. Should pump capacity increase or decrease, the software adjusts the irrigation cycle based on this change (optional).
- Map Utilities make the irrigation map useful for measurement and area calculations.

Nimbus™ II		Nimbus II Central Control System
Satellite Two-Wire with MIM	110 VAC 220 VAC	H52400-X H52410
Decoder System with LDI	110 VAC 220 VAC	H52600-X H52610
Radio LINK System with MIM LINK* w/o Radio Modem Kit (RMK)	110 VAC 220 VAC	H52515-X H50525

X=01 is 1 year Global Service Plan

X=03 is 3 year Global Service Plan

*Radio Modem Kit (RMK) must be purchased separately.

Cirrus™



Specifications

Installation and Design

- Cirrus™ software—PC computer, Pentium 4 (or higher) microprocessor, 2.4 GHz (min) clock speed, 512 megabytes (min) RAM, 20 GB hard drive, 1.44 MB floppy disk drive, Microsoft® PS2 mouse, 56K (min) modem, DVD/CD–RW combo drive, 32 MB (min) video card, sound card, speakers, keyboard, additional serial port for expansion and color monitor.
- Voltage: 120 or 240VAC, 50/60 Hz
- MIM, MIM LINK or LDI Interface Unit—indoor mount, or combination of any two interface units in hybrid installation

Functional

- Operates up to 54 golf holes.
- Basic software operates hard-wired satellite system, radio-operated (LINK) satellite system, decoder-based system or combination of any two communication designs in hybrid installation.
- Satellites (two-wire) per system: 224 satellites in standard and 336 in hybrid mode. Satellites (Link) per system: 112 in standard and 336 in hybrid mode
- Decoders per system: up to 2,000 single decoder addresses and 4,000 solenoids. Systems greater than 500 single decoder addresses require additional LDIs and a hybrid system.
- Communication medium—two-wire, 24VAC, voltage-regulated signal for hard-wired satellite interface and decoder-based interface. Two-way radio communication for radio-operated interface.
- Hybrid communication—allows user the opportunity to use any combination of two communication interface units.
- All programming, execution of field commands, station timing, and data logging done at the central computer.
- Continuous on-line communication between central and field units—provides true central control.
- All data logging maintained at the computer for instant review and retrieval.
- QuickIRR™ programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.

Programming

- Program-/schedule-/satellite-/area-based system providing maximum flexibility in programming.
- Accepts Computer-Aided Design (CAD) drawings generated by GPS technology.
- Nine languages to choose from: English, French, German, Italian, Spanish, Japanese, Korean, Chinese, and Swedish.
- Three flow measurement units to select from—U.S. gallons per minute, metric cubic meters per hour, and metric liters per second.
- Automatic Rain Shut-Down with integration of a Rain Sensor.
- SmartLogic—Smart Sensors™ uses static sensors to monitor and react to any condition on the golf course.
- Smart Weather™—on-line communication with Weather Station to monitor and react through logical sequence steps to current weather conditions.
- FloWatch™—uses flow sensors to continually monitor the flow conditions on the golf course and control master valves in the event of an overflow situation.
- Fully automatic ET implementation of selected programs.
- Watersaver feature provides water budgeting in 1 percent increments from 0 to 300 percent at the system level, program level or at the schedule level.
- Accepts pump capacity data and priority of operation settings.
- Built-in Flo-Manager® feature balances system demand at maximum capacity with the efficiency of the pump station and delivery network by staging pumps to reduce wear and tear.
- Accepts full flow management data for system piping network flow zones, branches, and pump station data.
- Full system remote control via handheld field radio or remote telephone commands with The FREEDOM™ System.
- Direct manual access of any stations, any time.
- Add a FREEDOM-Pad™ for optimum field control and Database Management (optional).

System Features and Brief Definitions

Standard Features

- Capable of controlling three (3) individual 18-hole courses, each with its own database information, irrigation programming and flow management data.
- Programming and control of other user-defined areas, such as the driving range, chipping green, putting green, club house, nursery and other miscellaneous areas.
- On-screen graphics show a custom map of the course, complete with the location each rotor program.
- Easy table selection of sprinkler type, nozzle size and operating pressure for each area and the gpm demand providing precise, consistent flow information and resulting in reliable, efficient irrigation management.
- Automatic calculation and entry of precipitation rates for each station with selection of sprinkler model, pattern and spacing.
- Complete flow management database for up to six (6) independent pump stations; up to 250 branches and 500 flow zones for each pump station. This results in highly efficient pump station operation, shortest watering cycle time and conservation of energy.
- Individual flow graphs generated, for each of the three courses that are possible to be programmed with individual station activity. Information presented in colorful charts.
- Flow graphs are automatically maintained on file for future access and reference.
- Fully automatic Weather Station integration into the system.
- Programs may be set to automatically track Weather Station ET value.
- Programs may be set to adhere to manual water budgeting; by system, by programs and/or by schedules.
- Individual station ET adjustment possible to accommodate individual area microclimates.
- Graphic display of each hole you have defined—indicating areas to be irrigated—such as: green, tee, fairway, approach, perimeter, rough and miscellaneous areas.
- Multi-Station programming and operation for satellites.
- Station data table gives complete database information for each individual station.
- System Flo-Bar continuously indicates flow conditions.
- Course graphic overview provides visual indication of all areas being irrigated.
- Direct manual access and system monitoring of entire course at all times.
- Course daily and seasonal logs for record keeping and easy compliance with regulatory requirements regarding water usage.
- Decoder-based system automatic diagnostic testing.
- Built-in database utilities provide for easy backup and management of system and program data files.
- Exclusive design, programming and operational informational data bank provides quick, easy reference for the system programmer or operator.
- DMA Express allows the user the ability to manually operate any stations on the course.
- Satellite View provides immediate view of stations in either area or satellite orientations.

Unique Features

- **QuickIRR** programming provides for a quick and easy method to automatically build programs to meet your irrigation challenges.
- **Smart Sensors** allow a sensor condition to activate an alarm and turn on/off the system, programs and schedules, or pause/resume the same.
- Exclusive **CYCLE + SOAK™** feature provides for control of the application of water to each area, to be consistent with the infiltration rate of the soil. Total application of water is precisely controlled regardless of number of cycles, each cycle time and/or soak time specified.
- **Course monitor** screens provide a graphical, real-time view of the course with the ability to monitor activities at a glance.
- **Pump Profiling** feature limits power consumption during peak periods.
- Innovative, guided initialization and start-up programming resulting in a customized **Quick Start™** program.
- **Dry Run** feature provides for test of a program and making necessary adjustments before actually operating it in the field.
- **Virtual Weather™** mode allows calculation of ET value based on manual data entry.
- Unique **Cost Estimator™** feature projects your water and power costs for an irrigation circle. Can greatly assist you in establishing your budget requirements.
- **Smart Weather™** scheduling monitors evapotranspiration (ET) rates and modifies schedules based on actual course demand.
- **Smart Pump™** links your pump station to your central control system providing real-time communication and optimizing your irrigation cycle. Smart Pump also has the ability to monitor and react to changes in station capacity. Should pump capacity increase or decrease, the software adjusts the irrigation cycle based on this change (optional).
- **Map Utilities** makes the irrigation map useful for measurement and area calculations.
- Multiple Weather Stations allow the central to communicate with up to 5 different weather stations throughout the golf course.
- Hybrid allows multiple field interface devices on a central. These could be multiple MIMs or LDIs, or a combination of these devices, therefore allowing the possibility of having a decoder system in addition to a satellite system operate from the same central.

Cirrus™		Cirrus Central Control System
Satellite Two-Wire System with MIM	110 VAC 220 VAC	H50805-X H50815
Decoder System with LDI	110 VAC 220 VAC	H50905-X H50915
Radio LINK System with MIM LINK* w/o Radio Modem Kit (RMK)	110 VAC	H60905-X

X=01 is 1 year Global Service Plan

X=03 is 3 year Global Service Plan

*Radio Modem Kit (RMK) must be purchased separately.

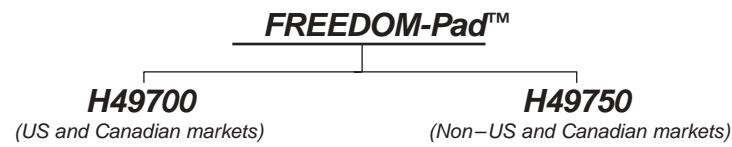
FREEDOM-Pad™



Features

- Works with any Rain Bird map-based central control system using a FREEDOM System.
- Windows CE system commands provide superior operation.
- Map or Explorer style view for quick activation.
- Transfer central control map layers for easy reference of station locations.
- Standard FREEDOM Handheld radio functions.
- Built-in map layers and database transfer utility.

How to Specify/Order:



Specifications

Design and Technology

- Practical Pocket PC Technology and Golf Irrigation Control.
- The FREEDOM-Pad uses the Compaq® iPAQ™ and Windows®CE operating system to allow real-time operation and database management of golf course central control.

Map-Based System Compatibility

- Maps are transferred directly from your Rain Bird Cirrus™, Nimbus™ II, Stratus™ II or Stratus™ LT Central.
- The FREEDOM-Pad™ provides complete station, program and/or schedule operation.
- Command based functions (Turn On, Turn Off, Advance, Pause, Resume) and schedule-based operations are easily activated.
- All commands are sent directly to the central control computer and properly administered according to the systems' hydraulic conditions.

