Product Catalog

RESIDENTIAL & COMMERCIAL IRRIGATION | *Built on Innovation®*

VOLUME 39

Hunter®






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Your Success Is Our Success

REFLECTING ON 40 YEARS OF INNOVATION

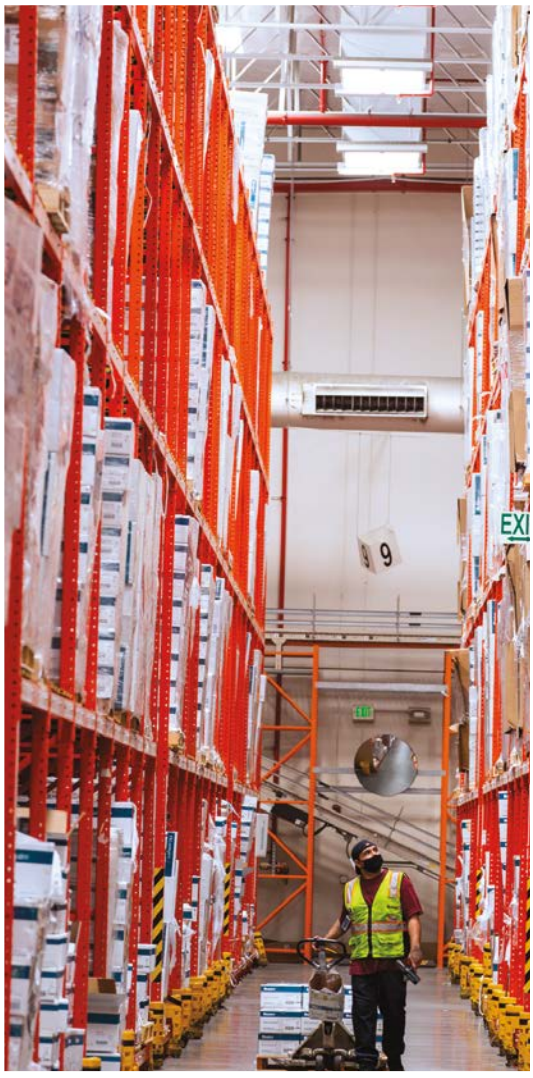
This year, we reached an incredible milestone: four decades of leadership in the irrigation industry. We could not have achieved this special anniversary without the support of every one of our customers around the globe.

From the earliest days of our company until now, we have always strived to connect with you through open dialogue and meaningful collaboration. **We listen to your needs. We value your opinions. We overcome obstacles together**. Through every shared triumph and challenge, we have kept our focus thanks to mutual trust, flexibility, and respect.

Looking ahead, our commitment to innovation remains one of our top priorities. In addition to providing you with best-in-class irrigation solutions, we want to be your go-to partner for growing your business. From product training to design tools, our goal is to equip you with the technology, resources, and support you need to work smarter and prepare your business for whatever challenges the future may hold.

Thank you for supporting Hunter Industries. We look forward to finding new ways to strengthen our partnership even more over the next 40 years and beyond.


40
YEAR
ANNIVERSARY



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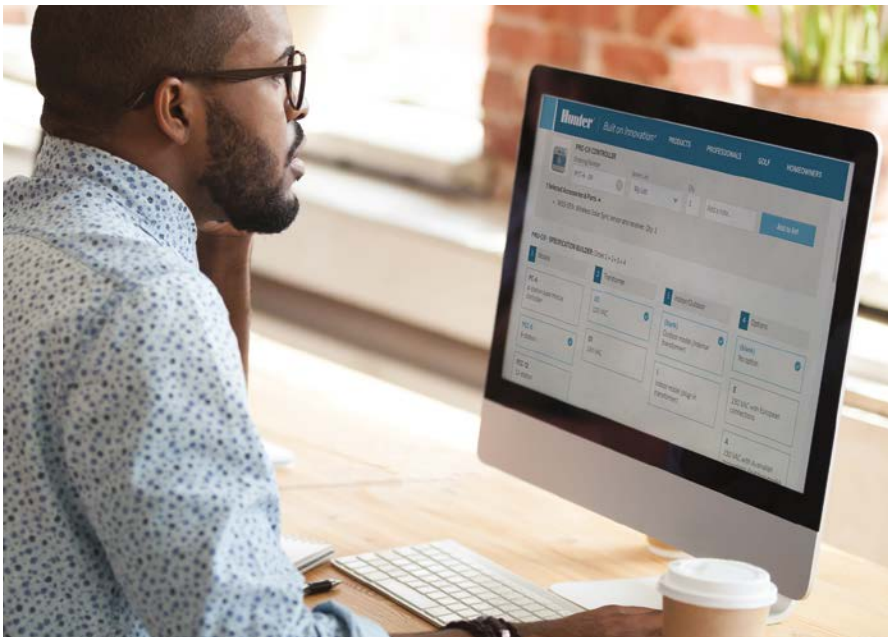

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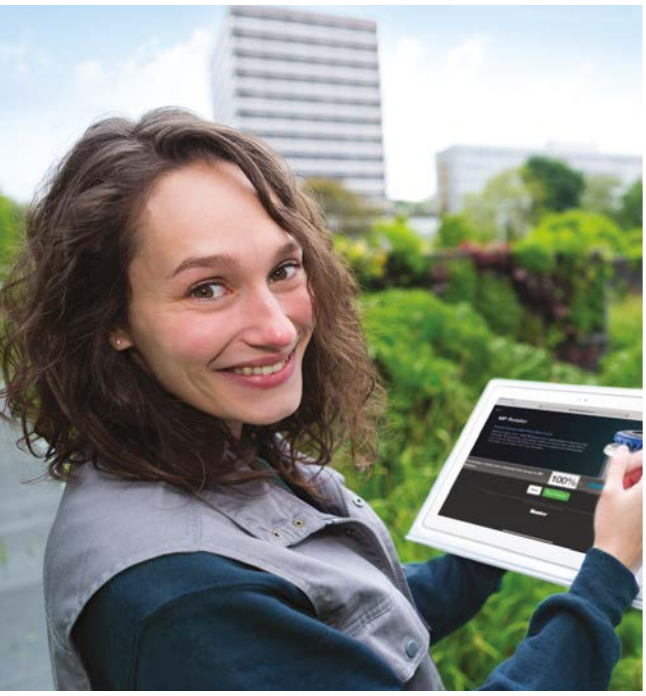

WATER SAVINGS CALCULATOR

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Show your customers how much water — and money — they can save by upgrading to a more efficient irrigation system.

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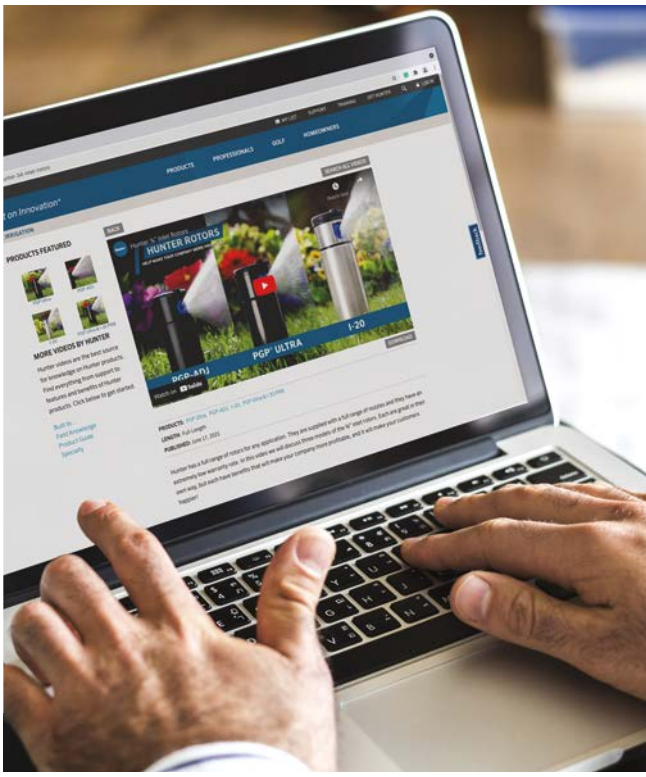
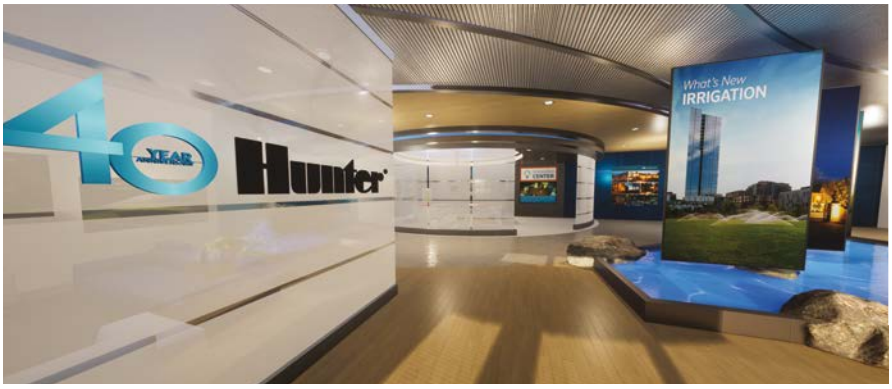
BIM uses advanced 3D modeling to develop irrigation specification documents. Find BIM-supported products for your next project.





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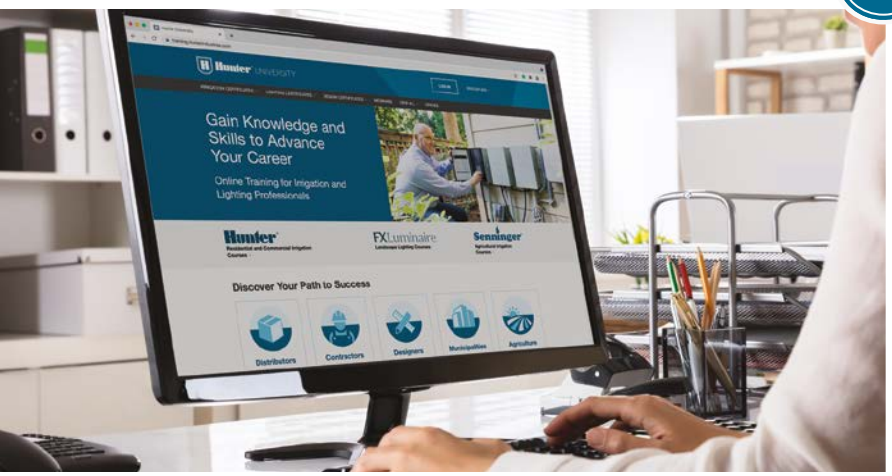
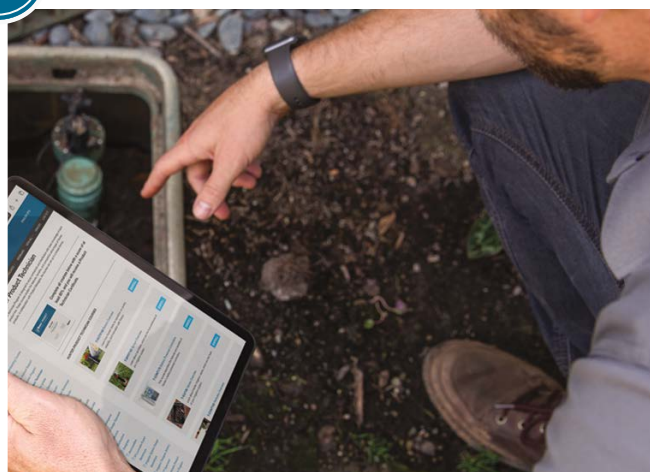
Hunter® UNIVERSITY





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- Product Technician
- Irrigation Designer
- Hydrawise® Specialist
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- Irrigation Installation Fundamentals NEW
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ROTORS

ROTORS
ADVANCED FEATURES

RELIABLE STRENGTH & DURABILITY

PRESSURE-REGULATED BODY

Reduce high incoming pressure to prevent misting and allow nozzles to operate at peak efficiency. Lower pressure produces larger water droplets that fight the effects of wind.

PGP® Ultra Shrub and 4",
I-20 Shrub, 4" and 6"

STAINLESS STEEL RISER

For unforgiving soil conditions, unpredictable climates, or heavy foot traffic, stainless steel is the best choice.

Standard on I-40, I-50, I-80
Optional on I-20 and I-25

DRAIN CHECK VALVE

The Drain Check Valve keeps lines from draining when the system is shut off. This saves water, reduces liability, and prolongs system life.

PGJ, PGP Ultra, I-20, I-25, I-40, I-50, I-80, I-90

VALUE-ADDED OPTIONS

OPPOSING NOZZLE 360° MODEL

The opposing nozzle design offers excellent water distribution. With primary and secondary nozzles on opposing sides of the turret, streams arc in opposite directions as the sprinkler rotates for outstanding midrange and close-in watering.

I-40, I-50, I-80, I-90

EASY IN-THE-FIELD IDENTIFICATION

OPTIONAL RECLAIMED WATER ID

Purple caps indicate where non-potable irrigation water is being used.

PGJ, PGP Ultra, I-20, I-25, I-40, I-50, I-80, I-90

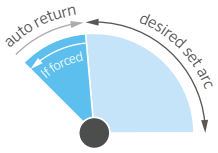
COLOR-CODED NOZZLES

Nozzles are easier to differentiate in the field for simple installation and quick organization.

I-25, I-40, I-50, I-80, I-90

EASY AS-NEEDED ADJUSTMENTS

AUTOMATIC ARC RETURN & NON-STRIPPABLE DRIVE



This patented feature returns the turret to the original arc regardless of where it is turned. The non-strippable drive mechanism is protected from damage, ensuring protection from vandalism.

PGP Ultra, I-20, I-25, I-40

FLOSTOP® CONTROL

FloStop closes the flow of water from individual sprinkler heads while the system is running. This is ideal for changing nozzles or turning off specific heads during maintenance and construction.

I-20

HEADED AND SLOTTED SETSCREW

Use a slotted screwdriver or the Hunter Wrench for easier and simpler adjustments as needed.

PGJ, PGP Ultra, I-20

ROTOR COMPARISON CHART

QUICK SPECS		PGJ	SRM	PGP-ADJ	PGP ULTRA	I-20	I-25	I-40 I-50	I-40-ON I-50-ON	I-80	I-90
INLET SIZE		½"	½"	¾"	¾"	¾"	1"	1"	1"	1½"	1½"
RADIUS	ft.	15' - 37'	15' - 30'	22' - 52'	17' - 46'	17' - 46'	40' - 71'	44' - 69'	52' - 76'	63' - 97'	66' - 103'
FLOW	GPM	0.64 - 5.3	0.42 - 3.4	0.5 - 14.1	0.36 - 14.8	0.36 - 14.8	3.8 - 31.5	7.6 - 29.5	13.0 - 33.7	20.2-58.5	29.5 - 83.8
FEATURES											
RECOMMENDED PRESSURE RANGE	PSI	30 - 50	30 - 50	25 - 70	25 - 70	25 - 70	40 - 100	40 - 100	40 - 100	50-100	80 - 120
OPERATING PRESSURE RANGE	PSI	20 - 100	20 - 100	20 - 100	20 - 100	20 - 100	40 - 100	40 - 100	40 - 100	50 - 100	80 - 120
NOZZLE TRAJECTORY		15°	15°	25°	25°	25°	25°	25°	25°	22.5°	22.5°
SPECIFIC NOZZLES		---	---	---	Optional	Optional	Pre-Installed	Pre-Installed	Pre-Installed	Pre-Installed	Pre-Installed
NOZZLE OPTIONS		8	6	27	34	34	11	6	6	7	8
WARRANTY		2 Years	1 Year	2 Years	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years
ADVANCED FEATURES											
LOW-ANGLE NOZZLE CHOICES				●	●	●					
AUTOMATIC ARC RETURN					●	●	●	●			
NON-STRIPPABLE DRIVE					●	●	●	●			
PART- AND FULL-CIRCLE IN ONE MODEL					●	●	●	●		●	
HEADED AND SLOTTED SETSCREW		●			●	●					
RECLAIMED WATER ID		●			●	●	●	●	●	●	●
AVAILABLE SHORT RADIUS NOZZLES					●	●					
FLOSTOP® CONTROL						●					
OPPOSING NOZZLE									●	●	●
STAINLESS STEEL RISER OPTION						●	●	●	●	●	
OPTIONAL PRESSURE-REGULATED BODY					●	●					
OPTIONAL OR FACTORY-INSTALLED DRAIN CHECK VALVE		● (7')			● (7')	● (7')	● (10')	● (15')	● (15')	● (5')	● (9')

PGJ

Radius: **15' to 34'**
Flow: **0.42 to 4.3 GPM**

The highly durable PGJ offers all the benefits of a large rotor in a compact, spray-sized package, with water-efficient nozzles and easy arc adjustment.

KEY BENEFITS

- Headed and slotted setscrew allows radius adjustment with a Hunter Wrench or flat-blade screwdriver
- Adjustable arc from 40° to 360° to keep water in the appropriate areas
- Standard factory-installed 2.0 nozzle speeds installation
- QuickCheck™ Arc Mechanism for fast arc adjustment

OPERATING SPECIFICATIONS

- Nozzle choices: 8
- Radius: 15' to 34'
- Flow: 0.42 to 4.3 GPM
- Recommended pressure range: 30 to 50 PSI
- Operating pressure range: 20 to 100 PSI
- Precipitation rate: 0.6 in/hr approximately
- Nozzle trajectory: 14° approximately
- Warranty period: 2 years

FACTORY-INSTALLED OPTIONS

- Drain Check Valve (up to 7' of elevation) excluding PGJ-00
- Reclaimed water ID

USER-INSTALLED OPTIONS

- Drain Check Valve (up to 7' of elevation) excluding PGJ-00 (P/N 462078SP)
- HC-50F-50M Check Valve (up to 32' of elevation)

PGJ Reclaimed
Available as a factory-installed option on all models

PGJ-00
Overall height: 7"
Exposed diameter: 1⅛"
Inlet size: ½"

PGJ-04
Overall height: 7⅛"
Pop-up height: 4"
Exposed diameter: 1⅛"
Inlet size: ½"

PGJ-06
Overall height: 9⅛"
Pop-up height: 6"
Exposed diameter: 1⅛"
Inlet size: ½"

PGJ-12
Overall height: 16⅜"
Pop-up height: 12"
Exposed diameter: 1⅛"
Inlet size: ½"

PGJ – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Standard Features	3 Feature Options
PGJ-00 = Shrub	Adjustable arc, 8 standard nozzles	**(blank)** = No option
PGJ-04 = 4" pop-up		**V** = Drain Check Valve
PGJ-06 = 6" pop-up		**R** = Drain Check Valve and reclaimed water ID
PGJ-12 = 12" pop-up		

Examples:
PGJ-04 = 4" pop-up, adjustable arc
PGJ-06-V = 6" pop-up, adjustable arc, with drain Check Valve
PGJ-12-R = 12" pop-up, adjustable arc, with drain Check Valve and reclaimed water ID

Compatible with:

½" Swing Joints
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Hunter Flex SG
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PGJ PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
0.50	30	14	0.42	0.41	0.48
	40	**15**	**0.50**	**0.43**	**0.49**
	50	16	0.58	0.44	0.50
0.75	30	15	0.64	0.55	0.63
	40	**16**	**0.75**	**0.56**	**0.65**
	50	17	0.85	0.57	0.65
1.0	30	18	0.85	0.51	0.58
	40	**19**	**1.0**	**0.51**	**0.59**
	50	19	1.1	0.57	0.66
1.5	30	21	1.3	0.57	0.66
	40	**22**	**1.5**	**0.60**	**0.69**
	50	22	1.7	0.67	0.77
2.0	30	24	1.7	0.55	0.64
	40	**25**	**2.0**	**0.62**	**0.71**
	50	25	2.3	0.71	0.82
2.5	30	27	2.2	0.58	0.67
	40	**28**	**2.5**	**0.60**	**0.69**
	50	28	2.8	0.68	0.79
3.0	30	30	2.5	0.53	0.62
	40	**31**	**3.0**	**0.60**	**0.69**
	50	31	3.4	0.68	0.79
4.0	30	33	3.7	0.65	0.76
	40	**33**	**4.0**	**0.71**	**0.82**
	50	34	4.3	0.72	0.83

Note:
All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.

PGJ NOZZLES

SRM

Radius: **15' to 34'**
Flow: **0.42 to 4.3 GPM**

The SRM is an economical short-range rotor that offers a convenient and efficient alternative to spray heads.

KEY BENEFITS

- Adjustable arc from 40° to 360° to keep water in the appropriate areas
- Standard factory-installed 2.0 nozzle speeds installation
- Through-the-top arc adjustment for easy installation
- QuickCheck™ Arc Mechanism for fast arc adjustment

OPERATING SPECIFICATIONS

- Nozzle choices: 8
- Radius: 15' to 34'
- Flow: 0.42 to 4.3 GPM
- Recommended pressure range: 30 to 50 PSI
- Operating pressure range: 20 to 100 PSI
- Precipitation rate: 0.6 in/hr approximately
- Nozzle trajectory: 14° approximately
- Warranty period: 1 year

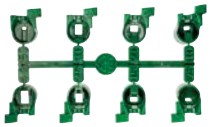
USER-INSTALLED OPTIONS

- Drain Check Valve (up to 7' of elevation) (P/N 462078SP)

SRM

Model	Description
SRM-04	4" pop-up, adjustable arc, 8 standard nozzles

SRM NOZZLES



SRM

SRM-04
Overall height: 7⅛"
Pop-up height: 4"
Exposed diameter: 1⅛"
Inlet size: ½"

SRM-04 PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
0.50	30	14	0.42	0.41	0.48
	40	15	0.50	0.43	0.49
	50	16	0.58	0.44	0.50
0.75	30	15	0.64	0.55	0.63
	40	16	0.75	0.56	0.65
	50	17	0.85	0.57	0.65
1.0	30	18	0.85	0.51	0.58
	40	19	1.0	0.51	0.59
	50	19	1.1	0.57	0.66
1.5	30	21	1.3	0.57	0.66
	40	22	1.5	0.60	0.69
	50	22	1.7	0.67	0.77
2.0	30	24	1.7	0.55	0.64
	40	25	2.0	0.62	0.71
	50	25	2.3	0.71	0.82
2.5	30	27	2.2	0.58	0.67
	40	28	2.5	0.60	0.69
	50	28	2.8	0.68	0.79
3.0	30	30	2.5	0.53	0.62
	40	31	3.0	0.60	0.69
	50	31	3.4	0.68	0.79
4.0	30	33	3.7	0.65	0.76
	40	33	4.0	0.71	0.82
	50	34	4.3	0.72	0.83

Note:
All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.

Compatible with:

½" Swing Joints
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Hunter Flex SG
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PGP®

Radius: **22' to 52'**
Flow: **0.5 to 14.1 GPM**

As Hunter's original rotor, the PGP delivers unsurpassed reliability, durability, versatility, and value, keeping it the professional's choice year after year.

KEY BENEFITS

- Three types of nozzles available for various landscapes: standard red, standard blue, gray low-angle
- Adjustable arc from 40° to 360° to keep water in the appropriate areas
- Factory-installed rubber cover for safety
- Through-the-top arc adjustment for easy installation
- QuickCheck™ Arc Mechanism for fast arc adjustment

OPERATING SPECIFICATIONS

- Nozzle choices: 27
- Radius: 22' to 52'
- Flow: 0.5 to 14.1 GPM
- Recommended pressure range: 25 to 70 PSI
- Operating pressure range: 20 to 100 PSI
- Precipitation rate: 0.4 in/hr approximately
- Nozzle trajectory: standard = 25°, low-angle = 13°
- Warranty period: 2 years

FACTORY-INSTALLED OPTIONS

- Red #5–#8 Nozzle; Blue #1.5–4.0

USER-INSTALLED OPTIONS

- Drain Check Valve (up to 3' of elevation) (P/N 142300SP)

PGP-ADJ
Overall height: 7⅜"
Pop-up height: 4"
Exposed diameter: 1¾"
Inlet size: ¾"

PGP-ADJ – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Standard Features	3 Feature Options
PGP-ADJ-B = 4" pop-up	Adjustable arc with blue nozzle rack	**1.5 to 4.0** = Factory-installed blue nozzle number
PGP-ADJ = 4" pop-up	Adjustable arc with red nozzle rack	**#5 to #8** = Factory-installed red nozzle number

Examples:
PGP-ADJ = 4" pop-up, adjustable arc
PGP-ADJ-B-3.0 = 4" pop-up, adjustable arc, and 3.0 blue nozzle
PGP-ADJ-07 = 4" pop-up, adjustable arc, and #7 red nozzle

PGP Red Standard Nozzle

PGP GRAY LOW-ANGLE NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
4LA ● Gray	30	22	1.4	0.56	0.64
	40	24	1.7	0.57	0.66
	50	**26**	**1.8**	**0.51**	**0.59**
	60	28	2.0	0.49	0.57
5LA ● Gray	30	25	1.6	0.49	0.57
	40	27	1.9	0.50	0.58
	50	**28**	**2.1**	**0.52**	**0.60**
	60	30	2.3	0.49	0.57
6LA ● Gray	30	27	2.1	0.55	0.64
	40	30	2.5	0.53	0.62
	50	**33**	**2.8**	**0.49**	**0.57**
	60	35	3.0	0.47	0.54
7LA ● Gray	30	29	2.8	0.64	0.74
	40	32	3.1	0.58	0.67
	50	**35**	**3.5**	**0.55**	**0.64**
	60	37	3.8	0.53	0.62
8LA ● Gray	30	31	3.4	0.68	0.79
	40	34	3.9	0.65	0.75
	50	**37**	**4.4**	**0.62**	**0.71**
	60	38	4.7	0.63	0.72
9LA ● Gray	30	33	4.3	0.76	0.88
	40	37	5.0	0.70	0.81
	50	**40**	**5.6**	**0.67**	**0.78**
	60	42	6.1	0.67	0.77
10LA● Gray	40	38	6.5	0.87	1.00
	50	40	7.3	0.88	1.01
	60	**42**	**8.0**	**0.87**	**1.01**
	70	44	8.6	0.86	0.99

Bold = Recommended pressure

Note:
All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.

PGP® RED NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
1 ● Red	30	28	0.5	0.12	0.14
	40	29	0.6	0.14	0.16
	50	**29**	**0.7**	**0.16**	**0.19**
	60	30	0.8	0.17	0.20
2 ● Red	30	29	0.7	0.16	0.19
	40	30	0.8	0.17	0.20
	50	**30**	**0.9**	**0.19**	**0.22**
	60	31	1.0	0.20	0.23
3 ● Red	30	30	0.9	0.19	0.22
	40	31	1.0	0.20	0.23
	50	**31**	**1.2**	**0.24**	**0.28**
	60	32	1.3	0.24	0.28
4 ● Red	30	32	1.2	0.23	0.26
	40	33	1.4	0.25	0.29
	50	**34**	**1.6**	**0.27**	**0.31**
	60	34	1.8	0.30	0.35
5 ● Red	30	32	1.6	0.30	0.35
	40	36	1.8	0.27	0.31
	50	**38**	**2.0**	**0.27**	**0.31**
	60	38	2.2	0.29	0.34
6 ● Red	30	34	2.0	0.33	0.38
	40	36	2.4	0.36	0.41
	50	**38**	**2.7**	**0.36**	**0.42**
	60	38	2.9	0.39	0.45
7 ● Red	30	34	2.6	0.43	0.50
	40	38	3.0	0.40	0.46
	50	**40**	**3.4**	**0.41**	**0.47**
	60	40	3.7	0.45	0.51
8 ● Red	30	37	3.2	0.45	0.52
	40	39	3.7	0.47	0.54
	50	**41**	**3.9**	**0.45**	**0.52**
	60	42	4.6	0.50	0.58
9 ● Red	30	38	3.6	0.48	0.55
	40	41	4.3	0.49	0.57
	50	**44**	**5.2**	**0.52**	**0.60**
	60	45	5.5	0.52	0.60
10 ● Red	40	44	6.0	0.60	0.69
	50	**46**	**6.8**	**0.62**	**0.71**
	60	47	7.6	0.66	0.76
	70	49	8.2	0.66	0.76
11 ● Red	40	46	8.0	0.73	0.84
	50	**48**	**8.9**	**0.74**	**0.86**
	60	50	9.8	0.75	0.87
	70	51	10.5	0.78	0.90
12 ● Red	40	46	10.5	0.96	1.10
	50	**48**	**11.9**	**0.99**	**1.15**
	60	50	12.7	0.98	1.13
	70	52	14.1	1.00	1.16

Bold = Recommended pressure

Note:
All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.

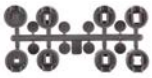
PGP BLUE NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
1.5 ● Blue	25	29	1.2	0.27	0.32
	35	31	1.4	0.28	0.32
	45	**31**	**1.5**	**0.30**	**0.35**
	55	32	1.8	0.34	0.39
	65	32	1.9	0.36	0.41
2.0 ● Blue	25	33	1.4	0.25	0.29
	35	33	1.7	0.30	0.35
	45	**34**	**2.0**	**0.33**	**0.38**
	55	34	2.1	0.35	0.40
	65	34	2.3	0.43	0.50
2.5 ● Blue	25	33	1.7	0.30	0.35
	35	35	2.1	0.33	0.38
	45	**35**	**2.5**	**0.39**	**0.45**
	55	35	2.6	0.41	0.47
	65	35	2.9	0.46	0.53
3.0 ● Blue	25	35	2.2	0.35	0.40
	35	36	2.7	0.40	0.46
	45	**38**	**3.0**	**0.40**	**0.46**
	55	39	3.4	0.43	0.50
	65	39	3.7	0.47	0.54
4.0 ● Blue	25	37	3.0	0.42	0.49
	35	39	3.5	0.44	0.51
	45	**40**	**4.0**	**0.48**	**0.56**
	55	41	4.5	0.52	0.60
	65	41	4.8	0.55	0.63
5.0 ● Blue	25	37	3.7	0.52	0.60
	35	39	4.5	0.57	0.66
	45	**42**	**5.0**	**0.55**	**0.63**
	55	42	5.7	0.62	0.72
	65	42	6.2	0.68	0.78
6.0 ● Blue	25	38	4.3	0.57	0.66
	35	40	5.6	0.67	0.78
	45	**43**	**6.0**	**0.62**	**0.72**
	55	44	6.7	0.67	0.77
	65	44	7.3	0.73	0.84
8.0 ● Blue	25	37	6.0	0.84	0.97
	35	41	7.0	0.80	0.93
	45	**44**	**8.0**	**0.80**	**0.92**
	55	46	9.0	0.82	0.95
	65	46	9.8	0.89	1.03

PGP NOZZLES

Red (P/N 130900)

Blue (P/N 665300)



Gray (P/N 233200)

PGP-ADJ

Easy arc and radius adjustment

PGP® ULTRA

Radius: **17' to 46'**
Flow: **0.36 to 14.8 GPM**

The PGP Ultra raises the bar for rotor technology with powerful features developed over three decades of research, customer feedback, and lab testing.

KEY BENEFITS

- Patented automatic arc return feature returns the turret back to the original arc pattern if vandalized; adjustable arc from 50° to 360°
- Non-strippable drive mechanism is protected from damage if turned in the opposite direction of travel
- Part- and full-circle in one model for flexibility across landscapes and reduced inventory
- Headed and slotted setscrew allows radius adjustment with a Hunter Wrench or flat-blade screwdriver
- Flat-top nozzles allow fast, easy insertion
- QuickCheck™ Arc Mechanism for fast arc adjustment

OPERATING SPECIFICATIONS

- Nozzle choices: 34
- Radius: 17' to 46'
- Flow: 0.36 to 14.8 GPM
- Recommended pressure range: 25 to 70 PSI
- Operating pressure range: 20 to 100 PSI
- Precipitation rate: 0.4 in/hr approximately
- Nozzle trajectory: standard = 25°, low-angle = 13°
- Nozzle racks: 1.5 to 8.0 blue, 2.0 to 4.5 low-angle gray, 0.50 to 3.0 black, 6.0 to 13.0 green, MPR-25, MPR-30, MPR-35
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Drain Check Valve (up to 10' of elevation)
- Reclaimed water ID
- Blue #1.5–4.0 Nozzles

USER-INSTALLED OPTIONS

- Drain Check Valve (up to 3' of elevation) PGP 4" / 6" only (P/N 142300SP)
- HSJ-0 prefabricated ¾" PVC Swing Joint

PGP Ultra Reclaimed
Available as a factory-installed option on all models

PGP Ultra
Easy arc and radius adjustment

PGP-ULTRA – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
PGP-00 = Shrub **PGP-04** = 4" pop-up **PGP-06** = 6" pop-up **PGP-12** = 12" pop-up	Adjustable arc, plastic riser, 8 standard nozzles, and 4 low-angle nozzles	**(blank)** = No option **CV** = Drain Check Valve **CV-R** = Drain Check Valve and reclaimed water ID	**Blue 1.5–8.0** **Gray low-angle** **Black short-radius** **Green high-flow** **MPR-25-Q, T, H, F** **MPR-30-Q, T, H, F** **MPR-35-Q, T, H, F** **1.5 to 4.0** = Only nozzles 1.5–4.0 can be factory-installed

Examples:
PGP-04 = 4" pop-up, adjustable arc
PGP-04-2.5 = 4" pop-up, adjustable arc, and 2.5 nozzle
PGP-12-CV-R-4.0 = 12" pop-up, adjustable arc, with drain check valve and reclaimed water ID, and 4.0 nozzle

PGP-00
Overall height: 7½"
Exposed diameter: 1¾"
Inlet size: ¾"

PGP-04
Overall height: 7½"
Pop-up height: 4"
Exposed diameter: 1¾"
Inlet size: ¾"

PGP-06
Overall height: 9⅞"
Pop-up height: 6"
Exposed diameter: 1¾"
Inlet size: ¾"

PGP-12
Overall height: 17"
Pop-up height: 12"
Exposed diameter: 1¾"
Inlet size: ¾"

I-20

Radius: **17' to 46'**
Flow: **0.36 to 14.8 GPM**

The I-20 is loaded with upgraded features such as FloStop control, check valves, and efficient nozzles that make it the perfect choice in a range of applications.

KEY BENEFITS

- Patented automatic arc return feature returns the turret back to the original arc pattern if vandalized; adjustable arc from 50° to 360°
- Non-strippable drive mechanism is protected from damage if turned in the opposite direction of travel
- Part- and full-circle in one model for flexibility across landscapes and reduced inventory
- Headed and slotted setscrew allows radius adjustment with a Hunter Wrench or flat-blade screwdriver
- FloStop® closes the flow of water from individual sprinklers to change the nozzle or perform repairs
- Flat-top nozzles allow fast, easy insertion
- QuickCheck™ Arc Mechanism for fast arc adjustment
- Available stainless steel riser for extra durability
- Drain Check Valve prevents low-head drainage (up to 10' of elevation)

OPERATING SPECIFICATIONS

- Nozzle choices: 34
- Radius: 17' to 46'
- Flow: 0.36 to 14.8 GPM
- Recommended pressure range: 25 to 70 PSI
- Operating pressure range: 20 to 100 PSI
- Precipitation rate: 0.4 in/hr approximately
- Nozzle trajectory: standard = 25°, low-angle = 13°
- Nozzle racks: 1.5 to 8.0 blue, 2.0 to 4.5 low-angle gray, 0.50 to 3.0 black, 6.0 to 13.0 green, MPR-25, MPR-30, MPR-35
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- No drain Check Valve (NCV models)
- Reclaimed water ID
- Blue #1.5–4.0 Nozzles

USER-INSTALLED OPTIONS

- HSJ-0 prefabricated ¾" PVC Swing Joint

I-20 (PLASTIC) – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-20-00 = Shrub **I-20-04** = 4" pop-up **I-20-06** = 6" pop-up **I-20-12** = 12" pop-up	Adjustable arc, plastic riser, check valve, 8 standard nozzles, and 4 low-angle nozzles	**(blank)** = No option **NCV** = Without Check Valve *(only available on 4" model)* **R** = Drain Check Valve and reclaimed water ID	**Blue 1.5–8.0** **Gray low-angle** **Black short-radius** **Green high-flow** **MPR-25-Q, T, H, F** **MPR-30-Q, T, H, F** **MPR-35-Q, T, H, F** **1.5 to 4.0** = Only nozzles 1.5–4.0 can be factory-installed

I-20 (STAINLESS STEEL) – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-20-04-SS = 4" pop-up **I-20-06-SS** = 6" pop-up	Adjustable arc, stainless steel riser, check valve, 8 standard nozzles, and 4 low-angle nozzles	**(blank)** = No option **NCV** = Without Check Valve *(only available on 4" model)* **R** = Drain Check Valve and reclaimed water ID	**Blue 1.5–8.0** **Gray low-angle** **Black short-radius** **Green high-flow** **MPR-25-Q, T, H, F** **MPR-30-Q, T, H, F** **MPR-35-Q, T, H, F** **1.5 to 4.0** = Only nozzles 1.5–4.0 can be factory-installed

Example:
I-20-12-R-4.0 = 12" pop-up, adjustable arc, with reclaimed water ID, and 4.0 nozzle

I-20-00
Overall height: 7¾"
Exposed diameter: 1¾"
Inlet size: ¾"

I-20-04
Overall height: 7⅛"
Pop-up height: 4"
Exposed diameter: 1¾"
Inlet size: ¾"

I-20-06
Overall height: 9⅞"
Pop-up height: 6"
Exposed diameter: 1¾"
Inlet size: ¾"

I-20-12
Overall height: 17"
Pop-up height: 12"
Exposed diameter: 1¾"
Inlet size: ¾"

I-20 Reclaimed
Available as a factory-installed option on all models

PGP® ULTRA & I-20 PRB

Radius: **17' to 46'**
Flow: **0.36 to 9.8 GPM**

The PGP Ultra and I-20 PRB are built to thrive in applications where high water pressure could otherwise lead to inefficient nozzle operation.