Superior Database Control

- On the course, changes like Runtime, ET adjust, Station adjust, Cycle + Soak™ time can be made anywhere as the situation is identified.
- In the office, the FREEDOM-Pad™ automatically updates the changes made in the field through synchronization with the central control computer.

Operation Tracking

- The FREEDOM-Pad™ activity is logged at the central control computer to deliver unmatched true system-reporting performance.
- Rain Bird central software verifies all transmissions received, bringing together reliable two-way communication and easy operation.



Decoder FD-101, FD-102, FD-202, FD-401, FD-601

FD-101 Specifications

Model: FD-101 single field decoder (1 address and 1 solenoid)

Mounting: In valve box or direct burial

Power Draw: 0.5 mA (idle) 18 mA (Per active valve)

Dimensions: Length: 2.24" (57 mm), Diameter: 1.57" (40 mm)

Stations: 1

Wires: Blue to cable, white to solenoid

Output Power: Adjustable from central controller

Encapsulation: Fully waterproof

Address: Precoded from factory (i.e. no switches)

Electrical input:
Nominal voltage: 33VAC from line
Minimum voltage: 21VAC
Standby current: 0.5 mA
Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Electrical Output:
Max. voltage: 33VAC
Max. load: 1 RB solenoid

Max Distance Decoder/Solenoid:
Max. resistance: 3 ohms
Cable length: 328': 100m, 196': 60m

Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Environment:
Working range: 0 to 50°C
Storage range: -30 to 70°C
Humidity: 100%

Surge Protection: 40 V, 1.5 kW transil

FD-102 Specifications

Model: FD-102 single field decoder (1 address and 2 solenoid)

Mounting: In valve box or direct burial

Power Draw: 0.5 mA (idle) 18 mA (Per active valve)

Dimensions: Length: 3.35" (85 mm), Diameter: 1.77" (45 mm)

Stations: 1

Wires: Blue to cable, white to solenoid

Output Power: Adjustable from central controller

Encapsulation: Fully waterproof

Address: Precoded from factory (i.e. no switches)

Electrical input:
Nominal voltage: 33VAC from line
Minimum voltage: 21VAC
Standby current: 0.5 mA
Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Electrical Output:
Max. voltage: 33VAC
Max. load: 2 RB solenoid

Max Distance Decoder/Solenoid:
Max. resistance: 3 ohms
Cable length: 328': 100m, 196': 60m

Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Environment:
Working range: 0 to 50°C
Storage range: -30 to 70°C
Humidity: 100%

Surge Protection: 40 V, 1.5 kW transil

FD-202 Specifications

Model: FD-202 dual address field decoder (2 addresses and up to 2 solenoids per address)

Mounting: In valve box or direct burial

Power Draw: 1 mA (idle) 18 mA (Per active solenoid)

Dimensions: Length: 3.35" (85 mm), Diameter: 1.77" (45 mm)

Stations: 2

Wires: Blue to cable, white and brown to solenoid

Output Power: Adjustable from central controller

Encapsulation: Fully waterproof

Address: Precoded from factory (i.e. no switches)

Electrical input:
Nominal voltage: 33VAC from line
Minimum voltage: 21VAC
Standby current: 1 mA
Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Electrical Output:
Max. voltage: 33VAC
Max. load: 4 RB solenoids (2 per address)

Max Distance Decoder/Solenoid:
Cable length: 328': 100 m, 196': 60 m

Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Environment:
Working range: 0 to 50°C
Storage range: -20 to 70°C
Humidity: 100%

Surge Protection: 40 V, 1.5 kW transil

FD-401 Specifications

Model: FD-401 four-in-one field decoder (4 addresses and up to 1 solenoid per address)

Mounting: In valve box or direct burial

Power Draw: 1 mA (idle) 18 mA (Per active solenoid)

Dimensions: Length: 3.94" (100 mm), Diameter: 2.56" (65 mm)

Stations: 4

Wires: Blue to cable, colored-coded to solenoids

Surge Protection: Built-in LSP

Output Power: Adjustable from central controller

Encapsulation: Fully waterproof

Address: Precoded from factory (i.e. no switches)

Electrical input:
Nominal voltage: 33VAC from line
Minimum voltage: 21VAC
Standby current: 1 mA
Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Electrical Output:
Max. voltage: 33VAC
Max. load: 4 RB solenoids (1 per address)

Max Distance Decoder/Solenoid:
Cable length: 328': 100 m, 196': 60 m

Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Environment:
Working range: 0 to 50°C
Storage range: -20 to 70°C
Humidity: 100%

FD-601 Specifications

Model: FD-601 six-in-one field decoder (6 addresses and up to 1 solenoid per address)

Mounting: In valve box or direct burial

Power Draw: 1 mA (idle) 18 mA (per active valve)

Dimensions: Length: 3.94" (100 mm), Diameter: 2.56" (65 mm)

Stations: 6

Wires: Blue to cable, color-coded to solenoids

Surge Protection: Built-in LSP

Output Power: Adjustable from central controller

Encapsulation: Fully waterproof

Address: Precoded from factory (i.e. no switches)

Electrical Input:
Nominal voltage: 33 VAC from line
Minimum voltage: 21 VAC
Standby current: 1.0 mA
Input fuse: 300-500 mA, thermal
Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Electrical Output:
Max. voltage: 33 VAC
Max. load: 6 RB solenoids (1 per address)

Number of Simultaneously Active Outputs: 4

Max. Distance Decoder/Solenoids:
Cable Length:
328 ft: 100 m
196 ft: 60 m

Wiring: 2 x 14-gauge (1.5 mm²) solid copper, PVC insulated

Environment:
Working range: 0 to 50°C
Storage range: -20 to 70°C
Humidity: 100%



Note: Rain Bird recommends using 3M DBY electrical connectors for all connections.

How to Specify/Order:

FD-XXX

Model	Decoder Type
FD-101	Single Address (1 solenoid)
FD-102	Single Address (up to 2 solenoids)
FD-202	Dual Address (up to 4 solenoids)
FD-401	Four Addresses (up to 4 solenoids)
FD-601	Six Addresses (up to 6 solenoids)

ESC-1



Specifications

The power of an advanced water-management tool in an easy-to-use package. The ESC-1 is a golf controller for the basic or sophisticated user. Four programs, a real-time calendar and the best customer satisfaction program in the industry help you conserve both water and money.

Operating Specifications

- Station timing: A, B, C, D - 0 to 2 hours in 1-minute increments; 2 to 12 hours in 10-minute increments.
- Automatic starts: 32 starts total, eight per program per day.
- Programming schedule: 1. ODD day watering; 2. EVEN day watering; 3. Variable day cycle from 1 to 99 days by program; 4. Custom day-of-the-week by program.
- Test program: Variable 1 to 99 minutes.
- Rain shutdown: programmable 1 to 99 days.

Electrical Specifications

- Input required: 117 VAC \pm 10%, 60 Hz (International models: 220 VAC, 50 Hz).
- Output: 26.5 VAC, 3A.
- Station load capacity: Up to two 24 VAC, 7VA solenoid valves per station plus a master valve or pump start relay.
- Diagnostic circuit breaker skips and indicates stations with overloaded circuits.
- Power supply overload, backup fuse: 3A.
- Heavy-duty electrical surge protection for input and output.

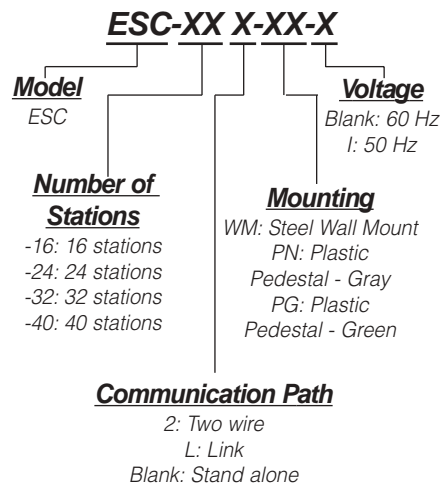
Pedestal Dimensions

- Steel Wall-mount
 - Width: 11 5/16" (28,7 cm)
 - Height: 11 1/2" (29,2 cm)
 - Depth: 6 1/2" (16,5 cm)
- Large Plastic Pedestal
 - Width: 16" (40,6 cm)
 - Height: 36" (91,4 cm)
 - Depth: 18 1/2" (47,0 cm)

Product Features

- 12-hour watering duration for any or all stations to aid in drip compatibility.
- Four independent programs with eight start times; each allow mixed irrigation applications in a single controller.
- Two master valve terminals; one programmable by station to provide better irrigation control.
- Programs can overlap to maximize hydraulic efficiency and minimize watering time.
- 365-day calendar with leap year intelligence for one-time date and time setting.
- Event day off.
- Programmable rain delay enables system to stay off for up to 99 days with auto-restart.
- Upgradeable to Golf Central Control.
- Water budget by program provides adjustments from 0-300% in 1% increments.
- Programmable delay between stations provides time for water well recovery or slow closing valves.
- Manual watering by station or program.
- Universal remote ready—pre-installed connectors for addition of remote products.
- Heavy-duty transformer for simultaneous operation of up to nine 24 VAC, 7VA solenoids.
- Battery-programmable controller allows for programming prior to installation.
- Available in 2 enclosures:
 - Powder-coated wall-mount steel cabinet
 - High impact plastic pedestal