KEY BENEFITS

- Pressure-regulated body (45 PSI) reduces high incoming pressure to increase nozzle efficiency (requires dynamic pressure differential: 15 PSI)
- Patented automatic arc return feature returns the turret back to the original arc pattern if vandalized; adjustable arc from 50° to 360°
- Non-strippable drive mechanism is protected from damage if turned in the opposite direction of travel
- Part- and full-circle in one model for flexibility across landscapes and reduced inventory
- Headed and slotted setscrew allows radius adjustment with a Hunter Wrench or flat-blade screwdriver
- FloStop® closes the flow of water from individual sprinklers, to change the nozzle or perform repairs (I-20 only)
- Flat-top nozzles allow fast, easy insertion
- QuickCheck™ Arc Mechanism for fast arc adjustment
- Available stainless steel riser for extra durability
- Drain Check Valve prevents low-head drainage (up to 10' of elevation)

OPERATING SPECIFICATIONS

- Nozzle choices: 30
- Radius: 17' to 46'
- Flow: 0.36 to 9.8 GPM
- Nozzle discharge pressure: 45 PSI
- Operating pressure range: 60 to 100 PSI
- Precipitation rate: 0.4 in/hr approximately
- Nozzle trajectory: standard = 25°, low-angle = 13°
- Nozzle racks: 1.5 to 8.0 blue, 2.0 to 4.5 low-angle gray, 0.50 to 3.0 black, MPR-25, MPR-30, MPR-35
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Reclaimed water ID
- Blue #1.5-4.0 Nozzels

USER-INSTALLED OPTIONS

- HSJ-0 prefabricated ¾" PVC Swing Joint

PGP-00-PRB
Overall height: 8⅝"
Exposed diameter: 1¼"
Inlet size: ¾"

PGP-04-PRB
Overall height: 8¼"
Pop-up height: 4"
Exposed diameter: 1¾"
Inlet size: ¾"

I-20-00-PRB
Overall height: 8⅝"
Exposed diameter: 1¼"
Inlet size: ¾"

I-20-04-PRB
Overall height: 8¼"
Pop-up height: 4"
Exposed diameter: 1¾"
Inlet size: ¾"

I-20-06-PRB
Overall height: 10⅝"
Pop-up height: 6"
Exposed diameter: 1¾"
Inlet size: ¾"

PGP-ULTRA & I-20 PRB – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
PGP-00-PRB = Riser mount **PGP-04-PRB** = 4" pop-up	Adjustable arc, plastic riser, pressure-regulated body, 8 standard nozzles, and 4 low-angle nozzles	**(blank)** = No option **CV** = Drain Check Valve (PGP-04 only) **CV-R** = Drain Check Valve and reclaimed water ID	**Blue 1.5–8.0** = **Gray low-angle** **Black short-radius** **MPR-25, 30, 35 - Q, T, H, F**
I-20-00-PRB = Shrub **I-20-04-PRB** = 4" pop-up **I-20-06-PRB** = 6" pop-up	Adjustable arc, plastic riser, pressure-regulated body, 8 standard nozzles, and 4 low-angle nozzles	**(blank)** = No option **R** = Drain Check Valve and reclaimed water ID	**Blue 1.5–8.0** = **Gray low-angle** **Black short-radius** **MPR-25, 30, 35 - Q, T, H, F**
I-20-04-SS-PRB = 4" pop-up **I-20-06-SS-PRB** = 6" pop-up	Adjustable arc, stainless steel riser, pressure-regulated body, 8 standard nozzles, and 4 low-angle nozzles	**(blank)** = No option **R** = Drain Check Valve and reclaimed water ID	**Blue 1.5–8.0** = **Gray low-angle** **Black short-radius** **MPR-25, 30, 35 - Q, T, H, F**

Examples:
PGP-04-PRB = 4" pop-up, adjustable arc, plastic riser with no factory installed-nozzle
I-20-04-PRB-3.0-2.5 = 4" pop-up, adjustable arc, plastic riser with 3.0 nozzle
I-20-06-SS-PRB-R-MPR-25H = 6" pop-up, adjustable arc, stainless steel riser with MPR-25H

PGP ULTRA / I-20 / PRB BLUE STANDARD NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
1.5 ● Blue	25	29	1.2	0.27	0.32
	35	31	1.4	0.28	0.32
	45	**31**	**1.5**	**0.30**	**0.35**
	55	32	1.8	0.34	0.39
	65	32	1.9	0.36	0.41
2.0 ● Blue	25	33	1.4	0.25	0.29
	35	33	1.7	0.30	0.35
	45	**34**	**2.0**	**0.33**	**0.38**
	55	34	2.1	0.35	0.40
	65	32	2.3	0.43	0.50
2.5 ● Blue	25	33	1.7	0.30	0.35
	35	35	2.1	0.33	0.38
	45	**35**	**2.5**	**0.39**	**0.45**
	55	35	2.6	0.41	0.47
	65	35	2.9	0.46	0.53
3.0 ● Blue	25	35	2.2	0.35	0.40
	35	36	2.7	0.40	0.46
	45	**38**	**3.0**	**0.40**	**0.46**
	55	39	3.4	0.43	0.50
	65	39	3.7	0.47	0.54
4.0 ● Blue	25	37	3.0	0.42	0.49
	35	39	3.5	0.44	0.51
	45	**40**	**4.0**	**0.48**	**0.56**
	55	41	4.5	0.52	0.60
	65	41	4.8	0.55	0.63
5.0 ● Blue	25	37	3.7	0.52	0.60
	35	39	4.5	0.57	0.66
	45	**42**	**5.0**	**0.55**	**0.63**
	55	42	5.7	0.62	0.72
	65	42	6.2	0.68	0.78
6.0 ● Blue	25	38	4.3	0.57	0.66
	35	40	5.6	0.67	0.78
	45	**43**	**6.0**	**0.62**	**0.72**
	55	44	6.7	0.67	0.77
	65	44	7.3	0.73	0.84
8.0 ● Blue	25	37	6.0	0.84	0.97
	35	41	7.0	0.80	0.93
	45	**44**	**8.0**	**0.80**	**0.92**
	55	46	9.0	0.82	0.95
	65	46	9.8	0.89	1.03

PGP ULTRA / I-20 / PRB GRAY LOW-ANGLE NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
2.0 LA ● Gray	30	25	1.6	0.49	0.57
	40	27	1.9	0.50	0.58
	50	**28**	**2.1**	**0.52**	**0.60**
	60	30	2.3	0.49	0.57
2.5 LA ● Gray	30	27	2.1	0.55	0.64
	40	30	2.5	0.53	0.62
	50	**33**	**2.8**	**0.49**	**0.57**
	60	35	3.0	0.47	0.54
3.5 LA ● Gray	30	29	2.8	0.64	0.74
	40	32	3.1	0.58	0.67
	50	**35**	**3.5**	**0.55**	**0.64**
	60	37	3.8	0.53	0.62
4.5 LA ● Gray	30	29	3.4	0.78	0.90
	40	32	3.9	0.73	0.85
	50	**35**	**4.4**	**0.69**	**0.80**
	60	37	4.7	0.66	0.76

Bold = Recommended pressure

Note:
All precipitation rates calculated for 180° operation.
For the precipitation rate for a 360° sprinkler, divide by 2.

Convenient Nozzle Rack

PGP ULTRA / I-20 / PRB NOZZLES

Blue Standard / Gray Low-Angle (P/N 782900)

Flat-top nozzle for easy insertion coupled with a headed slotted adjustment screw for quick radius adjustment with a Hunter Wrench or a flat-blade screwdriver.

Flat-front nozzle allows easy alignment during installation.

I-20-04 with PRB Body

Pressure Regulation

Continual operating pressure of 45 PSI

PR-075

Overall height: 2¼"
Inlet/outlet size: ¾"
For use under all models ¾" inlet sprinklers, regulates to 45 PSI

PGP ULTRA / I-20 GREEN HIGH-FLOW NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
10 ● Dk. Green	40	42	8.4	0.92	1.06
	50	43	9.5	0.99	1.14
	60	**45**	**10.5**	**1.00**	**1.15**
	70	47	11.4	0.99	1.15
13 ● Dk. Green	40	43	10.9	1.13	1.31
	50	44	12.3	1.22	1.41
	60	**45**	**13.6**	**1.29**	**1.49**
	70	47	14.8	1.29	1.49
6.0 LA ● Dk. Green	30	31	4.2	0.84	0.97
	40	35	5.0	0.79	0.91
	50	**37**	**5.8**	**0.82**	**0.94**
	60	39	6.3	0.80	0.92
8.0 LA ● Dk. Green	40	37	6.7	0.94	1.09
	50	39	7.7	0.97	1.13
	60	**41**	**8.5**	**0.97**	**1.12**
	70	41	9.2	1.05	1.22

I-20 with Blue Standard Nozzle

PGP ULTRA / I-20 / PRB BLACK SHORT-RADIUS NOZZLE PERFORMANCE DATA (18'/25')

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
.50 SR ● Black	30	17	0.36	0.24	0.28
	40	17	0.43	0.29	0.33
	50	**18**	**0.50**	**0.30**	**0.34**
	60	19	0.57	0.30	0.35
1.0 SR ● Black	30	17	0.78	0.52	0.60
	40	17	0.90	0.60	0.69
	50	**18**	**1.00**	**0.59**	**0.69**
	60	19	1.10	0.59	0.68
2.0 SR ● Black	30	17	1.40	0.93	1.08
	40	17	1.70	1.13	1.31
	50	**18**	**2.00**	**1.19**	**1.37**
	60	19	2.20	1.17	1.35
.75 SR ● Black	30	23	0.58	0.21	0.24
	40	24	0.68	0.23	0.26
	50	**25**	**0.75**	**0.23**	**0.27**
	60	26	0.83	0.24	0.27
1.5 SR ● Black	30	23	1.10	0.40	0.46
	40	24	1.30	0.43	0.50
	50	**25**	**1.50**	**0.46**	**0.53**
	60	26	1.60	0.46	0.53
3.0 SR ● Black	30	23	2.50	0.91	1.05
	40	24	2.70	0.90	1.04
	50	**25**	**3.00**	**0.92**	**1.07**
	60	26	3.10	0.88	1.02

Bold = Recommended pressure

Note:
All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.

PGP ULTRA / I-20 / PRB NOZZLES

Dk. Green High-Flow (P/N 444800)

Black Short-Radius (P/N 466100)

PGP® ULTRA / I-20 / PRB MPR-25 NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
90°	25	23	0.74	0.54	0.62
	35	24	0.88	0.59	0.68
	45	25	1.00	0.62	0.71
	55	25	1.11	0.68	0.79
	65	25	1.21	0.75	0.86
120°	25	23	1.00	0.55	0.63
	35	24	1.21	0.61	0.70
	45	25	1.38	0.64	0.74
	55	25	1.53	0.71	0.82
	65	25	1.67	0.77	0.89
180°	25	23	1.44	0.52	0.61
	35	24	1.73	0.58	0.67
	45	25	1.98	0.61	0.70
	55	25	2.21	0.68	0.79
	65	25	2.41	0.74	0.86
360°	25	23	2.78	0.51	0.58
	35	24	3.34	0.56	0.64
	45	25	3.82	0.59	0.68
	55	25	4.25	0.65	0.76
	65	25	4.63	0.71	0.82

MPR-25 NOZZLE

PGP ULTRA / I-20 / PRB MPR-35 NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
90°	25	32	1.40	0.53	0.61
	35	34	1.67	0.56	0.64
	45	35	1.92	0.60	0.70
	55	35	2.13	0.67	0.77
	65	35	2.31	0.73	0.84
120°	25	32	1.77	0.50	0.58
	35	34	2.15	0.54	0.62
	45	35	2.46	0.58	0.67
	55	35	2.74	0.65	0.75
	65	35	2.99	0.70	0.81
180°	25	32	2.75	0.52	0.60
	35	34	3.33	0.55	0.64
	45	35	3.81	0.60	0.69
	55	35	4.23	0.66	0.77
	65	35	4.62	0.73	0.84
360°	25	32	5.36	0.50	0.58
	35	34	6.62	0.55	0.64
	45	35	7.58	0.60	0.69
	55	35	8.43	0.66	0.76
	65	35	9.18	0.72	0.83

MPR-35 NOZZLE

PGP ULTRA / I-20 / PRB MPR-30 NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
90°	25	29	1.03	0.47	0.54
	35	30	1.23	0.53	0.61
	45	30	1.40	0.60	0.69
	55	30	1.56	0.67	0.77
	65	30	1.69	0.72	0.83
120°	25	29	1.34	0.46	0.53
	35	30	1.62	0.52	0.60
	45	30	1.85	0.59	0.69
	55	30	2.06	0.66	0.76
	65	30	2.24	0.72	0.83
180°	25	29	2.15	0.49	0.57
	35	30	2.59	0.55	0.64
	45	30	2.96	0.63	0.73
	55	30	3.30	0.71	0.82
	65	30	3.60	0.77	0.89
360°	25	29	4.24	0.49	0.56
	35	30	5.08	0.54	0.63
	45	30	5.78	0.62	0.71
	55	30	6.39	0.68	0.79
	65	30	6.92	0.74	0.85

MPR-30 NOZZLE

PGP-04 Ultra with MPR-30 Nozzle

I-25

Radius: **37' to 71'**
Flow: **3.8 to 31.5 GPM**

The reliable, durable, and versatile I-25 offers an expansive nozzle selection that makes it the perfect choice for large turf applications.

KEY BENEFITS

- Patented automatic arc return feature returns the turret back to the original arc pattern if vandalized; adjustable arc from 50° to 360°
- Non-strippable drive mechanism is protected from damage if turned in the opposite direction of travel
- Part- and full-circle in one model for installation flexibility and reduced inventory
- Color-coded nozzles make identification easy
- QuickCheck™ Arc Mechanism for fast arc adjustment
- Available stainless steel riser for extra durability
- Drain Check Valve prevents low-head drainage (up to 10' of elevation)

I-25-04
Overall height: 7⅞"
Pop-up height: 4"
Exposed diameter: 1¾"
Inlet size: 1"

OPERATING SPECIFICATIONS

- Nozzle choices: 11
- Radius: 37' to 71'
- Flow: 3.8 to 31.5 GPM
- Recommended pressure range: 40 to 100 PSI
- Operating pressure range: 40 to 100 PSI
- Precipitation rates: 0.4 in/hr approximately
- Nozzle trajectory: standard = 25°
- Warranty period: 5 years

I-25-06
Overall height: 10¼"
Pop-up height: 6"
Exposed diameter: 1¾"
Inlet size: 1"

FACTORY-INSTALLED OPTIONS

- Reclaimed water ID
- High-speed rotations

USER-INSTALLED OPTIONS

- HSJ-1 prefabricated 1" PVC Swing Joint

I-25 Reclaimed
Available as a factory-installed option on all models

I-25 High-Speed
Available as a factory-installed option on stainless steel models

I-25 (PLASTIC) - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-25-04 = 4" pop-up **I-25-06** = 6" pop-up	Adjustable arc, plastic riser, check valve, and 5 nozzles	**(blank)** = No option **R** = Reclaimed water ID	**#4 to #28** = Factory-installed nozzle number

I-25 (STAINLESS STEEL) – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-25-04-SS = 4" pop-up **I-25-06-SS** = 6" pop-up	Adjustable arc, stainless steel riser, check valve, and 5 nozzles	**(blank)** = No option **R** = Reclaimed water ID **HS** = High-speed **HS-R** = High-speed and reclaimed water ID	**#4 to #28** = Factory-installed nozzle number

Examples:
I-25-04 = 4" pop-up, adjustable arc
I-25-04-SS-R-18 = 4" pop-up, adjustable arc, stainless steel riser, reclaimed water ID, and #18 nozzle
I-25-06-SS = 6" pop-up, adjustable arc, stainless steel riser

I-25 STANDARD NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
04 Yellow	40	40	3.8	0.46	0.53
	50	41	4.3	0.49	0.57
	60	42	4.7	0.51	0.59
	70	43	5.1	0.53	0.61
07 Orange*	40	45	6.6	0.63	0.72
	50	47	7.0	0.61	0.70
	60	48	7.5	0.63	0.72
	70	49	7.9	0.63	0.73
08 Lt. Brown	40	47	7.7	0.67	0.77
	50	49	8.3	0.67	0.77
	60	50	9.2	0.71	0.82
	70	51	9.9	0.73	0.85
10 Lt. Green*	50	51	10.1	0.75	0.86
	60	52	11.1	0.79	0.91
	70	53	12.1	0.83	0.96
	80	54	12.9	0.85	0.98
13 Lt. Blue	50	53	11.2	0.77	0.89
	60	54	12.3	0.81	0.94
	70	55	13.3	0.85	0.98
	80	55	14.3	0.91	1.05
15 Gray*	50	56	13.4	0.82	0.95
	60	57	14.3	0.85	0.98
	70	57	15.2	0.90	1.04
	80	58	16.4	0.94	1.08
18 Red	50	58	14.5	0.83	0.96
	60	59	15.7	0.87	1.00
	70	62	16.9	0.85	0.98
	80	63	18.2	0.88	1.02
20 Dk. Brown*	60	62	17.8	0.89	1.03
	70	63	19.2	0.93	1.08
	80	64	20.5	0.96	1.11
	90	65	21.8	0.99	1.15
23 Dk. Green	60	64	21.9	1.03	1.19
	70	65	23.6	1.08	1.24
	80	66	25.6	1.13	1.31
	90	67	27.0	1.16	1.34
25 Dk. Blue*	60	66	23.5	1.04	1.20
	70	68	25.5	1.06	1.23
	80	69	28.0	1.13	1.31
	90	70	29.5	1.16	1.34
28 Black	70	68	26.9	1.12	1.29
	80	70	28.7	1.13	1.30
	90	71	30.6	1.17	1.35
	100	71	31.5	1.20	1.39

I-25 HIGH-SPEED NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
04 Yellow	40	37	3.8	0.53	0.62
	50	38	4.3	0.57	0.66
	60	38	4.7	0.63	0.72
	70	39	5.1	0.65	0.75
07 Orange*	40	40	6.6	0.79	0.92
	50	41	7.0	0.80	0.93
	60	42	7.5	0.82	0.95
	70	44	7.9	0.79	0.91
08 Lt. Brown	40	42	7.7	0.84	0.97
	50	43	8.3	0.86	1.00
	60	44	9.2	0.91	1.06
	70	45	9.9	0.94	1.09
10 Lt. Green*	50	46	10.1	0.92	1.06
	60	48	11.1	0.93	1.07
	70	49	12.1	0.97	1.12
	80	50	12.9	0.99	1.15
13 Lt. Blue	50	48	11.2	0.94	1.08
	60	49	12.3	0.99	1.14
	70	51	13.3	0.98	1.14
	80	51	14.3	1.06	1.22
15 Gray*	50	49	13.4	1.07	1.24
	60	51	14.3	1.06	1.22
	70	53	15.2	1.04	1.20
	80	54	16.4	1.08	1.25
18 Red	50	50	14.5	1.12	1.29
	60	53	15.7	1.08	1.24
	70	55	16.9	1.08	1.24
	80	57	18.2	1.08	1.25
20 Dk. Brown*	60	53	17.8	1.22	1.41
	70	56	19.2	1.18	1.36
	80	58	20.5	1.17	1.35
	90	59	21.8	1.21	1.39
23 Dk. Green	60	56	21.9	1.34	1.55
	70	58	23.6	1.35	1.56
	80	60	25.6	1.37	1.58
	90	61	27.0	1.40	1.61
25 Dk. Blue*	60	58	23.5	1.34	1.55
	70	62	25.5	1.28	1.47
	80	64	28.0	1.32	1.52
	90	66	29.5	1.30	1.51
28 Black	70	60	26.9	1.44	1.66
	80	62	28.7	1.44	1.66
	90	65	30.6	1.39	1.61
	100	67	31.5	1.35	1.56

* Five standard nozzles included with each sprinkler.

Note:
All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.

I-25 NOZZLE

Standard

I-40

Radius: **44' to 76'**
Flow: **7.6 to 33.7 GPM**

The I-40 Rotor has a comprehensive list of upgraded features that make it the top choice for demanding, large turf projects.

KEY BENEFITS

- Patented automatic arc return feature returns the turret back to the original arc pattern if vandalized; adjustable arc from 50° to 360°
- Non-strippable drive mechanism is protected from damage if turned in the opposite direction of travel
- Part- and full-circle in one model for flexibility across landscapes and reduced inventory
- Color-coded nozzles make identification easy
- Available opposing nozzle model for even watering in full-circle applications (I-40-ON model)
- Drain Check Valve prevents low-head drainage (up to 15' of elevation)

OPERATING SPECIFICATIONS

- Nozzle choices: 12
- Radius I-40: 44' to 69'
- Radius I-40-ON: 52' to 76'
- Flow I-40: 7.6 to 29.5 GPM
- Flow I-40-ON: 13.0 to 33.7 GPM
- Recommended pressure range: 40 to 100 PSI
- Operating pressure range: 40 to 100 PSI
- Precipitation rate: 0.4 in/hr approximately
- Nozzle trajectory: standard = 25°
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Reclaimed water ID
- High-speed rotations

USER-INSTALLED OPTIONS

- HSJ-1 prefabricated 1" PVC Swing Joint

I-40-04
Overall height: 7⅞"
Pop-up height: 4"
Exposed diameter: 2"
Inlet size: 1"

I-40-06
Overall height: 10¼"
Pop-up height: 6"
Exposed diameter: 2"
Inlet size: 1"

I-40 Reclaimed
Available as a factory-installed option on all models

I-40 High-Speed
Available as a factory-installed option on all models

I-40 – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-40-04-SS = 4" pop-up **I-40-06-SS** = 6" pop-up	Adjustable arc, stainless steel riser, check valve, and 6 nozzles	**(blank)** = No option **HS** = High-speed **HS-R** = High-speed and reclaimed water ID **R** = Reclaimed water ID	**#8 to #25** = Factory-installed nozzle number

I-40-ON – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Opposing Nozzle Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-40-04-SS-ON = 4" pop-up **I-40-06-SS-ON** = 6" pop-up	Full-circle, opposing nozzle, stainless steel riser, check valve, and 6 nozzles	**(blank)** = No option **HS** = High-speed **HS-R** = High-speed and reclaimed water ID **R** = Reclaimed water ID	**#15 to #28** = Factory-installed nozzle number

Examples:
I-40-04-SS = 4" pop-up, adjustable arc, stainless steel riser, with check valve
I-40-04-SS-ON-R-23 = 4" pop-up, adjustable arc, stainless steel riser, with check valve, and reclaimed water ID and #23 nozzle
I-40-06-SS-15 = 6" pop-up, adjustable arc, stainless steel riser, with check valve and #15 nozzle

I-40 NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■	Precip in/hr ▲
08 ○ Lt. Brown	40	44	7.6	0.76	0.87
	50	45	8.4	0.80	0.92
	60	46	9.2	0.84	0.97
10 ● Lt. Green	50	49	10.3	0.83	0.95
	60	50	11.3	0.87	1.00
	70	51	12.2	0.90	1.04
	80	51	13.0	0.96	1.11
13 ● Lt. Blue	50	50	11.1	0.85	0.99
	60	51	12.3	0.91	1.05
	70	52	13.3	0.95	1.08
	80	53	14.2	0.97	1.12
15 ● Gray	50	54	13.8	0.91	1.05
	60	55	15.7	1.00	1.15
	70	57	16.6	0.98	1.14
	80	59	18.3	1.01	1.17
23 ● Dk. Green	60	62	21.3	1.07	1.23
	70	64	23.0	1.08	1.25
	80	65	24.5	1.12	1.29
	90	66	25.9	1.14	1.32
25 ● Dk. Blue	60	66	23.9	1.06	1.22
	70	67	25.8	1.11	1.28
	80	68	27.7	1.15	1.33
	90	69	29.5	1.19	1.38

I-40 HIGH-SPEED NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■	Precip in/hr ▲
08 ○ Lt. Brown	40	41	7.6	0.87	1.00
	50	41	8.4	0.96	1.11
	60	42	9.2	1.00	1.16
10 ● Lt. Green	50	45	10.3	0.98	1.13
	60	46	11.3	1.03	1.19
	70	47	12.2	1.06	1.23
	80	47	13.0	1.13	1.31
13 ● Lt. Blue	50	46	11.1	1.01	1.17
	60	47	12.3	1.07	1.24
	70	48	13.3	1.11	1.28
	80	49	14.2	1.14	1.31
15 ● Gray	50	51	13.8	1.02	1.18
	60	52	15.7	1.12	1.29
	70	53	16.6	1.14	1.31
	80	54	18.3	1.21	1.40
23 ● Dk. Green	60	58	21.3	1.22	1.41
	70	59	23.0	1.27	1.47
	80	60	24.5	1.31	1.51
	90	61	25.9	1.34	1.55
25 ● Dk. Blue	60	59	23.9	1.32	1.53
	70	61	25.8	1.33	1.54
	80	62	27.7	1.39	1.60
	90	63	29.5	1.43	1.65

I-40 NOZZLES

Standard/High-Speed

I-40 Opposing Nozzle 360° Model

I-40 Turf Cup Kit Option
Available as a field-installed option on all models
P/N TURFCUPKITI40

I-40 DUAL OPPOSING NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■	Precip in/hr ▲
15 ● Gray	50	52	13.0	0.46	0.53
	60	54	13.2	0.44	0.50
	70	56	14.4	0.44	0.51
	80	57	15.5	0.46	0.53
18 ● Red	50	58	13.7	0.39	0.45
	60	59	15.2	0.42	0.49
	70	60	16.6	0.44	0.51
	80	62	17.8	0.45	0.51
20 ● Dk. Brown	60	63	19.1	0.46	0.53
	70	64	20.9	0.49	0.57
	80	66	22.3	0.49	0.57
	90	66	23.9	0.53	0.61
23 ● Dk. Green	60	65	20.4	0.46	0.54
	70	66	22.3	0.49	0.57
	80	67	24.0	0.51	0.59
	90	68	25.6	0.53	0.62
25 ● Dk. Blue	60	66	22.0	0.49	0.56
	70	68	24.0	0.50	0.58
	80	69	25.9	0.52	0.60
	90	70	27.2	0.53	0.62
28 ● Black	70	70	28.9	0.57	0.66
	80	72	30.9	0.57	0.66
	90	74	32.9	0.58	0.67
	100	76	33.7	0.56	0.65

Notes:
All precipitation rates calculated for 180° operation.
For the precipitation rate for a 360° sprinkler, divide by 2.
Precipitation rates for the ON Opposing Nozzle model are calculated at 360°.

I-40 NOZZLES

Opposing

Front

Back

I-50

Radius: **44' to 76'**
Flow: **7.6 to 33.7 GPM**

The high-torque I-50 Rotor is engineered to thrive in difficult water-quality conditions within large turf projects.

KEY BENEFITS

- Extra-strong, non-strippable, planetary gear drive mechanism is reliable and durable in harsh water conditions
- Tool-free, part- and full-circle arc adjustment mechanism makes fast, easy installation and reduces inventory (50° to 360°)
- Color-coded nozzles make identification easy
- QuickCheck™ Arc Mechanism for fast arc adjustment
- Stainless steel riser for extra durability
- Available opposing nozzle model for even watering in full-circle applications (I-50-ON model)
- Drain Check Valve prevents low-head drainage (up to 15' of elevation)

OPERATING SPECIFICATIONS

- Nozzle choices: 12
- Radius I-50: 44' to 69'
- Radius I-50-ON: 52' to 76'
- Flow I-50: 7.6 to 29.5 GPM
- Flow I-50-ON: 13.0 to 33.7 GPM
- Recommended pressure range: 40 to 100 PSI
- Operating pressure range: 40 to 100 PSI
- Precipitation rate: 0.4 in/hr approximately
- Nozzle trajectory: standard = 25°
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Reclaimed water ID

USER-INSTALLED OPTIONS

- HSJ-1 prefabricated 1" PVC Swing Joint

I-50 Reclaimed
Available as a factory-installed option on all models

I-50-06-SS
Overall height: 10¼"
Pop-up height: 6"
Exposed diameter: 2"
Inlet size: 1"

I-50-06-SS-ON
Overall height: 10¼"
Pop-up height: 6"
Exposed diameter: 2"
Inlet size: 1"

I-50 Turf Cup Kit Option
Available as a field-installed option on all models
P/N TURFCUPKITI40

I-50 – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-50-06-SS = 6" pop-up	Adjustable arc, stainless steel riser, check valve, and 6 nozzles	**(blank)** = No option **R** = Reclaimed water ID	**#8 to #25** = Factory-installed nozzle number

I-50-ON – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Opposing Nozzle Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-50-06-SS-ON = 6" pop-up	Full-circle, opposing nozzle, stainless steel riser, check valve, and 6 nozzles	**(blank)** = No option **R** = Reclaimed water ID	**#15 to #28** = Factory-installed nozzle number

Examples:
I-50-06-SS = 6" pop-up, adjustable arc, stainless steel riser, with check valve
I-50-06-SS -ON-R-3 = 6" pop-up, adjustable arc, stainless steel riser, with check valve, reclaimed water ID, and #23 nozzle
I-50-06-SS-15 = 6" pop-up, adjustable arc, stainless steel riser, with check valve and #15 nozzle

I-50 Opposing Nozzle 360° Model

Below-the -turret arc adjustment

Robust planetary gear drive for extreme conditions

I-50 NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■	Precip in/hr ▲
8 Lt. Brown	40	44	7.6	0.76	0.87
	50	45	8.4	0.80	0.92
	60	46	9.2	0.84	0.97
10 Lt. Green	50	49	10.3	0.83	0.95
	60	50	11.3	0.87	1.00
	70	51	12.2	0.90	1.04
	80	51	13.0	0.96	1.11
13 Lt. Blue	50	50	11.1	0.85	0.99
	60	51	12.3	0.91	1.05
	70	52	13.3	0.95	1.08
	80	53	14.2	0.97	1.12
15 Gray	50	54	13.8	0.91	1.05
	60	55	15.7	1.00	1.15
	70	57	16.6	0.98	1.14
	80	59	18.3	1.01	1.17
23 Dk. Green	60	62	21.3	1.07	1.23
	70	64	23.0	1.08	1.25
	80	65	24.5	1.12	1.29
	90	66	25.9	1.14	1.32
25 Dk. Blue	60	66	23.9	1.06	1.22
	70	67	25.8	1.11	1.28
	80	68	27.7	1.15	1.33
	90	69	29.5	1.19	1.38

I-50 NOZZLES

Standard

I-50 DUAL OPPOSING NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr ■	Precip in/hr ▲
15 Gray	50	52	13.0	0.46	0.53
	60	54	13.2	0.44	0.50
	70	56	14.4	0.44	0.51
	80	57	15.5	0.46	0.53
18 Red	50	58	13.7	0.39	0.45
	60	59	15.2	0.42	0.49
	70	60	16.6	0.44	0.51
	80	62	17.8	0.45	0.51
20 Dk. Brown	60	63	19.1	0.46	0.53
	70	64	20.9	0.49	0.57
	80	66	22.3	0.49	0.57
	90	66	23.9	0.53	0.61
23 Dk. Green	60	65	20.4	0.46	0.54
	70	66	22.3	0.49	0.57
	80	67	24.0	0.51	0.59
	90	68	25.6	0.53	0.62
25 Dk. Blue	60	66	22.0	0.49	0.56
	70	68	24.0	0.50	0.58
	80	69	25.9	0.52	0.60
	90	70	27.2	0.53	0.62
28 Black	70	70	28.9	0.57	0.66
	80	72	30.9	0.57	0.66
	90	74	32.9	0.58	0.67
	100	76	33.7	0.56	0.65

Notes:
All precipitation rates calculated for 180° operation.
For the precipitation rate for a 360° sprinkler, divide by 2.
Precipitation rates for the ON Opposing Nozzle model are calculated at 360°.

I-50 NOZZLES

Opposing

Front

Back

I-80

Radius: **63' to 97'**
Flow: **20.2 to 59.6 GPM**

The highly versatile and efficient I-80 Rotor is the first commercial sports turf rotor with no-dig Total-Top-Serviceability.

KEY BENEFITS

- Exclusive Total-Top-Service (TTS) design provides convenient no-dig servicing
- Exclusive PressurePort™ Technology creates exceptional nozzle uniformity
- Forward-facing triple nozzles (I-80) or opposing triple nozzles (I-80-ON) create uniform nozzle profiles in part and full-circle applications
- QuickCheck™ Arc Mechanism (I-80) for fast arc adjustment and review of the arc setting
- QuickSet-360 Arc Mechanism (I-80) converts adjustable arc rotor to full-circle in an instant
- Part- and full-circle in one model provides flexible installation options and reduces inventory (I-80)
- Ratcheting stainless steel riser allows setting of right-side fixed arc alignment to the landscape without rotor disassembly
- Drain Check Valve prevents low-head drainage (up to 5' of elevation)

OPERATING SPECIFICATIONS

- I-80
  - Standard 22.5° nozzle choices: 7
  - Radius: 65' to 94'
  - Flow: 20.2 to 59.6 GPM
  - Pressure range: 50 to 100 PSI
- Warranty Period: 5 years
- I-80-ON
  - Standard 22.5° nozzle choices: 7
  - Radius: 63' to 97'
  - Flow: 21.6 to 58.5 GPM
  - Pressure range: 65 to 100 PSI
- All I-80 Rotors are pressure-rated at 150 PSI

FACTORY-INSTALLED OPTIONS

- Exclusive Turf Cup option for an aesthetically clean and safe installation:
  - No-dig servicing of riser assembly
  - No-dig arc adjustments
  - Quick-release turf cup assembly
  - Threads in cup lock/retain the turf
- Reclaimed water ID

USER-INSTALLED OPTIONS

- Rubber Cover Kit
- Turf Cup Kit
- HSJ prefabricated PVC Swing Joints

I-80-04-SS Pop-Up
I-80-04-SS-ON Pop-Up
Overall height: 9¾"
Pop-up height: 3¾"
Exposed diameter: 4⅜"
Inlet size: 1½"

I-80-04-SS-TC Turf Cup
I-80-04-SS-ON-TC Turf Cup
Overall height: 11½"
Pop-up height: 3¾"
Exposed diameter: 3½"
Inlet size: 1½"

I-80 Turf Cup Kit
P/N 959400SP

I-80 Rubber Cover Kit
P/N 959300SP

I-80 – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Featured Options	4 Nozzle Options
I-80-04-SS = 4" pop-up	Adjustable arc, stainless steel riser	**(blank)** = No option	**#23 to #53** = Factory-installed nozzle number, no nozzle pack
I-80-04-SS-TC = 4" pop-up with turf cup	Adjustable arc, stainless steel riser, check valve	**R** = Reclaimed water ID*	
	Adjustable arc, stainless steel riser, check valve, factory-installed turf cup	** TC reclaimed ID not available*	
I-80-04-SS-ON = 4" pop-up	Full-circle, opposing nozzle, stainless steel riser	**(blank)** = No option	**#23 to #53** = Factory-installed nozzle number, no nozzle pack
I-80-04-SS-ON-TC = 4" pop-up with turf cup	Full-circle, opposing nozzle, stainless steel riser, check valve	**R** = Reclaimed water ID*	
	Full-circle, opposing nozzle, stainless steel riser, check valve, factory-installed turf cup	** TC reclaimed ID not available*	

Examples:
I-80-04-SS-25 = 4" pop-up, adjustable arc, stainless steel riser, check valve, and factory-installed #25 nozzle
I-80-04-SS-ON-R-38 = 4" pop-up, stainless steel riser, check valve, opposing nozzle full-circle, reclaimed water ID, and factory-installed #38 nozzle
I-80-04-SS-ON-TC-48 = 4" pop-up, stainless steel riser, check valve, opposing nozzle full-circle, factory-installed turf cup, and factory-installed #48 nozzle

I-80-ON NOZZLE PERFORMANCE DATA*

Nozzle Set			Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
● Tan 803611	23 Green	● Lt. Blue 315311	50	63	21.6	0.52	0.60
			60	65	23.0	0.52	0.61
			65	66	24.0	0.53	0.61
			70	67	24.9	0.53	0.62
			80	68	26.6	0.55	0.64
● Tan 803611	25 Blue	● Lt. Blue 315311	65	71	28.6	0.55	0.63
			70	73	29.7	0.54	0.62
			80	74	31.7	0.56	0.64
			90	75	33.7	0.58	0.67
			100	77	35.8	0.58	0.67
● Tan 803611	33 Gray	● Lt. Blue 315311	65	74	30.9	0.54	0.63
			70	75	32.0	0.55	0.63
			80	77	34.2	0.56	0.64
			90	79	36.2	0.56	0.64
			100	81	38.2	0.56	0.65
● Tan 803611	38 Red	● Lt. Blue 315311	65	77	35.1	0.57	0.66
			70	79	36.6	0.56	0.65
			80	82	38.9	0.56	0.64
			90	84	41.3	0.56	0.65
			100	87	43.6	0.55	0.64
● Tan 803611	43 Dk. Brown	● Lt. Blue 315311	-	-	-	-	-
			70	83	41.3	0.58	0.67
			80	85	43.6	0.58	0.67
			90	87	46.3	0.59	0.68
			100	89	48.8	0.59	0.68
● Tan 803611	48 Dk. Green	● Lt. Blue 315311	-	-	-	-	-
			70	90	46.9	0.56	0.64
			80	92	48.9	0.56	0.64
			90	94	50.5	0.55	0.63
			100	96	53.5	0.56	0.65
● Tan 803611	53 Dk. Blue	● Lt. Blue 315311	-	-	-	-	-
			70	91	49.8	0.58	0.67
			80	93	52.2	0.58	0.67
			90	95	55.5	0.59	0.68
			100	97	58.5	0.60	0.69

● = Nozzle plug P/N 315300 installed in the front side of the nozzle housing.

I-80 NOZZLES

I-80 NOZZLE PERFORMANCE DATA*

Nozzle Set			Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
Orange 803603 ●	23 Green	Lt. Green 315313 ●	50	65	20.2	0.46	0.53
			60	66	22.1	0.49	0.56
			65	67	23.9	0.51	0.59
			70	67	24.2	0.52	0.60
			80	69	25.9	0.52	0.60
Orange 803603 ●	25 Blue	Lt. Green 315313 ●	65	71	28.3	0.54	0.62
			70	72	29.3	0.54	0.63
			80	73	31.5	0.57	0.66
			90	74	33.4	0.59	0.68
			100	75	35.4	0.61	0.70
Orange 803603 ●	33 Gray	Lt. Green 315313 ●	65	72	30.6	0.57	0.66
			70	73	31.6	0.57	0.66
			80	75	33.9	0.58	0.67
			90	77	35.8	0.58	0.67
			100	79	37.9	0.58	0.67
Orange 803603 ●	38 Red	Lt. Green 315313 ●	65	76	34.9	0.58	0.67
			70	78	36.2	0.57	0.66
			80	80	39.1	0.59	0.68
			90	82	41.2	0.59	0.68
			100	84	43.5	0.59	0.69
Orange 803603 ●	43 Dk. Brown	Lt. Green 315313 ●	-	-	-	-	-
			70	81	41.2	0.60	0.70
			80	83	43.5	0.61	0.70
			90	86	46.2	0.60	0.69
			100	89	48.7	0.59	0.68
Orange 803603 ●	48 Dk. Green	Lt. Green 315313 ●	-	-	-	-	-
			70	83	46.3	0.65	0.75
			80	85	48.4	0.64	0.74
			90	89	51.7	0.63	0.73
			100	91	54.5	0.63	0.73
Orange 803603 ●	53 Dk. Blue	Lt. Green 315313 ●	-	-	-	-	-
			70	87	50.7	0.64	0.74
			80	89	53.1	0.65	0.75
			90	92	56.4	0.64	0.74
			100	94	59.6	0.65	0.75

● = Nozzle plug P/N 315300 installed in the back side of the nozzle housing.

* Complies to ASAE standard. All precipitation rates calculated for 360° operation. All triangular rates are equilateral.

I-90

Radius: **66' to 103'**
Flow: **29.5 to 83.8 GPM**

The robust I-90 Rotor is built for long-distance natural turf applications in large parks, open spaces, and sports fields.

KEY BENEFITS

- Exclusive PressurePort™ Technology creates exceptional nozzle uniformity
- Forward-facing triple nozzles (I-90), opposing triple nozzles (I-90-ON) create uniform nozzle profiles in part- and full-circle applications
- QuickCheck™ Arc Mechanism for fast arc adjustment and review of the arc setting
- Part- and full-circle in one model provides flexible installation options and decreases inventory (I-90)
- Drain Check Valve prevents low-head drainage (up to 9' of elevation)

OPERATING SPECIFICATIONS

- I-90 nozzle choices: 8
- Radius I-90 ADV: 66' to 97'
- Radius I-90 36V: 73' to 103'
- Flow I-90 ADV: 30.5 to 83.3 GPM
- Flow I-90 36V: 14.2 to 58.5 GPM
- Recommended pressure range: 80 to 120 PSI
- Operating pressure range: 80 to 150 PSI
- Precipitation rate: 0.75 in/hr approximately
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Reclaimed water ID

USER-INSTALLED OPTIONS

- Rubber Cover Kit #234201
- Turf Cup Kit #467955
- HSJ prefabricated PVC 1½" Swing Joints

I-90
Overall height: ADV/36V: 11"
Pop-up height: 3"
Exposed diameter: 3½"
Inlet size: 1½"

Turf Cup Kit
P/N 467955

Rubber Cover Kit
P/N 234200; P/N 234201

I-90 Reclaimed
Available as a factory-installed option on all models

I-90 – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-90 = 3" pop-up	Plastic riser, check valve, and 8 nozzles	**ADV** = Adjustable arc **ARV** = Adjustable arc and reclaimed water ID **36V** = Full-circle, opposing nozzles **3RV** = Full-circle, opposing nozzles, and reclaimed water ID	**#25 to #73** = Factory-installed nozzle number

Examples:
I-90-ADV = 3" pop-up, adjustable arc
I-90-36V-43 = 3" pop-up, full-circle, opposing nozzles, and #43 nozzle
I-90-3RV-63 = 3" pop-up, full-circle, opposing nozzles, reclaimed water ID, and #63 nozzle

I-90-ADV NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
25 Lt. Blue	80	66	29.5	1.30	1.51
	90	67	31.5	1.35	1.56
	100	68	33.2	1.38	1.60
	110	69	35.6	1.44	1.66
33 Gray	80	68	36.2	1.51	1.74
	90	69	38.2	1.54	1.78
	100	70	40.4	1.59	1.83
	110	71	42.6	1.63	1.88
38 Red	80	72	40.6	1.51	1.74
	90	73	43.0	1.55	1.79
	100	75	45.4	1.55	1.79
	110	76	47.6	1.59	1.83
43 Dk. Brown	80	74	46.1	1.62	1.87
	90	74	48.5	1.70	1.97
	100	75	50.7	1.74	2.00
	110	77	53.4	1.73	2.00
48 Dk. Green	80	77	50.2	1.63	1.88
	90	79	52.6	1.62	1.87
	100	81	55.1	1.62	1.87
	110	82	57.5	1.65	1.90
53 Dk. Blue*	80	81	54.9	1.61	1.86
	90	84	57.2	1.56	1.80
	100	86	59.5	1.55	1.79
	110	87	62.1	1.58	1.82
	120	88	64.4	1.60	1.85
63 Black	80	86	62.3	1.62	1.87
	90	88	65.5	1.63	1.88
	100	90	69.0	1.64	1.89
	110	91	71.9	1.67	1.93
	120	92	74.7	1.70	1.96
73 Orange	80	89	72.7	1.77	2.04
	90	91	75.4	1.75	2.02
	100	93	78.1	1.74	2.01
	110	95	80.9	1.73	1.99
	120	97	83.8	1.71	1.98

I-90-36V NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
25 Lt. Blue	80	73	30.5	0.55	0.64
	90	75	32.4	0.55	0.64
	100	76	34.3	0.57	0.66
	110	78	36.5	0.58	0.67
33 Gray	80	77	36.3	0.59	0.68
	90	78	38.4	0.61	0.70
	100	80	40.6	0.61	0.71
	110	81	42.7	0.63	0.72
38 Red	80	80	40.6	0.61	0.71
	90	82	42.9	0.61	0.71
	100	83	45.3	0.63	0.73
	110	85	47.7	0.64	0.73
43 Dk. Brown	80	83	46.2	0.65	0.75
	90	84	48.6	0.66	0.77
	100	85	50.9	0.68	0.78
	110	86	53.4	0.69	0.80
48 Dk. Green	80	86	49.6	0.65	0.75
	90	89	52.5	0.64	0.74
	100	90	54.8	0.65	0.75
	110	91	57.3	0.67	0.77
53 Dk. Blue*	80	89	54.2	0.66	0.76
	90	90	56.7	0.67	0.78
	100	92	59.2	0.67	0.78
	110	93	61.7	0.69	0.79
	120	94	64.2	0.70	0.81
63 Black	80	92	63.2	0.72	0.83
	90	94	65.9	0.72	0.83
	100	96	69.4	0.72	0.84
	110	97	72.0	0.74	0.85
	120	98	74.9	0.75	0.87
73 Orange	80	96	72.1	0.75	0.87
	90	98	75.0	0.75	0.87
	100	99	77.8	0.76	0.88
	110	102	80.5	0.74	0.86
	120	103	83.3	0.76	0.87

* Factory-installed nozzle

Notes:
Precipitation rates for ADV models are calculated for 180° operation. Precipitation rates for 36V models are calculated for 360° operation. All triangular rates are equilateral. Complies to ASAE standard.

I-90 NOZZLES

ADV & 36V

I-90

SWING JOINTS

With swivel ells on both ends, SJ Swing Joints easily adjust sprinklers to proper height and position in any configuration.

KEY BENEFITS

- Strength, longevity, and contamination resistance
  - Prefabricated PVC design with O-ring seals
- Configurations to meet every installation requirement
  - Available in all popular inlet and outlet configurations
  - Choose from 8", 12", or 18" lay arm lengths
  - Single top-out or triple top-out designs

Swing Joints
HSJ-0 = Model ¾"
HSJ-1 = Model 1"
HSJ-2 = Model 1¼"
HSJ-3 = Model 1½"

HSJ SWING JOINT – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Inlet Type (from pipe fitting)	3 Outlet Type (to sprinkler inlet)	4 Outlet Style	5 Lay Length
HSJ-0 = ¾" commercial Swing Joint **HSJ-1** = 1" heavy-duty Swing Joint **HSJ-2** = 1¼" heavy-duty Swing Joint **HSJ-3** = 1½" heavy-duty Swing Joint	**2** = Spigot, short  **3** = Male NPT  **7** = Spigot, 4" long*  ** Not available HSJ-0*	**2** = Male NPT 	**2** = Single top-out  **4** = Triple top-out 	**08** = 8" lay arm* **12** = 12" lay arm **18** = 18" lay arm ** HSJ-0 only*

Example:
HSJ-1-3-2-2-12 = HSJ 1" heavy-duty Swing Joint, 1" NPT inlet, 1" male NPT single top-out outlet, 12" lay arm length

HUNTER CHECK VALVES

Eliminate low-head drainage for both rotor and spray shrub systems with the adjustable Hunter Check Valve.

KEY BENEFITS

- Adjustment access through top of valve
- Adjusts to compensate for elevational changes up to 32'
- Variety of inlet and outlet options reduces need for additional fittings
- Meets schedule 80 specifications for durability under high pressure
- Pressure loss charts for HCV products on **page 197**

HUNTER CHECK VALVES

Model	Description
HC-50F-50F	½" female inlet x ½" female outlet
HC-50F-50M	½" female inlet x ½" male outlet
HC-75F-75M	¾" female inlet x ¾" male outlet

HCV Check Valve
Overall height: 3"

SNAPLOK COMBO KITS

These kits are designed for applications that demand sturdy installation due to frequent quick coupler use.

KEY BENEFITS

- Versatile, cross-compatible, and heavy-duty quick coupler
- Highly effective solution for quick-coupler stabilization
- SnapLok™ design includes:
  - Heavy-duty PVC and brass outlet construction
  - Anti-rotation coupler locking feature
  - Accommodates both rebar and pipe stabilization
- Solves common quick-coupler stabilization and unthreading concerns
  - Unique SnapLok™ outlet with integrated brass thread outlet
- See the HSJ Swing Joints on **page 37**

Quick Coupler with SnapLok
Equipped HSJ-1 Swing Joint

SNAPLOK COMBO KITS – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Inlet Type (from pipe fitting)	3 Outlet Type (to sprinkler inlet)	4 Outlet Style	5 Lay Length
HSJ-1 = 1" heavy-duty Swing Joint	**3** = Male NPT 	**S** = Male 1" brass NPT SnapLok  **T** = Male ¾" brass NPT/BSP SnapLok 	**2** = Single top-out 	**12** = 12" lay arm **18** = 18" lay arm

Example:
HSJ-1-3-S-2-12 = HSJ 1" heavy-duty Swing Joint, 1" NPT inlet, 1" male brass outlet, single top-out, 12" lay arm length

SnapLok is a trademark of LASCO Fittings Inc.

ST SYSTEM

ST-90

The ST-90 Synthetic Turf Rotor is designed for installation in natural turf adjacent to the playing surface — the perfect solution for small and midsize fields.

KEY BENEFITS

- Arc setting: 40° to 360°
- QuickCheck™ Arc Mechanism
- Through-the-top arc adjustment
- Water-lubricated gear drive
- Factory-installed rubber logo cap
- Nozzle trajectory: 22.5°

OPERATING SPECIFICATIONS

- Radius: 103' to 120'
- Flow: 74.5 to 92.0 GPM
- Operating pressure range: 100 to 120 PSI
- Precipitation rate: 1.25 in/hr approximately
- Warranty period: 5 years for component parts

USER-INSTALLED OPTIONS

- Rubber cover kit ST-90: P/N 234200SP

ST-90*
Overall height: 11½"
Pop-up height: 3"
Diameter: 5½"
Inlet size: 1½" NPT

*Not for use with the ST Vault

ST ROTOR

Model	Description
ST-90-XX	3" pop-up, jar-top cap, adjustable arc, plastic riser, and NPT inlet threads, #73 or #83 preinstalled nozzle

ST-90 NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
73 ● Orange	100	103	74.5	1.35	1.56
	110	109	77.0	1.25	1.44
	120	115	79.6	1.16	1.34
83 ● Tan	100	112	84.2	1.29	1.49
	110	116	88.1	1.26	1.46
	120	120	92.0	1.23	1.42

Notes:
All precipitation rates are calculated for 180° operation.
For the precipitation rate of a 360° sprinkler, divide by 2.

HIGH-FLOW SWING JOINTS

These durable Swing Joints are easy to position and ensure correct rotor installation height.

KEY BENEFITS

- Heavy-duty, high-flow Swing Joints with O-ring seals
- HSJ-4 for high-flow I-90 and ST-90 Rotors with 1½" inlets

High-Flow Swing Joints
HSJ-4 = 2" model

HSJ HIGH-FLOW SWING JOINT – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Inlet Type (from pipe fitting)	3 Outlet Type (to sprinkler inlet)	4 Outlet Style	5 Lay Length
HSJ-4 = 2" heavy-duty Swing Joint	**3** = 2" male NPT, horizontal side connection	**7** = 1½" male NPT	**2** = Single top-out	**12** = 12" lay arm

Example:
HSJ-4-37-212 = HSJ 2" heavy-duty Swing Joint, 2" male NPT horizontal side connection to piping, 1½" male NPT outlet to sprinkler, single top-out, and 12" lay arm

ST-1200-BR

The cost-effective ST-1200-BR Rotor is the ideal riser-mounted solution for pastures, corrals, arenas, dust control, and wash-down watering.

KEY BENEFITS

- Nozzle choices: 5 (included)
- Standard nozzle: #12
- Nozzle range: #10 to #18
- Nozzle trajectory: 22.5°
- Isolated, grease-lubricated gear drive
- Nozzle barrels: short and long (included)
- Movable stops (left and right) arc adjustment
- Arc setting: 40° to non-reversing 360°
- Ratcheting nozzle turret

OPERATING SPECIFICATIONS

- Radius: 67' to 115'
- Flow: 27.0 to 131.0 GPM

ST-1200-BR
Overall height: 12"
Overall length: 12"
Overall width: 3¾"
Inlet size: 1½" BSP*

*Use P/N 241401SP 1½" BSP t.o.e nipple adapter to 1½" PVC pipe if needed.

Included
Short and long barrels

ST-1200-BR NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
10 ● Black	30	67	27.0	1.16	1.34
	45	75	32.8	1.12	1.30
	60	85	38.1	1.02	1.17
	75	90	43.5	1.03	1.19
12 ● Black	30	68	33.6	1.40	1.62
	45	78	41.2	1.30	1.51
	60	88	47.6	1.18	1.37
	75	98	53.1	1.06	1.23
14 ● Black	30	70	45.7	1.80	2.07
	45	86	56.0	1.46	1.68
	60	100	64.7	1.25	1.44
	75	110	72.5	1.15	1.33
16 ● Black	30	72	59.5	2.21	2.55
	45	93	73.0	1.62	1.88
	60	103	84.3	1.53	1.77
	75	116	80.9	1.16	1.34
18 ● Black	30	95	92.5	1.97	2.28
	45	104	107.0	1.90	2.20
	60	111	119.5	1.87	2.16
	75	115	131.0	1.91	2.20

ST-1200-BR Installed

ST-1600-HS-BR

In addition to synthetic turf, this heavy-duty rotor is designed for irrigating pastures, horse arenas, dust control, and natural turf areas.

KEY BENEFITS

- Nozzle choices: 6 (included)
- Standard nozzle: #20
- Nozzle range: #16 to #26
- Nozzle trajectory: 25°
- Isolated, grease-lubricated gear drive
- Movable stops with left and right arc adjustment
- Arc setting 40° to non-reversing 360°
- Ratcheting nozzle turret

OPERATING SPECIFICATIONS

- Radius: 107' to 165'
- Flow: 96.2 to 326.8 GPM

ST-1600-HS-BR
Overall height: 8¾"
Diameter: 8¼"
Inlet size: 2" BSP*

*Use P/N 241400SP 2" BSP t.o.e. nipple adapter to 2" PVC pipe if needed

ST-1600 NOZZLE PERFORMANCE DATA*

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
16 ● Black	60	107	96.2	1.63	1.88
	70	115	107.3	1.57	1.81
	90	121	117.8	1.54	1.78
	100	128	127.3	1.50	1.73
	115	135	137.4	1.46	1.69
18 ● Black	60	112	107.0	1.66	1.91
	70	121	119.4	1.56	1.80
	90	128	131.0	1.54	1.78
	100	133	141.3	1.54	1.78
	115	141	153.2	1.48	1.71
20 ● Black	60	115	144.0	2.10	2.43
	70	128	160.9	1.89	2.18
	90	141	176.5	1.71	1.97
	100	144	190.5	1.76	2.03
	115	148	204.2	1.80	2.08
22 ● Black	60	118	171.5	2.37	2.73
	70	130	191.8	2.20	2.54
	90	144	210.0	1.94	2.24
	100	151	226.9	1.84	2.12
	115	157	243.1	1.89	2.18
24 ● Black	60	121	202.1	2.64	3.05
	70	133	225.9	2.46	2.84
	90	148	247.6	2.19	2.52
	100	156	267.4	2.12	2.45
	115	160	286.4	2.16	2.49
26 ● Black	60	126	233.2	2.83	3.27
	70	136	260.4	2.71	3.13
	90	151	284.5	2.40	2.77
	100	160	307.0	2.31	2.67
	115	165	326.8	2.32	2.68

Note:
All precipitation rates are calculated for 180° operation.
For the precipitation rate of a 360° sprinkler, divide by 2.

* All radius measurements are taken at standard rotation speeds. Slowing rotation to the minimum rotation speed will add 10+ feet to the radius.

ST-1600-HS-BR Installed

ST-1600-KIT / ST-1600-HS-B

This all-in-one solution offers unmatched cleaning, cooling, and flushing capabilities to prepare synthetic sports fields for play.

KEY BENEFITS

- Nozzle choices: 6 (included)
- Standard nozzle: #20
- Nozzle range: #16 to #26
- Nozzle trajectory: 25°
- Isolated, grease-lubricated gear drive
- Movable stops (left and right) arc adjustment
- Arc setting: 40° to non-reversing 360°
- Ratcheting nozzle turret
- Adjustable speed of rotation: 0 to 65 seconds (high-speed models, 180° at 120 PSI)
- Warranty period: 5 years component part

OPERATING SPECIFICATIONS

- Radius: 107' to 165'
- Flow: 96.2 to 326.8 GPM
- Operating pressure range: 60 to 120 PSI
- Precipitation rate: 2.25 in/hr approximately

USER-INSTALLED OPTIONS

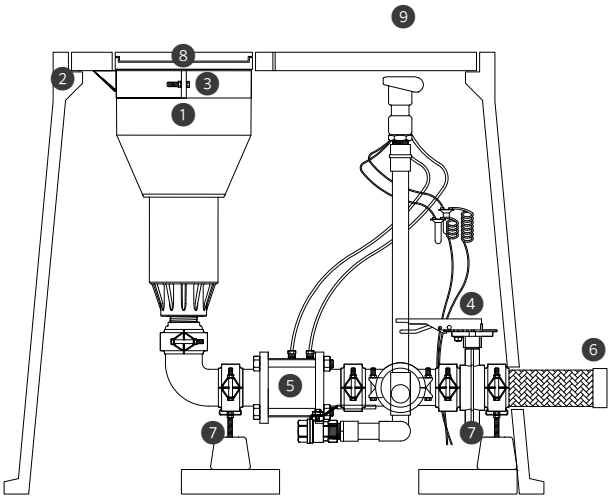
- Simulated concrete cover for attachment for flattened Infill Barrier System (used with vault): P/N ST-FRP-1600
- ST approved adhesive for attaching artificial turf, track, or ST-FRP-1600 to Infill Barrier System: P/N ST-ADH-K
- ST-1600 Short-Radius Nozzle Kit: P/N 959900
- Adapter, 2" slip x 2" male BSP: P/N 241400SP
- DC-Latching Solenoid Kit: P/N ST-LSA

ST-1600-HS-B (High-Speed)
Overall height: 22½"
Pop-up height: 5"
Diameter: 14"
Inlet size: 2" BSP*

*Use P/N 241400SP 2" BSP t.o.e nipple adapter to 2" PVC pipe if needed.

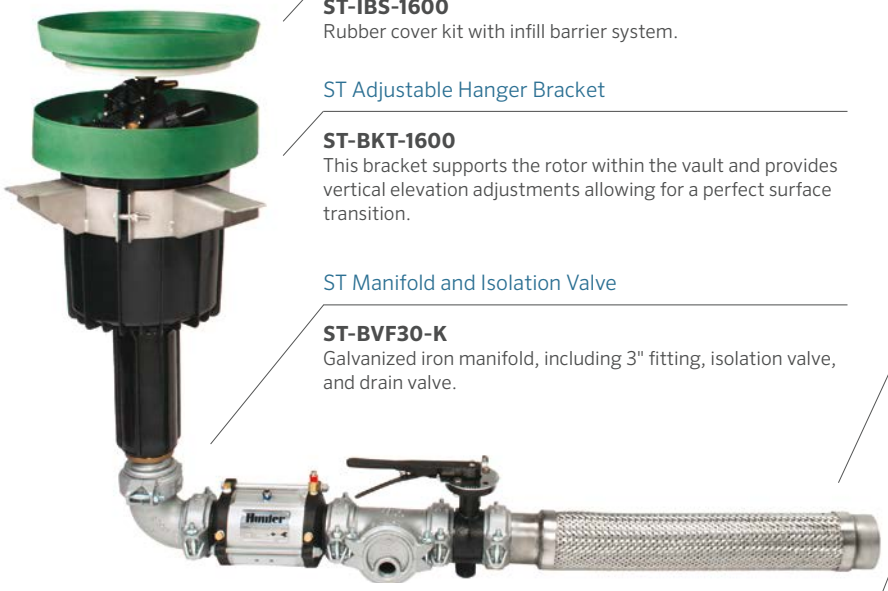
ST-1600 Tool
P/N 517600SP
For gear-drive installation and removal

ST-1600-KIT



ST-1600-KIT COMPONENTS

FIGURE	COMPONENTS	QTY	DESCRIPTION
1	ST-1600-HS-B	1	High-speed pop-up, adjustable arc (40°–360°), 2" BSP inlet
2	ST-243636-B	1	Composite vault
3	ST-BKT-1600	1	Rotor vault hanger and grade adjustment bracket for ST-1600-HS-B rotor
4	ST-BVF30-K	1	Manifold butterfly valve and Victaulic® coupling fitting kit
5	ST-V30-KV	1	3" metal control valve, 3" grooved Victaulic inlet/outlet fittings, solenoid, and on-off-auto selector manifold
6	ST-H30-K	1	Stainless steel inlet hose 3" NPT inlet
7	ST-SPT-K	2	Adjustable manifold support stand; two required per vault
8	ST-IBS-1600	1	Infill barrier system rubber cover kit for ST-1600-HS-B rotor
9	HQ-5RC	1	Quick coupler, 1" NPT inlet, 1¼" outlet for key



ST Infill Barrier System

ST-IBS-1600
Rubber cover kit with infill barrier system.

ST Adjustable Hanger Bracket

ST-BKT-1600
This bracket supports the rotor within the vault and provides vertical elevation adjustments allowing for a perfect surface transition.

ST Manifold and Isolation Valve

ST-BVF30-K
Galvanized iron manifold, including 3" fitting, isolation valve, and drain valve.

ST H-Block Manifold Supports

ST-SPT-K
Adjustable support stands include a large footprint base made from recycled tire rubber and a 2" vertically adjustable support rail (two required under manifold).

ST Flexible Stainless Inlet Hose

ST-H30-K
3" ultra-flexible stainless steel corrugated hose with stainless steel support braiding.

ST Low-Loss, Slow-Opening Valve

ST-V30-KV
Heavy-duty 3" low-pressure-loss metal valve, including on-off-auto selector and solenoid.

ST-1600 NOZZLE PERFORMANCE DATA*

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
16 ● Black	60	107	96.2	1.63	1.88
	70	115	107.3	1.57	1.81
	90	121	117.8	1.54	1.78
	100	128	127.3	1.50	1.73
	115	135	137.4	1.46	1.69
18 ● Black	60	112	107.0	1.66	1.91
	70	121	119.4	1.56	1.80
	90	128	131.0	1.54	1.78
	100	133	141.3	1.54	1.78
	115	141	153.2	1.48	1.71
20 ● Black	60	115	144.0	2.10	2.43
	70	128	160.9	1.89	2.18
	90	141	176.5	1.71	1.97
	100	144	190.5	1.76	2.03
	115	148	204.2	1.80	2.08
22 ● Black	60	118	171.5	2.37	2.73
	70	130	191.8	2.20	2.54
	90	144	210.0	1.94	2.24
	100	151	226.9	1.84	2.12
	115	157	243.1	1.89	2.18
24 ● Black	60	121	202.1	2.64	3.05
	70	133	225.9	2.46	2.84
	90	148	247.6	2.19	2.52
	100	156	267.4	2.12	2.45
	115	160	286.4	2.16	2.49
26 ● Black	60	126	233.2	2.83	3.27
	70	136	260.4	2.71	3.13
	90	151	284.5	2.40	2.77
	100	160	307.0	2.31	2.67
	115	165	326.8	2.32	2.68

Note:
All precipitation rates are calculated for 180° operation.
For the precipitation rate of a 360° sprinkler, divide by 2.
* All radius measurements are taken at standard rotation speeds. Slowing rotation to the minimum rotation speed will add 10+ feet to the radius.

SEAMLESS INTEGRATION

Blends in perfectly with the surrounding synthetic surface

ST VAULTS

The heavy-duty tapered fiberglass and polymer-concrete construction includes pre-cast holes for the rotor, quick-coupler valve, and remote manifold assembly.

Quick couplers provide a convenient source of water for washing down spills and water-soluble paint. The integrated in-vault design eliminates the need for additional quick-coupler enclosures.

The ST-V30-KV Valve Kit includes a remotely located on-off-auto selector and solenoid manifold assembly. These convenient features bring valve manual control functions and solenoid splice connections closer to the surface for easy access.

ST-243636-B: Includes 3" thick, 4-piece PC cover set

Main cover: 24" x 36"
Overall height: 36"
Body weight: 170 lbs.
Total weight: 320 lbs.
Base pad: 42" x 48"
Quick-access ports: 2

① Quick Coupler

② On-Off-Auto Selector

STG-900-KIT / STG-900

This top-quality, long-range system is specially designed for synthetic turf sports field irrigation.

KEY BENEFITS

- Arc setting: 40° to 360°
- QuickCheck™ Arc Mechanism
- Through-the-top arc adjustment
- Water-lubricated gear drive
- Factory-installed rubber logo cap
- Nozzle trajectory: 22.5°
- Warranty period: 5 years for component parts

OPERATING SPECIFICATIONS

- Radius: 103' to 120'
- Flow: 74.5 to 92.0 GPM
- Operating pressure range: 100 to 120 PSI
- Precipitation rate: 1.25 in/hr approximately

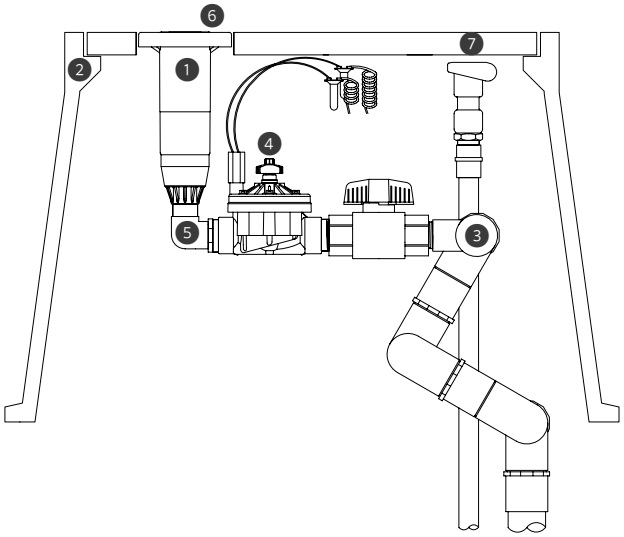
USER-INSTALLED OPTIONS

- Rubber Cover Kit STG-900: P/N 473900SP

STG-900*
Overall height: 14"
Pop-up height: 3"
Diameter: 8"
Inlet size: 1½" Acme

*For use with the ST-173026-B Vault

STG-900-KIT



STG-900-KIT COMPONENTS

FIGURE	COMPONENTS	QTY	DESCRIPTION
1	STG-900-83	1	Pop-up, top serviceable, adjustable arc (40°–360°), 1½" Acme inlet
2	ST-173026-B	1	Composite vault, pre-cast hole for rotor and quick coupler
3	ST-2008-VA	1	Vertical alignment PVC swing joint, seven pivot points, 2" female slip inlet, 1½" female Acme outlet
4	ST-VBVF-K	1	ICV-151G valve, manifold ball valve, 1½" Acme inlet, 1½" Acme outlet
5	239800	1	1½" elbow, female Acme to male Acme, connects STG-900 rotor to ST-VBVF-K
6	473900SP	1	STG-900 rubber cover kit
7	HQ-5RC	1	Quick coupler, 1" NPT inlet, 1¼" outlet for key

STG-900 Rotor

STG-900 NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
73 ● Orange	100	103	74.5	1.35	1.56
	110	109	77.0	1.25	1.44
	120	115	79.6	1.16	1.34
83 ● Tan	100	112	84.2	1.29	1.49
	110	116	88.1	1.26	1.46
	120	120	92.0	1.23	1.42

Notes:
All precipitation rates are calculated for 180° operation.
For the precipitation rate of a 360° sprinkler, divide by 2.

ST SWING JOINTS

Multiaxis 315 PSI rated vertical alignment PVC swing joints with seven O-ring sealed pivot points allow the rotor to be perfectly placed within the ST Vault's cover set opening.

ST-2008-VA: 2" for STG-900-KIT

Inlet: 2" female slip
Outlet: 1½" female Acme

Adapter fitting 239300
Connects 239800 elbow fitting to STG-900 Acme inlet rotor

ST VALVE SETS

Heavy-duty control valves are configured to complement the ST Rotors and ST Vaults.

ST-VBVF-K: for STG-900-KIT

Valve: 1½" NPT ICV
Ball valve: 315 PSI rated
Inlet: 1½" Acme
Outlet: 1½" Acme
Low-pressure-loss design: 9.8 PSI at 100 GPM
Includes: 1½" connection fittings

ST VAULTS

Heavy-duty tapered fiberglass and polymer-concrete construction with pre-cast holes for rotor and quick-coupler valve.

ST-173026-B for STG-900-KIT includes 2" thick, 3-piece cover set

Main cover: 17" x 30"
Overall height: 26"
Body weight: 104 lbs.
Total weight: 161 lbs.
Base pad: 27" x 41"
Quick-access port: 1

All ST Vaults include convenient quick-access ports. Quick couplers provide a convenient source of water for washing down spills and water-soluble paint. The integrated in-vault design eliminates the need for additional quick-coupler enclosures.

① Quick Coupler

MP ROTATOR®

ADVANCED FEATURES

AUTOMATIC MATCHED PRECIPITATION

MP Rotator Nozzles adjust the flow rate through the nozzle as the radius and arc are changed, resulting in the same matched precipitation rate regardless of the nozzle setting.

DOUBLE-POP FEATURE

MP Rotator Nozzles pop up from their protected position only after the riser is fully extended, providing superior defense against dirt and debris.

HIGH DISTRIBUTION UNIFORMITY

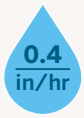
The multiple streams of the MP Rotator target all areas of the landscape evenly, resulting in superior uniformity over traditional spray nozzles and better wind resistance.

LOW PRECIPITATION RATE

Since the majority of soils have a water infiltration rate of less than 1.0 in/hr, irrigating at a low precipitation rate is essential to reduce runoff and increase efficiency.

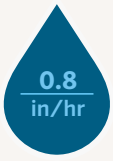
The Standard MP Rotator applies water at 0.4 in/hr, while the MP800 has a precipitation rate of 0.8 in/hr. Either choice will avoid runoff, save water, and prevent erosion.

STANDARD
MP Rotator



8' to 35'
- Maximum water efficiency
- Slowest precipitation rate

MP800



6' to 16'
- Small spaces
- Tight water windows

MP STRIPS

5' wide
- Rectangular spaces
- Pair with either option

MP ROTATOR®

Radius: **8' to 35'**

0.4 in/hr

The MP Rotator ozzle is the most trusted high-efficiency solution on the market, offering up to 30% water savings over traditional spray nozzles.