How to Specify/Order:



MSC+

Specifications

Installation/Design

- **Mounting/Configuration:** Pedestal
- **Pedestal Dimensions:** 12.25" w x 30" h x 12.06 d (grey plastic and stainless steel pedestal)
16" w x 36" h x 18.5" w, larger pedestal (not pictured)
- **Material:** Sturdy, impact resistant double-walled ascorene or stainless steel 0.5 mm thick.
- **Voltage:** 117 V @ 60 Hz or 220/240 V @ 50 Hz
- **Power Draw:** 117 V @ 0.20 amps
- **Output Power:** 26.5 V
- **Surge Protection:** MSP-1 Surge Arrestor
- **UL/C-UL, C-Tick and CE Listed:** Yes
- **Reference Literature:** D31667A, D31641D

Functional

- **Configurations:** Stand-alone controller, two-wire satellite and wireless (LINK) satellite

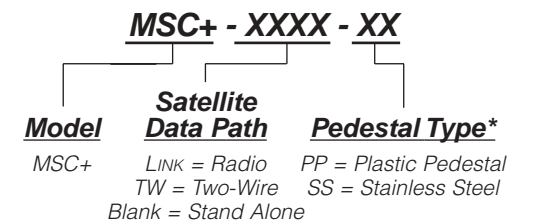
- **Stations Per Satellite:** 16, 24, 32, 40 or 48
- **Timing Mechanism Type:** Solid-state
- **Syringe:** Yes
- **Multimanual:** Yes
- **Pump Start:** Yes
- **Modules/Expansion:** Upgradeable in field by addition of 8-station output modules (OSM)
- **Displays:** Backlit 32-character LCD and 48 station status LEDs

Programming

- **Automatic Schedules:** 8 plus number of stations (up to 48 single-station schedules)
- **Manual Start/Cancel:** Yes
- **Remote Manual Operation:** Yes, with The FREEDOM™ System and Rain Bird central control software
- **Simultaneous Operation:** Up to 16 valves at 60 Hz
- **Over Current Control:** Yes
- **Pass-Key Protection:** Yes
- **Assign Stations to Location Key:** Yes



How to Specify/Order:



* For large plastic pedestal models, use part #s listed in Golf Price List.

PAR+ES Controller



Features and Benefits

Easy to Use - Large buttons with clear, descriptive icons make programming easy.

Upgradeable - Plug-in Output Station Modules (OSM) to expand station capacity to 72 stations, in 8 station increments.

Cost Savings - More stations means reduced cost per station.

16-Solenoid Simultaneous

Operation - Heavy-duty transformer permits simultaneous operation of up to 16 solenoids (12 at 50 Hz).

Multiple Schedule Operation - No schedule limit when operated with Rain Bird® Central Control Systems. Six (6) automatic (with 12 start times each) and two (2) manual schedules available for standalone operation.

Irrigation Control - Variable or weekday programming, for weekday cycle or for irrigation every other day, every three days or up to every nine days.

Central Control Ready - Controllers available with Maxi Interface Boards for two-wire or LINK two-way communication with any Rain Bird Central Control System.

Quick Programming - Copy and paste buttons make programming quick and easy.

Simplified Installation - One transformer accommodates various power inputs.

Front Panel Lighting - LEDs and backlit Liquid Crystal Display (LCD) make programming easy even in poor lighting.

Standard Station Lights - OSM lights provide easy identification of active stations.

Optional Station Switches - Turn stations on or off quickly for easy operation and troubleshooting.

Standard Surge Protection - Standard surge protection included in all models.

Sensor Response - Sensor activation cancels irrigation at controller.

Master Valve Activation - Activate master valve output with station activation.

Easy Programming - Large, raised control buttons with clear, descriptive icons and a high-contrast Liquid Crystal Display (LCD) panel make programming easy – even for the novice. Lights indicate active schedules and central control status, while copy paste function speeds programming process. An angled keypad aids visibility as well as water drainage, and makes the PAR+ES controller extremely easy to use.

Greater Water Precision - The PAR+ES controller allows you to program six (6) automatic and two (2) manual schedules. It allows you to turn on a maximum of 16 valves at 60 Hz and 12 valves at 50 Hz, and features four (4) control modes – giving you ample programming and operating control.

Increase Your Control - Now you have a choice. If you're looking for advanced capabilities in a stand-alone controller, it's hard to beat the great value of the PAR+ES. If the precision of a Rain Bird® Central Control System is what you're after, the PAR+ES can also deliver. By simply adding a module to your PAR+ES controller, you'll be ready for the most advanced irrigation management on the market. Either way, the PAR+ES offers a broad choice of options with easy, flexible expansion.

Modular Configuration Allows Easy Expansion - The PAR+ES base configuration of 16 stations can be easily upgraded in 8-station increments. By simply plugging in an 8-station Output Station Module (OSM) you can expand your PAR+ES controller capabilities to accommodate 24, 32, 40, 48, 56, 64 or 72 stations. Upgrading the PAR+ES costs less and reduces the need for additional controllers.

Universal Performance Simplifies Installation and Operation - The intuitive PAR+ES controller reduces installation and training hassles with its many universal features. For quick electrical hookups, the system automatically senses and adjusts for either a 50 or 60 Hz current; while one (1) transformer accommodates 100V/120V, 220V or 230V/240V with the flip of a switch. The PAR+ES controller also displays system activities and accepts user input in eight (8) different languages. The icon-driven controls and multilingual display eliminate confusion and translation problems.

Purchase the Appropriate Performance - The PAR+ES controller offers superior design and installation flexibility. Mix and match with other controllers and with any Rain Bird Central Control System. The PAR+ES controller is available with 16, 24, 32, 40, 48, 56, 64 and 72 stations and as 2-wire and wireless (LINK) satellite. If more stations are required, you can simply purchase additional 8-station, plug-in OSMs for up to 72 stations per controller. Pedestals will stand up to years of inclement weather and hard use.

The flexible new PAR+ES can be ordered in the following configurations:

- PAR+ES standalone controller in a plastic pedestal.
- PAR+ES satellite with two-wire module in a plastic pedestal.
- PAR+ES satellite with LINK (wireless) module in plastic pedestal.

Buy only the control you need today and increase your operating capabilities or change your communication method at any time.



How to Specify/Order:

PAR+ES - XX - XX - X

Model	Station Count	OSM Type
PAR+ES	16, 24, 32, 40, 48, 56, 64, 72	S = OSMs with Station Switches Blank = OSMs without Station Switches
Configuration		
Blank = Stand Alone		
2 = Two-Wire		
L = LINK		
LR = LINK with Radio		

PAR+ES DECODER CONTROLLER

PAR+ES Decoder Controller

Combine the features and benefits of a controller system with those of a decoder system and the result is the PAR+ES Decoder Controller with:

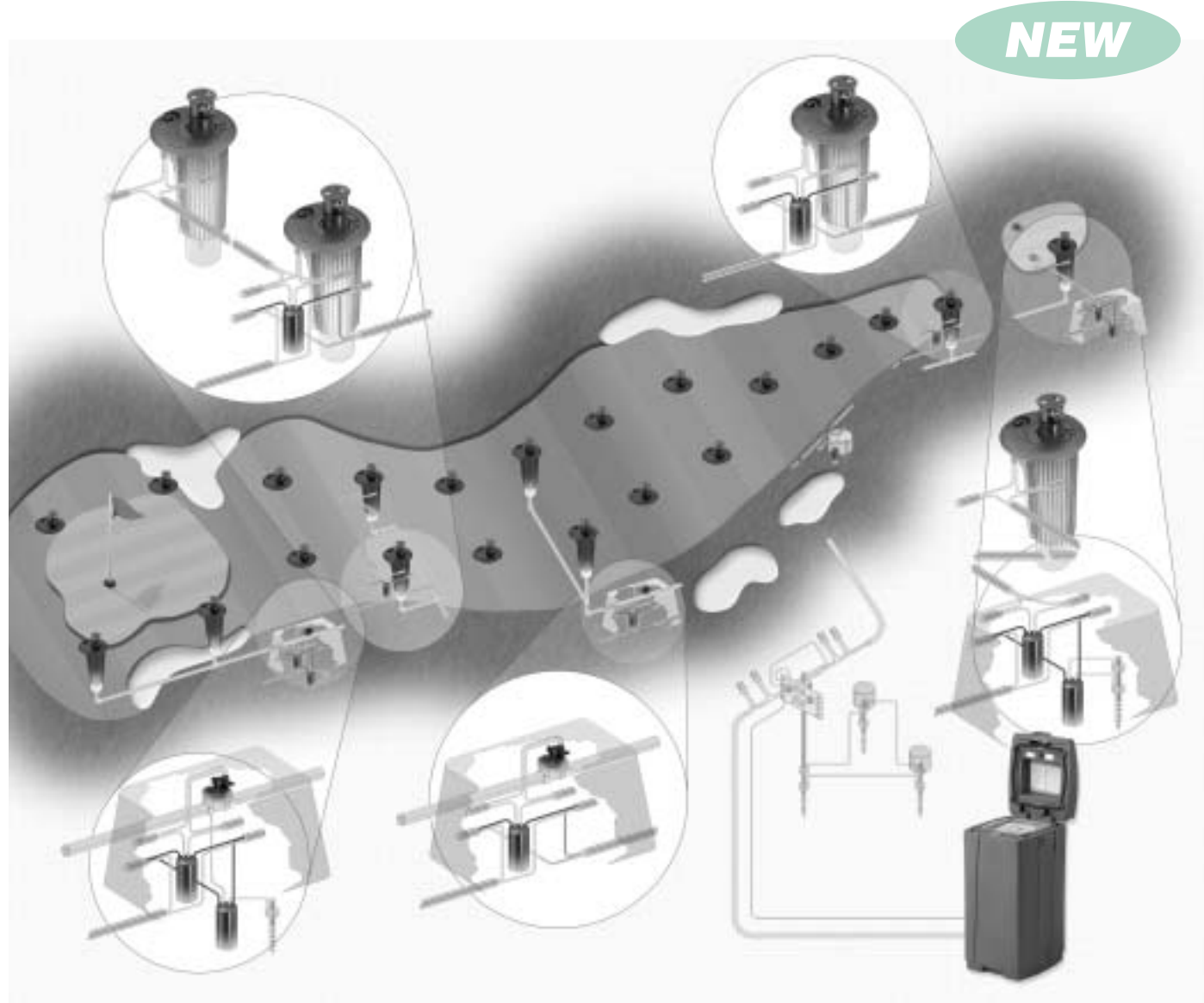
- Easy Installation
- Reduced Installation Costs
- Easy Expansion