KEY BENEFITS

- Low precipitation rate of approximately 0.4 in/hr — lowest in the industry
- Automatic matched precipitation for simplified irrigation design and flexibility
- Double-pop feature protects the nozzle from external debris
- High distribution uniformity for a healthy landscape with maximum water efficiency

ADDITIONAL FEATURES

- Wind-resistant, multi-stream technology prevents misting
- For vandal resistance, the arc is adjustable only when the MP Rotator is running
- Removable filter screen prevents nozzle from clogging
- Color-coded for easy identification

OPERATING SPECIFICATIONS

- Radius reduction up to approximately 25% on all models
- Recommended operating pressure: 40 PSI
- Minimum radius setting achieved at 30 PSI
- Warranty period: 3 years

OPTIONS

- Pair with Pro-Spray® PRS40 Sprinkler Body for pressure regulation to 40 PSI for nominal radius settings
- Pair with Pro-Spray PRS30 Sprinkler Body for pressure regulation to 30 PSI for minimum radius settings

MP ROTATOR – SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Options
MP1000-90 = 8' to 15' radius, adjustable from 90° to 210°	**(blank)** = No option
MP1000-210 = 8' to 15' radius, adjustable from 210° to 270°	**HT** = Male threaded version *(Not available in 3500 and 1000-210)*
MP1000-360 = 8' to 15' radius, 360°	
MP2000-90 = 13' to 21' radius, adjustable from 90° to 210°	
MP2000-210 = 13' to 21' radius, adjustable from 210° to 270°	
MP2000-360 = 13' to 21' radius, 360°	
MP3000-90 = 22' to 30' radius, adjustable from 90° to 210°	
MP3000-210 = 22' to 30' radius, adjustable from 210° to 270°	
MP3000-360 = 22' to 30' radius, 360°	
MP3500-90 = 31' to 35' radius, adjustable from 90° to 210°	
MPLCS-515 = Left corner strip, 5' x 15'	
MPRCS-515 = Right corner strip, 5' x 15'	
MPSS-530 = Side strip, 5' x 30'	
MP-CORNER = 8' to 15' radius, adjustable from 45° to 105°	

MP1000: 8' to 15' radius

MP1000-90
90° to 210°

MP1000-210
210° to 270°

MP1000-360
360°

MP2000: 13' to 21' radius

MP2000-90
90° to 210°

MP2000-210
210° to 270°

MP2000-360
360°

MP3000: 22' to 30' radius

MP3000-90
90° to 210°

MP3000-210
210° to 270°

MP3000-360
360°

MP3500: 31' to 35' radius

MP3500-90
90° to 210°

MP ROTATOR PERFORMANCE DATA

MP1000
Radius: 8' to 15'
Adjustable Arc and Full-Circle
- Maroon: 90° to 210°
- Lt. Blue: 210° to 270°
- Olive: 360°

MP2000
Radius: 13' to 21'
Adjustable Arc and Full-Circle
- Black: 90° to 210°
- Green: 210° to 270°
- Red: 360°

MP3000
Radius: 22' to 30'
Adjustable Arc and Full-Circle
- Blue: 90° to 210°
- Yellow: 210° to 270°
- Gray: 360°

Arc	Pressure PSI	MP1000 Radius ft.	MP1000 Flow GPM	MP1000 Flow GPH	MP1000 Precip in/hr ■	MP1000 Precip in/hr ▲	MP2000 Radius ft.	MP2000 Flow GPM	MP2000 Flow GPH	MP2000 Precip in/hr ■	MP2000 Precip in/hr ▲	MP3000 Radius ft.	MP3000 Flow GPM	MP3000 Flow GPH	MP3000 Precip in/hr ■	MP3000 Precip in/hr ▲
90°	25	--	--	--	--	--	17	0.34	20.4	0.45	0.52	25	0.71	42.6	0.44	0.51
	30	12	0.17	10.2	0.45	0.52	18	0.38	22.8	0.45	0.52	27	0.76	45.6	0.40	0.46
	35	13	0.19	11.4	0.43	0.50	19	0.40	24.0	0.43	0.49	28	0.82	49.2	0.40	0.46
	40	**14**	**0.21**	**12.6**	**0.41**	**0.48**	**20**	**0.43**	**25.8**	**0.41**	**0.48**	**30**	**0.86**	**51.6**	**0.37**	**0.42**
	45	14	0.23	13.8	0.45	0.52	21	0.46	27.6	0.40	0.46	30	0.90	54.0	0.39	0.44
	50	15	0.25	15.0	0.43	0.49	21	0.47	28.2	0.41	0.47	30	0.95	57.0	0.41	0.47
	55	15	0.27	16.2	0.46	0.53	21	0.48	28.8	0.42	0.48	30	1.01	60.6	0.43	0.50
180°	25	--	--	--	--	--	16	0.6	36.0	0.45	0.52	25	1.44	86.4	0.44	0.51
	30	12	0.34	20.4	0.45	0.52	17	0.64	38.4	0.43	0.49	27	1.58	94.8	0.42	0.48
	35	13	0.38	22.8	0.43	0.50	18	0.71	42.6	0.42	0.49	28	1.70	102.0	0.42	0.48
	40	**14**	**0.42**	**25.2**	**0.41**	**0.48**	**19**	**0.77**	**46.2**	**0.41**	**0.47**	**30**	**1.82**	**109.2**	**0.39**	**0.45**
	45	14	0.44	26.4	0.43	0.50	20	0.85	51.0	0.41	0.47	30	1.93	115.8	0.41	0.48
	50	15	0.50	30.0	0.43	0.49	21	0.91	54.6	0.40	0.46	30	2.04	122.4	0.44	0.50
	55	15	0.51	30.6	0.44	0.50	21	0.95	57.0	0.41	0.48	30	2.13	127.8	0.46	0.53
210°	25	--	--	--	--	--	16	0.72	43.2	0.46	0.54	25	1.68	100.8	0.44	0.51
	30	12	0.40	24.0	0.46	0.53	17	0.75	45.0	0.43	0.49	27	1.84	110.4	0.42	0.48
	35	13	0.45	27.0	0.44	0.51	18	0.81	48.6	0.41	0.48	28	1.99	119.4	0.42	0.48
	40	**14**	**0.49**	**29.4**	**0.41**	**0.48**	**19**	**0.86**	**51.6**	**0.39**	**0.45**	**30**	**2.12**	**127.2**	**0.39**	**0.45**
	45	14	0.51	30.6	0.43	0.50	20	0.91	54.6	0.38	0.43	30	2.25	135.0	0.41	0.48
	50	15	0.57	34.2	0.42	0.48	21	0.98	58.8	0.37	0.42	30	2.37	142.2	0.43	0.50
	55	15	0.59	35.4	0.43	0.50	21	1.01	60.6	0.38	0.44	30	2.49	149.4	0.46	0.53
270°	25	--	--	--	--	--	16	0.87	52.2	0.44	0.50	25	2.19	131.4	0.45	0.52
	30	12	0.48	28.8	0.43	0.49	17	0.95	57.0	0.42	0.49	27	2.37	142.2	0.42	0.48
	35	13	0.53	31.8	0.40	0.46	18	1.03	61.8	0.41	0.47	28	2.55	153.0	0.42	0.48
	40	**14**	**0.63**	**37.8**	**0.41**	**0.48**	**19**	**1.10**	**66.0**	**0.39**	**0.45**	**30**	**2.73**	**163.8**	**0.39**	**0.45**
	45	14	0.67	40.2	0.44	0.51	20	1.17	70.2	0.38	0.43	30	2.89	173.4	0.41	0.48
	50	15	0.72	43.2	0.41	0.47	21	1.23	73.8	0.36	0.41	30	3.06	183.6	0.44	0.50
	55	15	0.75	45.0	0.43	0.49	21	1.30	78.0	0.38	0.44	30	3.22	193.2	0.46	0.53
360°	25	--	--	--	--	--	16	1.20	72.0	0.45	0.52	25	2.88	172.8	0.44	0.51
	30	12	0.69	41.4	0.46	0.53	17	1.28	76.8	0.43	0.49	27	3.15	189.0	0.42	0.48
	35	13	0.77	46.2	0.44	0.51	18	1.37	82.2	0.41	0.47	28	3.40	204.0	0.42	0.48
	40	**14**	**0.84**	**50.4**	**0.41**	**0.48**	**19**	**1.48**	**88.8**	**0.39**	**0.46**	**30**	**3.64**	**218.4**	**0.39**	**0.45**
	45	14	0.88	52.8	0.43	0.50	20	1.57	94.2	0.38	0.44	30	3.86	231.6	0.41	0.48
	50	15	0.98	58.8	0.42	0.48	21	1.68	100.8	0.37	0.42	30	4.07	244.2	0.44	0.50
	55	15	1.01	60.6	0.43	0.50	21	1.74	104.4	0.38	0.44	30	4.27	256.2	0.46	0.53

Bold = Optimal pressure for the MP Rotator is 40 PSI. This can easily be achieved by using the MP Rotator with the Hunter Pro-Spray PRS40 pressure-regulated at 40 PSI.

Works best with Pro-Spray PRS40

Compatible with:

Pro-Spray PRS40
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MP ROTATOR PERFORMANCE DATA

MP3500
Radius: 31' to 35'
Adjustable Arc
● Light Brown: 90°

Arc	Pressure PSI	Radius ft.	Flow GPM	Flow GPH	Precip in/hr ■	Precip in/hr ▲
90°	25	33	1.04	62.4	0.37	0.42
	30	34	1.13	67.8	0.38	0.43
	35	34	1.21	72.6	0.40	0.47
	40	**35**	**1.28**	**76.8**	**0.40**	**0.46**
	45	35	1.38	82.8	0.43	0.50
	50	35	1.43	85.8	0.45	0.52
	55	35	1.50	90.0	0.47	0.54
180°	25	33	2.21	132.6	0.39	0.45
	30	34	2.24	134.4	0.37	0.43
	35	34	2.65	159.0	0.44	0.51
	40	**35**	**2.86**	**171.6**	**0.45**	**0.52**
	45	35	3.10	186.0	0.49	0.56
	50	35	3.21	192.6	0.50	0.58
	55	35	3.28	196.8	0.52	0.60
210°	25	33	2.59	155.4	0.39	0.45
	30	34	2.84	170.4	0.41	0.47
	35	34	3.08	184.8	0.44	0.51
	40	**35**	**3.29**	**197.4**	**0.44**	**0.51**
	45	35	3.54	212.4	0.48	0.55
	50	35	3.76	225.6	0.51	0.59
	55	35	3.94	236.4	0.53	0.61

MP3500

Bold = Optimal pressure for the MP Rotator is 40 PSI. This can easily be achieved by using the MP Rotator with the Pro-Spray PRS40, pressure-regulated spray body at 40 PSI.

MP ROTATOR PERFORMANCE DATA

- **MPLCS-515:** Ivory, MP Left Corner Strip
- **MPRCS-515:** Copper, MP Right Corner Strip
- **MPSS-530:** Brown, MP Side Strip

	Pressure PSI	Radius ft.	Flow GPM	Flow GPH
MP Left Corner Strip	30	4 x 14	0.19	11.4
	35	5 x 15	0.21	12.6
	40	**5 x 15**	**0.22**	**13.2**
	45	5 x 15	0.23	13.8
	50	6 x 16	0.25	15.0
	55	6 x 16	0.26	15.6
MP Right Corner Strip	30	4 x 14	0.19	11.4
	35	5 x 15	0.21	12.6
	40	**5 x 15**	**0.22**	**13.2**
	45	5 x 15	0.23	13.8
	50	6 x 16	0.25	15.0
	55	6 x 16	0.26	15.6
MP Side Strip	30	4 x 28	0.38	22.8
	35	5 x 30	0.41	24.6
	40	**5 x 30**	**0.44**	**26.4**
	45	5 x 30	0.47	28.2
	50	6 x 32	0.49	29.4
	55	6 x 32	0.51	30.6

MP Strips

MPLCS-515
Left Corner Strip
5' x 15'

MPRCS-515
Right Corner Strip
5' x 15'

MPSS-530
Side Strip
5' x 30'

Bold = Recommended pressure
Notes: To match the precipitation rate of Standard MP Rotator models, use single-row or triangular spacing. To match the MP800, use rectangular spacing.

See **page 182** for precipitation rate calculation.

MP ROTATOR PERFORMANCE DATA

MP Corner
Radius: 8' to 15'
Adjustable Arc
● Turquoise: 45° to 105°

Arc	Pressure PSI	Radius ft.	Flow GPM	Flow GPH
45°	25	--	--	--
	30	12	0.17	10.2
	35	13	0.18	10.8
	40	**14**	**0.19**	**11.4**
	45	14	0.21	12.6
	50	14	0.22	13.2
	55	15	0.23	13.8
90°	25	11	0.31	18.6
	30	12	0.34	20.4
	35	13	0.36	21.6
	40	**14**	**0.39**	**23.4**
	45	14	0.41	24.6
	50	15	0.43	25.8
	55	15	0.46	27.6
105°	25	11	0.36	21.6
	30	12	0.39	23.4
	35	13	0.42	25.2
	40	**14**	**0.45**	**27.0**
	45	14	0.48	28.8
	50	15	0.51	30.6
	55	15	0.53	31.8

Bold = Recommended pressure

MP Corner

MP-CORNER
Corner
8' to 15'

Male Threaded

MP-HT
Male Threaded

MP Accessories

MPTOOL
Adjusts all MP Rotator Nozzles

MPSTICK
Snaps onto any length of 1" PVC to allow standing adjustment. *PVC pipe not included.*

MP Corner

MP Tool for easy adjustments

MP ROTATOR® 800

Radius: **6' to 16'**

0.8 in/hr

The MP800 offers a higher precipitation rate perfect for small spaces and spray retrofits.

KEY BENEFITS

- Precipitation rate of approximately 0.8 in/hr for spray retrofit applications
- Automatic matched precipitation for simplified irrigation design and flexibility
- Double-pop feature protects the nozzle from external debris
- High distribution uniformity for a healthy landscape with maximum water efficiency

ADDITIONAL FEATURES

- Wind-resistant, multi-stream technology prevents misting
- For vandal resistance, the arc is adjustable only when the MP Rotator is running
- Removable filter screen prevents nozzle clogging
- Color-coded for easy identification

OPERATING SPECIFICATIONS

- Radius reduction up to approximately 25% on all models
- Recommended operating pressure: 40 PSI
- Minimum radius setting achieved at 30 PSI
- Filtration recommended on dirty water applications
- Warranty period: 3 years

OPTIONS

- Pair with Pro-Spray® PRS40 Sprinkler Body for pressure regulation to 40 PSI for nominal radius settings
- Pair with Pro-Spray PRS30 Sprinkler Body for pressure regulation to 30 PSI for minimum radius settings

MP800SR: 6' to 12' radius

MP800SR-90
90° to 210°

MP800SR-360
360°

MP815: 8' to 16' radius

MP815-90
90° to 210°

MP815-210
210° to 270°

MP815-360
360°

Compatible with:

HY Filter
Page 152

PRS30 and PRS40
Page 62 and Page 63

MP800SR-90

MP815-90

MP ROTATOR PERFORMANCE DATA

MP800SR

Radius: 6' to 12'
Adjustable Arc and Full-Circle
- Orange and Gray: 90° to 210°
- Lime Green and Gray: 360°

		MAX RADIUS					MIN RADIUS	
Arc	Pressure PSI	Radius ft.	Flow GPM	Flow GPH	Precip in/hr ■	Precip in/hr ▲	Radius ft.	Flow GPM
90°	30	8	0.17	9.6	0.90	1.04	6	0.13
	35	9	0.21	11.4	0.89	1.03	7	0.15
	40	**10**	**0.23**	**13.8**	**0.83**	**0.96**	**8**	**0.16**
	45	11	0.25	15.0	0.80	0.92	8	0.18
	50	11	0.27	16.2	0.79	0.92	9	0.19
	55	12	0.28	16.8	0.80	0.93	10	0.20
180°	30	8	0.33	19.2	0.88	1.02	6	0.26
	35	9	0.38	22.2	0.85	0.99	7	0.29
	40	**10**	**0.42**	**25.2**	**0.81**	**0.93**	**8**	**0.32**
	45	11	0.46	27.6	0.77	0.88	8	0.36
	50	11	0.48	28.8	0.76	0.88	9	0.38
	55	12	0.50	30.0	0.73	0.84	10	0.40
210°	30	8	0.35	22.2	0.80	0.93	6	0.30
	35	9	0.38	26.4	0.77	0.89	7	0.34
	40	**10**	**0.43**	**29.4**	**0.81**	**0.91**	**8**	**0.37**
	45	10	0.45	31.8	0.82	0.95	8	0.42
	50	11	0.49	33.6	0.73	0.85	9	0.44
	55	12	0.56	34.8	0.70	0.81	10	0.47
360°	30	8	0.66	37.8	0.89	1.03	6	0.47
	35	9	0.71	42.0	0.80	0.92	7	0.52
	40	**10**	**0.78**	**46.8**	**0.79**	**0.91**	**8**	**0.56**
	45	10	0.85	51.0	0.78	0.90	8	0.59
	50	11	0.88	52.8	0.73	0.85	9	0.63
	55	12	0.98	58.8	0.70	0.81	10	0.70

Bold = Optimal pressure for the MP Rotator is 40 PSI. This can easily be achieved by using the MP Rotator with the Pro-Spray PRS40, pressure-regulated at 40 PSI.

MP ROTATOR PERFORMANCE DATA

MP815

Radius: 8' to 16'
Adjustable Arc and Full-Circle
- Maroon and Gray: 90° to 210°
- Lt. Blue and Gray: 210° to 270°
- Olive and Gray: 360°

Arc	Pressure PSI	Radius ft.	Flow GPM	Flow GPH	Precip in/hr ■	Precip in/hr ▲
90°	30	14	0.42	25.2	0.83	0.95
	35	15	0.46	27.6	0.79	0.91
	40	**15**	**0.49**	**29.4**	**0.84**	**0.97**
	45	16	0.52	31.2	0.78	0.90
	50	16	0.55	33.0	0.83	0.96
	55	16	0.58	34.8	0.87	1.01
180°	30	13	0.75	45.0	0.85	0.99
	35	14	0.86	51.6	0.84	0.98
	40	**15**	**0.93**	**55.8**	**0.80**	**0.92**
	45	15	0.96	57.6	0.82	0.95
	50	16	1.06	63.6	0.80	0.92
	55	16	1.11	66.6	0.83	0.96
210°	30	13	0.88	52.8	0.86	0.99
	35	14	0.96	57.6	0.81	0.93
	40	**15**	**1.10**	**66.0**	**0.81**	**0.93**
	45	15	1.16	69.6	0.85	0.98
	50	16	1.24	74.4	0.80	0.92
	55	16	1.30	78.0	0.84	0.97
270°	30	13	1.14	68.4	0.87	1.00
	35	14	1.24	74.4	0.81	0.94
	40	**15**	**1.40**	**84.0**	**0.80**	**0.92**
	45	15	1.47	88.2	0.84	0.97
	50	16	1.54	92.4	0.77	0.89
	55	16	1.61	96.6	0.81	0.93
360°	30	13	1.52	91.2	0.87	1.00
	35	14	1.70	102.0	0.83	0.96
	40	**15**	**1.87**	**112.2**	**0.80**	**0.92**
	45	15	2.00	120.0	0.86	0.99
	50	16	2.13	127.8	0.80	0.92
	55	16	2.26	135.6	0.85	0.98

MP STAKE

Models: **Standard and Pressure-Regulating Staking Kits**

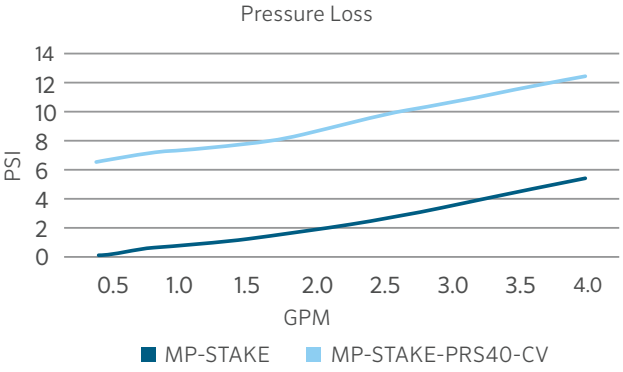
Designed for easy implementation with any water-efficient MP Rotator Nozzle, MP Stake Kits come preassembled for quick installation in the field.

KEY BENEFITS

- Pair with any high-efficiency MP Rotator Nozzle to simplify temporary irrigation
- Preassembled for fast and easy installation in the field
- Standard kit includes a 26" stake, nozzle adapter, 0.345" tubing, and ½" threaded male fitting for quick connection
- For maximum water savings, upgrade to a 40 PSI pressure regulator and Hunter Check Valve

OPERATING SPECIFICATIONS

- Operational pressure range: 30 to 70 PSI



MP-STAKE
Total height: 28"
Male threaded connection: ½"

MP-STAKE-PRS40-CV
Total height: 34"
Male threaded connection: ½"

Compatible with:

All MP Rotator Nozzles
Page 46 and page 50

Spray Nozzles
Page 65

MP-STAKE-PRS40-CV Installation

MP-STAKE MODELS	
Model	**Description**
MP-STAKE	26" stake, 0.345" tubing to ½" male fitting, PROS-00 shrub adapter (total height: 28")
MP-STAKE-PRS40-CV	26" stake, 0.345" tubing to ½" male fitting, Hunter Check Valve, PROS-00-PRS40 pressure-regulated shrub adapter (total height: 34")

ENGINEERED FOR *MAXIMUM EFFICIENCY*

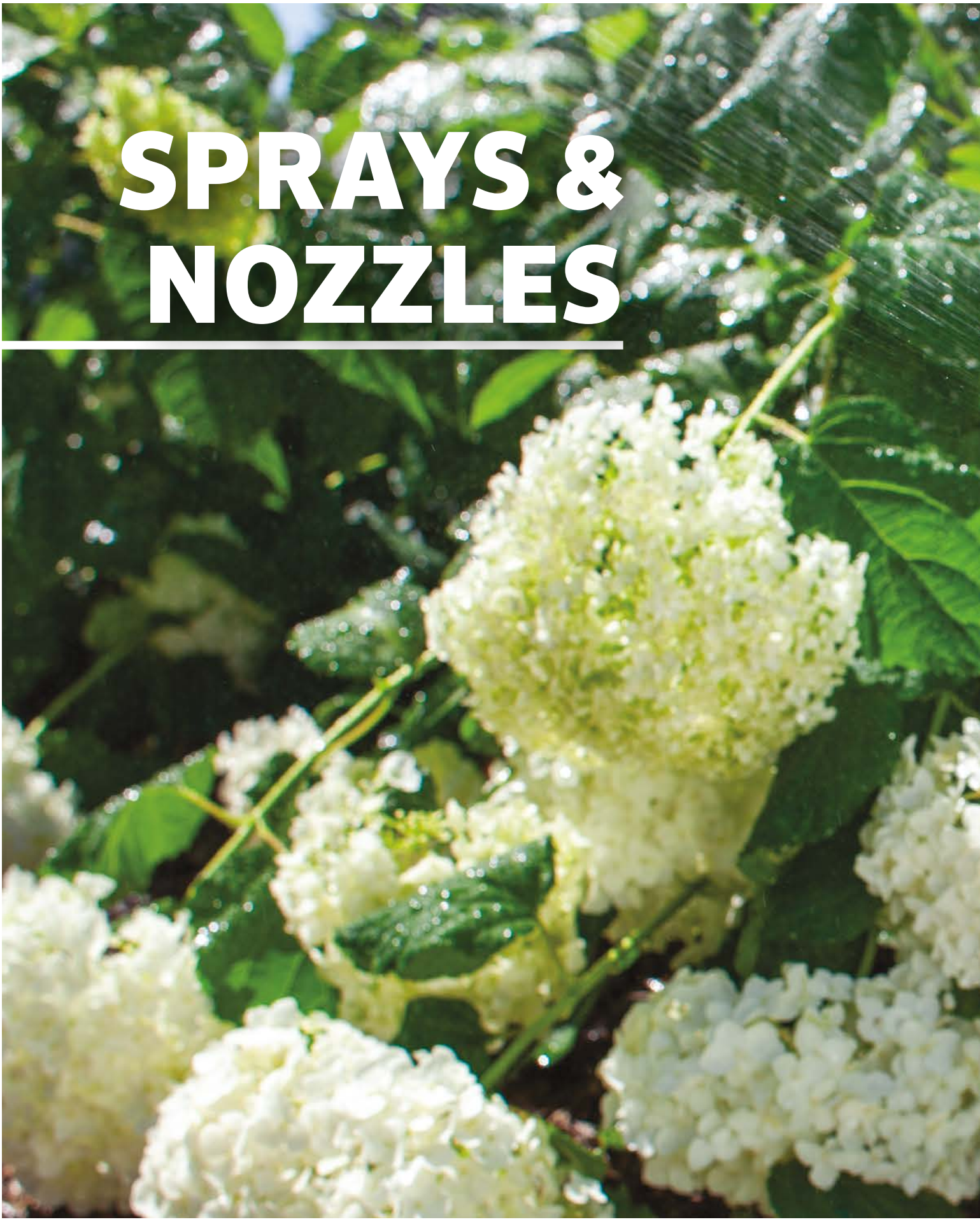
DURABLE
With only one moving part, the MP Rotator is built with the highest-quality materials to ensure long-lasting performance in every installation.

EFFICIENT
The rotating streams of water cut through wind, reduce misting, and distribute water at a slow, even rate that soils can better absorb, preventing runoff.

FLEXIBLE
Matched precipitation across 5' wide strips to 35' radius allows the MP Rotator to fit a wide range of landscapes with uniform coverage for healthy plants.

RELIABLE
With more than 10 years of proven performance with Hunter Industries, the MP Rotator is the most trusted high-efficiency nozzle on the market.

SPRAYS & NOZZLES



SPRAYS
ADVANCED FEATURES

CO-MOLDED WIPER SEAL

Molded with two types of chemical- and chlorine-resistant materials, this multi-function wiper seal reduces flow-by, allowing more heads on one zone, and prevents debris from entering the seal, reducing riser stick-ups.

FLOGUARD™ TECHNOLOGY

In the event of a missing nozzle, FloGuard Technology reduces the flow of water from the riser to a 0.5 GPM (10' tall) indicator stream, eliminating water waste and preventing landscape erosion while providing a visual indicator for repair.

HEAVY-DUTY SPRING

The industry's strongest spring offers positive retraction under any conditions.

CHECK VALVE

Optional field- or factory-installed check valves eliminate leaks and puddles at the lower heads, protecting landscapes from damage and erosion while reducing water waste.

PRESSURE REGULATION

Pressure-regulated Pro-Spray Sprinkler Bodies optimize the performance of the nozzle, reducing flow rates and preventing misting. The PRS30 (brown) regulates pressures to 30 PSI for spray nozzles. The PRS40 (gray) is designed for the efficient MP Rotator® Nozzle at 40 PSI.

INDUSTRY'S STRONGEST SPRAY BODY

The Pro-Spray line incorporates a heavy-duty ribbed body and durable cap engineered to withstand the harshest environments, including the rigors of foot traffic and the abuses of heavy machinery. In addition, the buttress thread design provides superior strength in cap-to-body gripping capacity, helping the head to withstand high inlet surge pressures.

PRO-SPRAY **COMPETITOR**

INNOVATIVE SEAL DESIGN

Pedestrian traffic, landscape equipment, temperature changes, and cycling pressures can cause body caps to loosen. Pro-Spray caps can withstand more than one full 360° turn and remain sealed at any pressure, preventing excess runoff.

Pro-Spray: Seal remains intact
Competitor: Significant leaking at the body cap

SPRAY BODY COMPARISON CHART




QUICK SPECS		PS ULTRA	PRO-SPRAY®	PRS30	PRS40
		Good	Better	Best for Spray Nozzles	Best for MP Rotator®
POP-UP HEIGHT	in.	2, 4, 6	Shrub, 2, 3, 4, 6, 12	Shrub, 4, 6, 12	Shrub, 4, 6, 12
PRESSURE-REGULATED	PSI	N/A	N/A	30	40
FEATURES					
PREINSTALLED NOZZLE		5SS, 8A, 10A, 12A, 15A, 17A	N/A	N/A	N/A
CAP COLOR		Black	Black	Brown	Gray
CHECK VALVES		Field-Installed	Field-Installed or Factory-Installed	Field-Installed or Factory-Installed	Field-Installed or Factory-Installed
WARRANTY		2 Years	5 Years	5 Years	5 Years
ADVANCED FEATURES					
BODY STYLE		Slim Line	Rugged Body	Rugged Body	Rugged Body
SPRING		Standard	Heavy-Duty	Heavy-Duty	Heavy-Duty
CO-MOLDED WIPER SEAL			●	●	●
RECLAIMED CAP			●	●	●
PRESSURE REGULATION				●	●
FLOGUARD™ TECHNOLOGY				●	●
EPA WATERSENSE CERTIFIED				●	●
APPLICATIONS					
TURFGRASS		●	●	●	●
TURFGRASS: TALL MOWING HEIGHT		●	●	●	●
SHRUBS: SPRINKLERS ON RISERS			●	●	●
SHRUBS: TALL POP-UP SPRINKLERS			●	●	●
RESIDENTIAL		●	●	●	●
COMMERCIAL/MUNICIPALITIES			●	●	●
HIGH-TRAFFIC AREAS			●	●	●
RECLAIMED WATER			●	●	●

PS ULTRA

The PS Ultra is a compact, slim-line spray sprinkler with the option of preinstalled nozzles for faster installation.

KEY BENEFITS

- Enhanced cap for more durability, easier handling, and extended riser seal life
- Large inlet filter screen for increased debris resistance
- Check valve option eliminates low-head drainage
- Heavy-duty spring for consistent riser retraction

ADDITIONAL FEATURES

- Directional flush plug design for cleaner installation
- Two-piece ratcheting riser
- 2" and 4" models can retrofit into older style PS models
- Compatible with all female-threaded nozzles

OPERATING SPECIFICATIONS

- Operational pressure range: 20 to 70 PSI
- Warranty period: 2 years

FACTORY-INSTALLED OPTIONS

- Flush plug (large filter screen not included)
- Nozzles 8A, 10A, 12A, 15A, 5' x 30' side strip
- Large inlet filter screen included in 4" and 6" preinstalled nozzle models

USER-INSTALLED OPTIONS

- Check valve installs in filter screen for 4" and 6" models (up to 7' of elevation; P/N 462237SP)
- Large inlet filter screen (P/N 162900SP)
- Shutoff nozzle (P/N 916400SP)

PSU-02
Retracted height: 5"
Pop-up height: 2"
Exposed diameter: 1¼"
Inlet size: ½"

PSU-04
Retracted height: 7¼"
Pop-up height: 4"
Exposed diameter: 1¼"
Inlet size: ½"

PSU-06
Retracted height: 9½"
Pop-up height: 6"
Exposed diameter: 1¼"
Inlet size: ½"

PS ULTRA – SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Nozzles
PSU-02 = 2" pop-up	**(blank)** = Flush plug, no large filter screen
PSU-04 = 4" pop-up	**8A** = 8' adjustable nozzle
PSU-06 = 6" pop-up	**10A** = 10' adjustable nozzle
	12A = 12' adjustable nozzle
	15A = 15' adjustable nozzle
	17A = 17' adjustable nozzle
	5SS = 5' x 30' side strip *(2" and 4" only)*

Examples:
PSU-02 - 5SS = 2" pop-up, with a 5' x 30' side strip
PSU-06 - 10A = 6" pop-up, with a 10' adjustable nozzle
PSU-04 = 4" pop-up, with flush plug, large filter screen not included

PS ULTRA STANDARD NOZZLES PERFORMANCE DATA

		8A ● Brown 8' radius Adjustable from 0° to 360° Trajectory: 15°				10A ● Red 10' radius Adjustable from 0° to 360° Trajectory: 15°				12A ● Green 12' radius Adjustable from 0° to 360° Trajectory: 28°			
Arc	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
45°	20	7	0.18	2.83	3.27	9	0.20	1.90	2.20	11	0.25	1.59	1.84
	25	8	0.20	2.74	3.16	10	0.23	1.92	2.22	12	0.28	1.60	1.85
	30	**8**	**0.22**	**2.65**	**3.06**	**10**	**0.25**	**1.93**	**2.22**	**12**	**0.32**	**1.68**	**1.95**
	35	9	0.24	2.50	2.89	11	0.28	1.92	2.22	13	0.37	1.80	2.08
	40	9	0.25	2.38	2.74	11	0.30	1.88	2.17	13	0.42	1.91	2.21
90°	20	7	0.36	2.83	3.27	9	0.40	1.90	2.20	11	0.50	1.59	1.84
	25	8	0.40	2.74	3.16	10	0.45	1.92	2.22	12	0.55	1.60	1.85
	30	**8**	**0.44**	**2.65**	**3.06**	**10**	**0.50**	**1.93**	**2.22**	**12**	**0.63**	**1.68**	**1.95**
	35	9	0.47	2.50	2.89	11	0.55	1.92	2.22	13	0.73	1.80	2.08
	40	9	0.50	2.38	2.74	11	0.59	1.88	2.17	13	0.84	1.91	2.21
120°	20	7	0.48	2.83	3.27	9	0.53	1.90	2.20	11	0.67	1.59	1.84
	25	8	0.53	2.74	3.16	10	0.60	1.92	2.22	12	0.73	1.60	1.85
	30	**8**	**0.59**	**2.65**	**3.06**	**10**	**0.67**	**1.93**	**2.22**	**12**	**0.84**	**1.68**	**1.95**
	35	9	0.63	2.50	2.89	11	0.73	1.92	2.22	13	0.97	1.80	2.08
	40	9	0.67	2.38	2.74	11	0.79	1.88	2.17	13	1.12	1.91	2.21
180°	20	7	0.72	2.83	3.27	9	0.80	1.90	2.20	11	1.00	1.59	1.84
	25	8	0.80	2.74	3.16	10	0.90	1.92	2.22	12	1.10	1.60	1.85
	30	**8**	**0.88**	**2.65**	**3.06**	**10**	**1.00**	**1.93**	**2.22**	**12**	**1.26**	**1.68**	**1.95**
	35	9	0.94	2.50	2.89	11	1.10	1.92	2.22	13	1.46	1.80	2.08
	40	9	1.00	2.38	2.74	11	1.18	1.88	2.17	13	1.68	1.91	2.21
240°	20	7	0.96	2.83	3.27	9	1.07	1.90	2.20	11	1.33	1.59	1.84
	25	8	1.07	2.74	3.16	10	1.20	1.92	2.22	12	1.47	1.60	1.85
	30	**8**	**1.17**	**2.65**	**3.06**	**10**	**1.33**	**1.93**	**2.22**	**12**	**1.68**	**1.68**	**1.95**
	35	9	1.25	2.50	2.89	11	1.47	1.92	2.22	13	1.95	1.80	2.08
	40	9	1.33	2.38	2.74	11	1.57	1.88	2.17	13	2.24	1.91	2.21
270°	20	7	1.08	2.83	3.27	9	1.20	1.90	2.20	11	1.50	1.59	1.84
	25	8	1.20	2.74	3.16	10	1.35	1.92	2.22	12	1.65	1.60	1.85
	30	**8**	**1.32**	**2.65**	**3.06**	**10**	**1.50**	**1.93**	**2.22**	**12**	**1.89**	**1.68**	**1.95**
	35	9	1.41	2.50	2.89	11	1.65	1.92	2.22	13	2.19	1.80	2.08
	40	9	1.50	2.38	2.74	11	1.77	1.88	2.17	13	2.52	1.91	2.21
360°	20	7	1.44	2.83	3.27	9	1.60	1.90	2.20	11	2.00	1.59	1.84
	25	8	1.60	2.74	3.16	10	1.80	1.92	2.22	12	2.20	1.60	1.85
	30	**8**	**1.76**	**2.65**	**3.06**	**10**	**2.00**	**1.93**	**2.22**	**12**	**2.52**	**1.68**	**1.95**
	35	9	1.88	2.50	2.89	11	2.20	1.92	2.22	13	2.92	1.80	2.08
	40	9	2.00	2.38	2.74	11	2.36	1.88	2.17	13	3.36	1.91	2.21

Bold = Recommended pressure

PS ULTRA STANDARD NOZZLES PERFORMANCE DATA

		15A ● Black — 15' radius, Adjustable from 0° to 360°, Trajectory: 28°				17A ● Gray — 17' radius, Adjustable from 0° to 360°, Trajectory: 28°			
Arc	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
45°	20	14	0.39	1.51	1.75	16	0.49	1.46	1.68
	25	15	0.43	1.57	1.82	17	0.57	1.60	1.85
	30	**15**	**0.47**	**1.59**	**1.84**	**17**	**0.58**	**1.53**	**1.77**
	35	16	0.52	1.55	1.79	18	0.63	1.49	1.72
	40	17	0.57	1.60	1.85	19	0.69	1.55	1.79
90°	20	14	0.77	1.51	1.75	16	0.97	1.46	1.68
	25	15	0.86	1.57	1.82	17	1.13	1.60	1.85
	30	**15**	**0.93**	**1.59**	**1.84**	**17**	**1.15**	**1.53**	**1.77**
	35	16	1.03	1.55	1.79	18	1.25	1.49	1.72
	40	17	1.13	1.60	1.85	19	1.38	1.55	1.79
120°	20	14	1.03	1.51	1.75	16	1.29	1.46	1.68
	25	15	1.15	1.57	1.82	17	1.51	1.51	1.74
	30	**15**	**1.24**	**1.59**	**1.84**	**17**	**1.53**	**1.53**	**1.77**
	35	16	1.37	1.55	1.79	18	1.67	1.49	1.72
	40	17	1.51	1.60	1.85	19	1.84	1.47	1.70
180°	20	14	1.54	1.51	1.75	16	1.94	1.46	1.68
	25	15	1.72	1.57	1.82	17	2.26	1.51	1.74
	30	**15**	**1.86**	**1.59**	**1.84**	**17**	**2.30**	**1.53**	**1.77**
	35	16	2.06	1.55	1.79	18	2.50	1.49	1.72
	40	17	2.26	1.60	1.85	19	2.76	1.47	1.70
240°	20	14	2.05	1.51	1.75	16	2.59	1.46	1.68
	25	15	2.29	1.57	1.82	17	3.01	1.51	1.74
	30	**15**	**2.48**	**1.59**	**1.84**	**17**	**3.07**	**1.53**	**1.77**
	35	16	2.75	1.55	1.79	18	3.33	1.49	1.72
	40	17	3.01	1.60	1.85	19	3.68	1.47	1.70
270°	20	14	2.31	1.51	1.75	16	2.91	1.46	1.68
	25	15	2.58	1.57	1.82	17	3.39	1.51	1.74
	30	**15**	**2.79**	**1.59**	**1.84**	**17**	**3.45**	**1.53**	**1.77**
	35	16	3.09	1.55	1.79	18	3.75	1.49	1.72
	40	17	3.39	1.60	1.85	19	4.14	1.47	1.70
360°	20	14	3.08	1.51	1.75	16	3.88	1.46	1.68
	25	15	3.44	1.57	1.82	17	4.52	1.51	1.74
	30	**15**	**3.72**	**1.59**	**1.84**	**17**	**4.60**	**1.53**	**1.77**
	35	16	4.12	1.55	1.79	18	5.00	1.49	1.72
	40	17	4.52	1.60	1.85	19	5.52	1.47	1.70

Bold = Recommended pressure

STRIP PATTERN NOZZLE PERFORMANCE DATA

Model	Pressure PSI	Width x Length ft.	Flow GPM
SS-530	20	4 x 28	1.10
	25	5 x 30	1.20
	30	**5 x 30**	**1.30**
	35	5 x 30	1.40
	40	5 x 30	1.50

Bold = Recommended pressure

PRO-SPRAY®

Meet the strongest, most versatile spinkler body in the industry.

KEY BENEFITS

- Industry's strongest spray body for years of reliable performance
- Co-molded wiper seal made from chemical- and chlorine-resistant materials
- Innovative seal design prevents cap-to-body leaks, even with a loose cap
- Heavy-duty spring for consistent riser retraction
- Check valve option eliminates low-head drainage

ADDITIONAL FEATURES

- Directional flush plug design for cleaner installation
- Interchangeable components for easier servicing, retrofits, and upgrades
- Compatible with all female-threaded nozzles

OPERATING SPECIFICATIONS

- Operational pressure range: 15 to 100 PSI
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Check valve available for 4", 6", and 12" models (up to 10' of elevation)
- Reclaimed water ID cap

USER-INSTALLED OPTIONS

- Drain check valve (up to 10' of elevation; P/N 437400SP)
- Reclaimed water ID cap (P/N 458520SP)
- Snap-on reclaimed cover (P/N PROS-RC-CAP-SP)
- Shutoff cap (P/N 213600SP)
- Shutoff nozzle (P/N 916400SP)

Pro-Spray Reclaimed

Pro-Spray models include optional factory-installed purple reclaimed caps

PRO-SPRAY – SPECIFICATION BUILDER: ORDER 1 + 2

1 Models	2 Options
PROS-00 = Shrub adapter	**(blank)** = No option
PROS-02 = 2" pop-up	**CV** = Factory-installed drain check valve *(Pop-up models only)*
PROS-03 = 3" pop-up	**R** = Factory-installed reclaimed body cap *(Shrub molded in purple)*
PROS-04 = 4" pop-up	
PROS-06 = 6" pop-up (no side inlet)	
PROS-12 = 12" pop-up (no side inlet)	

PRO-SPRAY (SIDE INLET) MODELS

Model
PROS-06-SI = 6" pop-up with side inlet
PROS-12-SI = 12" pop-up with side inlet

Examples:
PROS-04 = 4" pop-up
PROS-06-CV = 6" pop-up, drain check valve
PROS-12-CV-R = 12" pop-up, drain check valve, reclaimed body cap

PROS-00
Retracted height: 1½"
Inlet size: ½"

PROS-02
Retracted height: 4"
Pop-up height: 2"
Exposed diameter: 2¼"
Inlet size: ½"

PROS-03
Retracted height: 5"
Pop-up height: 3"
Exposed diameter: 2¼"
Inlet size: ½"

PROS-04
Retracted height: 5⅞"
Pop-up height: 4"
Exposed diameter: 2¼"
Inlet size: ½"

[A] **PROS-06-SI**
[B] **PROS-06**
Retracted height: 8¾"
Pop-up height: 6"
Exposed diameter: 2¼"
Inlet size: ½"

[A] **PROS-12-SI**
[B] **PROS-12**
Retracted height: 16⅛"
Pop-up height: 12"
Exposed diameter: 2¼"
Inlet size: ½"

PRS30

To maintain consistent performance and reduce water waste, the Pro-Spray PRS30 is pressure-regulated to an optimal pressure of 30 PSI.