The idea is simple,

- 1) install the controller,
- 2) connect a decoder to the nearest wire path.

- Uses up to 90% fewer wire than conventional hardwire systems.
- Built-in diagnostic tools.
- Compatible with all Rain Bird Golf decoders (i.e. FD-101, FD-201, FD-402 and FD-601).
- Simply attach new decoder to nearest decoder.
- Operates as a stand alone controller or add a Rain Bird Central Control System for greater control.
- Operates up to 72 decoder addresses.

NEW



SPECIFICATIONS

	PAR+ES	PAR+ES Decoder Controller
Station Capacity	72 stations, up to 16 stations operating simultaneously	72 decoder addresses, up to 16 stations operating simultaneously
Configurations	Standalone, Two-wire, LINK and LINK with Radio	
Electrical Input (50/60 Hz)	115VAC Nominal 98-132VAC 220VAC Nominal 208-232VAC 240VAC Nominal 225-255VAC	
Electrical Output	26.5VAC, 5.25 AMP	
Station Load Capacity	Up to four (4) 24VAC, 7VA solenoids per station	Up to two (2) 24VAC, 7VA solenoids per station (depending on decoder type)
Plastic Pedestal Dimensions	Width: 16" (40,6 cm) Height: 36" (91,4 cm) Depth: 18 1/2" (47,0 cm)	
Programs	No limit with Rain Bird Central Control Systems Six (6) automatic (12 start times each) and two (2) manual in standalone mode	
Water Budget	0-200%, in 10% increments	
Station Runtimes	1-120 minutes, in 1 minute increments	
Languages	English, French, German, Italian, Japanese, Portuguese, Spanish and Dutch	
Grounding Requirements	Less than 10 ohms	
Compliance	UL & C-UL listed CE approved C-Tick Compliant FCC	
Max Wire Length Between Controller and Decoder	N/A	#12 AWG Star Design 3.8 miles (6.1 km) Loop Design 15.2 miles (24.4 km) #14 AWG Star Design 2.4 miles (3.8 km) Loop Design 9.6 miles (15.2 km)
Max Wire Length Between Decoder and Rotor	N/A	456 ft (#14 AWG)
Max Wire Paths	N/A	Four, plus multiple branches per wire path

The FREEDOM™ System



FREEDOM Repeater

FREEDOM Handheld

Specifications

Standard Transmit Frequency: 452.1875 MHz*
Standard Receiver Frequency: 457.1875 MHz*
Standard Tone: 100
Jacks: #2 RJ-11
Cable: FP-2PC
Power: 120/240 VAC
Amp: 3.0
Antenna: ROA-45/2.5 db
Antenna Ground: CX70-14-C/#10 gauge wire
Surge Arrestor: PolyPhaser IS-50NX-C2
Connectors: N type
Cable: RG-8/N coaxial
Reference Literature: D31294E

- Provides remote communication and operation of the central control system.
- Contains command functions like “turn on,” “turn off” and “resume,” as well as schedule-based functions programmed into central.
- Controls individual stations or entire irrigation system.
- Instant handheld control.
- Can access other radios on the course.
- Saves time, water and energy costs.
- Narrowband/wideband programmable handheld.

How to Specify/Order:

FREEDOM System

H59503
(Standard Narrowband Frequency)
H59504
(Special Narrowband Frequency)
H59300
(Special Narrowband Frequency for use in Canada)
H59305
(Special Narrowband Frequency for Non-US & Canadian Markets)

Flow Meters

Product Features

- **Benefits**—Rain Bird Golf Flow Meters help to:
 - Meet regulatory requirements
 - Better manage water consumption
 - Detect leaks in breaks in pipes
- **Features (Sensors)**
 - Simple six-bladed impeller design
 - Designed for outdoor or underground applications
 - Available in PVC, brass or stainless steel construction
 - Preinstalled in tee or insert versions
- **Features (Transmitters)**
 - Reliable solid-state design
 - Display or signal-alone versions
 - Easy-to-program, menu-driven design
 - Programmable from a laptop computer (G-PT322)
 - Operates with both MAXILINK™ and two-wire systems
 - Optional NEMA enclosure for G-PT1502
- **Flow Sensors**—Two types of flow sensors are available from Rain Bird: tee-type sensors come preinstalled in plastic or metal tees up to 4" in diameter and are easy to install on new courses. Insertion-type sensors are ideal for installation in preexisting systems and are effective in pipe sizes above 2 1/2". Insertion-type sensors are available in brass and stainless steel models.
- **Pulse Transmitters**—Pulse transmitters interpret the spinning of the paddlewheel and translate it into a pulse that represents flow in either metric or U.S. measures. Two models of pulse transmitters are available from Rain Bird: The 1502 series transmitter features local programming and display. The 322 model allows for programming through a PC and has potted circuitry that makes it resistant to harsh environmental conditions. Both models utilize intuitive, menu-driving programming, are compact and easy to install in most pedestals and when used with a Rain Bird Pulse Decoder, have the ability to communicate flow rate back to the central computer.
- **Flow Sensors and Smart Sensor™ for Rain Bird Golf Central Control**—Rain Bird flow sensors coupled with the Smart Sensor™ feature in any Rain Bird Golf central control system can provide the superintendent real-time responses to critical conditions such as damaged or broken pipes throughout their course. With Smart Sensor, the central control system can react, based on user-defined thresholds, to the sensor conditions.



Specifications

Operating Specifications (Sensors)

- Accuracy ± 1% (full scale)
- Flow rate: 1-30 feet per second
- Pressure: 400 psi (max) on metal models; 100 psi (max) on plastic models
- Operating Temperature: 221° F (105°C) (max) on metal models; 140° F (60° C) (max) on plastic models

Electrical Specifications (Transmitters)

- Input required: 9-35 VDC (G-PT322); 12-24 VDC (G-PT1502)
- Output: 4-20 mA pulse output
- Operating temperatures: 32° F - 158° F (0° C - 70° C)

Models

Tee-Type Sensors

- G-FS100B: 1" brass tee-type flow sensor
- G-FS150P: 1 1/2" plastic tee-type flow sensor
- G-FS200P: 2" plastic tee-type flow sensor
- G-FS300P: 3" plastic tee-type flow sensor
- G-FS400P: 4" plastic tee-type flow sensor

Insertion-Type Sensors

- G-FS350B: brass insertion-type flow sensor
- G-FS350SS: stainless steel insertion-type flow sensor

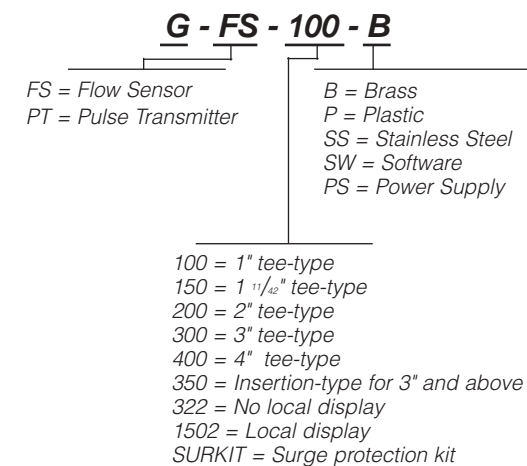
Transmitters

- G-PT322: pulse transmitter, no local display
- G-PT1502: pulse transmitter with local display

Accessories

- G-PT322SW: Programming software for 322 Pulse Transmitter
- G-PT1502PS: Power supply for 1502 Pulse Transmitter
- G-FSSURKIT: Surge protection kit

How to Specify/Order:

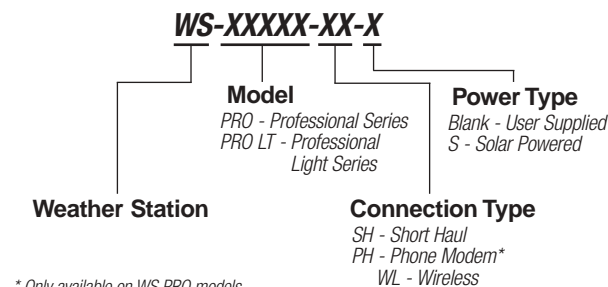


* Also available in special frequency (450-470 MHz)

Weather Station



How to Specify/Order:



Features and Benefits

Automatic Shut Off/Turn On—Rain Bird central control systems automatically shut off irrigation to the entire system or to specific areas (teebox, fairway, green, etc...) when alarm conditions are detected at the weather station. They also automatically turn on irrigation when weather conditions return to the acceptable range for irrigation.

Automatic Pause/Resume—Rain Bird central control systems automatically suspend irrigation to the entire system or specific areas (teebox, fairway, greens, etc...) when alarm conditions are detected by the weather station. They also automatically resume irrigation when weather conditions return to the acceptable range for irrigation.

Automatic Notification—The WS PRO weather station can automatically notify you at the central control or through a paging system when alarm conditions exist.

Superior ET Model—Rain Bird's central control systems use weather sensor input to determine evapotranspiration (ET) rates based upon the industry standard Penman-Monteith equation for ET.

Automatic ET Download/Selective Usage—Automatically download weather data daily and calculate ET to determine irrigation times for the entire system or specific areas, holes or stations.

ET Override—Allows you to easily set certain programs to ignore ET values when determining runtimes.

Cost Savings—ET adjusted irrigation times apply only the water you need to replace the water lost from the soil reservoir. More efficient irrigation results in less water wasted for non-beneficial reasons resulting in reduced pump station operation, and lower energy costs.

Rain Bucket—Allows rainfall from one day to be carried over to the following day(s) for more accurate ET calculations.

Multiple Station Capacity—Connect up to five weather stations to one central control system for more precise ET values based upon different weather conditions around the golf course.

Max Rain Fall—User-defined Max Rain Fall can be set to limit the amount of acceptable rainfall for clay soil types or other areas that are subject to high runoff.

Reliable Sensor Input—Weather stations are equipped with a full sensor array, providing accurate measurements of seven different types of weather data:

- Air Temperature
- Wind Speed
- Solar Radiation
- Wind Direction
- Relative Humidity
- Rainfall
- Barometric Pressure (available with WS PRO LT weather stations only)

Weather Data Reports—Generate reports to show current or past weather conditions by the hour, day, week, month or year.

Unlimited Data Storage—Store unlimited weather data at the central control.

Multiple Languages—Choose from ten different languages (English, French, German, Italian, Japanese, Korean, Portuguese, Spanish, Swedish or Chinese).

English or Metric Measurement Units—Select between English or Metric units of measure.



Rain Bird's WS PRO LT provides the environmental data you need for The Intelligent Use of Water.™

Specifications	WS PRO LT	WS PRO
Compatible Modules	- Automatic ET - Multiple Weather Station	- Automatic ET - Multiple Weather Station - Smart Weather Alarms - Smart Pager Module
Communication Options	- Wireless (900 MHz SS Radio or 2.4GHz Radio) - Short Haul	- Telephone - Short Haul
Transmission Range	Wireless 900 MHz - 1/2 mile (805 m) Wireless 2.4 GHz - 1/4 mile (402 m) Short Haul - 20,000 ft (6096 m)	Telephone - no limit Short Haul - 20,000 ft (6096 m)
Power Supply Required	16 to 22 Vdc	9.6 to 16 Vdc
Optional Power Supplies	Solar Panel	Solar Panel
Temperature Range	-40° to +122° F (-40° to +50° C)	-13° to +122° F (-25° to +50° C)
Air Temperature Sensor	- Operating range -40° to +122° F (-40° to +50° C) - Accuracy ±0.9°F (±0.5°C)	-13° to +122° F (-25° to +50° C) ±2.7°F (±1.5°C)
Relative Humidity Sensor	- Operating range 0 - 100% - Accuracy ±5% - 90% to 100% RH ±3% - 10% to 95% RH	0 - 100% ±6% - 90% to 100% RH ±3% - 0% to 90% RH
Barometric Pressure Sensor	- Operating range 15 - 115 kPa (4.43 to 33.96 inches of Mercury) - Accuracy ±1.5kPa (0° to 85° C)	N/A
Rain Gauge Sensor	- Resolution 0.04" (1 mm)	0.01" (0.25 mm)
Solar Radiation Sensor	- Accuracy ±2.5%	±3%
Wind Direction Sensor	- Range 360° mechanical, 352° electrical - Accuracy ±4°	360° mechanical, 356° electrical ±4°
Wind Speed Sensor	- Starting threshold 0.78 ms ⁻¹ (1.75 mph)	0.4 ms ⁻¹ (0.9 mph)

Specifications

Features	Automatic ET Module	Smart Weather Alarms Module
Compatible Weather Stations	WS PRO LT, WS PRO	WS PRO
Generate Alarms (rain, ambient temperature, wind, rain intensity and soil temperature)		X
Reset Alarms		X
Automatic Shut Off/Turn On		X
Automatic Pause/Resume		X
Automatic Notification*		X
Superior ET Model	X	X
Automatic ET Download	X	X
ET Override	X	X
Cost Savings	X	X
Rain Bucket	X	X
Multiple Station Capacity**	X	X
Max Rain Fall	X	X
Reliable Sensor Input	X	X
Weather Data Reports	X	X
Unlimited Data Storage	X	X
Multiple Languages	X	X
English or Metric Units of Measure	X	X
Cirrus Central Control	X	X
Nimbus II Central Control	Optional	Optional
Stratus II Central Control	Optional	Optional

* Requires Smart Pager Module

** Requires Multiple Weather Station Module

Swing Joints



Specifications

- Diameters:** 1" (2,5 cm), 1.25" (3,2 cm) and 1.5" (3,8 cm)
- Lengths:** 8" (20,3 cm), 12" (30,5 cm) and 18" (45,7 cm)
- Inlet Type:** NPT, BSP, ACME, spigot, metric spigot, socket and integrated service tee
- Outlet Thread Type:** NPT, BSP or ACME
- Enlarging NPT, BSP or ACME Outlets:** Available on 1" (2,5 cm) and 1.25" (3,2 cm) swing joints for connections to many rotors with 1.25" (3,2 cm) and 1.5" (3,8 cm) inlet sizes respectively (no additional adapters required)
- Outlet Configuration:** Single-top or triple-top
- Pressure Rating:** 315 psi (21,7 bars) @ 73°F (22,8°C)
- Reducing ACME Inlet:** Available on 1.25" (3,2 cm) diameter swing joints

Product Features

- **Superior Flow Characteristics**—An innovative swept elbow design* reduces pressure loss by 50 percent over other swing joints.
- **Excellent Structural Integrity**—Reduces the costs associated with fatigue-related failures.
- **Double O-ring Protection**—Provides a better seal to ensure that joints are kept clean and can be repositioned easily.
- **Modified ACME Outlet**—Improves safety by losing seal engagement before losing thread engagement during rotor removal.
- **Color-coding and Distinct Size Markings**—Reduce costs by eliminating errors and improving installation efficiency with quick size identification at the job site.
- **Oversized Threaded Inlets**—Make hand-tightening and blind installations (underwater) easier. This also reduces the risk of potential damage caused by over-tightening with a wrench.

*Patent pending

How to Specify/Order:

SJ - (X)X - XXX - XX - (X)

Length

8 = 8"
12 = 12"
18 = 18"

Diameter

100 = 1"
125 = 1¼"
150 = 1½"

Optional Triple-Top

T = Triple-Top

Inlet/Outlet Styles

Inlet

1 = NPT
2 = BSP
3 = ACME
4 = Spigot
5 = Metric Spigot
6 = Socket
R = Reducing ACME Inlet**