KEY BENEFITS

- Industry's strongest spray body for years of reliable performance
- Pressure-regulated to 30 PSI for optimal nozzle performance
- Brown cap for easy field identification
- Co-molded wiper seal made from chemical- and chlorine-resistant materials
- Innovative seal design prevents cap-to-body leaks, even with a loose cap
- FloGuard Technology option eliminates water waste in the event of a missing nozzle

ADDITIONAL FEATURES

- Directional flush plug design for cleaner installation
- Interchangeable components for easier servicing, retrofits, and upgrades
- Heavy-duty spring for consistent riser retraction
- Check valve option eliminates low-head drainage
- Compatible with all female-threaded nozzles

OPERATING SPECIFICATIONS

- Operational pressure range: 15 to 100 PSI
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Check valve available for 4", 6", and 12" models (up to 14' of elevation)
- Reclaimed water identification
- FloGuard Technology available for check valve models

USER-INSTALLED OPTIONS

- Check valve (up to 14' of elevation; P/N 437400SP)
- Reclaimed water ID cap (P/N 458560SP)
- Snap-on reclaimed cover (P/N PROS-RC-CAP-SP)
- Shutoff cap (P/N 213600SP)
- Shutoff nozzle (P/N 916400SP)

PRS30 Reclaimed

PRS30 models include optional factory-installed purple reclaimed caps

PROS-00-PRS30
Retracted height: 4½"
Inlet size: ½"

PROS-04-PRS30
Retracted height: 5⅞"
Pop-up height: 4"
Exposed diameter: 2¼"
Inlet size: ½"

FloGuard Technology

[A] **PROS-06-SI-PRS30**
[B] **PROS-06-PRS30**
Retracted height: 8¾"
Pop-up height: 6"
Exposed diameter: 2¼"
Inlet size: ½"

[A] **PROS-12-SI-PRS30**
[B] **PROS-12-PRS30**
Retracted height: 16⅛"
Pop-up height: 12"
Exposed diameter: 2¼"
Inlet size: ½"

PRO-SPRAY PRS30 – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Feature Options	3 Specialty Options
PROS-00-PRS30 = 30 PSI regulated shrub adapter **PROS-04-PRS30** = 30 PSI regulated 4" pop-up **PROS-06-PRS30** = 30 PSI regulated 6" pop-up **PROS-12-PRS30** = 30 PSI regulated 12" pop-up	**(blank)** = No option **CV** = Factory-installed drain check valve *(Pop-up models only)*	**(blank)** = No option **R** = Factory-installed reclaimed body cap **F** = FloGuard Technology **F-R** = FloGuard Technology with reclaimed body cap

PRO-SPRAY PRS30 (SIDE INLET) MODELS

Model
PROS-06-SI-PRS30 = 30 PSI regulated 6" pop-up with side inlet
PROS-12-SI-PRS30 = 30 PSI regulated 12" pop-up with side inlet

Examples:
PROS-06-SI-PRS30 = 6" pop-up with side inlet regulated at 30 PSI
PROS-06-PRS30-CV = 6" pop-up regulated at 30 PSI, drain check valve
PROS-12-PRS30-CV-F-R = 12" pop-up regulated at 30 PSI, drain check valve, and FloGuard Technology with reclaimed body cap

WaterSense Meets EPA Criteria Certified by ICC-ES

Compatible with:

Pro Adjustable Nozzles
Page 65
Pro-Spray Fixed Arc Nozzles
Page 68

PRS40

To optimize MP Rotator Nozzle performance, the Pro-Spray PRS40 is pressure-regulated to 40 PSI.

KEY BENEFITS

- Industry's strongest spray body for years of reliable performance
- Pressure-regulated to 40 PSI for the MP Rotator Nozzle
- Gray cap for easy field identification
- Co-molded wiper seal made from chemical- and chlorine-resistant materials
- Innovative seal design prevents cap-to-body leaks, even with a loose cap
- FloGuard technology option eliminates water waste in the event of a missing nozzle

ADDITIONAL FEATURES

- Directional flush plug design for cleaner installation
- Interchangeable components for easier servicing, retrofits, and upgrades
- Heavy-duty spring for consistent riser retraction
- Check valve option eliminates low-head drainage

OPERATING SPECIFICATIONS

- Operational pressure range: 15 to 100 PSI
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Check valve available for 4", 6", and 12" models (up to 14' of elevation)
- Reclaimed water identification
- FloGuard Technology available for pop-up models

USER-INSTALLED OPTIONS

- Check valve (up to 14' of elevation; P/N 437400SP)
- Reclaimed water ID cap (P/N 458562SP)
- Snap-on reclaimed cover (P/N PROS-RC-CAP-SP)
- Shutoff cap (P/N 213600SP)
- Shutoff nozzle (P/N 916400SP)

PRS40 Reclaimed

PRS40 models include optional factory-installed purple reclaimed caps

PROS-00-PRS40
Retracted height: 4½"
Inlet size: ½"

PROS-04-PRS40-CV
Retracted height: 5⅞"
Pop-up height: 4"
Exposed diameter: 2¼"
Inlet size: ½"

FloGuard Technology

PROS-06-PRS40-CV
Retracted height: 8¾"
Pop-up height: 6"
Exposed diameter: 2¼"
Inlet size: ½"

PROS-12-PRS40-CV
Retracted height: 16⅛"
Pop-up height: 12"
Exposed diameter: 2¼"
Inlet size: ½"

PRO-SPRAY PRS40 – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Feature Options	3 Specialty Options
PROS-00-PRS40 = 40 PSI regulated shrub adapter **PROS-04-PRS40** = 40 PSI regulated 4" pop-up **PROS-06-PRS40** = 40 PSI regulated 6" pop-up **PROS-12-PRS40** = 40 PSI regulated 12" pop-up	**(blank)** = No option **CV** = Factory-installed drain check valve *(Pop-up models only)*	**(blank)** = No option **R** = Factory-installed reclaimed body cap **F** = FloGuard Technology **F-R** = FloGuard Technology with reclaimed body cap

PRO-SPRAY PRS40 (SIDE INLET) MODELS

Model
PROS-06-SI-PRS40 = 40 PSI regulated 6" pop-up with side inlet
PROS-12-SI-PRS40 = 40 PSI regulated 12" pop-up with side inlet

Examples:
PROS-06-SI-PRS40 = 6" pop-up with side inlet regulated at 40 PSI
PROS-06-PRS40-CV = 6" pop-up regulated at 40 PSI, drain check valve
PROS-12-PRS40-CV-F-R = 12" pop-up regulated at 40 PSI, drain check valve, and FloGuard Technology with reclaimed body cap

WaterSense Meets EPA Criteria Certified by ICC-ES

Compatible with:

MP Rotator
Page 46 and Page 50

SPRAY ACCESSORIES

Spray accessories provide additional flexibility for installation and maintenance of spray systems.

SJ SWING JOINTS

Features
- Unique swivel ells on both ends for easy installation in any configuration
- Airtight connection points for long-term reliability

Models
- SJ-506: ½" threaded x 6" length standard
- SJ-7506: ½" x ¾" threaded x 6" length
- SJ-706: ¾" threaded x 6" length
- SJ-512: ½" threaded x 12" length
- SJ-7512: ½" x ¾" threaded x 12" length
- SJ-712: ¾" threaded x 12" length

Operating Specifications
- Pressure-rated to 150 PSI
- Warranty period: 2 years

SJ Swing Joint
6" and 12" links

HUNTER SPIRAL BARB ELBOWS

Features
- Improved bigger, stronger design
- Compatible with FlexSG and other brands for a customized swing joint
- Spiral to barb design for easier installation
- Acetal material for sharp barbs

Models
- HSBE-050: ½" male thread x spiral barb elbow
- HSBE-075: ¾" male thread x spiral barb elbow

Operating Specifications
- Operating pressure: Up to 80 PSI
- Warranty period: 2 years

Spiral Barb Elbows
P/N HSBE-050, P/N HSBE-075

FlexSG TUBING

Features
- Engineered to resist kinking
- Textured for easy grip
- Linear low-density polyethylene material
- Meets ASTM D2104, D2239, D2737

Models
- FLEXSG: 100' roll
- FLEXSG-18: 18" pre-cut lengths

Operating Specifications
- Operating pressure: up to 80 PSI
- Warranty period: 2 years

FlexSG Tubing
100' and 18" pre-cut lengths
Inside diameter: 0.49"

PRO-SPRAY SHUTOFF CAP

Features
- Caps off the Pro-Spray for maintenance or drip conversions
- Maintains a clean look to the landscape

Models
- 213600SP

Pro-Spray Shutoff Cap
213600SP

SHUTOFF NOZZLE

Features
- Easy shutoff for spray systems
- Allows heads to pop-up for easy visibility
- Use with Pro-Spray and PS Ultra models

Models
- 916400SP

Shutoff Nozzle
916400SP

PRO ADJUSTABLE NOZZLES

Choose Pro Adjustable Nozzles for optimal landscape coverage in any setting.

KEY BENEFITS

- Adjustable from 0° to 360° for maximum design flexibility
- Easy-grip top for simple adjustment
- Strong edges for a defined pattern with better wind resistance
- Large water droplets minimize misting with better uniformity

ADDITIONAL FEATURES

- Matched precipitation rate on each nozzle from 8A to 17A
- Even distribution results in better coverage
- Color-coded for easy field identification

OPERATING SPECIFICATIONS

- Recommended operating pressure: 30 PSI
- Pair with Pro-Spray PRS30 pop-up for pressure regulation to 30 PSI
- Warranty period: 2 years

Pro Adjustable Nozzle

4A
Radius: 4'

6A
Radius: 6'

8A
Radius: 8'

10A
Radius: 10'

12A
Radius: 12'

15A
Radius: 15'

17A
Radius: 17'

PRO ADJUSTABLE NOZZLES PERFORMANCE DATA




4A ● Lt. Green — 4' radius, Adjustable from 0° to 360°, Trajectory: 0°

6A ● Lt. Blue — 6' radius, Adjustable from 0° to 360°, Trajectory: 0°

8A ● Brown — 8' radius, Adjustable from 0° to 360°, Trajectory: 15°

10A ● Red — 10' radius, Adjustable from 0° to 360°, Trajectory: 15°

Arc	Pressure PSI	4A Radius ft.	4A Flow GPM	4A Precip in/hr ■	4A Precip in/hr ▲	6A Radius ft.	6A Flow GPM	6A Precip in/hr ■	6A Precip in/hr ▲	8A Radius ft.	8A Flow GPM	8A Precip in/hr ■	8A Precip in/hr ▲	10A Radius ft.	10A Flow GPM	10A Precip in/hr ■	10A Precip in/hr ▲
45°	20	3	0.10	7.29	8.42	5	0.15	4.19	4.84	7	0.18	2.83	3.27	9	0.20	1.90	2.20
	25	3	0.11	7.12	8.22	5	0.17	4.36	5.03	8	0.20	2.74	3.16	10	0.23	1.92	2.22
	30	**4**	**0.13**	**6.26**	**7.22**	**6**	**0.18**	**3.85**	**4.45**	**8**	**0.22**	**2.65**	**3.06**	**10**	**0.25**	**1.93**	**2.22**
	35	4	0.14	6.11	7.06	6	0.18	3.55	4.10	9	0.24	2.50	2.89	11	0.28	1.92	2.22
	40	4	0.16	6.36	7.35	6	0.19	3.57	4.12	9	0.25	2.38	2.74	11	0.30	1.88	2.17
90°	20	3	0.19	6.93	8.00	5	0.30	4.19	4.84	7	0.36	2.83	3.27	9	0.40	1.90	2.20
	25	3	0.20	6.47	7.47	5	0.34	4.49	5.18	8	0.40	2.74	3.16	10	0.45	1.92	2.22
	30	**4**	**0.22**	**5.29**	**6.11**	**6**	**0.37**	**3.96**	**4.57**	**8**	**0.44**	**2.65**	**3.06**	**10**	**0.50**	**1.93**	**2.22**
	35	4	0.24	5.24	6.05	6	0.38	3.75	4.32	9	0.47	2.50	2.89	11	0.55	1.92	2.22
	40	4	0.25	4.97	5.74	6	0.40	3.76	4.34	9	0.50	2.38	2.74	11	0.59	1.88	2.17
120°	20	3	0.28	7.65	8.84	5	0.37	3.88	4.48	7	0.48	2.83	3.27	9	0.53	1.90	2.20
	25	3	0.30	7.28	8.40	5	0.38	3.76	4.35	8	0.53	2.74	3.16	10	0.60	1.92	2.22
	30	**4**	**0.34**	**6.14**	**7.09**	**6**	**0.44**	**3.53**	**4.08**	**8**	**0.59**	**2.65**	**3.06**	**10**	**0.67**	**1.93**	**2.22**
	35	4	0.36	5.81	6.71	6	0.46	3.40	3.93	9	0.63	2.50	2.89	11	0.73	1.92	2.22
	40	4	0.37	5.52	6.37	6	0.48	3.38	3.91	9	0.67	2.38	2.74	11	0.79	1.88	2.17
180°	20	3	0.34	6.20	7.16	5	0.50	3.49	4.03	7	0.72	2.83	3.27	9	0.80	1.90	2.20
	25	3	0.38	6.15	7.10	5	0.54	3.56	4.12	8	0.80	2.74	3.16	10	0.90	1.92	2.22
	30	**4**	**0.45**	**5.41**	**6.25**	**6**	**0.60**	**3.21**	**3.70**	**8**	**0.88**	**2.65**	**3.06**	**10**	**1.00**	**1.93**	**2.22**
	35	4	0.46	5.02	5.80	6	0.64	3.15	3.64	9	0.94	2.50	2.89	11	1.10	1.92	2.22
	40	4	0.48	4.77	5.51	6	0.68	3.20	3.69	9	1.00	2.38	2.74	11	1.18	1.88	2.17
240°	20	3	0.58	7.93	9.15	5	0.73	3.82	4.42	7	0.96	2.83	3.27	9	1.07	1.90	2.20
	25	3	0.62	7.52	8.68	5	0.78	3.86	4.46	8	1.07	2.74	3.16	10	1.20	1.92	2.22
	30	**4**	**0.68**	**6.14**	**7.09**	**6**	**0.88**	**3.53**	**4.08**	**8**	**1.17**	**2.65**	**3.06**	**10**	**1.33**	**1.93**	**2.22**
	35	4	0.74	6.06	6.99	6	0.92	3.40	3.93	9	1.25	2.50	2.89	11	1.47	1.92	2.22
	40	4	0.80	5.97	6.89	6	1.02	3.60	4.15	9	1.33	2.38	2.74	11	1.57	1.88	2.17
270°	20	3	0.62	7.53	8.70	5	0.88	4.10	4.73	7	1.08	2.83	3.27	9	1.20	1.90	2.20
	25	3	0.66	7.12	8.22	5	0.98	4.31	4.98	8	1.20	2.74	3.16	10	1.35	1.92	2.22
	30	**4**	**0.73**	**5.86**	**6.76**	**6**	**1.10**	**3.92**	**4.53**	**8**	**1.32**	**2.65**	**3.06**	**10**	**1.50**	**1.93**	**2.22**
	35	4	0.78	5.67	6.55	6	1.15	3.78	4.36	9	1.41	2.50	2.89	11	1.65	1.92	2.22
	40	4	0.84	5.57	6.43	6	1.20	3.76	4.34	9	1.50	2.38	2.74	11	1.77	1.88	2.17
360°	20	3	0.66	6.01	6.94	5	1.05	3.67	4.23	7	1.44	2.83	3.27	9	1.60	1.90	2.20
	25	3	0.72	5.82	6.72	5	1.10	3.63	4.19	8	1.60	2.74	3.16	10	1.80	1.92	2.22
	30	**4**	**0.80**	**4.81**	**5.56**	**6**	**1.26**	**3.37**	**3.89**	**8**	**1.76**	**2.65**	**3.06**	**10**	**2.00**	**1.93**	**2.22**
	35	4	0.86	4.69	5.42	6	1.30	3.20	3.70	9	1.88	2.50	2.89	11	2.20	1.92	2.22
	40	4	0.90	4.47	5.17	6	1.40	3.29	3.80	9	2.00	2.38	2.74	11	2.36	1.88	2.17

Bold = Recommended pressure
Note: The Pro-Spray PRS30's built-in pressure regulator controls output to a maximum of 30 PSI. Adjusting the radius reduction screw may be required to achieve catalog radius and flow.

PRO ADJUSTABLE NOZZLES PERFORMANCE DATA



		12A ● Green 12' radius Adjustable from 0° to 360° Trajectory: 28°				15A ● Black 15' radius Adjustable from 0° to 360° Trajectory: 28°				17A ● Gray 17' radius Adjustable from 0° to 360° Trajectory: 28°			
Arc	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
45°	20	11	0.25	1.59	1.84	14	0.39	1.51	1.75	16	0.49	1.46	1.68
	25	12	0.28	1.60	1.85	15	0.43	1.57	1.82	17	0.57	1.60	1.85
	30	**12**	**0.32**	**1.68**	**1.95**	**15**	**0.47**	**1.59**	**1.84**	**17**	**0.58**	**1.53**	**1.77**
	35	13	0.37	1.80	2.08	16	0.52	1.55	1.79	18	0.63	1.49	1.72
	40	13	0.42	1.91	2.21	17	0.57	1.60	1.85	19	0.69	1.55	1.79
90°	20	11	0.50	1.59	1.84	14	0.77	1.51	1.75	16	0.97	1.46	1.68
	25	12	0.55	1.60	1.85	15	0.86	1.57	1.82	17	1.13	1.60	1.85
	30	**12**	**0.63**	**1.68**	**1.95**	**15**	**0.93**	**1.59**	**1.84**	**17**	**1.15**	**1.53**	**1.77**
	35	13	0.73	1.80	2.08	16	1.03	1.55	1.79	18	1.25	1.49	1.72
	40	13	0.84	1.91	2.21	17	1.13	1.60	1.85	19	1.38	1.55	1.79
120°	20	11	0.67	1.59	1.84	14	1.03	1.51	1.75	16	1.29	1.46	1.68
	25	12	0.73	1.60	1.85	15	1.15	1.57	1.82	17	1.51	1.51	1.74
	30	**12**	**0.84**	**1.68**	**1.95**	**15**	**1.24**	**1.59**	**1.84**	**17**	**1.53**	**1.53**	**1.77**
	35	13	0.97	1.80	2.08	16	1.37	1.55	1.79	18	1.67	1.49	1.72
	40	13	1.12	1.91	2.21	17	1.51	1.60	1.85	19	1.84	1.47	1.70
180°	20	11	1.00	1.59	1.84	14	1.54	1.51	1.75	16	1.94	1.46	1.68
	25	12	1.10	1.60	1.85	15	1.72	1.57	1.82	17	2.26	1.51	1.74
	30	**12**	**1.26**	**1.68**	**1.95**	**15**	**1.86**	**1.59**	**1.84**	**17**	**2.30**	**1.53**	**1.77**
	35	13	1.46	1.80	2.08	16	2.06	1.55	1.79	18	2.50	1.49	1.72
	40	13	1.68	1.91	2.21	17	2.26	1.60	1.85	19	2.76	1.47	1.70
240°	20	11	1.33	1.59	1.84	14	2.05	1.51	1.75	16	2.59	1.46	1.68
	25	12	1.47	1.60	1.85	15	2.29	1.57	1.82	17	3.01	1.51	1.74
	30	**12**	**1.68**	**1.68**	**1.95**	**15**	**2.48**	**1.59**	**1.84**	**17**	**3.07**	**1.53**	**1.77**
	35	13	1.95	1.80	2.08	16	2.75	1.55	1.79	18	3.33	1.49	1.72
	40	13	2.24	1.91	2.21	17	3.01	1.60	1.85	19	3.68	1.47	1.70
270°	20	11	1.50	1.59	1.84	14	2.31	1.51	1.75	16	2.91	1.46	1.68
	25	12	1.65	1.60	1.85	15	2.58	1.57	1.82	17	3.39	1.51	1.74
	30	**12**	**1.89**	**1.68**	**1.95**	**15**	**2.79**	**1.59**	**1.84**	**17**	**3.45**	**1.53**	**1.77**
	35	13	2.19	1.80	2.08	16	3.09	1.55	1.79	18	3.75	1.49	1.72
	40	13	2.52	1.91	2.21	17	3.39	1.60	1.85	19	4.14	1.47	1.70
360°	20	11	2.00	1.59	1.84	14	3.08	1.51	1.75	16	3.88	1.46	1.68
	25	12	2.20	1.60	1.85	15	3.44	1.57	1.82	17	4.52	1.51	1.74
	30	**12**	**2.52**	**1.68**	**1.95**	**15**	**3.72**	**1.59**	**1.84**	**17**	**4.60**	**1.53**	**1.77**
	35	13	2.92	1.80	2.08	16	4.12	1.55	1.79	18	5.00	1.49	1.72
	40	13	3.36	1.91	2.21	17	4.52	1.60	1.85	19	5.52	1.47	1.70

Bold = Recommended pressure
Note: The Pro-Spray PRS30's built-in pressure regulator controls output to a maximum of 30 PSI. Adjusting the radius reduction screw may be required to achieve catalog radius and flow.

PRO-SPRAY® FIXED ARC NOZZLES

Pro-Spray Fixed Arc Nozzles are designed for high accuracy within a variety of landscape shapes and sizes.

KEY BENEFITS

- Clean edges for a defined pattern with better wind resistance
- Large water droplets minimize misting with better uniformity
- Sturdy construction ensures reliable performance
- Color-coded for easy field identification

OPERATING SPECIFICATIONS

- Recommended operating pressure: 30 PSI
- Pair with Pro-Spray PRS30 pop-up for pressure regulation to 30 PSI
- Warranty period: 2 years

PRO-SPRAY FIXED ARC NOZZLES

ARC	5	8	10	12	15	17
Q						
T	Use 4A/6A Nozzle					Use 17A Nozzle
H						
TT	Use 4A/6A Nozzle	Use 8A Nozzle	Use 10A Nozzle			Use 17A Nozzle
TQ	Use 4A/6A Nozzle	Use 8A Nozzle	Use 10A Nozzle			Use 17A Nozzle
F						Use 17A Nozzle
	(5')	(8')	(10')	(12')	(15')	(17')

PRO-SPRAY FIXED ARC NOZZLES PERFORMANCE DATA



			5 ● Blue	5' radius Fixed: ¼, ½, Full Trajectory: 0°			**8** ● Brown	8' radius Fixed: ¼, ⅓, ½, Full Trajectory: 15°			**10** ● Red	10' radius Fixed: ¼, ⅓, ½, Full Trajectory: 15°		
Arc	**Position**	**Pressure** PSI	**Radius** ft.	**Flow** GPM	**Precip in/hr** ■	**Precip in/hr** ▲	**Radius** ft.	**Flow** GPM	**Precip in/hr** ■	**Precip in/hr** ▲	**Radius** ft.	**Flow** GPM	**Precip in/hr** ■	**Precip in/hr** ▲
90°	Q	20	4	0.09	2.25	2.60	7	0.20	1.54	1.78	9	0.34	1.63	1.88
		25	4	0.11	2.54	2.94	8	0.22	1.33	1.53	10	0.39	1.48	1.71
		30	**5**	**0.12**	**1.80**	**2.08**	**8**	**0.24**	**1.46**	**1.69**	**10**	**0.42**	**1.63**	**1.89**
		35	6	0.13	1.36	1.57	9	0.26	1.25	1.45	11	0.46	1.47	1.69
		40	6	0.14	1.46	1.69	9	0.28	1.34	1.55	11	0.49	1.57	1.82
120°	T	20					7	0.26	1.54	1.78	9	0.46	1.63	1.88
		25					8	0.29	1.33	1.53	10	0.51	1.48	1.71
		30	**Use Hunter 4A or 6A Nozzle**				**8**	**0.32**	**1.46**	**1.69**	**10**	**0.57**	**1.63**	**1.89**
		35					9	0.35	1.25	1.45	11	0.61	1.47	1.69
		40					9	0.38	1.34	1.55	11	0.66	1.57	1.82
180°	H	20	4	0.19	2.25	2.60	7	0.38	1.49	1.72	9	0.70	1.67	1.92
		25	4	0.21	2.54	2.94	8	0.43	1.28	1.48	10	0.79	1.53	1.76
		30	**5**	**0.23**	**1.80**	**2.08**	**8**	**0.47**	**1.41**	**1.63**	**10**	**0.88**	**1.69**	**1.95**
		35	6	0.25	1.36	1.57	9	0.51	1.21	1.39	11	0.95	1.52	1.75
		40	6	0.27	1.46	1.69	9	0.54	1.29	1.49	11	1.03	1.63	1.89
240°	TT	20												
		25												
		30	**Use Hunter 4A or 6A Nozzle**				**Use Hunter 8A Nozzle**				**Use Hunter 10A Nozzle**			
		35												
		40												
270°	TQ	20												
		25												
		30	**Use Hunter 4A or 6A Nozzle**				**Use Hunter 8A Nozzle**				**Use Hunter 10A Nozzle**			
		35												
		40												
360°	F	20	4	0.37	2.25	2.60	7	0.78	1.54	1.78	9	1.29	1.53	1.77
		25	4	0.42	2.54	2.94	8	0.88	1.33	1.53	10	1.45	1.39	1.61
		30	**5**	**0.47**	**1.80**	**2.08**	**8**	**0.97**	**1.46**	**1.69**	**10**	**1.59**	**1.53**	**1.76**
		35	6	0.51	1.36	1.57	9	1.05	1.25	1.45	11	1.72	1.37	1.58
		40	6	0.55	1.46	1.69	9	1.13	1.34	1.55	11	1.84	1.46	1.69

Bold = Recommended pressure

PRO-SPRAY FIXED ARC NOZZLES PERFORMANCE DATA



12 ● Green — 12' radius; Fixed: ¼, ⅓, ½, ⅔, ¾, Full; Trajectory: 28°

15 ● Black — 15' radius; Fixed: ¼, ⅓, ½, ⅔, ¾, Full; Trajectory: 28°

17 ● Gray — 17' radius; Fixed: ¼, ½; Trajectory: 28°

Arc	Position	Pressure PSI	12 Radius ft.	12 Flow GPM	12 Precip in/hr ■	12 Precip in/hr ▲	15 Radius ft.	15 Flow GPM	15 Precip in/hr ■	15 Precip in/hr ▲	17 Radius ft.	17 Flow GPM	17 Precip in/hr ■	17 Precip in/hr ▲
90°	Q	20	11	0.54	1.71	1.98	14	0.78	1.53	1.77	16	0.93	1.40	1.61
		25	12	0.61	1.62	1.87	15	0.88	1.51	1.74	17	1.05	1.39	1.61
		30	**12**	**0.67**	**1.78**	**2.06**	**15**	**0.97**	**1.67**	**1.92**	**17**	**1.15**	**1.54**	**1.77**
		35	13	0.72	1.65	1.90	16	1.06	1.59	1.84	18	1.25	1.49	1.72
		40	13	0.78	1.77	2.04	17	1.14	1.52	1.75	19	1.34	1.43	1.65
120°	T	20	11	0.72	1.71	1.98	14	1.04	1.53	1.77				
		25	12	0.81	1.62	1.87	15	1.17	1.51	1.74				
		30	**12**	**0.89**	**1.78**	**2.06**	**15**	**1.30**	**1.67**	**1.92**	**Use Hunter 17A Nozzle**			
		35	13	0.97	1.65	1.90	16	1.41	1.59	1.84				
		40	13	1.04	1.77	2.04	17	1.52	1.52	1.75				
180°	H	20	11	1.05	1.67	1.93	14	1.51	1.48	1.71	16	1.91	1.43	1.66
		25	12	1.18	1.58	1.83	15	1.69	1.45	1.67	17	2.15	1.43	1.65
		30	**12**	**1.30**	**1.74**	**2.01**	**15**	**1.86**	**1.59**	**1.84**	**17**	**2.37**	**1.58**	**1.82**
		35	13	1.42	1.61	1.86	16	2.02	1.52	1.75	18	2.57	1.53	1.76
		40	13	1.52	1.73	2.00	17	2.16	1.44	1.66	19	2.76	1.47	1.70
240°	TT	20	11	1.40	1.67	1.93	14	2.01	1.48	1.71				
		25	12	1.58	1.58	1.83	15	2.26	1.45	1.67				
		30	**12**	**1.74**	**1.74**	**2.01**	**15**	**2.48**	**1.59**	**1.84**	**Use Hunter 17A Nozzle**			
		35	13	1.89	1.61	1.86	16	2.69	1.52	1.75				
		40	13	2.03	1.73	2.00	17	2.88	1.44	1.66				
270°	TQ	20	11	1.61	1.67	1.93	14	2.34	1.48	1.71				
		25	12	1.82	1.58	1.83	15	2.64	1.45	1.67				
		30	**12**	**2.00**	**1.74**	**2.01**	**15**	**2.92**	**1.59**	**1.84**	**Use Hunter 17A Nozzle**			
		35	13	2.17	1.61	1.86	16	3.18	1.52	1.75				
		40	13	2.33	1.73	2.00	17	3.42	1.44	1.66				
360°	F	20	11	2.17	1.72	1.99	14	3.04	1.49	1.72				
		25	12	2.45	1.63	1.89	15	3.41	1.46	1.69				
		30	**12**	**2.70**	**1.80**	**2.08**	**15**	**3.75**	**1.61**	**1.85**	**Use Hunter 17A Nozzle**			
		35	13	2.93	1.67	1.93	16	4.07	1.53	1.76				
		40	13	3.15	1.80	2.07	17	4.36	1.45	1.68				

Bold = Recommended pressure

SHORT-RADIUS MICRO SPRAY NOZZLES

These highly accurate nozzles are perfect for small spaces and can support a robust micro spray system with Pro-Spray pop-ups.

KEY BENEFITS

- Low flow for controlled irrigation of tight spaces
- Meets micro spray requirement of 30 GPH max flow at 30 PSI
- Built to last for a robust overhead solution for small spaces

OPERATING SPECIFICATIONS

- Recommended operating pressure: 30 PSI
- Pair with Pro-Spray PRS30 pop-up for pressure regulation to 30 PSI

SHORT-RADIUS NOZZLES PERFORMANCE DATA

Lt. Brown

Arc	Pressure PSI	Position	Radius ft.	Flow GPM	Flow GPH	*Precip in/hr
90°	20	2Q	2	0.09	5.4	2.17
	25		2	0.10	6.0	2.41
	30		**2**	**0.11**	**6.6**	**2.65**
	35		2	0.13	7.8	3.13
	40		2	0.14	8.4	3.37
180°	20	2H	2	0.14	8.4	1.68
	25		2	0.15	9.0	1.80
	30		**2**	**0.20**	**12.0**	**2.41**
	35		2	0.20	12.0	2.41
	40		2	0.21	12.6	2.53

SHORT-RADIUS NOZZLES PERFORMANCE DATA

Lt. Green

Arc	Pressure PSI	Position	Radius ft.	Flow GPM	Flow GPH	*Precip in/hr
90°	20	4Q	4	0.18	10.8	1.08
	25		4	0.20	12.0	1.20
	30		**4**	**0.20**	**12.0**	**1.20**
	35		4	0.22	13.2	1.32
	40		4	0.24	14.4	1.44
180°	20	4H	4	0.33	19.8	0.99
	25		4	0.34	20.4	1.02
	30		**4**	**0.40**	**24.0**	**1.20**
	35		4	0.40	24.0	1.20
	40		4	0.44	26.4	1.32

SHORT-RADIUS NOZZLES PERFORMANCE DATA

Lt. Blue

Arc	Pressure PSI	Position	Radius ft.	Flow GPM	Flow GPH	*Precip in/hr
90°	20	6Q	6	0.22	13.2	0.59
	25		6	0.24	14.4	0.64
	30		**6**	**0.30**	**18.0**	**0.80**
	35		6	0.30	18.0	0.80
	40		6	0.30	18.0	0.80
180°	20	6H	6	0.40	24.0	0.53
	25		6	0.44	26.4	0.59
	30		**6**	**0.50**	**30.0**	**0.67**
	35		6	0.52	31.2	0.70
	40		6	0.54	32.4	0.72

Bold = Recommended pressure
*Precipitation rate shown without overlap

2Q
Radius: 2'

2H
Radius: 2'

4Q
Radius: 4'

4H
Radius: 4'

6Q
Radius: 6'

6H
Radius: 6'

Short-Radius Micro Spray Nozzle

STRIP PATTERN NOZZLES

Irrigate narrow turf and planter areas accurately with fixed arc Strip Pattern Nozzles.

KEY BENEFITS

- Designed for accurate coverage of strip areas
- Available in a variety of models for unique, rectangular spaces
- Built to last in harsh conditions

OPERATING SPECIFICATIONS

- Recommended operating pressure: 30 PSI
- Pair with Pro-Spray PRS30 pop-up for pressure regulation to 30 PSI
- Warranty period: 2 years

Left Corner Strip
Rectangle: 5' x 15'

Right Corner Strip
Rectangle: 5' x 15'

Side Strip
Rectangle: 5' x 30'

Side Strip
Rectangle: 9' x 18'

Center Strip
Rectangle: 5' x 30'

End Strip
Rectangle: 5' x 15'

STRIP PATTERN NOZZLE PERFORMANCE DATA

Arc	Pressure PSI	Width x Length	Flow GPM
LCS-515	20	4' x 14'	0.55
	25	5' x 15'	0.60
	30	**5' x 15'**	**0.65**
	35	5' x 15'	0.70
	40	5' x 15'	0.75
RCS-515	20	4' x 14'	0.55
	25	5' x 15'	0.60
	30	**5' x 15'**	**0.65**
	35	5' x 15'	0.70
	40	5' x 15'	0.75
SS-530	20	4' x 28'	1.10
	25	5' x 30'	1.20
	30	**5' x 30'**	**1.30**
	35	5' x 30'	1.40
	40	5' x 30'	1.50
SS-918	20	8' x 17'	1.45
	25	9' x 18'	1.58
	30	**9' x 18'**	**1.72**
	35	9' x 18'	1.88
	40	9' x 18'	2.08
CS-530	20	4' x 28'	1.10
	25	5' x 30'	1.20
	30	**5' x 30'**	**1.30**
	35	5' x 30'	1.40
	40	5' x 30'	1.50
ES-515	20	4' x 14'	0.55
	25	5' x 15'	0.60
	30	**5' x 15'**	**0.65**
	35	5' x 15'	0.70
	40	5' x 15'	0.75

Bold = Recommended pressure

Notes: To match the precipitation rate of Standard MP Rotator models, use single-row or triangular spacing. To match the MP800, use rectangular spacing.

See **page 182** for precipitation rate calculation.

RCS-515

STREAM NOZZLES

Prevent runoff for slope, groundcover, and shrub applications with the low precipitation rate of these adjustable arc Stream Nozzles.

KEY BENEFITS

- Low application rate to avoid runoff
- Ideal for slopes, ground cover, and shrub applications
- Multiple streams provide even coverage
- Adjustable arc from 25° to 360° for design flexibility

OPERATING SPECIFICATIONS

- Recommended operating pressure: 30 PSI
- Pair with Pro-Spray PRS30 pop-up for pressure regulation to 30 PSI
- Warranty period: 2 years

S-8A
7' to 9'

S-16A
15' to 18'

MODEL S-8A STREAM SPRAY NOZZLE PERFORMANCE DATA

Arc S-8A	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
90°	20	7	0.29	2.28	2.63
	25	8	0.32	1.93	2.22
	30	**8**	**0.38**	**2.11**	**2.43**
	35	8	0.41	2.29	2.64
	40	9	0.54	1.95	2.25
180°	20	7	0.54	2.12	2.45
	25	8	0.57	1.71	1.98
	30	**8**	**0.60**	**1.80**	**2.08**
	35	8	0.63	1.89	2.19
	40	9	0.66	1.57	1.81
360°	20	7	1.08	2.12	2.45
	25	8	1.11	1.67	1.93
	30	**8**	**1.15**	**1.73**	**2.00**
	35	8	1.18	1.77	2.05
	40	9	1.22	1.45	1.67

Bold = Recommended pressure

MODEL S-16A STREAM SPRAY NOZZLE PERFORMANCE DATA

Arc S-16A	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr ■	Precip in/hr ▲
90°	20	15	0.40	0.68	0.79
	25	16	0.46	0.69	0.80
	30	**16**	**0.50**	**0.75**	**0.87**
	35	17	0.54	0.72	0.83
	40	18	0.57	0.68	0.78
180°	20	15	0.67	0.57	0.66
	25	16	0.80	0.60	0.69
	30	**16**	**0.88**	**0.66**	**0.76**
	35	17	0.97	0.65	0.75
	40	18	1.04	0.62	0.71
360°	20	15	1.19	0.51	0.59
	25	16	1.46	0.55	0.63
	30	**16**	**1.66**	**0.62**	**0.72**
	35	17	1.82	0.61	0.70
	40	18	1.99	0.59	0.68

Bold = Recommended pressure

S-8A

BUBBLER NOZZLES

Deliver a consistent flow regardless of inlet pressure with pressure-compensating Bubbler Nozzles.

KEY BENEFITS

- Pressure-compensating for constant water flow at any pressure
- Designed for deep watering of planted areas
- Nozzle threaded for use with Pro-Spray
- Warranty period: 2 years

MULTI-STREAM BUBBLER PERFORMANCE DATA

Arc		Model	Flow GPM	Radius ft.
		MSBN-25Q	0.25	1.0
		MSBN-50Q	0.50	1.5
		MSBN-50H	0.50	1.0
		MSBN-10H	1.00	1.5
		MSBN-10F	1.00	1.0
		MSBN-20F	2.00	1.5

Notes:
Typical spacing 2' to 4'. Flows shown for pressures between 15 and 70 PSI.

Multi-Stream Bubbler

MSBN Installed on PROS-04

Combining Hunter Bubbler Nozzles with the Pro-Spray provides the watering precision of pressure-compensating bubblers paired with the benefit of retracting the nozzle out of sight.

MULTI-STREAM BUBBLER NOZZLES

MSBN-25Q
Flow: 0.25 GPM

MSBN-50Q/50H
Flow: 0.50 GPM

MSBN-10H/10F
Flow: 1.0 GPM

MSBN-20F
Flow: 2.0 GPM

PCN PERFORMANCE DATA

	Model	Flow GPM	Pattern Type
	25	0.25	Trickle
	50	0.50	Trickle
	10	1.00	Umbrella
	20	2.00	Umbrella

Notes:
Typical spacing 2' to 4'. Flows shown for pressures between 15 and 70 PSI.

PCN

PCN BUBBLER NOZZLES

PCN-25
Flow: 0.25 GPM

PCN-50
Flow: 0.50 GPM

PCN-10
Flow: 1.0 GPM

PCN-20
Flow: 2.0 GPM

5-CST-B BUBBLER NOZZLE PERFORMANCE DATA

	Pressure (PSI)	Radius (ft.)	Flow (GPM)
	20	5	0.30
	25	5	0.32
	30	**5**	**0.38**
	35	5	0.40
	40	5	0.42

5-CST-B

DUAL-STREAM BUBBLER NOZZLE

5-CST-B

BUBBLERS

Ensure consistent flow regardless of pressure with above-ground, pressure-compensating Bubblers.

KEY BENEFITS

- Pressure-compensating for constant water flow at any pressure
- Designed for deep watering of planted areas
- ½" threaded inlet for easy installation on a ½" riser
- Warranty period: 2 years

PCB PERFORMANCE DATA

	Model	Flow GPM	Pattern Type
●	25	0.25	Trickle
	50	0.50	Trickle
	10	1.00	Umbrella
	20	2.00	Umbrella

Notes:
Typical spacing 2' to 4'. Flows shown for pressures between 15 and 70 PSI.

PCB

PRESSURE-COMPENSATING BUBBLERS

PCB

PCB-R

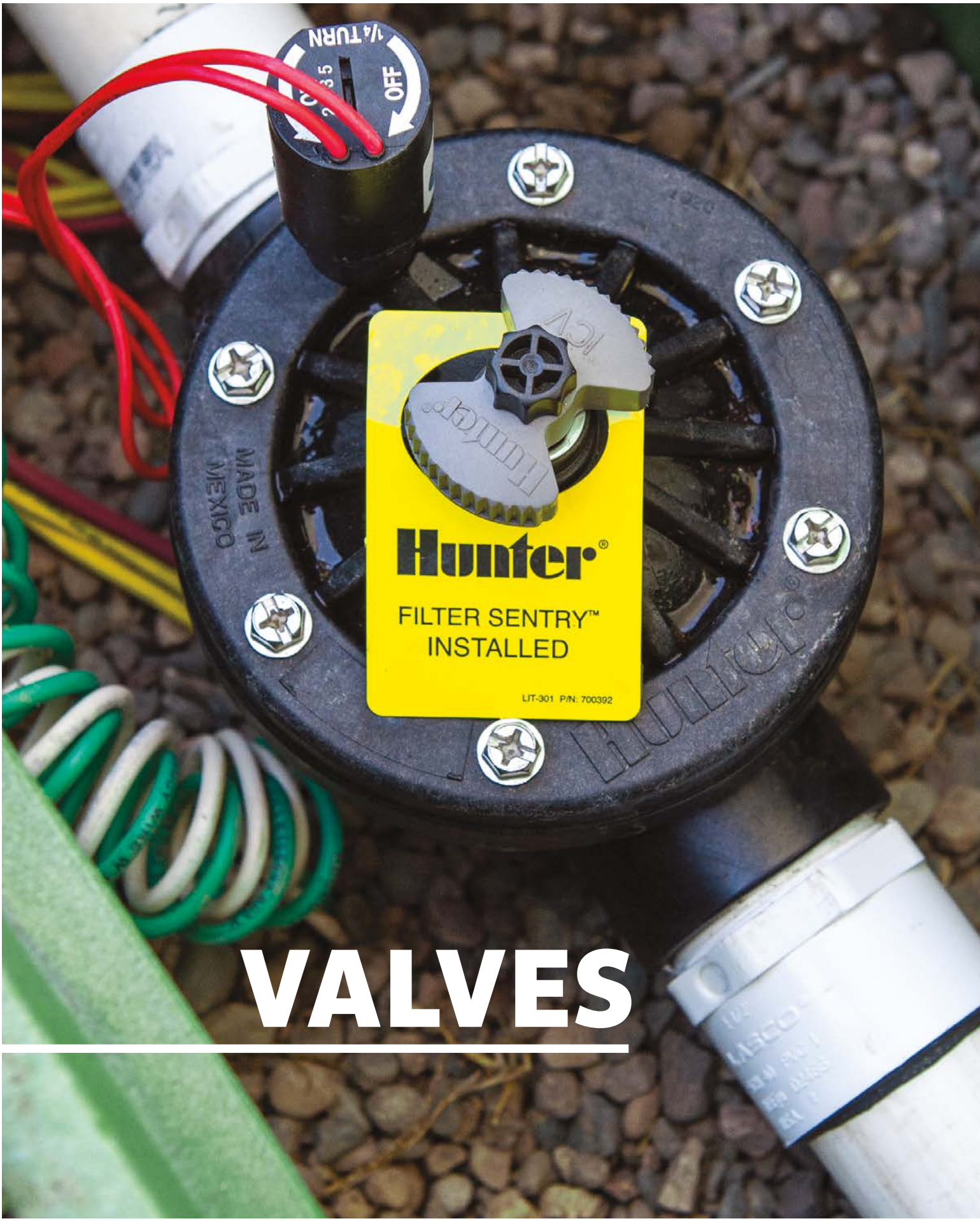
AFB PERFORMANCE DATA

	Model	Flow GPM	Pattern Type
●	AFB	< 2.0	Trickle/ Umbrella

AFB

ADJUSTABLE FLOOD BUBBLER

AFB


1/4 TURN
OFF
MADE IN MEXICO
Hunter®
FILTER SENTRY™
INSTALLED
LIT-301 P/N: 700392

VALVES

VALVE COMPARISON CHART

QUICK SPECS	1" PGV & JAR-TOP	PGV	ICV	ICV FILTER SENTRY	IBV
SIZE	1"	1½", 2"	1", 1½", 2", 3"	1", 1½", 2", 3"	1", 1½", 2", 3"
FLOW GPM	0.2 to 40	20 to 150	0.1 to 300	0.1 to 300	0.1 to 300
FEATURES					
CAPTIVE BONNET BOLTS	●	●	●	●	
EPDM DIAPHRAGM AND SEAT			Standard	Standard	Standard
WARRANTY	2 Years	2 Years	5 Years	5 Years	5 Years
ADVANCED FEATURES					
FLOW CONTROL	Optional	●	●	●	●
FILTER SENTRY® MECHANISM			User-Installed	Factory-Installed	Factory-Installed
ACCU SYNC® CAPABLE	●	●	●	●	●
RECLAIMED WATER ID HANDLE	User-Installed	User-Installed	User-Installed	User-Installed	
RECLAIMED WATER ID TAG			User-Installed	User-Installed	User-Installed
APPLICATIONS					
RESIDENTIAL	●	●	●		
COMMERCIAL		●	●	●	●
POTABLE WATER	●	●	●	●	●
RECLAIMED WATER			●	●	●
SECONDARY WATER				●	●
PRESSURE REGULATION	●	●	●	●	●
HIGH-PRESSURE SYSTEMS			●	●	●
LOW-PRESSURE SYSTEMS	●	●	●	●	●
HIGH-TEMPERATURE LOCATIONS			●	●	●
USE AS MASTER VALVE		●	●	●	●

Advanced Features

ACCU SYNC PRESSURE REGULATORS

Available on:
PGV, ICV, IBV

Avoid sprinkler over-pressure conditions and gain significant water savings with Hunter's Accu Sync Pressure Regulator. This option is available in adjustable or fixed pressure models.

FILTER SENTRY MECHANISM

For use with:
ICV, IBV

The Filter Sentry Mechanism scours the filter clean twice during each valve cycle. Since it is attached to the diaphragm, the Filter Sentry feature can be easily added after a valve has been installed.

All Hunter valves are 100% water-tested to ensure reliable operation once installed. From residential to commercial applications, high pressure to low pressure, and clean water to dirty water, Hunter valves keep systems running flawlessly day in and day out.

1" PGV AND PGV JAR-TOP

These versatile and robust valves offer simple serviceability.

KEY BENEFITS

- External/internal manual bleed allows for quick and easy activation at the valve
- Double-beaded diaphragm seal design ensures leak-free performance
- Captive bonnet screws eliminate the possibility of lost parts during disassembly
- Triple-tool bonnet screws are compatible with standard or Phillips screwdrivers as well as a nut driver
- Jar-top models provide easy access without tools
- Encapsulated solenoid with captive plunger used on every Hunter valve provides hassle-free service
- Flow control maximizes efficiency and prolongs the life of the system

USER-INSTALLED OPTIONS

- Accu Sync® Pressure Regulator at the valve*
- DC-Latching Solenoid for battery-operated controllers (P/N 458200)
- Solenoid conduit cover (P/N 464322)

FACTORY-INSTALLED OPTIONS

- LS: Valve without solenoid
- DC: DC-Latching Solenoid for battery-operated controllers; **see page 201**
- JT: Jar-top models

OPERATING SPECIFICATIONS

- Flow: 0.2 to 40 GPM
- Recommended pressure range: 20 to 150 PSI
- Temperature rating: 150°F
- Warranty period: 2 years

SOLENOID SPECIFICATIONS

- 24 VAC solenoid
  - 350 mA inrush, 190 mA holding, 60 Hz
  - 370 mA inrush, 210 mA holding, 50 Hz

* Accu Sync product information on **page 85**

PGV-100G
Inlet diameter: 1"
Height: 5"
Length: 4½"
Width: 2½"

PGV-101G
Inlet diameter: 1"
Height: 5"
Length: 4½"
Width: 2½"

PGV-100JT-G
Inlet diameter: 1"
Height: 5½"
Length: 4½"
Width: 3¼"

PGV-101JT-G
Inlet diameter: 1"
Height: 5½"
Length: 4½"
Width: 3¼"

Double-Beaded Diaphragm

Captive Bonnet Bolts

PGV – SPECIFICATION BUILDER : ORDER 1 + 2 + 3 + 4 + 5

1 Model	2 Standard Features	3 Feature Options	4 Options	5 User-Installed Options
PGV-100 = 1" **PGV-101** = 1"	Globe valve, without flow control, threaded inlet/outlet Globe valve, with flow control, threaded inlet/outlet	**G** = Female threaded inlet/outlet **G-S** = Slip inlet /outlet **MB** = Male NPT inlet/1" poly barb outlet **MB-075** = Male NPT inlet/¾" poly barb outlet **MB-125 =** Male NPT inlet/1¼" poly barb outlet **MM** = Male NPT inlet/Male NPT outlet	**DC** = DC-Latching Solenoid for battery-operated controllers **LS** = Less solenoid **Blank** = No options	**AS-ADJ** = Adjustable Accu Sync Pressure Regulator **458200** = DC-Latching Solenoid for battery-operated controllers **269205** = Reclaimed flow control handle **LIT-700** = Reclaimed ID tag
PGV-100-A = 1" **PGV-101-A** = 1"	Angle valve, without flow control, threaded inlet/outlet Angle valve, with flow control, threaded inlet/outlet	**Blank** = No options	**Blank** = No options	

Example:
PGV-101-MM = 1" PGV globe valve, with flow control, with male NPT inlet and outlet

PGV JAR-TOP – SPECIFICATION BUILDER : ORDER 1 + 2 + 3 + 4 + 5

1 Model	2 Standard Features	3 Feature Options	4 Options	5 User-Installed Options
PGV-100-JT = 1" **PGV-101-JT** = 1"	Globe valve, without flow control, threaded inlet/outlet Globe valve, with flow control, threaded inlet/outlet	**G** = Female threaded inlet/outlet **G-S** = Slip inlet /outlet **MB** = Male NPT inlet/1" poly barb outlet **MB-075** = Male NPT inlet/¾" poly barb outlet **MB-125** = Male NPT inlet/1¼" poly barb outlet **MM** = Male NPT inlet/Male NPT outlet	**DC** = DC-Latching Solenoid for battery-operated controllers **LS** = Less solenoid	**AS-ADJ** = Adjustable Accu Sync Pressure Regulator **458200** = DC-Latching Solenoid for battery-operated controllers **269205** = Reclaimed flow control handle **LIT-700** = Reclaimed ID tag

Example:
PGV-101-JT-MM = 1" PGV globe valve, with jar-top bonnet, with flow control, with male NPT inlet and outlet

PGV PRESSURE LOSS IN PSI

GPM	Globe	Angle	Male x Male	Male x Barb
1	3	1	2	2
5	4	1	2	2
10	4	1	2	2
15	5	1	3	3
20	5	2	4	4
25	6	2	7	6
30	8	3	10	10
40	14	5	18	16

PGV-100G Installed

PGV-ASV

Gain simple and trouble-free operation without the need for a separate backflow preventer.

KEY BENEFITS

- External/internal manual bleed allows for quick and easy activation at the valve
- Double-beaded diaphragm seal design ensures leak-free performance
- Captive bonnet screws eliminate the possibility of lost parts during disassembly
- Triple-tool bonnet screws are compatible with standard or Phillips screwdrivers as well as a nut driver
- Removable anti-siphon cap for simple servicing
- Encapsulated solenoid with captive plunger used on every Hunter valve provides hassle-free service
- Flow control maximizes efficiency and prolongs the life of the system

USER-INSTALLED OPTIONS

- Accu Sync® Pressure Regulator at the valve*
- DC-Latching Solenoid for battery-operated controllers (P/N 458200)

FACTORY-INSTALLED OPTIONS

- LS: Valve without solenoid
- DC: DC-Latching Solenoid for battery-operated controllers; **see page 201**

OPERATING SPECIFICATIONS

- Flow: 0.2 to 40 GPM
- Recommended pressure range: 20 to 150 PSI
- Temperature rating: 150°F
- Warranty period: 2 years

* Accu Sync product information on **page 85**

PGV-075-ASV
Inlet diameter: ¾"
Height: 5½"
Length: 5¾"
Width: 2½"

PGV-101-ASV
Inlet diameter: 1"
Height: 5½"
Length: 6¼"
Width: 2½"

Double-Beaded Diaphragm

PGV-ASV – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 User-Installed Options
PGV-075-ASV = ¾" **PGV-101-ASV** = 1"	Anti-siphon valve with flow control, threaded inlet/outlet	**(blank)** = No option **DC** = DC-Latching Solenoid battery-operated controllers **LS** = Less solenoid	**AS-ADJ =** Adjustable Accu Sync Pressure Regulator **458200** = DC-Latching Solenoid for battery-operated controllers **607105** = Reclaimed flow control handle **LIT-700** = Reclaimed ID tag
PGV-075-ASV-S = ¾" **PGV-101-ASV-S** = 1"	Anti-siphon valve with flow control, slip inlet/outlet		

Example:
PGV-101-ASV-S = 1" PGV anti-siphon valve with slip inlet and outlet

PGV-ASV PRESSURE LOSS IN PSI

Flow (GPM)	¾"	1"
1	1	1
5	2	2
10	2	2
15	3	3
20	6	6
25		6
30		9
35		16
40		20

1½" AND 2" PGV

These reliable valves provide long-lasting performance for larger systems.

KEY BENEFITS

- External/internal manual bleed allows for quick and easy activation at the valve
- Double-beaded diaphragm seal design ensures leak-free performance
- Captive bonnet screws eliminate the possibility of lost parts during disassembly
- Triple-tool bonnet screws are compatible with standard or Phillips screwdrivers as well as a nut driver
- Each valve available with globe or angle configuration for convenient placement
- Encapsulated solenoid with captive plunger used on every Hunter valve provides hassle-free service
- Flow control maximizes efficiency and prolongs the life of the system

PGV-151
Inlet diameter: 1½"
Height: 7½"
Length: 5¾"
Width: 4½"

PGV-201
Inlet diameter: 2"
Height: 8"
Length: 6¾"
Width: 5¼"

USER-INSTALLED OPTIONS

- Accu Sync® Pressure Regulator at the valve*
- DC-Latching Solenoid for battery-operated controllers (P/N 458200)
- Solenoid conduit cover (P/N 464322)
- Reclaimed flow control handle (P/N 607105)

FACTORY-INSTALLED OPTIONS

- LS: Valve without solenoid
- DC: DC-Latching Solenoid for battery-operated controllers; **see page 201**

OPERATING SPECIFICATIONS

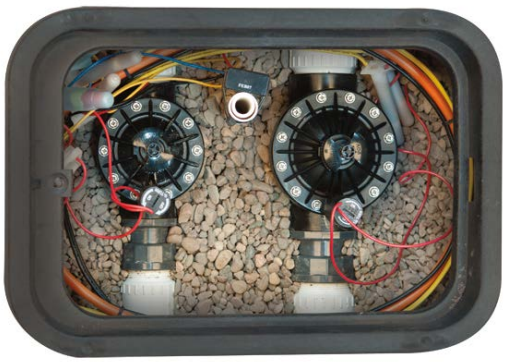
- Flow:
  - PGV-151: 20 to 120 GPM
  - PGV-201: 20 to 150 GPM
- Recommended pressure range: 20 to 150 PSI
- Temperature rating: 150°F
- Warranty period: 2 years

SOLENOID SPECIFICATIONS

- 24 VAC solenoid
  - 350 mA inrush, 190 mA holding, 60 Hz
  - 370 mA inrush, 210 mA holding, 50 Hz

* Accu Sync product information on **page 85**

PGV Installed



PGV-ASV – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 User-Installed Options
PGV-151 = 1½" **PGV-201** = 2"	Globe/angle valve with flow control	**(blank)** = No option **DC** = DC-Latching Solenoid battery-operated controllers **LS** = Less solenoid	**AS-ADJ** = Adjustable Accu Sync Pressure Regulator **458200** = DC-Latching Solenoid for battery-operated controllers **607105** = Reclaimed flow control handle **LIT-700** = Reclaimed ID tag

Example:
PGV-201-AS-ADJ = 2" PGV globe/angle valve with flow control, user-installed adjustable Accu Sync Pressure Regulator

PGV PRESSURE LOSS IN PSI

Flow GPM	1½" Globe	1½" Angle	2" Globe	2" Angle
20	3	3	1	1
30	3	3	1	2
35	3	3	2	2
40	3	3	2	2
50	4	3.5	1	1
60	5	4	2	2
80	5.5	4.5	3	2
100	9	8	5	3
120	11.5	10.5	6	5
135			8	7
150			10	9

ICV

This dependable valve works seamlessly with highly demanding systems.

KEY BENEFITS

- Optional Filter Sentry® Mechanism scours the filter screen in dirty water conditions
- External/internal manual bleed allows for quick and easy activation at the valve
- Glass-filled nylon construction provides high pressure rating and reliability
- Double-beaded diaphragm seal design ensures leak-free performance
- Fabric-reinforced EPDM diaphragm and seat ensure greater performance in all water conditions
- Captive bonnet screws eliminate the possibility of lost parts during disassembly
- Triple-tool bonnet screws are compatible with standard or Phillips screwdrivers as well as a nut driver
- Encapsulated solenoid with captive plunger used on every Hunter valve provides hassle-free service
- Flow control maximizes efficiency and prolongs the life of the system

USER-INSTALLED OPTIONS

- Accu Sync® Pressure Regulator at the valve
- DC-Latching Solenoid for battery-operated controllers (P/N 458200)
- Filter Sentry easily added to an installed valve*
- Solenoid conduit cover (P/N 464322)

FACTORY-INSTALLED OPTIONS

- LS: Valve without solenoid
- DC: DC-Latching Solenoid for battery-operated controllers; **see page 201**
- FS: Filter Sentry
- FS-R: Reclaimed option with Filter Sentry, purple control knob, and purple chlorine-resistant diaphragm

OPERATING SPECIFICATIONS

- Flow:
  - ICV-101G: 0.1 to 40 GPM
  - ICV-151G: 0.1 to 150 GPM
  - ICV-201G: 0.1 to 200 GPM
  - ICV-301: 0.1 to 300 GPM
- Recommended pressure range: 20 to 220 PSI
- Temperature rating: 150°F
- Warranty period: 5 years

SOLENOID SPECIFICATIONS

- 24 VAC solenoid
  - 350 mA inrush, 190 mA holding, 60 Hz
  - 370 mA inrush, 210 mA holding, 50 Hz

* Accu Sync product information on **page 85**

ICV-101G
Inlet diameter: 1"
Height: 5½"
Length: 4¾"
Width: 4"

ICV-151G
Inlet diameter: 1½"
Height: 7⅛"
Length: 6⅞"
Width: 5½"

ICV-201G
Inlet diameter: 2"
Height: 7⅛"
Length: 6⅞"
Width: 5½"

ICV-301
Inlet diameter: 3"
Height: 10¾"
Length: 9"
Width: 7⅜"

ICV-R
Inlet diameter: 1", 1½", 2", and 3"
Height: 7⅛"
Length: 6⅞"
Width: 5½"

Double-Beaded Diaphragm

Filter Sentry

ICV 1", 1½", 2", & 3" – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 User Installed Options
ICV-101G = 1" **ICV-151G** = 1½" **ICV-201G** = 2" **ICV-301** = 3"	Globe valve with flow control Globe / Angle valve with flow control	**(blank)** = No option **FS** = Filter Sentry **FS-R** = Filter Sentry purple reclaimed diaphragm and ID tag **DC** = DC-Latching Solenoid for battery-operated controllers **LS** = Less solenoid	**AS-ADJ** = Adjustable Accu Sync Pressure Regulator **458200** = DC-Latching Solenoid for battery-operated controllers **561205** = Reclaimed flow control handle andle (1", 1½", 2" only) **LIT-700** = Reclaimed ID tag

Example:
ICV-201G-AS-ADJ = 2" ICV globe valve with flow control, user-installed adjustable Accu Sync Pressure Regulator

ICV PRESSURE LOSS (AT OPTIMAL FLOWS) IN PSI

Flow (GPM)	1" Globe	1½" Globe	2" Globe	3" Globe	3" Angle
0.1	2.0				
0.5	2.0				
1	2.0				
5	2.5				
10	3.0				
15	3.0				
20	3.0	1.5			
30	9.0	1.5			
40	20.0	1.7	0.8		
50		2.2	1.2		
60		3.0	1.7		
75		3.9	2.4		
90		5.5	3.2		
100		7.0	4.2		
120		10.9	6.5		
135		12.7	7.9		
150		16.2	9.8	2.5	1.9
175			13.3	3.0	2.4
200			17.7	4.1	3.3
225				5.3	4.3
250				6.7	5.5
275				8.3	6.9
300				10.1	8.5

IBV

Built of solid brass, this valve can power through the fiercest irrigation conditions.

KEY BENEFITS

- Factory-installed Filter Sentry® scours the filter screen in dirty water conditions
- External/internal manual bleed allows for quick and easy activation at the valve
- Heavy-duty brass construction provides high pressure rating and reliability
- Double-beaded diaphragm seal design ensures leak-free performance
- Fabric-reinforced EPDM diaphragm and seat ensure greater performance in all water conditions
- Triple-tool bonnet screws are compatible with standard or Phillips screwdrivers as well as a nut driver
- Encapsulated solenoid with captive plunger used on every Hunter valve provides hassle-free service
- Flow control maximizes efficiency and prolongs the life of the system

IBV-101G-FS
Inlet diameter: 1"
Height: 5¼"
Length: 4½"
Width: 3"

IBV-151G-FS
Inlet diameter: 1½"
Height: 6½"
Length: 6"

IBV-201G-FS
Inlet diameter: 2"
Height: 7"
Length: 6"
Width: 5¼"

IBV-301G-FS
Inlet diameter: 3"
Height: 9"
Length: 8½"
Width: 7"

USER-INSTALLED OPTIONS

- Accu Sync® Pressure Regulator at the valve*
- DC-Latching Solenoid for battery-operated controllers (P/N 458200)
- Solenoid conduit cover (P/N 464322)

FACTORY-INSTALLED OPTIONS

- DC: DC-Latching Solenoid for battery-operated controllers; **see page 201**

OPERATING SPECIFICATIONS

- Flow:
  - IBV-101G: 0.1 to 40 GPM
  - IBV-151G: 0.1 to 150 GPM
  - IBV-201G: 0.1 to 200 GPM
  - IBV-301G: 0.1 to 300 GPM
- Recommended pressure range: 20 to 220 PSI
- Temperature rating: 150°F
- Warranty period: 5 years

SOLENOID SPECIFICATIONS

- 24 VAC solenoid
- 350 mA inrush, 190 mA holding, 60 Hz
- 370 mA inrush, 210 mA holding, 50 Hz

* Accu Sync product information on **page 85**

IBV PRESSURE LOSS (AT OPTIMAL FLOWS) IN PSI

Flow GPM	1" Globe	1½" Globe	2" Globe	3" Globe
0.1	2.0			
0.5	2.0			
1	2.0			
5	2.5			
10	3.0			
15	3.0			
20	3.0	1.5		
30	4.0	1.5		
40	7.0	1.7	0.8	
50		2.2	1.2	
60		3.0	1.7	
75		3.9	2.4	
90		5.5	3.2	
100		7.0	4.2	
120		10.9	6.5	
135		12.7	7.9	
150		16.2	9.8	2.5
175			13.3	3.0
200			17.7	4.1
225				5.3
250				6.7
275				8.3
300				10.1

Note:
Charts based on full-open flow-control position

IBV 1", 1½", 2" & 3" – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Standard Features	3 Feature Options	4 User-Installed Options
IBV-101G-FS = 1" **IBV-151G-FS** = 1½" **IBV-201G-FS** = 2" **BV-301G-FS** = 3"	Brass globe valve with flow control, Filter Sentry diaphragm	**(blank)** = No option **R** = Filter Sentry purple reclaimed diaphragm and ID tag **DC** = DC Latching Solenoid battery-operated controllers **LS** = Less solenoid	**AS-ADJ =** Adjustable Accu Sync Pressure Regulator **458200** = DC-Latching Solenoid for battery-operated controllers **899605** = Reclaimed flow control handle **LIT-700** = Reclaimed ID tag

Examples:
IBV-201G-FS-AS-ADJ = 2" IBV brass globe valve with flow control, Filter Sentry diaphragm, user-installed adjustable Accu Sync Pressure Regulator

ACCU SYNC® PRESSURE REGULATOR

Gain unparalleled pressure regulation for any Hunter valve.

OPERATING SPECIFICATIONS

- Regulation from 20 to 100 PSI
- Static pressure: 150 PSI
- Required dynamic pressure differential: 15 PSI
- Works with AC and DC-Latching Solenoids
- Works with any Hunter valve
- Warranty period: 2 years

ACCU SYNC VALVE RECOMMENDED FLOW RANGE

Valve	Flow GPM
PGV-100/101	5–40
PGV-151	20–120
PGV-201	40–150
ICV-101	5–40
ICV-151	20–150
ICV-201	40–200
ICV-301	150–300
IBV-101	5–40
IBV-151	20–150
IBV-201	40–200
IBV-301	150–300

ACCU SYNC APPLICATIONS

●	**Adjustable 20–100 PSI**	For full customization, the adjustable Accu Sync can regulate pressure from 20 to 100 PSI
●	**Fixed 30 PSI**	Ideal for spray systems
●	**Fixed 40 PSI**	Ideal for MP Rotator® Nozzles and large in-line drip systems

ACCU SYNC PRESSURE REGUALTORS – SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Inlet/Outlet
ACCU SYNC	**ADJ** = Adjustable Pressure Regulator (20–100 PSI)
	30 = Fixed Pressure Regulator (30 PSI)
	40 = Fixed Pressure Regulator (40 PSI)

Example:
ICV-201G-B-AS-ADJ = 2" ICV globe valve with flow control, user-installed adjustable Accu Sync Pressure Regulator

ADJUSTABLE

AS-ADJ
Height with solenoid: 3¼"

ADAPTER

SOLENOID ADAPTER

FIXED

AS-30
Height with solenoid: 3¼"

AS-40
Height with solenoid: 3¼"

Installation
Accu Sync shown installed on ICV and PGV Valves

QUICK COUPLERS

The sturdy red brass and stainless steel construction of Quick Couplers strengthens any project.

KEY BENEFITS

- 100% interchangeable with major brands
- Red brass and stainless steel construction
- Heavy-duty thermoplastic locking and non-locking covers
- Optional winged stabilization and Acme key connection
- Stainless steel lug on 1" and 1¼" keys
- Spring-loaded covers with stainless steel springs for positive closing and protection of valve's sealing components
- Warranty period: 5 years
- See the SnapLok combo kits on **page 35**

Quick Couplers

QUICK COUPLER, KEY, AND HOSE SWIVEL CHARTS

Model	Inlet Threads	Slots	Body	Color*	Locking	Key	Swivels
HQ-3-RC	¾"	2	1-piece	Yellow	No	HK-33	HS-0
HQ-33-DRC	¾"	2	2-piece	Yellow	No	HK-33	HS-0
HQ-33-DLRC	¾"	2	2-piece	Yellow	Yes	HK-33	HS-0
HQ-44-RC	1" NPT	1	2-piece	Yellow	No	HK-44	HS-1 or HS-2
HQ-44-LRC	1" NPT	1	2-piece	Yellow	Yes	HK-44	HS-1 or HS-2
HQ-44-RC-AW	1" NPT	Acme	2-piece wing**	Yellow	No	HK-44A	HS-1 or HS-2
HQ-44-LRC-AW	1" NPT	Acme	2-piece wing**	Yellow	Yes	HK-44A	HS-1 or HS-2
HQ-5-RC	1" NPT	1	1-piece	Yellow	No	HK-55	HS-1 or HS-2
HQ-5-LRC	1" NPT	1	1-piece	Yellow	Yes	HK-55	HS-1 or HS-2

Notes:
* All locking cover models are available with purple covers for reclaimed water applications.
** Anti-rotation stabilization wings.

HQ-3-RC HQ-5-RC HK-33

HQ-33-DLRC-R HQ-44-LRC HK-44

Non-locking Locking Reclaimed

HQ-44-LRC-AW-R HK-44A

HLK

Reclaimed Water Option

All locking models have an optional purple cover for sites using reclaimed water.

QUICK COUPLER – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Cover Options	3 Additional Options
HQ-3 = ¾" inlet, 1-piece body, 2 slots	**RC** = Yellow rubber cover	**(blank)** = No option
HQ-5 = 1" inlet, 1-piece body, 1 slot	**LRC** = Yellow locking rubber cover	**AW** = Acme key with anti-rotation wings
HQ-33-D = ¾" inlet, 2-piece body, 2 slots	*(Not available for HQ-3 body)*	*(Only available for HQ-44 body)*
HQ-44 = 1" inlet, 2-piece body, 1 slot or Acme key socket		**R** = Purple locking cover *(reclaimed water ID; only available for LRC models)*

Examples:
HQ-3-RC = HQ-3 valve with rubber cover
HQ-44-LRC = HQ-44 valve with locking rubber cover
HQ-44-LRC-R = HQ-44 valve with locking rubber cover and reclaimed water ID
HQ-44-LRC-AW-R = HQ-44 valve, with locking rubber cover, Acme key socket with anti-rotation wings and reclaimed water ID

KEYS

Model	Compatible Valve	Compatible Swivel
HK-33 = ¾" valve, ¾" key inlet	HQ-3, HQ-33	HS-0
HK-44 = 1" valve, 1" key inlet	HQ-44	HS-1, HS-2
HK-44A = 1" valve, Acme key inlet	HQ-44-AW	HS-1, HS-2
HK-55 = 1" valve, 1¼" key inlet	HQ-5	HS-1, HS-2

HS HOSE SWIVELS

Model	Compatible Key
HS-0 = ¾" inlet, ¾" hose outlet	HK-33
HS-1 = 1" inlet, ¾" hose outlet	HK-44, HK-44A, HK-55
HS-2 = 1" inlet, 1" hose outlet	HK-44, HK-44A, HK-55

HQ PRESSURE LOSS IN PSI

Flow (GPM)	HQ-3	HQ-33	HQ-44	HQ-5
5	0.8	1.0		
10	1.8	2.0		
15	4.1	4.3	2.2	
20	7.2	7.6	4.4	1.0
30			11.5	3.0
40				6.3
50				9.2
60				13.0
70				19.8

HS-0 HS-1 HS-2

CONTROLLERS


HPC
HPC Wi-Fi
Hydrawise
Hunter

CONTROLLER
SELECTION GUIDE

Platform	*AC-Powered Controllers*
STANDARD *Details on* ***page 92*** Dial-based controllers are standalone systems that offer water-saving features and convenient remote control operation for faster maintenance.	**X-Core®** ***Stations:*** *2, 4, 6, 8* *page 93*  **X2™** ***Stations:*** *4, 6, 8, 14* *page 94*  **Pro-C®** ***Stations:*** *4–32, 6, 12* *page 95* 
HYDRAWISE® *Details on* ***page 98*** The Wi-Fi controller solution designed for contractors. Hydrawise is simple to set up, easy to use, and packed with helpful features, to help you remotely manage your customers' irrigation systems. Built-in system monitoring and a suite of powerful tools make saving water and managing customers or multiple sites easy.	**HC** ***Stations:*** *6, 12* *page 100*  **WAND for X2** ***Stations:*** *4, 6, 8, 14* *page 101*  **Pro-HC** ***Stations:*** *6, 12, 24* *page 102*  **HPC** ***Stations:*** *4–32* *page 103*  **HCC** ***Stations:*** *8–54* *page 104* 
CENTRALUS™ *Details on* ***page 108*** Gain cloud-based control and monitoring for ICC2 and ACC2 Controllers with the mobile-friendly Centralus Irrigation Management Platform.	**ICC2** ***Stations:*** *8–54* *page 109*  **ACC2** ***Stations:*** *12–54 conventional, 1–225 with two-wire* *page 110* 

Use this guide to quickly compare Hunter controller power needs, station counts, and software platforms to ensure you choose the best controller for every installation.

Platform	*Battery-Operated Controllers*
INDEPENDENT *Details on* ***page 112*** Battery-operated controllers allow automatic irrigation for power-restricted valve locations and areas where hardscape blocks the ability to run wire affordably.	**NODE** ***Stations:*** *1, 2, 4, 6* ***page 115***  **XC Hybrid** ***Stations:*** *6, 12* ***page 117*** 
BLUETOOTH® *Details on* ***page 112*** Bluetooth enabled, battery-operated controllers have all the benefits of independent battery controllers with convenient, on-site wireless control from a smartphone.	**BTT** ***Zones:*** *1, 2* ***page 114***  **NODE-BT** ***Stations:*** *1, 2, 4* ***page 116*** 

With two-wire, you can easily expand the system as needed after installation.

STANDARD CONTROLLERS

Standard controllers are self-contained irrigation systems designed for simple installation and programming. They offer locally measured weather monitoring capabilities for automatic schedule adjustments, the option of modular station flexibility, and convenient remote control operation for faster maintenance.

STANDARD CONTROLLER COMPARISON CHART

CONTROLLER MODELS	MAXIMUM STATIONS	SENSOR INPUTS	TWO-WIRE	REMOTE CONTROL	WEB ACCESS
X-CORE	8	1	N/A	ROAM, ROAM XL	N/A
X2	14	1	N/A	ROAM, ROAM XL, Hydrawise App	Hydrawise, Wi-Fi (WAND Module)
PRO-C	32	1	EZDS	ROAM, ROAM XL	N/A

X-CORE®

This simple irrigation controller offers optional on-site smart ET watering adjustments and handheld remote operation.