Outlet

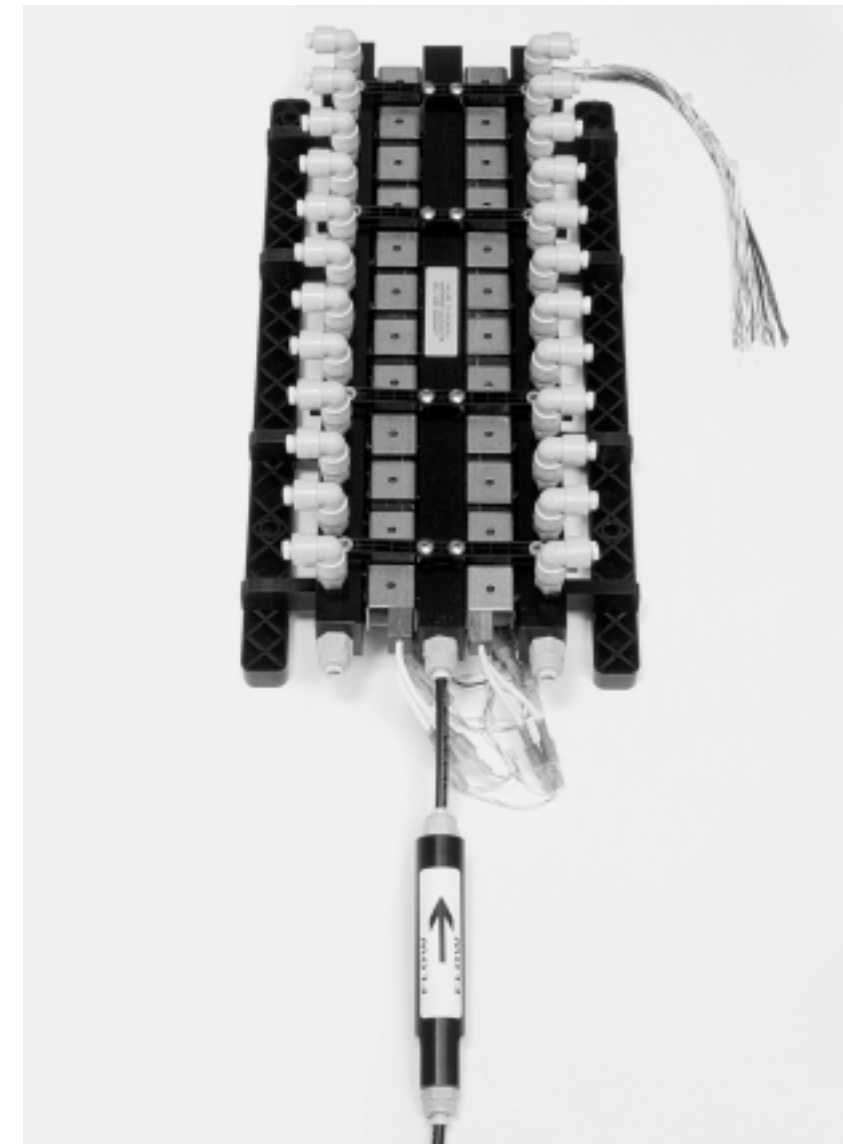
1 = NPT
2 = BSP
3 = ACME
4 = Enlarging NPT †
5 = Enlarging BSP †
6 = Enlarging ACME †

Example: 13 = NPT inlet, ACME outlet

† Enlarging outlet available only on 1" & 1.25" diameter models

** Reducing inlets available on 1.25" diameter Swing Joints

Aquagator Hydraulic Module



Specifications

- Maximum Operating Distance:** 2,000 ft (615 m) of hydraulic tubing per station
- Operating Pressure:** 40-150 psi (2,8-10,3 bars) in control lines
- Solenoid:** 24 VAC
Inrush: 0.37 amps (8.80 VA)
Holding: 0.30 amps (7.20 VA)
- Reference Literature:** D31684

Product Features

- **Superior Solenoid Protection**—The fully-encapsulated solenoid is completely protected from the elements. It's designed to maintain reliable rotor control through the worst possible conditions.
- **Corrosion-Resistant Manifolds**—The Aquagator features precisely machined thermoplastic manifolds that protect the unit from corrosion and contamination.
- **Easy Installation**—A color-coded wiring harness and quick-connect hydraulic elbows speed installation and simplify maintenance.
- **Reliable Filtering**—A removable, in-line filter element conveniently keeps your hydraulic lines free of debris for dependable, uninterrupted operation.
- **Expandable Configuration**—The Aquagator is available in 12-, 16- and 24-station configurations to match your precise irrigation needs. Capabilities can be expanded to as many as 48 stations when mounted back-to-back in Rain Bird plastic pedestals.
- **Compatibility**—The Aquagator is compatible with most Rain Bird and similar satellite controllers.

How to Specify/Order:

AHM-XX

Model

AHM

Number of Stations

12
16
24

Hose Reels

Rain Bird® Hose Reels make watering with hoses faster, safer and more efficient, saving your crews valuable time and money. Featuring top-quality materials and construction and an ergonomic, easy-to-use design, our full line of hose reels can meet virtually any need, in both mounted and trailer models.

Benefits

Efficiency—Hose reels let you put the hose where you need it, when you need it... improves efficiency and reduces clutter

Economy—Tests prove hoses that are properly stored on a reel will last 5 to 7 times longer...reduces downtime and replacement costs

Ergonomics—Hose reels make handling easier and more comfortable for workers over the course of a long day...provides low hose tension during pullout and controlled return speed

Safety—Hose reels keep hose out of the way when not in use...eliminates tripping and safety problems

Features

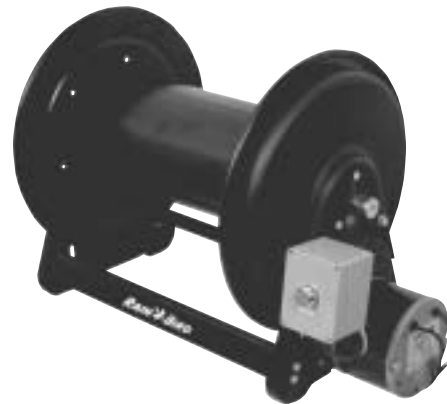
- Durable abrasion & corrosion resistant baked-on powder coat paint is standard on all painted models. Each component is individually painted
- Full flow shaft and ball bearing swivel assures maximum product delivery

Models

Heavy-Duty Hose Reel—Designed for heavy-duty applications requiring long hose lengths.

- Adjustable spool rotation eliminates hose backlash when de-reeling
- Zinc-plated swivel with VITON® “O” ring seals
- Permanently lubricated dual main bearings
- Motor mounting at either end of the reel
- All bolted construction – no welds
- Lock pin prevents spool rotation when the reel is not in use
- Vibration-proof self-locking fasteners ensure assembly integrity

- Manual driven reels are easily converted to power driven reels
- Unitized spool construction
- Steel drum
- Available in hand crank or motor drive models
- Includes 10' connecting hose only



Rain Bird Heavy-Duty Hose Reel

- Spring Driven Reel**—Incorporate contemporary engineering and construction for the ultimate in trouble-free performance. Ideal for applications with critical space requirements.
- Guide is field adjustable for wall, ceiling or truck mounting positions
 - Heavy-duty brackets eliminate bending due to angular hose pull
 - Banded drive springs give smooth, automatic hose retrieval
 - Multi-position guide arms permit wall, floor, ceiling, pit or truck mounting
 - All reels are permanently factory lubricated
 - Reliable latch will maintain the desired working length of hose. Our mechanism assures a positive latch or unlatch of the hose
 - Adjustable hose bumpers allow any desired length of hose to be maintained outside the reel
 - Nylon guide rollers reduce hose drag and abrasion

- Declutching spring arbor drive eliminates the possibility of spring damage due to reverse winding of the reel spool
- Includes air/water hose only



Rain Bird Spring Driven Reel

Poly Hose Reel—Lightweight and easy to handle, meets the needs for continuous, problem-free operation. Highly resistant to acids and alkalis.

- Spring retraction
- Lightweight and portable
- Virtually maintenance free
- Tough, U.V. stabilized outer case
- Simple and reliable latch mechanism
- Spring tension easily adjusted
- Corrosion proof
- Pivoting wall bracket included
- Includes air/water and 4' connecting hose



Rain Bird Poly Hose Reel



Towable Hose Reel Trailer

Towable Hose Reel Trailer—Ergonomic design and rugged construction make hose handling easier, quicker and more efficient.

- Easily attaches to most off-road golf work vehicles or carts with clevis pin hitch
- 40" x 40" heavy gauge steel bed is predrilled for Heavy-duty hose reels
- Additional space for tool trays and accessories
- Dual-tapered automotive style bearings and solid steel axle for smooth, reliable operation
- Pneumatic tires and high quality wheels are recessed under trailer bed to eliminate snagging of trees and shrubs
- Extra long 32" trailer tongue allows for sharper turns and easier back up
- Maximum weight capacity is 400-lbs. 15-mph maximum speed
- **For off-road use only. No riders.**

- Specifications:

Model T4040: Trailer includes Model H100-100 hand rewind hose reel, less hose

Roller bracket, 3-way (upper) 1" I.D. x 10' connecting hose

Model T4040M: Trailer includes Model H100-100M motor drive hose reel, less hose

**Switch, complete
Battery box
Roller bracket, 3-way (upper)
Chain guard
1" I.D. x 10' connecting hose**

Electric Cord Reel—Compact, electric cord reels are ideal for indoor applications where space is critical.

- Spring retractable with latch
- Designed for wall, ceiling or bench mounting
- Features adjustable cord stop
- Includes pigtail and three-prong, grounded plug

- Specifications:

Model E045-115: Single Receptacle Cord Specifications:

AWG: 12 (3.32 mm²)

No. Cond.: 3

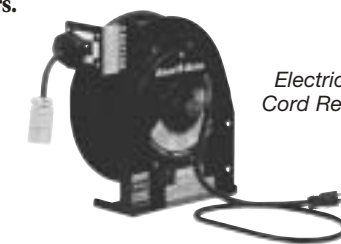
Length: 45' (14 m)

Type: SJO

Volts: 115

AMPS: 15

Weight: 23 lbs. (11 kg)



Electric Cord Reel



Composite Hose Reel

Composite Hose Reel—Hybrid design incorporates industrial grade steel with engineered composite components. Ideal for applications that are less demanding.