KEY BENEFITS

- Number of stations:
  - 2, 4, 6, or 8 (fixed models)
- Add a Solar Sync® Sensor to save water based on local weather conditions
- Built-in key lock on outdoor models protects against vandalism
- 3 flexible programs with 4 start times each and up to 4-hour run times
- QuickCheck™ Technology provides simple diagnostics of faulty field wiring
- Hide Programs setting shows 1 program and 1 start time for simplification
- Suspend irrigation up to 99 days during the off-season
- Short-circuit protection detects wiring faults and skips the station without system damage
- Easy Retrieve® Memory backs up the full irrigation schedule
- Delay Between Stations for slow-closing valves or pump recharge
- Cycle and Soak prevents water waste and runoff in areas with elevation changes or tight soils
- Seasonal adjustment for quicker schedule adjustments without changing run times

OPERATING SPECIFICATIONS

- Transformer input: 120 VAC
- Transformer output (24 VAC): 1 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Sensor inputs: 1
- Approvals: Plastic IP54 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

Plastic Indoor
Height: 6½"
Width: 5¾"
Depth: 2"

Plastic Outdoor
Height: 8⅜"
Width: 7"
Depth: 3¾"

Compatible with:

Solar Sync Sensor
Page 139

ROAM Remote
Page 126
ROAM XL Remote
Page 127

Soil-Clik Sensor
Page 136

X-CORE	
Model	**Description**
XC-200i	Fixed 2-station, plastic indoor wall mount
XC-400i	Fixed 4-station, plastic indoor wall mount
XC-400	Fixed 4-station, plastic outdoor wall mount with plug
XC-600i	Fixed 6-station, plastic indoor wall mount
XC-600	Fixed 6-station, plastic outdoor wall mount with plug
XC-800i	Fixed 8-station, plastic indoor wall mount
XC-800	Fixed 8-station, plastic outdoor wall mount with plug

look for WaterSense Meets EPA Criteria

EPA WaterSense
Add the WaterSense labeled Solar Sync Sensor to improve the water efficiency of this controller.

X2™

This online-capable controller offers rapid schedule programming and advanced water-saving features.

KEY BENEFITS

- Number of stations:
  - 4, 6, 8, or 14 (fixed models)
- Wi-Fi capable controller automatically managed by Hydrawise® Software
- Backlit display provides optimal visibility in any light
- 3 flexible programs with 4 start times each and up to 6-hour run times
- QuickCheck™ Technology provides simple diagnostics of faulty field wiring
- Hide Programs option shows 1 program and 1 start time for simplification
- Suspend irrigation up to 99 days during the off-season
- Short-circuit protection detects wiring faults and skips the station without system damage
- Easy Retrieve® Memory backs up the full irrigation schedule
- Delay Between Stations for slow-closing valves or pump recharge
- Cycle and Soak prevents water waste and runoff in areas with elevation changes or tight soils
- Seasonal adjustment for quicker schedule adjustments without changing run times

WI-FI MODULE BENEFITS

- Provides online irrigation management with controller status and faulty wiring alerts
- Standard ABC programming allows for 3 independent programs with 6 start times per program and 24-hour maximum run times
- Predictive Watering® Technology provides precise weather adjustments for maximum water savings
- Compatibility with Amazon Alexa™, Control4®, and HomeSeer™
- See complete WAND Module benefits and specifications on **page 101**

OPERATING SPECIFICATIONS

- Transformer input: 120 VAC
- Transformer output (24 VAC): 1 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Sensor inputs: 1
- Approvals (controller): Plastic IP55 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Approvals (module): Wi-Fi b/g/n, Bluetooth® 5.0, UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

X2
Height: 9"
Width: 7½"
Depth: 3½"

WAND Bluetooth and Wi-Fi Module
Height: ¾"
Width: 2⅛"
Depth: 2⅛"

Compatible with:

Hydrawise Software
Page 98

Rain-Clik Sensor
Page 134

ROAM Remote
Page 126
ROAM XL Remote
Page 127

X2	
Model	**Description**
X2-400	Fixed 4-station, plastic outdoor wall mount with plug
X2-600	Fixed 6-station, plastic outdoor wall mount with plug
X2-800	Fixed 8-station, plastic outdoor wall mount with plug
X2-1400	Fixed 8-station, plastic outdoor wall mount with plug
WAND	Bluetooth and Wi-Fi Module for Hydrawise Irrigation Management Platform

look for WaterSense Meets EPA Criteria

EPA WaterSense
Add the WaterSense labeled WAND Wi-Fi Module **(see page 101)** to improve the water efficiency of this controller.

PRO-C®

Simple programming and flexible station expansion make Pro-C the professional's choice for residential and light commercial systems.

KEY BENEFITS

- Number of stations:
  - Modular Pro-C
    - Conventional wiring from 4 to 23 stations
    - Hybrid EZ Decoder option up to 32 total stations (28 stations maximum if two-wire only)
  - Fixed PCC with 6- and 12-station options
- 3 independent irrigation programs (4 start times each) allow for customized scheduling
- 1 sensor input available for use with Solar Sync® or any Clik sensors
- 1 P/MV output for pump start relay and master valve activation
- Dedicated Solar Sync dial position provides logic for smart water savings
- Easy Retrieve® Memory allows for manual backup and retrieval of preferred settings and programming
- QuickCheck™ Technology provides simple diagnostics of faulty field wiring
- 3 independent lighting programs available for simultaneous irrigation and lighting control

OPERATING SPECIFICATIONS

- Transformer input: 120 VAC
- Transformer output (24 VAC): 1 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Approvals: IP44 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

Plastic Indoor
Height: 9"
Width: 10"
Depth: 4½"

Plastic Outdoor
Height: 9"
Width: 10"
Depth: 4½"

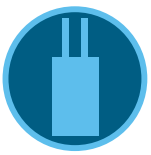
PRO-C	
Model	**Description**
PCC-600i	Fixed 6-station, plastic indoor wall mount
PCC-600	Fixed 6-station, plastic outdoor wall mount
PCC-1200i	Fixed 12-station, plastic indoor wall mount
PCC-1200	Fixed 12-station, plastic outdoor wall mount
PC-400i	Modular 4-station base, plastic indoor wall mount
PC-400	Modular 4-station base, plastic outdoor wall mount

PC-SERIES STATION EXPANSION	
Model	**Description**
PCM-300	3-station plug-in module
PCM-900	9-station plug-in module
PCM-1600	16-station plug-in module
PC-DM	EZ Decoder output module
PCM-1600-KIT	Upgrade kit for 16-station plug-in module
PC-DM-KIT	Upgrade kit for EZ Decoder output module

Compatible with:

Solar Sync Sensor
Page 139

ROAM Remote
Page 126
ROAM XL Remote
Page 127



EZ Decoder System
Page 122

look for WaterSense Meets EPA Criteria

EPA WaterSense
Add the WaterSense labeled Solar Sync Sensor to improve the water efficiency of this controller.

HYDRAWISE® CONTROLLERS

A healthy, beautiful garden needs just the right amount of water to thrive. The Hydrawise Irrigation Management Platform automatically adjusts watering based on local weather data. Choose from a complete lineup of Hydrawise enabled controllers to maximize water and money savings in any setting.

HYDRAWISE CONTROLLER COMPARISON CHART

CONTROLLER MODELS	MAXIMUM STATIONS	SENSOR INPUTS	TWO-WIRE	REMOTE CONTROL	WEB ACCESS	FLOW
HC	12	2	N/A	Hydrawise App	Hydrawise: Wi-Fi	HC Flow Meter (wired or wireless)
WAND for X2	14	1	N/A	ROAM, ROAM XL, Hydrawise App	Hydrawise: Wi-Fi	N/A
PRO-HC	24	2	N/A	Hydrawise App	Hydrawise: Wi-Fi	HC Flow Meter (wired or wireless)
HPC	32	1	EZDS	ROAM, ROAM XL, Hydrawise App	Hydrawise: Wi-Fi	HC Flow Meter (wired or wireless)
HCC	54	2	EZDS	ROAM, ROAM XL, Hydrawise App	Hydrawise: Wi-Fi	HC Flow Meter (wired or wireless)

HYDRAWISE® SOFTWARE

As the industry's best Wi-Fi control solution, the Hydrawise Irrigation Management Platform allows for professional multi-site management and provides a range of helpful water-saving features for end users.

Save Water

PREDICTIVE WATERING®

Predictive Watering Technology uses past, current, and forecast weather data sourced from the internet to automatically adjust to local, real-time conditions and provide homeowners and end users with tremendous water savings.

VIRTUAL SOLAR SYNC®

Virtual Solar Sync uses daily ET measurements from your selected weather stations to supplement the Predictive Watering adjustments on your controller, working to save even more water.

Protect the Landscape

SYSTEM MONITORING

Flow rate and valve monitoring alert you in the event of a problem, so you can quickly prevent landscape degradation before significant damage occurs.

WEATHER MONITORING

Web-based climate monitoring automatically adjusts irrigation systems to local weather conditions, ensuring plants remain healthy — rain or shine.

Save Time and Labor

REMOTE MANAGEMENT

Make changes to a program and know the status of the controller and the irrigation plan without a site visit.

STORE CUSTOMER PLANS AND DESIGNS

Attach irrigation system layouts to your customers' controllers for quick reference in the field. Never forget the location of the pipes or valve box again.

ON-SITE REMOTE

Turn your smartphone into a remote control to make changes and check the irrigation system without visiting the controller.

Build a Stronger Business

BUILD A STRONGER BUSINESS

Add services, grow revenue, increase customer satisfaction, and rest assured that Hydrawise has your back as you expand your business.

BUSINESS BRANDING

Gain instant recognition from your customers by including your business logo and details in your Hydrawise account.

MULTI-SITE MANAGER

Manage many customers or multiple sites with our unique business tools:

- Summary of all controllers
- Map view of controllers
- List view of customers/sites
- Search for customers and controllers
- View all controller events and logs
- View all controller alerts
- Branded automatic email reporting to customers
- Global control settings
  - Alerts
  - Watering Schedules
  - Start Times
  - Watering Triggers
- Quick select controllers
- Generate job sheets
- Manage subcontractors or regions

BUSINESS ACCOUNT

Manage staff access with different levels of permission. Remove or add staff easily and quickly. Add and store files, irrigation plans, layouts, or other documents for access by your staff.

MESSAGING

Receive messages from and send messages to customers and staff through the Hydrawise App.

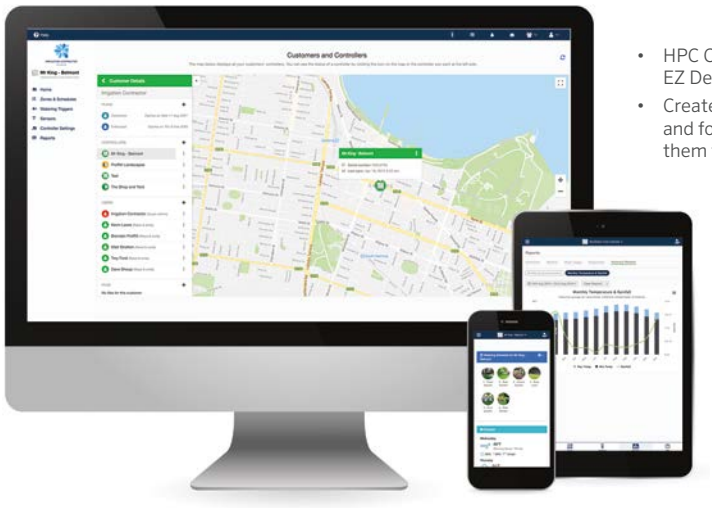
Manage from Anywhere

GLOBAL APP AND WEB ACCESS

Sit back and relax. With Hydrawise, everything you need is in the palm of your hand. Remote access allows you to view, manage, and monitor irrigation controllers from your smartphone, tablet, or computer at your convenience.

SMART-HOME COMPATIBILITY

Hydrawise integrates seamlessly with Amazon Alexa™, Control4®, and HomeSeer™.



What's New with Hydrawise

- HPC Controller now compatible with the EZ Decoder System up to 32 stations
- Create custom reports for water savings and forecasts and automatically email them to your customers
- WAND Module for X2 Controllers provides super-fast Bluetooth remote, Wi-Fi setup, and a convenient copy-paste schedule function
- Nine new updates to the Contractor Portal
- Controller touchscreen enhancements

Access to Hydrawise Software is free for all users worldwide.
To learn more, visit hydrawise.com.

EPA WaterSense Approved
Recognized as a responsible water-saving tool by the U.S. Environmental Protection Agency

HC Controller
6- and 12-station count

X2 Controller with WAND Module
4-, 6-, 8-, and 14-station count

Pro-HC Controller
6-, 12-, and 24-station count

HPC Controller
4- to 32-station count, EZDS two-wire option

HCC Controller
8- to 54-station count, EZDS two-wire option

Wireless Option Available!

HC Flow Meter
Add an optional flow meter to receive flow alerts and monitor water consumption

Not available for X2

HC

The cost-effective solution for residential projects, the HC Controller provides smart water savings and remote irrigation management capabilities.

Try Hydrawise Software today, hardware-free at hydrawise.com

KEY BENEFITS

- Number of stations:
  - 6 or 12 (fixed models)
- Standard programming option allows for 6 independent irrigation programs and 6 start times per program
- 2 sensor inputs available for use with any Clik sensors and HC Flow Meter
- Station outputs can also be used to activate a pump start relay or master valve
- Wi-Fi enabled for quick connection to Hydrawise® Software
- 2¾" full-color touchscreen display for Wi-Fi setup, zone testing, and offline programming at the control panel
- Built-in milliamp sensor for wire fault detection and alerts (12-zone model)

OPERATING SPECIFICATIONS

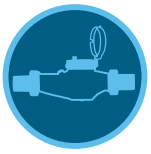
- Transformer input: 120 VAC
- Transformer output (24 VAC): 1 A
- Controller maximum current draw: 0.8 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- 2.4 GHz (only) Wi-Fi router compatible, 802.11 b/g/n 20 MHz
- Supported security protocols: WPA/WPA2 Personal (only) TLS, SSL
- Approvals: UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

USER-INSTALLED OPTIONS

- Wireless HC Flow Meter option permits wireless flow monitoring for Hydrawise enabled systems; **see page 141**

HC
(plastic indoor)
Height: 6"
Width: 7"
Depth: 1¼"

Compatible with:



HC Flow Meter
Page 141

Rain-Clik Sensor
Page 134

Soil-Clik Sensor
Page 136

EPA WaterSense Approved
Recognized as a responsible water-saving tool by the U.S. Environmental Protection Agency

HC	
Model	**Description**
HC-600i	Fixed 6-station, plastic indoor wall mount
HC-1200i	Fixed 12-station, plastic indoor wall mount

WAND FOR X2™

This Wi-Fi upgrade option equips X2 Controllers with remote management capabilities from anywhere with an internet connection.

Try Hydrawise Software today, hardware-free at hydrawise.com

KEY BENEFITS

- This simple, plug-in device enables Hydrawise Software capabilities for any X2 Controller to provide maximum water savings
- Provides controller status updates and faulty wiring alerts to signify the need for maintenance before costly landscape damage occurs
- Standard programming allows for 3 independent programs with 6 start times per program and 24-hour maximum run times
- Transfer X2 programming to Hydrawise for faster software setup
- Rapid Programming™ allows an existing Hydrawise schedule to be copied to any standalone X2 Controller for full schedule set up in seconds without touching the dial or buttons
- Use your smartphone as a manual remote when Wi-Fi is unavailable or the controller is hard to access
- Compatible with Amazon Alexa™, Control4®, and HomeSeer™
- See complete X2 Controller key benefits and specifications on **page 94**

OPERATING SPECIFICATIONS

- Flexible setup options: Bluetooth® Wi-Fi tether, Wi-Fi direct, or WPS push-button connection
- Bluetooth 5.0
- 2.4 GHz (only) Wi-Fi router compatible, 802.11 b/g/n 20 MHz
- Supported security protocols: WPA/WPA2 Personal (only) TLS, SSL
- Approvals: UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

WAND Bluetooth and Wi-Fi Module
Height: ¾"
Width: 2⅛"
Depth: 2⅛"

WAND Module installed in the X2 Controller

WAND MODULE	
Model	**Description**
WAND	Bluetooth and Wi-Fi Module for X2 Controllers
X2	**See page 94** for model chart

WAND INSTALLATION

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG Inc. and any use of such marks by Hunter Industries is under license. Amazon Alexa is a trademark of Amazon.com Inc. or its affiliates. Control4 is a registered trademark of Control4 Corporation in the United States and/or other countries. HomeSeer is a trademark of HomeSeer Technologies LLC.

Compatible with:

X2 Controller
Page 94

Rain-Clik Sensor
Page 134

ROAM Remote
Page 126
ROAM XL Remote
Page 127

EPA WaterSense Approved
Recognized as a responsible water-saving tool by the U.S. Environmental Protection Agency

PRO-HC

Use this rugged, cost effective and professional-grade Wi-Fi controller for residential and light commercial applications.

KEY BENEFITS

- Number of stations:
  - 6, 12, or 24 (fixed models)
- Standard programming option allows for 6 independent irrigation programs and 6 start times per program
- 2 sensor inputs available for use with any Clik sensor and HC Flow Meter
- 1 P/MV output for pump start relay and master valve activation
- Wi-Fi enabled for quick connection to Hydrawise Software
- 2¾" full-color touchscreen display for Wi-Fi setup, zone testing, and offline programming at the control panel
- Built-in milliamp sensor for wire fault detection and alerts

OPERATING SPECIFICATIONS

- Transformer input: 120 VAC
- Transformer output (24 VAC): 1 A
- Controller maximum current draw: 0.8 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- 2.4 GHz (only) Wi-Fi router compatible, 802.11 b/g/n 20 MHz
- Supported security protocols: WPA/WPA2 Personal (only) TLS, SSL
- Approvals: IP44 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

USER-INSTALLED OPTIONS

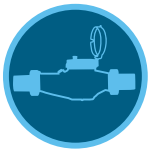
- Wireless HC Flow Meter option permits wireless flow monitoring for Hydrawise enabled systems; **see page 141**

Try Hydrawise Software today, hardware-free at hydrawise.com

Pro-HC
(plastic indoor)
Height: 8¼"
Width: 9½"
Depth: 3½"

Pro-HC
(plastic outdoor)
Height: 9"
Width: 10"
Depth: 4"

Compatible with:



HC Flow Meter
Page 141

Rain-Clik Sensor
Page 134

PXSYNC Accessory
*Visit **fxl.com***

EPA WaterSense Approved
Recognized as a responsible water-saving tool by the U.S. Environmental Protection Agency

PRO-HC	
Model	**Description**
PHC-600i	Fixed 6-station, plastic indoor wall mount
PHC-600	Fixed 6-station, plastic outdoor wall mount
PHC-1200i	Fixed 12-station, plastic indoor wall mount
PHC-1200	Fixed 12-station, plastic outdoor wall mount
PHC-2400i	Fixed 24-station, plastic indoor wall mount
PHC-2400	Fixed 24-station, plastic outdoor wall mount

HPC

This smart and flexible control solution combines the modularity of the popular Pro-C® Controller with the power of Hydrawise® Software.

Try Hydrawise Software today, hardware-free at hydrawise.com

KEY BENEFITS

- Number of stations:
  - Conventional wiring from 4 to 23 stations
  - Hybrid EZ Decoder option up to 32 total stations (28 stations maximum if two-wire only)
- Standard programming option allows for 6 independent irrigation programs and 6 start times per program
- 1 sensor input available for use with any Clik sensor or HC Flow Meter
- 1 P/MV output for pump start relay and master valve activation
- Wi-Fi enabled for quick connection to Hydrawise Software
- 2¾" full-color touchscreen display for Wi-Fi setup, zone testing, and offline programming at the control panel
- Built-in milliamp sensor for wire fault detection and alerts

OPERATING SPECIFICATIONS

- Transformer input: 120 VAC
- Transformer output (24 VAC): 1 A
- Controller maximum current draw: 0.8 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- 2.4 GHz (only) Wi-Fi router compatible, 802.11 b/g/n 20 MHz
- Supported security protocols: WPA/WPA2 Personal (only) TLS, SSL
- Approvals: IP44 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

USER-INSTALLED OPTIONS

- Wireless HC Flow Meter option permits wireless flow monitoring for Hydrawise enabled systems; **see page 141**

HPC
(plastic outdoor)
Height: 9"
Width: 10"
Depth: 4½"

HPC Face Panel

Compatible with:

HC Flow Meter
Page 141

ROAM Remote
Page 126
ROAM XL Remote
Page 127

EZ Decoder System
Page 122

EPA WaterSense Approved
Recognized as a responsible water-saving tool by the U.S. Environmental Protection Agency

HPC	
Model	**Description**
HPC-400	Modular 4-station base, plastic outdoor wall mount with plug
HPC-FP	Hydrawise retrofit face panel for Pro-C Controllers (March 2014 or newer models)

PC-SERIES STATION EXPANSION	
Model	**Description**
PCM-300	3-station plug-in module
PCM-900	9-station plug-in module
PCM-1600	16-station plug-in module
PC-DM	EZ Decoder output module

HCC

Bring the power of Hydrawise® to residential, commercial, and public-sector projects with this affordable powerhouse.

Try Hydrawise Software today, hardware-free at hydrawise.com

KEY BENEFITS

- Number of stations:
  - Conventional: 8 to 38 (plastic), 8 to 54 (metal and pedestal)
  - With two-wire EZDS: up to 54 (all enclosure options)
- Standard programming option allows for 6 independent irrigation programs and 6 start times per program
- Any 2 programs or stations can operate simultaneously
- 2 sensor inputs available for use with any Clik sensors and HC Flow Meter
- 1 P/MV output for pump start relay and master valve activation
- Wi-Fi enabled for quick connection to Hydrawise Software
- 3¼" full-color touchscreen display for Wi-Fi setup, zone testing, and offline programming at the control panel
- Built-in milliamp sensor for wire fault detection and alerts

OPERATING SPECIFICATIONS

- Transformer input: 120/230 VAC
- Transformer output (24 VAC): 1.4 A
- Controller max. current draw: 1.2 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.56 A
- 2.4 GHz (only) Wi-Fi router compatible, 802.11 b/g/n 20 MHz
- Supported security protocols: WPA/WPA2 Personal (only) TLS, SSL
- Approvals: Plastic Wall Mount IP55 (outdoor), Plastic Pedestal IP24 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

USER-INSTALLED OPTIONS

- Wireless HC Flow Meter option permits wireless flow monitoring for Hydrawise enabled systems; **see page 141**
- Compatible with ROAM Remote and ROAM XL Remote; **see pages 126 and 127**

Plastic
Height: 12"
Width: 13¾"
Depth: 5"

Metal
(gray or stainless steel)
Height: 16"
Width: 13"
Depth: 5"

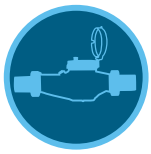
Metal Pedestal
(gray or stainless steel)
Height: 36"
Width: 11½"
Depth: 5"

Plastic Pedestal
Height: 39"
Width: 24"
Depth: 17"

HCC	
Model	**Description**
HCC-800-PL	8-station base model, plastic outdoor, wall mount
HCC-800-M	8-station base model, gray metal outdoor, wall mount
HCC-800-SS	8-station base model, stainless steel, wall mount
HCC-800-PP	8-station base model, plastic pedestal
HCC-FPUP	Retrofit upgrade kit for ICC and ICC2 Controllers
ICC-PED	Gray pedestal for metal wall mount cabinet
ICC-PED-SS	Stainless steel pedestal for stainless wall mount
ICC-PWB	Optional pedestal wiring board for metal pedestals
ANT-EXT-KIT	Universal antenna extension kit

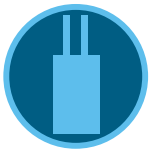
HCC SERIES STATION EXPANSION	
Model	**Description**
ICM-400	4-station plug-in module with enhanced surge protection
ICM-800	8-station plug-in module with enhanced surge protection
ICM-2200	22-station expansion module (maximum one per controller)
EZDS	**See page 122** for model chart

Compatible with:



HC Flow Meter
Page 141

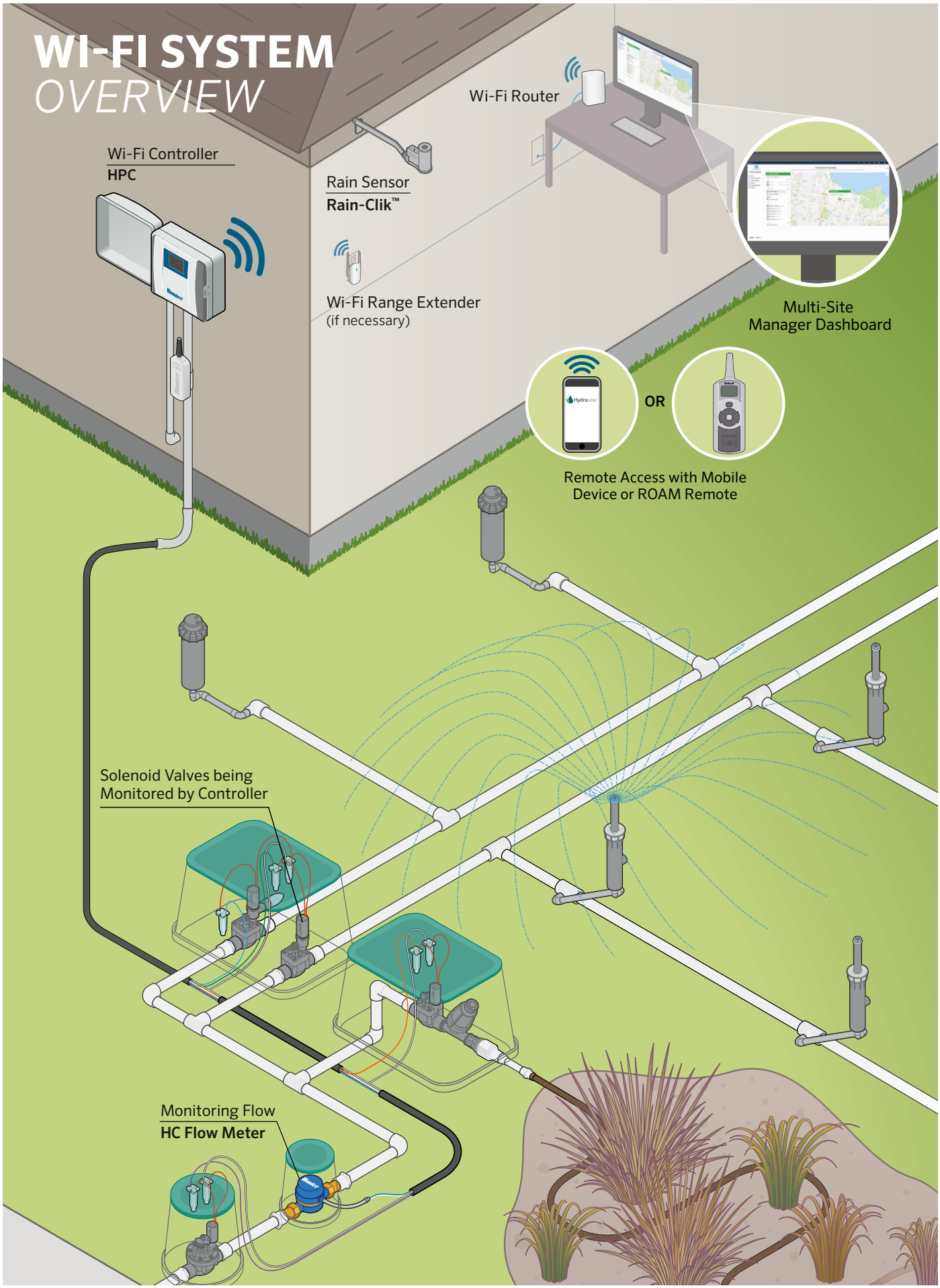
Rain-Clik Sensor
Page 134



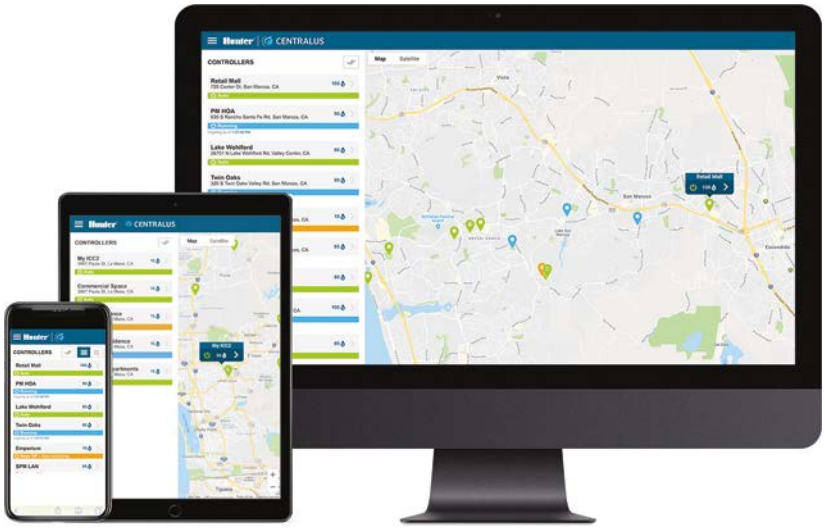
EZ Decoder System
Page 122

WaterSense Meets EPA Criteria
Certified by ICC-ES

EPA WaterSense Approved
Recognized as a responsible water-saving tool by the U.S. Environmental Protection Agency


WI-FI SYSTEM
OVERVIEW
Wi-Fi Router
Wi-Fi Controller
HPC
Rain Sensor
Rain-Clik™
Wi-Fi Range Extender
(if necessary)
Multi-Site
Manager Dashboard
OR
Remote Access with Mobile
Device or ROAM Remote
Solenoid Valves being
Monitored by Controller
Monitoring Flow
HC Flow Meter

CENTRALUS™ CONTROLLERS



Centralus Software
Enable ICC2 and ACC2 Controllers with next-generation management technology.
To learn more, visit **centralus.hunterindustries.com**

Mobile-Friendly

The mobile-friendly Centralus Irrigation Management Platform provides highly secure, comprehensive cloud-based control and monitoring features. The connectivity allows you to view a controller's status, change settings, view forecasts, save water, and receive instant notification of important system alarms.

User-Friendly

The addition of internet access brings dial-based ICC2 and ACC2 Controllers seamlessly into the world of next-generation irrigation control. From the intuitive Centralus dashboard, it is now easier than ever before to add alarm monitoring, location information, remote operation, and scheduling to ICC2 and ACC2 Controllers.

Easy to Upgrade

To upgrade to Centralus control, add a simple Wi-Fi, Ethernet (LAN), or Cellular (LTE) communication module to the controller:

- ICC2: Add WIFIKIT, LANKIT, or CELLKIT
- ACC2: Add A2C-WIFI, A2C-LAN, or A2C-LTE

CENTRALUS CONTROLLER COMPARISON CHART

CONTROLLER MODELS	MAXIMUM STATIONS	SENSOR INPUTS	TWO-WIRE	FLOW	REMOTE CONTROL	WEB ACCESS
ICC2	54	1 Clik or Solar Sync®	EZDS, 54 stations	Flow-Clik for catastrophic high-flow shutdown	ROAM, ROAM XL, Smartphone	Centralus: Wi-Fi, LAN, LTE
ACC2	54, 225 two-wire	3 Clik, 1 Solar Sync 6 Flow	ICD, 225 stations	HFS, WFS	ROAM, ROAM XL, Smartphone	Centralus: Wi-Fi, LAN, LTE

CENTRALUS™ SOFTWARE

Add cloud-based control and monitoring for ICC2 and ACC2 Controllers with the mobile-friendly Centralus Irrigation Management Platform.

View Centralus Software today, at centralus.hunterindustries.com

KEY BENEFITS

- Browser-based programming and communication software
- Highly secure cloud access
- Map-based navigation and status
- Instant remote control from mobile device
- Flow monitoring and reporting
- Alarm reporting and detailed irrigation history reports
- Responsive web design configures for your device, allowing the same controls from your smartphone, tablet, or desktop
- Wi-Fi, LAN (Ethernet), or LTE connectivity options
- Manage Solar Sync® adjustments and delay settings for greater water savings
- Professional crewmember administration with multiple levels of access
- Organize maintenance teams and their controllers into management groups

OPERATING SPECIFICATIONS

- Operates in most modern browsers
- Secure internet connection for web-hosted application

USER-INSTALLED OPTIONS

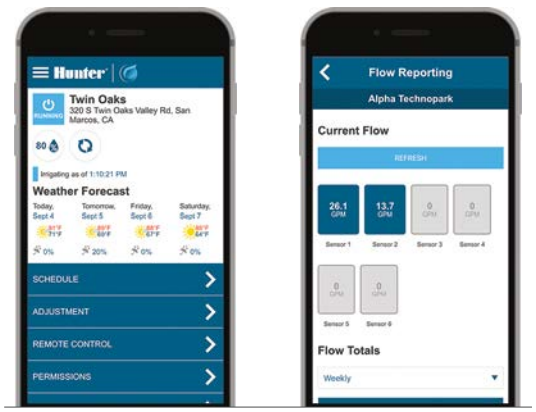
- ET-based Solar Sync Sensor (one per controller); **see page 139**
- Flow sensors including Flow-Sync, WFS, and other approved equals
- Connected controllers are compatible with license-free ROAM/ROAM XL Remote control (pre-wired controller connection)

COMMUNICATION OPTIONS

- LAN (Ethernet) with RJ-45 connection, low data requirements
- 2.4 GHz (only) Wi-Fi router compatible, 802.11 b/g/n 20 MHz
- Supported security protocols: WPA/WPA2 Personal (only) TLS, SSL
- Cellular connectivity with with ICC2 and ACC2 Controllers

ACC2 COMMUNICATION MODULE INSTALLATION

A2C Communication Modules are installed behind the ACC2 facepack



Manage and monitor controllers from anywhere

COMMUNICATIONS	
Model	**Description**
WIFIKIT	ICC2 Wi-Fi connection
LANKIT	ICC2 LAN (Ethernet) connection
CELLKIT	ICC2 cellular connection (service plan required)
A2C-WIFI	ACC2 Wi-Fi connection
A2C-LAN	ACC2 LAN (Ethernet) connection
A2C-LTE	Cellular communication module for ACC2 (service plan required)

COMMUNICATIONS ACCESSORIES	
Model	**Description**
ANT-EXT-KIT	Universal antenna extension kit

WIFIKIT
Height: 4¼"
Width: 2½" (installed)
Depth: 1⅜"

LANKIT
Height: 4¼"
Width: 2½" (installed)
Depth: 1⅜"

WIFIKIT INSTALLATION

ICC2

This flexible control system can run any combination of conventional or two-wire outputs with the option to upgrade to cloud-based Centralus™ control.

KEY BENEFITS

- Number of stations:
  - Conventional: 8 to 38 (plastic), 8 to 54 (metal and pedestals)
  - With two-wire EZDS: up to 54 (all enclosure options)
- 4 independent irrigation programs (8 start times each)
- Any 2 programs can operate simultaneously, providing more efficient watering
- 1 sensor input available for use with Solar Sync® or any Clik sensors
- 1 P/MV output for pump start relay and master valve activation
- Backward compatibility to original ICC Controllers allows for quick updates to older systems
- Upgradeable to Centralus Software for web-based central control options

OPERATING SPECIFICATIONS

- Transformer input: 120/230 VAC
- Transformer output (24 VAC): 1.4 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.56 A
- Approvals: Wall Mounts IP55 (outdoor), Plastic Pedestal IP24 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- WIFIKIT, LANKIT, or CELLKIT communications for cloud-based Centralus control
- Compatible with Flow-Clik® Sensor for catastrophic high-flow shutdown **see page 129**
- Compatible with Solar Sync® Sensor; **see page 139**

View Centralus Software today, at centralus.hunterindustries.com

Plastic
Height: 12"
Width: 13¾"
Depth: 5"

Metal
(gray or stainless steel)
Height: 16"
Width: 13"
Depth: 5"

Metal Pedestal
(gray or stainless steel)
Height: 36"
Width: 11½"
Depth: 5"

Plastic Pedestal
Height: 39"
Width: 24"
Depth: 17"

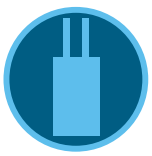
ICC2	
Model	**Description**
I2C-800-PL	8-station base model, plastic outdoor wall mount
I2C-800-M	8-station base model, gray metal outdoor, wall mount
I2C-800-SS	8-station base model, stainless steel, wall mount
I2C-800-PP	8-station base model, plastic pedestal
ICC-FPUP2	ICC2 Retrofit Kit for original ICC Controllers
ICC-PED	Gray pedestal for metal controller mount
ICC-PED-SS	Stainless steel pedestal for stainless controller mount
ICC-PWB	Optional pedestal wiring board for metal pedestals

ICC2 SERIES STATION EXPANSION	
Model	**Description**
ICM-400	4-station plug-in module with enhanced surge suppression
ICM-800	8-station plug-in module with enhanced surge suppression
ICM-2200	22-station expansion module (one per controller)
EZDS	**See page 122** for model chart

Compatible with:

Rain-Clik Sensor
Page 134

ROAM Remote
Page 126
ROAM XL Remote
Page 127



EZ Decoder System
Page 122

look for WaterSense Meets EPA Criteria

EPA WaterSense
Add the WaterSense labeled Solar Sync Sensor to improve the water efficiency of this controller.

ACC2

The multi-flow monitoring and management capabilities of ACC2, with the option to upgrade to Centralus cloud-based control, make it the best choice for complex projects.