- Base and arm feature heavy gauge steel stampings with reinforced ribs for structural integrity
- Glass-filled composite spool and spring case contain industrial grade drive spring
- Latch mechanism is mounted on arm to insure hose latch-out will not occur
- Long-lasting torsion spring and swivel ensures maximum life
- All steel components are powder-coated to virtually eliminate corrosion
- Includes air/water hose only

Rain Bird Hose Reel Dimensions

MODEL #	HOSE I.D. in./mm	HOSE O.D. in./mm	CAPACITY ft./m	WEIGHT W/O HOSE lbs./kg	WEIGHT W/ HOSE lbs./kg	PRESSURE psi/bar
Heavy Duty						
H175-075	.75/19	1.188/30,2	175/54	54/25	—/—	1000/69
H100-100	1/25,4	1.5/38,1	100/30	58/26	—/—	300/21
H100-100M	1/25,4	1.5/38,1	100/30	75/34	—/—	300/21
Spring Driven						
S050-038	.375/10	.640/16	50/15	—/—	37/17	300/21
S050-050	.5/13	.844/22	50/15	—/—	51/23	300/21
S025-075	.75/19	1.188/31	25/8	—/—	52/24	250/18
S050-075	.75/19	1.188/31	50/15	—/—	89/41	250/17
Poly						
P050-050	.5/13	.781/20	50/15	—/—	21.5/10	138/10
Composite						
C025-038	.375/10	.640/16	25/8	—/—	18.8/9	300/21
C050-038	.375/10	.640/16	50/15	—/—	26.1/12	300/21

Conversion Factors, Equivalents and Formulas

AREAS

6,452 Sq. Centimeters	1 Sq. Inch
144 Sq. Inches	1 Sq. Foot
9 Sq. Feet	1 Sq. Yard
43,560 Sq. Feet	1 Acre
1 Acre	43,560 Sq. Feet
1 Acre	4,840 Sq. Yards
1 Acre	160 Sq. Rods
1 Sq. Rod	272.25 Sq. Feet
1 Sq. Rod	30.25 Sq. Yards
640 Acres	1 Sq. Mile
640 Acres	1 Section
Area of a Circle	Radius Squared x 3.1416
Area of a Square	One Side Squared
Area of a Triangle	1/2 Base x Altitude
Area of a Rectangle	Length x Width
Area of a Parallelogram	Base x Altitude

LINEAL MEASUREMENTS

1 Centimeter	.3937 Inches
1 Cubit	18 Inches
1 Meter	39.37 Inches
1 Rod	16.5 Feet
1 Rod	5.5 Yards
1 Chain	4 Rods
1 Chain	66 Feet
320 Rods	1 Mile
5280 Feet	1 Mile
Circumference of Circle	Diam. x 3.1416

VOLUME

1728 Cubic Inches	1 Cubic Foot
231 Cubic Inches	1 Gallon
27 Cubic Feet	1 Cubic Yard
1 Cubic Foot	7.48052 Gallons (U.S.)
1 Cubic Yard	202 Gallons (U.S.)
16 Drams	1 Ounce
32 Ounces	1 Quart
4 Quarts	1 Gallon
1 Gallon	3.785 Liters
1 Gallon	.00379 Cu. Meters
1 Gallon	.833 Imperial Gal.
27,154 Gallons	1 Acre Inch
325,851 Gallons	1 Acre Foot
1,000,000 Gallons	3.0689 Acre Feet
1 Acre Foot	43,560 Cubic Feet
Volume of a Cube	Area of Base x Height
Volume of a Pyramid	1/3 Area of Base x Height
Volume of a Sphere	Diam. Cubed x .5236

WEIGHTS

1 U.S. Gallon (Water)	8.3357 Pounds
1 Cu. Foot (Water)	62.3554 Pounds
1 Imperial Gallon	10.0 Pounds
1 Liter	2.2 Pounds
Earth, in Place Undisturbed	100 lbs./cu.ft.
Earth, Dry and Loose	82-90 lbs./cu.ft.
Earth, Moist	75-100 lbs./cu.ft.
Sand, Dry	90-106 lbs./cu.ft.
Shale or Red Rock	162 lbs./cu.ft.
Limestone	160-163 lbs./cu.ft.
Base Gravel	12.0 lbs./sq. ft./inch Thick in Place
Asphalt	12.5 lbs./sq. ft./inch Thick in Place
Sack Cement	94 Pounds
Concrete (Plain)	140 lbs./cu.ft.
Concrete (Reinforced)	150 lbs./cu.ft.

PRESSURES

1 Atmosphere	29.921 Inches of Hg @ 32° F
1 Atmosphere	33.94 Ft. of Water @ 62° F
1 Atmosphere	14.6963 lbs./sq. Inch
1 Pound per Square Inch	2.31 Feet of Head
1 Foot of Water	.433 Pounds/sq. Inch
1 Kilogram/sq. Centimeter	14.22 lbs./sq. Inch
1 Foot of Water	62.3554 lbs./sq. Foot

FLOWS

1 Gallon/Minute (U.S.)	.002228 cu. ft./Second
1 Gallon/Minute (U.S.)	.13368 cu. ft./Minute
1 Gallon/Minute (U.S.)	8.0208 cu. ft./Hour
1 Gallon/Minute (U.S.)	.06309 Liters/Second
1 Gallon/Minute (U.S.)	3.78533 Liters/Minute
1 Gallon/Minute (U.S.)	.0044192 Acre Ft./24 Hrs.
1 Gallon/Minute (U.S.)	.22712 cu. Meters/Hr.
1 Cubic Ft. per Second	448.83 gpm
1 Liter per Second	15.85 gpm
1 Cubic Meter per Minute	264 gpm
1 Acre Inch per Hour	452.57 gpm
1 Acre Foot per Day	226.3 gpm
1,000,000 Gallons per Day	694.4 gpm
1 Cubic Ft. per Second	.992 Acre Inches/Hr.

POWER

Horsepower	$\frac{\text{gpm} \times \text{Total Head (Ft)}}{3960 \times \text{Pump Efficiency}}$
Pump Efficiency	$\frac{\text{gpm} \times \text{Total Head (Ft)}}{3960 \times \text{BHP to Pump}}$
1 Horsepower	33,000 Ft. Pounds/Minute
1 Horsepower	746 Watts
1 Horsepower	.746 Kilowatts

Hydraulic Formulas for Sprinklers

DISCHARGE FROM NOZZLES

U.S. (gpm)	METRIC (m ³ /h)	METRIC (lps)
$\text{gpm} = \sqrt{P \times D^2 \times 29.82 \times C}$	$\text{m}^3/\text{hr} = \sqrt{P \times D^2 \times 259.8 \times C}$	$\text{lps} = \sqrt{P \times D^2 \times 935.3 \times C}$
$D = \frac{\sqrt{\frac{\text{gpm}}{C \times \sqrt{P \times 29.82}}}}{\sqrt{C \times \sqrt{P \times 29.82}}}$	$D = \frac{\sqrt{\frac{\text{m}^3/\text{h}}{C \times \sqrt{P \times 259.8}}}}{\sqrt{C \times \sqrt{P \times 259.8}}}$	$D = \frac{\sqrt{\frac{\text{lps}}{C \times \sqrt{P \times 935.3}}}}{\sqrt{C \times \sqrt{P \times 935.3}}}$
$P = \left[\frac{\text{gpm}}{C \times D^2 \times 29.82} \right]^2$	$P = \left[\frac{\text{m}^3/\text{h}}{C \times D^2 \times 259.8} \right]^2$	$P = \left[\frac{\text{lps}}{C \times D^2 \times 935.3} \right]^2$
gpm = Gallons per minute D = Diameter of nozzle in inches P = Pressure in pounds per square inch C = Coefficient of discharge	m ³ /h = Cubic meters per hour D = Diameter of nozzle in millimeters P = Pressure in bars C = Coefficient of discharge	lps = Liters per second D = Diameter of nozzle in millimeters P = Pressure in bars C = Coefficient of discharge

PRECIPITATION

U.S. (gpm)	METRIC (m ³ /h)	METRIC (lps)
$\text{Pr.} = \frac{\text{gpm} \times 96.3}{A}$	$\text{Pr.} = \frac{\text{m}^3/\text{hr} \times 1000}{A}$	$\text{Pr.} = \frac{\text{lps} \times 3600}{A}$
$\text{gpm} = \frac{\text{Pr.} \times A}{96.3}$	$\text{m}^3/\text{h} = \frac{\text{Pr.} \times A}{1000}$	$\text{lps} = \frac{\text{Pr.} \times A}{3600}$
Pr. = Precipitation in inches per hour A = Area (Distance between sprinklers on line x distance between lines) gpm = Gallons per minute per sprinkler	Pr. = Precipitation in millimeters per hour A = Area (Distance between sprinklers on line x distance between lines) m ³ /h = Cubic meters per hour per sprinkler	Pr. = Precipitation in millimeters per hour A = Area (Distance between sprinklers on line x distance between lines) lps = Liters per second per sprinkler

VELOCITY

U.S.	METRIC
$\sqrt{\frac{P}{.00674}} \quad P = .00674 \times V^2 \quad V = \frac{\text{gpm}}{2.45 \times D^2}$	$\sqrt{\frac{P}{.01419}} \quad P = \frac{9547 \times \text{lps}}{D^2} \quad V = \frac{2652 \times \text{m}^3/\text{h}}{D^2}$
V = Velocity in feet per second P = Pressure in lbs. per square inch D = Dia. of pipe or nozzle in inches	P = .01419 x V ² V = Velocity in meters per second P = Pressure in bars D = Dia. of pipe or nozzle in millimeters

NOTES

A column of water 1 foot high equals .4331 pounds pressure. (A column of water 1 meter high equals 0,098 bars.)
1 pound pressure equals a column of water 2.309 feet high. (1 bar pressure equals a column of water 10,20 meters high.)
1 acre equals 43,560 square feet.
1 acre inch equals 27,154 gallons.
1 cubic foot equals 7.48 gallons.
1 liter per second equals 15.85 gallons per minute.
1 m³/h equals 4.403 gallons per minute.
1 bar equals 14.50 psi (approximately 100 kPa).
1 millimeter equals 0.394 inches.
The height of an equilateral triangle is .866 times its base.
The discharge of a nozzle is in proportion to the square of its diameter and the square root of the pressure.

POWER FORMULA

1 hp = 550 foot pounds per second
= 746 watts or 0.746 kW
= 1 second foot of water falling 8.8'
Water H.P. = $\frac{\text{Second foot of water} \times \text{head in feet}}{8.8}$

= $\frac{\text{Gal. per min. of water} \times \text{head in feet}}{3960}$

Brake hp = $\frac{\text{Water hp}}{\text{Eff. of pump}}$
1 kilowatt (kW) = 1000 watts
= 1,341 hp
= 737.5 foot pounds per second

Rain Bird® GSP Global Service Plan

Insurance For Your Central Control

How do you improve on one of the smartest, most user-friendly central control systems in the industry? Offer a comprehensive service and support plan that covers central control components.

Rain Bird, the company that pioneered computer-based central control systems, offers a series of service plans designed to provide extended warranty service and technical support exclusively for Rain Bird central control systems.

Five service plans are offered. Select the Platinum or Laptop GSP for the most comprehensive service in the industry. Or choose from our Basic packages for a plan that will meet your needs as well as your budget.

Annual and monthly payments are available in some areas. Please check with your local Rain Bird Golf Distributor for availability.



Rain Bird Global Service Plan Options Matrix

Features	Laptop 5 Years	Platinum 5 Years	Basic 5 Year	Basic 3 Year	Basic 1 Year
Toll-Free Support	•	•	•	•	•
pcANYWHERE Remote System Diagnostics	•	•	•	•	•
24-Hour Emergency Paging	•	•	•	•	•
Extended Warranty	•	•	•	•	•
24-Hour Hardware Replacement	•	•	•	•	•
Disk Backup	•	•	•	•	•
Rain Bird Certified Start-Up	•	•	•	•	•
Software Service Packs	•	•	•	•	•
GSP Software Enhancements	•	•	•	•	•
Basic Training	•	•	•	•	•
Advanced Training	•	•			
Central Control Software Upgrade Discount	•	•	•	•	•
Hewlett Packard Color Printer	•	•			
“P” Series Office Computer		•			
“L” Series Office Computer	•				
Uninterruptible Power Supply w/\$25,000 ins.	•	•			
Annual Central Control System Tune-up	•	•			
GSP Internet Membership	•	•	•	•	•
24-Hour On-Site Support	•	•			

GSP Service Features

• **Toll-Free Support**—5 a.m. to 5 p.m. (PST) normal business days. Rain Bird’s GSP engineering is just a toll-free call away to answer questions and resolve central control issues.

• **pcANYWHERE Remote System Diagnostics**—allows GSP engineers to remotely access your central control computer when issues can’t be resolved over the phone.

• **24-Hour Emergency Paging**—gives you access to a GSP engineer any time of the day or night. There is always someone on call and ready to respond.

• **Extended Warranty***—on Rain Bird central control hardware. The GSP warranty covers the Rain Bird computer, printer, MIM, MIM-X, The FREEDOM™ System repeater, MDI, line termination box and Uninterruptible Power Supply.

• **24-Hour Hardware Replacement**—ensures that if any Rain Bird central control hardware component covered under the GSP warranty becomes inoperable, a loaner will be delivered to your course within 24 hours.

• **Disk Backup Hardware**—allows you to protect your valuable central control databases and hard drive files.

• **Rain Bird Certified Start-Up**—provides an on-site inspection by an authorized Rain Bird service manager to certify that your central control system meets Rain Bird specifications.

• **Software Service Packs**—give you the newest central control service packs at no extra charge!

• **GSP Software Enhancements**—provide free access to periodic software enhancements for GSP subscribers.

• **Basic Training**—educational materials are provided to members to help you master the most common functions of your central control system.

• **Advanced Training**—features hands-on instruction by GSP engineers. Use all of your central control features with confidence and efficiency.

• **Central Control Software Upgrade Discount**—reduces the expense of upgrading your system.

• **Hewlett-Packard Color Printer**—an industry leading Hewlett-Packard Deskjet Printer to use for other business applications allowing your Rain Bird central control printer to be dedicated to your irrigation needs.

• **Uninterruptible Power Supply**—with \$25,000 insurance for five years! This premium quality system will protect your valuable data and hardware from unpredictable power disturbances.

• **Annual Central Control System Tune-Ups**—a GSP engineer will analyze your system and perform maintenance procedures yearly to ensure optimum performance.

• **GSP Internet Membership**—with access to the GSP web site.

• **24 Hour On-Site Support**—for issues that can’t be resolved remotely. A Rain Bird authorized service manager will be on-site within 24 hours.

• **Basic GSP Plans**—are also optionally available with a new irrigation computer. Contact Rain Bird GTS or your local distributor for details.

** Note: Rain Bird’s standard and extended warranty is to repair or replace the covered items that fail in normal use. It does not cover lightning, surge damage, theft or misuse. This commitment to repair or replace is our sole and total warranty. Rain Bird will not, under any circumstances, be liable for incidental or consequential damages, no matter how they occur. You can, however, take advantage of the loaner program for replacement equipment while your equipment is being repaired.*

Rain Bird® Board Exchange Program

The Rain Bird® Board Exchange program is designed to meet your needs for a fast and dependable supply of electronic circuit boards when a “downtime” situation demands action.

The program provides quick, easy and dependable replacement of a damaged circuit board with a Certified Rain Bird Golf Division Refurbished Board. A simple phone call to your local Rain Bird Golf Distributor will have the board on its way to you or your distributor to get your site operating again as soon as possible.

Program Features

- Fast, overnight replacement of damaged parts
- 6-month warranty on all replacement boards
- Engineering improvements built into all refurbished boards
- Low, fixed prices with no membership fee required

Fast Service/Easy Installation

When speed is essential to prevent damage to your golf course or to your reputation, you can depend on Rain Bird.

We stock an extensive supply of replacement boards for Rain Bird Golf products and we can ship overnight to almost any area of the United States. The replacement board can be shipped directly to your site or to your local distributor.

A simple phone call to your local Rain Bird Golf Distributor can have the replacement part ordered and quickly on the way. Your Rain Bird Golf Distributor can also arrange a service call to install the parts or you can install the parts with your own service staff.

Pricing

Pricing is fixed so you know the cost of the parts in advance. Pricing includes overnight shipping of the replacement board and return shipping of the damaged board to Rain Bird.



Quality

Turning to the manufacturer of the original part ensures that you receive the best quality replacement boards available.

All Rain Bird Certified Refurbished Boards carry a 6-month warranty to insure your system is functioning properly. All replacement boards are tested and repaired with original Rain Bird quality parts and any engineering and firmware improvements are added to the boards during repair.



Support

We know our products and we make every effort to meet your needs. With the finest distributor network in the golf business, we are prepared to provide you with the best service available.

Rain Bird's own team of Regional Golf Application Engineers and GSP Technical Engineers are also prepared to provide the service and information needed to keep your course's irrigation system operating like new.

Conditions:

- All boards must be ordered and purchased through your local Rain Bird Golf Distributor.
- Each board includes overnight shipping, whenever possible, within the U.S. (Monday – Friday deliveries only) and return shipping to Rain Bird. Damaged boards must be returned within 48 hours or additional charges will be incurred.
- All boards include firmware and displays. Cables, covers and connectors are not included and should be removed from the board being returned to Rain Bird. All returned boards must be returned with no components missing or removed. Extra charges will be incurred for returning incomplete assemblies.
- Orders should be received at Rain Bird Golf Technical Services from the Rain Bird Golf Distributor by 3:00 p.m. (PST) to ensure same-day shipment.
- Prices are subject to change without notice. Taxes are not included.
- Rain Bird will repair or replace, at no charge, any board exchange product that fails in normal use within the 6-month warranty period. This commitment to repair or replace is our sole and total warranty. Rain Bird will not, under any circumstances, be liable for incidental or consequential damages, no matter how they occur.
- The board exchange warranty does not warranty against damage to equipment or exchange boards caused by lightning or electrical surges.
- The 6-month warranty period begins upon receipt of the exchange board.
- No failed exchange board will be considered for warranty replacement if any labels have been removed or defaced.
- No credit will be issued for any unused exchange board.