View Centralus Software today, at centralus.hunterindustries.com

KEY BENEFITS

- Number of stations:
  - 12 to 225, for large projects
- Up to 6 flow sensor inputs and 6 P/MV outputs
- 32 automatic programs (10 start times each) for precise plant management
- Block function to group stations and consolidate large systems
- Add a Solar Sync® Sensor to save water based on local weather conditions
- Real-time flow monitoring detects and diagnoses leaks in up to 6 flow zones
- Flow management optimizes watering at safe velocities
- High-visibility, full-color display with reversible facepack
- Conditional Response "if/then" programming for active responses to sensor inputs
- User management password protection, with two levels of access
- Optional plug-in communications modules for cloud or network control
- Detailed alarm logs in plain language
- Extreme service lightning protection
- Easy Retrieve® Memory programming backup and restore
- Non-Water Windows to inhibit accidental irrigation

OPERATING SPECIFICATIONS

- Transformer input: 120/230 VAC
- Maximum AC current draw: 120 VAC, 2 A/230 VAC, 1 A
- Transformer output: 24 VAC, ~3 A
- P/MV outputs (24 VAC): Up to 6; 3 included, 0.8 A each
- Sensor inputs: 3 Clik, 1 Solar Sync, and up to 6 Flow sensors (3 included)
- Approvals: Wall Mounts IP55 (outdoor), Plastic Pedestal IP24 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- Centralus central control available with Wi-Fi, LAN (Ethernet), and cellular connection; **see page 129**

Metal Wall Mount
(gray or stainless steel)
Height: 15¾"
Width: 15"
Depth: 6¾"

Plastic Wall Mount
Height: 16⅜"
Width: 16½"
Depth: 6⅝"

Metal Pedestal
(gray or stainless steel)
Height: 37"
Width: 15½"
Depth: 5"

Plastic Pedestal
Height: 39½"
Width: 23½"
Depth: 17"

Compatible with:

Solar Sync Sensor
Page 139

Flow-Sync Sensor
Page 140
WFS Sensor
Page 142

ROAM Remote
Page 126
ROAM XL Remote
Page 127

look for WaterSense Meets EPA Criteria

EPA WaterSense Approved
Add the WaterSense-labeled Solar Sync Sensor to improve the water efficiency of this controller.

ADDITIONAL SPECIFICATIONS BY MODEL

ACC2 CONVENTIONAL

- Number of stations:
  - 12 to 54, for large projects
- Simultaneous station operation: Up to 14 solenoids
- Expands in 6-station increments
- Extreme service lightning protection, standard on all A2M-600 Output Modules
- Station outputs: 0.8 A each

ACC2 DECODER

- Number of stations:
  - 75, 150, or 225, for large projects
- Simultaneous station operation: Up to 30 solenoids
- Operates Hunter's premium ICD Decoders over ID wire:
  - Up to 10,000' (14 AWG wire)
  - Up to 15,000' (12 AWG wire)
- See complete ICD Decoder key benefits and specifications on **page 120**
- Up to 3 two-wire paths per output module
- Diagnostics including decoder inventory, wire tracker, solenoid finder, and more

ACC2 CONVENTIONAL MODELS

Model	Description
A2C-1200-M	12-station base unit controller, expands to 54 stations, gray steel wall mount, outdoor
A2C-1200-P	12-station base unit controller, expands to 54 stations, plastic outdoor wall mount
A2C-1200-SS	12-station base unit controller, expands to 54 stations, stainless steel wall mount, outdoor
A2C-1200-PP	12-station base unit controller, expands to 54 stations, plastic pedestal
A2M-600	6-station plug-in module for use with the A2C-1200 series controllers

ACC2 DECODER MODELS

Model	Description
A2C-75D-M	75-station base model, gray metal outdoor, wall mount
A2C-75D-P	75-station base model, plastic outdoor, wall mount
A2C-75D-SS	75-station base model, stainless steel, wall mount
A2C-75D-PP	75-station base model, plastic pedestal
A2C-D75	75-station decoder expansion module

ACC2 ACCESSORIES FOR ALL MODELS

ACC2 ACCESSORIES

Model	Description
A2C-F3	Optional flow meter expansion module (adds 3 inputs)
A2C-LEDKT	External status light shows controller status with door closed
A2C-WIFI	ACC2 Wi-Fi connection
A2C-LAN	ACC2 LAN (Ethernet) connection
A2C-LTE	ACC2 cell connection (monthly service plan required)
ACC-PED	Gray pedestal for wall mount
PED-SS	Stainless steel pedestal for wall mount

ACC2 REVERSIBLE FACEPACK AND AUTOMATIC DIAGNOSTIC MODE

BATTERY-OPERATED CONTROLLERS

When locations are difficult to access, lack electrical power, or demand cost-prohibitive wire runs, battery-operated controllers can make irrigation effective and affordable. Unlike traditional irrigation systems, they save time and money because there's no need to run wire, obtain construction permits, or lease equipment to tunnel under concrete or other hardscape elements. Since these systems are less intrusive, they can also help you win bids where specifications are strict about AC power requirements.

BATTERY-OPERATED CONTROLLER COMPARISON CHART

CONTROLLER MODELS	MAXIMUM STATIONS	SENSOR INPUTS	REMOTE CONTROL	SOLAR
BTT	2	N/A	BTT Bluetooth App	N/A
NODE	6	1	N/A	SPNODE
NODE-BT	4	2	NODE-BT Bluetooth App	Coming 2022
XC HYBRID	12	1	N/A	SPXCH, XCH-600-SSP, XCH-1200-SSP

BTT

Take advantage of smartphone-controlled, above-ground irrigation for easier access to the hose tap.

KEY BENEFITS

- Number of zones:
  - 1 or 2 (fixed models)
- Battery-operated tap timer with Bluetooth® control
- 1 smartphone manages an unlimited number of controllers
- 1-second to 24-hour run time with multiple start times for maximum programming flexibility
- Cycling mode repeats continuously within user-defined water windows, perfect for drip systems or germinating seeds
- Suspend irrigation up to 99 days during the off-season, ideal for seasonal markets
- Manual push-button operation for quick operation without a smartphone
- Automatic water shutoff after 1 hour prevents water waste
- Blinking LED low-battery alert indicates battery replacement
- Alkaline batteries included for quicker installation

OPERATING SPECIFICATIONS

- Two 1.5V AA alkaline batteries (included)
- Flow rate: 0.5 to 600 GPH
- Recommended pressure: 7 to 116 PSI
- See friction loss chart on **page 198**
- Bluetooth 4.0/4.2 (BLE)
- Approvals: Plastic IPX6 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

APP SPECIFICATIONS

- iOS® 9.0 or above, Android™ 4.4 or above
- Maximum communication distance: 32'
- See all app features at **hunter.info/BTT**

BTT-100
Inlet diameter: ¾"
Outlet diameter: ¾"
Height: 5"
Width: 5"
Depth: 2½"

BTT-200
Inlet diameter: ¾"
Outlet diameter: ¾"
Height: 6¼"
Width: 5¼"
Depth: 3"

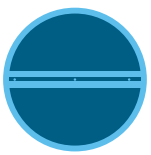
BTT-LOC
(optional)
Inlet diameter: ¾"
Outlet diameter:
16-18 mm dripline
Height: 2¾"
Width: 1¼"

Pressure Regulator
(optional)
Inlet diameter: ¾"
Outlet diameter: ¾"
Height: 3"
Width: 1½"

BTT WITH HDL INSTALLATION

To control drip irrigation applications with BTT, use the BTT-LOC Drip Adapter, which connects BTT to HDL surface and subsurface systems.

Compatible with:



HDL Dripline
Page 156

BTT	
Model	**Description**
BTT-100	1-zone Bluetooth Tap Timer, ¾" hose thread
BTT-200	2-zone Bluetooth Tap Timer, ¾" hose thread

USER-INSTALLED OPTIONS	
Model	**Description**
BTT-LOC	BTT adapter for 16-18 mm dripline
PRLG203FH3MH	20 PSI pressure regulator, ¾" hose thread
PRLG253FH3MH	25 PSI pressure regulator, ¾" hose thread
PRLG303FH3MH	30 PSI pressure regulator, ¾" hose thread
PRLG403FH3MH	40 PSI pressure regulator, ¾" hose thread

NODE

This battery-operated, waterproof controller offers automatic irrigation control for temporary irrigation and sites without electricity.

KEY BENEFITS

- Number of stations:
  - 1, 2, 4, or 6 (fixed models)
- Battery-operated controller for automatic irrigation
- Battery-life indicator for battery replacement
- Waterproof enclosure seal protects against water ingress
- 3 flexible programs with 4 start times each and up to 6-hour run times
- Suspend irrigation up to 99 days during the off-season
- Easy Retrieve® Memory backs up the full irrigation schedule if ever changed
- Seasonal adjustment for quicker schedule adjustments without changing run times
- Solar panel provides maintenance-free operation
- Mounts to Hunter solenoids, pipes, flat surfaces, or inside the valve box

OPERATING SPECIFICATIONS

- One or two 9V alkaline batteries or 1800 mAh solar panel with charging cell
- Operates Hunter DC-Latching Solenoids; **see page 201**
- 100' maximum wire runs, 18 AWG wire only
- Solar panel includes 40' of direct-burial wire
- Station output: 9–11 VDC
- P/MV output: 9–11 VDC (multi-station models)
- Sensor inputs: 1 (wired rain, freeze, or wind only)
- Approvals: IP68 (submersible), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

NODE
Height: 2½"
Diameter: 3½"

SPNODE
Solar panel kit (optional)
Height: 3¼"
Length: 3"
Width: ⅝"
Controller to solar panel: 100' maximum
18 AWG direct-burial wire

NODE WITH PGV INSTALLATION

NODE	
Model	**Description**
NODE-100	Single-station battery controller and DC-Latching Solenoid
NODE-100-LS	Single-station battery controller
NODE-100-VALVE	Single-station battery controller with PGV-101G valve and DC-Latching Solenoid (NPT threads)
NODE-200	2-station battery controller
NODE-400	4-station battery controller
NODE-600	6-station battery controller

USER-INSTALLED OPTIONS	
Model	**Description**
SPNODE	Solar Panel Kit for NODE controllers
458200	DC-Latching Solenoid (for all Hunter valves)

Compatible with:

Mini-Click Sensor
Page 135

Freeze-Clik Sensor
Page 137

Waterproof Wire Connector
Page 125

NODE-BT

Manage gardens, greenhouses, traffic medians, and temporary irrigation sites from a smartphone without opening the valve box.

KEY BENEFITS

- Number of stations:
  - 1, 2, or 4 (fixed models)
- Bluetooth® battery-operated controller for automatic irrigation
- 1 smartphone manages an unlimited number of controllers
- Waterproof enclosure seal protects against water ingress
- Active station LEDs and battery-life LED indicator for replacement
- 3 programs with 8 start times each and 1 second to 12-hour run times
- Suspend irrigation up to 99 days during the off-season
- Manual push-button operation for quick operation without a smartphone
- Delay Between Stations for slow-closing valves or pump recharge
- Soil moisture sensor prevents water waste; **see page 136**
- Cycle and Soak prevents water waste and runoff in areas with elevation changes or tight soils
- Monthly and global seasonal adjustment for quicker schedule adjustments without changing run times
- Solar recharging option available in 2022
- Mounts to Hunter solenoids, pipes, flat surfaces, or inside the valve box

OPERATING SPECIFICATIONS

- One or two 9V alkaline batteries
- Operates Hunter DC-Latching Solenoids; **see page 201**
- 100' maximum wire runs, 18 AWG wire only
- Station output: 9–11 VDC
- P/MV output: 9–11 VDC (multi-station models)
- Sensor inputs: 2 (wired soil plus wired rain, freeze, or wind only)
- Bluetooth 5.0 (BLE)
- Approvals: IP68 (submersible), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

APP SPECIFICATIONS

- iOS® 9.0 or above, Android™ 5.0 or above
- Maximum communication distance: 50'
- See all app features at **hunter.info/NodeBT**

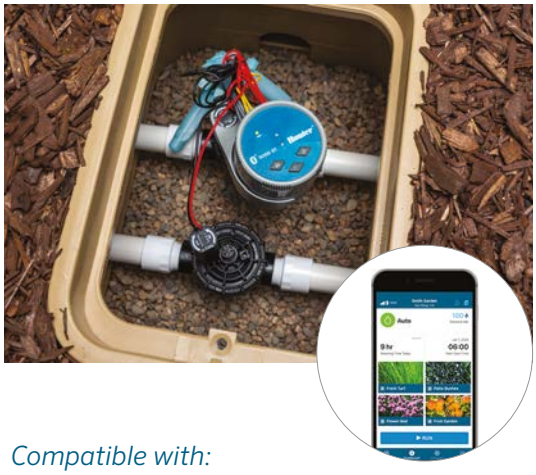
NODE-BT	
Model	**Description**
NODE-BT-100	Single-station Bluetooth battery controller and DC-Latching Solenoid
NODE-BT-100-LS	Single-station Bluetooth battery controller
NODE-BT-100-VALVE	Single-station Bluetooth battery controller with PGV-101G valve and DC-Latching Solenoid (NPT threads)
NODE-BT-200	2-station Bluetooth battery controller
NODE-BT-400	4-station Bluetooth battery controller

USER-INSTALLED OPTIONS	
Model	**Description**
SC-PROBE	Soil probe for moisture sensing
458200	DC-Latching Solenoid (for all Hunter valves)

NODE-BT
Height: 3"
Diameter: 3½"

SC-PROBE Soil Moisture Sensor Probe (optional)
Height: 3¼"
Diameter: 1"
Controller to probe: 100' maximum
18 AWG direct-burial wire

NODE-BT WITH PGV INSTALLATION



Compatible with:

Mini-Clik Sensor
Page 135

Freeze-Clik Sensor
Page 137

Waterproof Wire Connector
Page 125

XC HYBRID

Effectively manage landscapes where electricity is unavailable with this economical battery-operated or solar-powered controller.

KEY BENEFITS

- Number of stations:
  - 6 or 12 (fixed models)
- 3 power options: ambient-light-compatible solar panel, battery, or AC power
- Stainless steel enclosure protects against vandalism
- 3 programs with 4 start times each and up to 4-hour run times
- Suspend irrigation up to 99 days during the off-season
- Easy Retrieve® Memory backs up the full irrigation schedule
- Delay Between Stations for slow-closing valves or pump recharge
- Seasonal adjustment for quicker schedule adjustments without changing run times
- Solar Panel provides maintenance-free operation
- Mounts to flat surfaces or steel posts

OPERATING SPECIFICATIONS

- Plastic model operates six 1.5 V AA alkaline batteries
- Stainless steel model operated by six 1.5 V C alkaline batteries
- Stainless steel solar model operates 1800 mAh solar panel with charging cell
- Solar panel includes 40' of direct-burial wire
- Controller to solar panel: 100' maximum 18 AWG direct-burial wire
- All models operate optional 120/24 VAC plug-in wall adapter (P/N 526500)
- Operates Hunter DC-Latching Solenoids; **see page 201**
- Station output: 9-11 VDC
- P/MV output: 9-11 VDC
- Sensor inputs: 1 (wired rain, freeze, or wind only)
- Approvals: Plastic IP54 (outdoor), Stainless Steel IP24 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

Plastic
Height: 8⅝"
Width: 7"
Depth: 3¾"

Stainless Steel
Height: 9¾"
Width: 7⅜"
Depth: 4¼"

Stainless Steel Solar
Height: 10¾"
Width: 7⅜"
Depth: 4¼"

SPXCH
Solar panel kit (optional)
Height: ⅝"
Length: 3"
Width: 3"

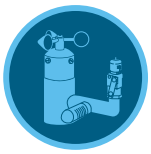
XCHSPOLE
Pole-mounting kit (optional)
Height: 4'

XCHSPB
Mounting bracket and hardware only (optional)

Compatible with:

Mini-Clik Sensor
Page 135

Freeze-Clik Sensor
Page 137



MWS Sensor
Page 138

XC HYBRID	
Model	**Description**
XCH-600	6-station battery controller
XCH-600-SS	6-station battery controller, stainless steel
XCH-600-SSP	6-station controller, stainless steel, with mounted solar panel
XCH-1200	12-station battery controller
XCH-1200-SS	12-station battery controller, stainless steel
XCH-1200-SSP	12-station controller, stainless steel, with mounted solar panel

USER-INSTALLED OPTIONS	
Model	**Description**
DCREL2	Latching sensor relay switch for pumps
526500	120/24 VAC plug-in wall adapter
458200	DC-Latching Solenoid (for all Hunter Valves)

MAXIMUM WIRE RUNS	
Wire Size	**Max. Distance (ft.)**
18 AWG	550
16 AWG	870
14 AWG	1,380
12 AWG	2,200

CONTROLLER DECODERS & ACCESSORIES


Update
Settings
Read
Program
EZ-DT v010
Humcr
1640 Diamond Street
San Marcos, CA 92078
EZ-1
Single-Station
Decoder/Décodeur
à 1 Station
Input/Entrée
Red. Blue/Rouge. Bleu
Black/Noir

ICD

Hunter's premium two-wire decoders for long-distance, high-station-count ACC2 applications include two-way communications and integrated surge protection.

KEY BENEFITS

- ICD Decoders are compatible with ACC2 Decoder Controllers and legacy ACC-99D Decoder Controllers
- 1-, 2-, 4-, and 6-station versions provide maximum flexibility
- Sensor decoders allow flow and Clik sensor monitoring via the two-wire paths
- Field-programmable decoders accept station numbers directly, and do not require entering serial numbers into the control panel
  - Decoders can be programmed before installation at the controller interface
  - Wireless programming with ICD-HP allows for decoder programming or re-programming after installation to the two-wire path
- Integrated surge protection eliminates the need for extra surge protection devices
- Color-coded wiring connections simplify installation
- Industrial-grade DBRY-6 waterproof connectors included for two-wire path splices

OPERATING SPECIFICATIONS

- Maximum recommended distance, decoder to solenoid: 150'
- Maximum distance to decoder via two-wire path:
  - 14 AWG wire path: 10,000'
  - 12 AWG wire path: 15,000'
- Approvals: UL, cUL, FCC, CE, RCM
- Decoder rating: IP68 (submersible)
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- Wireless handheld ICD-HP Programmer; **see page 121**
- DECSTAKE10 Universal Decoder Stake Kit, 10-pack; **see page 124**

ICD-100, 200, ICD-SEN
Height: 3½"
Width: 1½"
Depth: ¾"

ICD-400, 600
Height: 3½"
Width: 1¾"
Depth: 1½"

DECODER MODELS

Model	Description
ICD-100	Single-station decoder with surge suppression and ground wire
ICD-200	2-station decoder with surge suppression and ground wire
ICD-400	4-station decoder with surge suppression and ground wire
ICD-600	6-station decoder with surge suppression and ground wire
ICD-SEN	2-input sensor decoder with surge suppression and ground wire

ID WIRE MODEL GUIDE

14 AWG Decoder Cable		12 AWG Long-Range, Heavy-Duty Decoder Cable	
ID1GRY	Gray jacket	ID2GRY	Gray jacket
ID1PUR	Purple jacket	ID2PUR	Purple jacket
ID1YLW	Yellow jacket	ID2YLW	Yellow jacket
ID1ORG	Orange jacket	ID2ORG	Orange jacket
ID1BLU	Blue jacket	ID2BLU	Blue jacket
ID1TAN	Tan jacket	ID2TAN	Tan jacket

ID WIRE MAXIMUM WIRE RUNS

ID 1 Wire	ID 2 Wire
5,000' with legacy DUAL systems 10,000' with ICD systems	7,500' with legacy DUAL systems 15,000' with ICD systems

Compatible with:

Waterproof Splice Kit
Page 125

ICD-HP PROGRAMMER

Gain wireless, handheld programming and diagnostic capabilities for Hunter ICD and legacy DUAL® Decoders.

KEY BENEFITS

- Program or re-program decoder stations, whether new or installed*
- Program any station numbers in any order, or skip stations for future expansion
- Simplifies setup and diagnostics for sensor decoders
- Sensor test functions for Clik and Flow sensors, plus built-in multimeter
- Communicates with decoder through plastic case: wireless electromagnetic induction saves waterproof connectors
- Compatible with Hunter ICD and legacy DUAL Decoders, as well as Pilot® Two-Way Modules
- USB powered for shop or office use; 4 AA batteries for field use
- All test leads and cables included in durable, foam-padded carrying case
- Turn decoder stations on and view solenoid status, current in milliamps, and more
- Waterproof programming cup
- Backlit adjustable display
- 6 operating languages

* **Note:** ICD-HP is not compatible with EZ-1 decoders

ELECTRICAL SPECIFICATIONS

- Power input: 4 AA batteries, or standard USB connector (included)
- Communications: wireless induction, range 1"
- Fused test leads for unpowered decoder functions

APPROVALS

- UL, cUL, FCC, CE, RCM

ICD-HP
Height: 8¼"
Width: 3⅞"
Depth: 2"

Packaged in an outdoor carrying case, this complete kit includes probes, induction cup, cable, USB power cable for bench use, and 4 AA batteries for fieldwork.

ICD-HP

ICD-HP	
Model	**Description**
ICD-HP	Wireless handheld decoder programmer, includes all test and power leads, programming cup, and rugged carrying case

EZ DECODER SYSTEM

Bring two-wire technology to more projects than ever before with the revolutionary, low-cost, and hassle-free EZ Decoder System for Pro-C®, HPC, ICC2, and HCC Controllers.

KEY BENEFITS

- Number of stations:
  - Pro-C/HPC Controllers: Up to 28, plus master valve
  - ICC2/HCC Controllers: Up to 54, plus master valve
- No special wire or connectors required
- No special grounding or surge arrestors required in-line to maximize time and money savings during installation
- Programmable decoders with no need to input individual serial numbers
- P/MV can activate via the two-wire path for distant master valves
- Permits hybrid operations of side-by-side conventional and decoder stations for added flexibility
- EZ-1 Decoders have built-in status LED for positive diagnostics

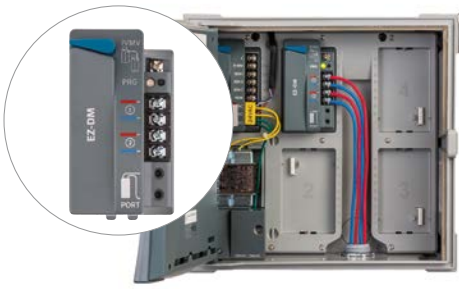
OPERATING SPECIFICATIONS

- Electrical output on two-wire path: 24 VAC, 50/60 Hz
- Two-wire paths to the field:
  - EZ-DM: 2
  - PC-DM: 1
- Wire paths possible over 3,000' (see Wiring Table below)
- Each EZ-1 decoder can activate two standard 24 VAC solenoids
- Operate any two decoders simultaneously for more efficient watering (ICC2 and HCC Controllers only)
- Approvals: UL, cUL, FCC, CE, RCM, ISED
- EZ-1 decoders are IP68 rated (submersible)
- Warranty period: 3 years

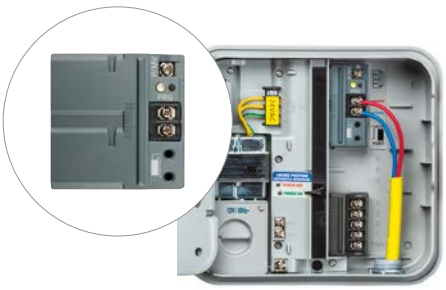
USER-INSTALLED OPTIONS

- Centralus™ with ICC2 Controller
- Hydrawise® with HPC and HCC Controllers
- Compatible with Waterproof Wire Connector; **see page 125**
- EZ-DT EZ Decoder Diagnostic Tool for wireless diagnostics with EZ-1 Decoders; **see page 123**
- DECSTAKE10 Universal Decoder Stake Kit, 10-pack; **see page 124**

Single-Station Decoder
Height: 2⅞"
Width: 1⅝"
Depth: ⅝"



Decoder Output Module: EZ-DM
Height: 4½"
Width: 2½"
Depth: 1⅝"



Decoder Output Module: PC-DM
Height: 3"
Width: 3"
Depth: 1¼"

WIRING TABLE

American Wire Gauge	Distance, single solenoid (ft.)	Distance, 2 solenoids per output
18 AWG	908	454
16 AWG	1,446	723
14 AWG	2,292	1,146
12 AWG	3,650	1,825

Note
Distances in the Wiring Table are calculated based on 60 Hz for American Wire Gauge, with a wire temperature of 120°F and a 10% safety factor.

DECODER MODELS

Model	Description
EZ-DM	Decoder output module for HCC and ICC2 Controllers
PC-DM	Decoder output module for HPC and Pro-C Controllers
EZ-1	Single-station decoder with status LED
EZ-DT	EZ Decoder Diagnostic Tool

Compatible with:

HCC Controller
Page 104

ICC2 Controller
Page 109

Pro-C Controller
Page 95

EZ-DT

Simplify maintenance of EZ Decoder Systems with the handheld, wireless EZ-DT Diagnostic Tool.

KEY BENEFITS

- Wireless, handheld diagnostic tool for EZ-1 Decoders
- Detect faults and perform electrical troubleshooting in the field without uninstalling decoders
- Quickly read decoder status, station address, current draw, and two-wire voltage to simplify maintenance
- Program decoder station address via wired connection to speed up installation and save time on-site
- Update controller facepack or decoder module firmware via ribbon cable connection for flexibility when updating systems
- Communicate in your preferred language using the multilingual user interface
- Work reliably and efficiently on the go with power supplied by 4 AAA batteries

OPERATING SPECIFICATIONS

- Power input: 4 x AAA batteries (included)
- Communications: Wireless induction, 1" range from decoder to EZ-DT
- 1.8" full-color, backlit TFT display

USER-INSTALLED OPTIONS

- Centralus™ with ICC2 Controller
- Hydrawise® with HPC and HCC Controllers
- Pro-C® Controller
- DECSTAKE10 Universal Decoder Stake Kit, 10-pack; **see page 124**

EZ-DT Diagnostic Tool
Height: 7¾”
Width: 2¼”
Depth: ⅞”

EZ-DT DIAGNOSTIC TOOL

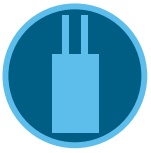
DECODER MODELS

Model	Description
EZ-DM	Decoder output module for HCC and ICC2 Controllers
PC-DM	Decoder output module for HPC and Pro-C Controllers
EZ-1	Single-station decoder with status LED
EZ-DT	EZ-DT Diagnostic Tool

Compatible with:

HCC Controller
Page 104

ICC2 Controller
Page 109



EZ Decoder System
Page 122

UNIVERSAL DECODER STAKE KIT

The Universal Decoder Stake Kit raises the decoder off the ground to keep two-wire installations organized, clean, and easily accessible during routine maintenance.

KEY BENEFITS

- Raises decoder off the ground, so contractors don't have to dig the device out of the mud
- Holds Hunter decoders in end-up position for convenient access and wireless programming without removal
- Works with all Hunter decoders and most other brands, so contractors only need to stock one item
- Zip ties conveniently included to secure the stake during installation
- Sturdy construction ensures the stake won't break or bend when hammered into the dirt
- Made primarily from recycled materials with minimal packaging to prevent waste and minimize carbon footprint

Universal Decoder Stake Kit
Height: 10¾"

OPERATING SPECIFICATIONS

- Fits all Hunter decoders and most other brands
- Zip ties included
- Made of recycled materials

UNIVERSAL DECODER STAKE KIT

UNIVERSAL DECODER STAKE KIT	
Model	**Description**
DECSTAKE10	Universal Decoder Stakes (10 per carton), zip ties included

ANTENNA EXTENSION KITS

Use these flexible Antenna Extension Kits when buildings, terrain, or other obstructions prevent reliable wireless communications.

KEY BENEFITS

- Universal Antenna Extension Kit option forr Wi-Fi and cellular communications (ANT-EXT-KIT)
  - Wi-Fi: HCC Controller, A2C-WIFI
  - Cell: A2C-LTE
- For ROAM XL Remotes, extend the receiver antenna up to 25' with a convenient extension cable (ROAMXL-EXT)
- Simplify Plastic Pedestal installations with a flexible pedestal lid mounting option (PED-LID-ANT-BRKT)

ROAMXL-EXT

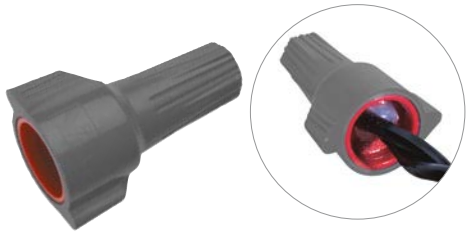
ANTENNA EXTENSION OPTIONS	
Model	**Description**
ANT-EXT-KIT	Universal Antenna Extension Kit for Wi-Fi and cellular communication hardware (9' cable and mounting hardware)
ROAMXL-EXT	ROAM XL Antenna Extension Kit (25' cable and mounting hardware)
PED-LID-ANT-BRKT	Plastic Pedestal Antenna Mount

WATERPROOF WIRE CONNECTOR

Use this approved waterproof connector for EZ Decoders and all above-grade solenoid and sensor wiring connections.

KEY BENEFITS

- 100% silicone-based sealant protects against moisture and corrosion
- Designed as a single-use only connection
- UL Listed for 600 V and 486G for use in damp/wet locations or above-grade applications
- Easy to apply, pre-filled twist-on wire connectors
- Eliminates the need for heat-shrink or excessive taping
- Not for use in continual submersion applications, use DBRY-6
- Approvals: UL, cUL, FCC, CE, RCM, RoHS, ISED



Waterproof Wire Connector
Height: 1½"
Minimum wire: 3 #18 AWG
Maximum wire: 2 #10 AWG with 1 #14 AWG

WIRE CONNECTOR

Model	Description
WC100	Bulk 100 connectors in canister

WC100 WIRE CONNECTOR

WATERPROOF SPLICE KIT

Use this approved splice kit for all direct-burial two-wire ICD and legacy DUAL® Decoder wiring connections, as well as Pilot® Two-Way Modules.

KEY BENEFITS

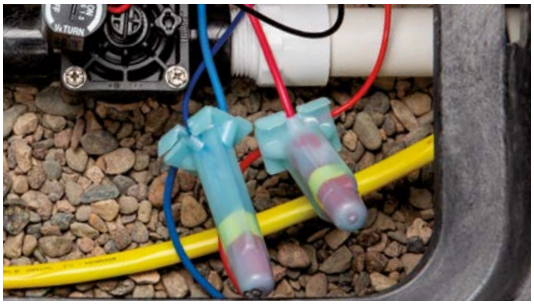
- UL Listed for 600 V and 486D for use in damp/wet location or direct-burial applications
- Waterproof, corrosion-proof, UV-rated, and impact resistant
- Snap-fit lid provides strain relief and three-wire exits
- Pre-filled with silicone that never hardens
- Two part system includes red/yellow winged wire connector and silicone-filled tube
- Compatible with EZ Decoder connections, but not a requirement
- Approvals: UL, cUL, FCC, CE, RCM, RoHS, ISED

Waterproof Splice Kit
Height: 3¾"
Minimum wire: 2-7 #18 AWG
Maximum wire: 2-3 #10 AWG

DBRY-6 SPLICE KIT

Model	Description
DBRY100	Bulk 100 connectors (100 tubes loose in box, plus inner box with 100 wire nuts)
DBRY2X25	25 x 2-packs (2 tubes and 2 wire nuts in a plastic bag, x 25 units)

DBRY-6 WATERPROOF SPLICE KIT



ROAM REMOTE

Enable convenient controller management from a distance with this handheld wireless remote.

KEY BENEFITS

- Compatibility with Hunter X-Core®, X2™, Pro-C®, HPC, ICC2, HCC, ACC2, and legacy ACC2 and I-Core® Controllers to enable remote management for projects of any size
- Manually start individual stations or programs for quick maintenance checks and troubleshooting
- 128 programmable addresses available prevents cross-communication between multiple remotes within close proximity of each other
- Programmable run times from 1 to 90 minutes, which will not overwrite regular automatic programming
- Manual operation up to 240 stations provides flexibility for larger projects

OPERATING SPECIFICATIONS

- Range: 1,000' from transmitter to receiver
- Transmitter power source: 4 x AAA batteries included
- Receiver power source: 24 VAC, 0.010 A
- System operating frequency: 433 MHz
- SmartPort® installation: maximum 50' from controller
- FCC and CE approved for use in the United States and internationally
- Warranty period: 2 years

ROAM Transmitter and Receiver
Height: 7"
Width: 2¼"
Depth: 1¼"

SmartPort
Hunter remotes require the installation of a SmartPort Wiring Harness. The SmartPort is a connector that is wired to the terminals on the controller, and allows quick connection to any Hunter receiver.

Wall-Mount Bracket for SmartPort
P/N 258200

ROAM	
Model	**Description**
ROAM-KIT	Transmitter, receiver, SmartPort Wiring Harness, and 4 AAA batteries
ROAM-TR	Transmitter unit and 4 AAA batteries included
ROAM-R	Receiver unit

USER-INSTALLED OPTIONS	
Model	**Description**
ROAM-WH	SmartPort Wiring Harness (length: 6')
ROAM-SCWH	Shielded SmartPort Wiring Harness (length: 25')
258200	Wall-mount bracket for SmartPort

ROAM XL REMOTE

Add professional, license-free remote control to projects of any size with this long-range remote.

KEY BENEFITS

- Compatibility with Hunter X-Core®, X2™, Pro-C®, HPC, ICC2, HCC, ACC2, and legacy ACC2 and I-Core® Controllers to enable remote management for projects of any size
- Manually start individual stations or programs for quick maintenance checks and troubleshooting
- 128 programmable addresses available prevents cross-communication between multiple remotes within close proximity of each other
- Programmable run times from 1 to 90 minutes, which will not overwrite regular automatic programming
- Manual operation up to 240 stations provides flexibility for larger projects
- Rugged and water-resistant transmitter includes a large LCD display with simple push-button operation and a battery-life indicator

OPERATING SPECIFICATIONS

- Range: 2 miles (line of sight) from transmitter to receiver
- Transmitter power source: 4 x AAA batteries included
- Receiver power source: 24 VAC, 0.010 A
- System operating frequency: 27 MHz
- SmartPort® installation: maximum 50' from controller
- FCC approved (not available in EU and some other countries, check local regulations)
- Warranty period: 3 years

ROAM XL Transmitter and Receiver
(without antenna)
Height: 6¼"
Width: 3"
Depth: 1¼"

SmartPort
Hunter remotes require the installation of a SmartPort Wiring Harness. The SmartPort is a connector that is wired to the terminals on the controller, and allows quick connection to any Hunter receiver.

Wall-Mount Bracket for SmartPort
P/N 258200

ROAM XL	
Model	**Description**
ROAMXL-KIT	Transmitter, receiver, SmartPort Wiring Harness, 4 AAA batteries and plastic carrying case included
ROAMXL-TR	Handheld transmitter and 4 AAA batteries included
ROAMXL-R	Receiver unit (SmartPort Wiring Harness included)

USER-INSTALLED OPTIONS	
Model	**Description**
258200	Wall-mount bracket for SmartPort
ROAM-WH	SmartPort Wiring Harness (length: 6')
ROAM-SCWH	Shielded SmartPort Wiring Harness (length: 25')
ROAMXL-EXT	ROAM XL Antenna Extension Kit (25' cable and mounting hardware included)

PSR

This reliable and economical Pump Start Relay family is perfect for systems that require pump activation.

KEY BENEFITS

- A pump start relay family for a variety of voltage and power requirements.
- 24 VAC flying leads make connection to the controller quick and easy
- Suitable for conventional wiring or two-wire decoder activation, allows flexible installation options

OPERATING SPECIFICATIONS

- Recommended installation: Minimum 15' from irrigation controller; see chart on **page 199** for maximum distances
- Approvals: IP44 (outdoor), UL, cUL, FCC, CE, RCM , ISED
- Warranty period: 2 years

Pump Start Relay
Height: 6½"
Width: 7½"
Depth: 4½"

PUMP START RELAY

Model	Description
PSR-22	Double-pole/single-throw pump start relay for 120 VAC pumps up to 2 hp or 230 VAC pumps up to 3 hp
PSR-52	Double-pole/single-throw pump start relay for 120 VAC pumps up to 3 hp or 230 VAC pumps up to 7.5 hp
PSR-53	Triple-pole/single-throw pump start relay for 120 VAC pumps up to 3 hp, 230 VAC pumps up to 7.5 hp, or 230 VAC pumps up to 10 hp (3-phase)

PUMP START RELAY ELECTRICAL SPECIFICATIONS

Model	Single-Phase		3-Phase**	Max. Full Load	Max. Resistive	Coil VA				Coil VA			
	HP at 120 VAC	HP at 230 VAC	HP at 230 VAC	AMPS	AMPS	INRUSH		AMPS		HOLDING		AMPS	
						50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
PSR-22	2*	3*	N/A	30	40	33	30	1.38	1.25	8	6.5	0.33	0.27
PSR-52	3	7.5	N/A	40	50	65	60	2.71	2.50	7.5	5	0.31	0.21
PSR-53	3	7.5	10	40	50	65	60	2.71	2.50	7.5	5	0.31	0.21

Note: *Approximate power
** 3-phase power at 230 VAC is not commonly available in some international markets. Check local electrical codes for compatibility.

PSR-B

For distant pump starts that require more power, choose the PSR-B.

KEY BENEFITS

- Provides a solution for irrigation controller and pump start relay installations that have insufficient power to activate the pump
- Includes solid state relay and local 24 VAC transformer for simple PSR activation

OPERATING SPECIFICATIONS

- Primary AC power input: 120/230 VAC
- Secondary AC power output: 24 VAC, 1.6 A
- Relay rating: Double-pole, double-throw solid state (10 A)
- Approvals: IP54 (outdoor), UL, cUL, FCC, CE, RCM, ISED
- Warranty period: 2 years

PSR-B Pump Start Relay Booster
Height: 8⅝"
Width: 7"
Depth: 3¾"

PUMP START RELAY BOOSTER

Model	Description
PSR-B	Use to boost controller output power available to operate larger pump start relays if necessary

CONNECT YOUR WAY

Choose from a range of Wi-Fi, LAN (Ethernet), and cellular connection accessories to enable remote irrigation management on standalone controllers anytime, anywhere.

Controller

Compatible Accessories

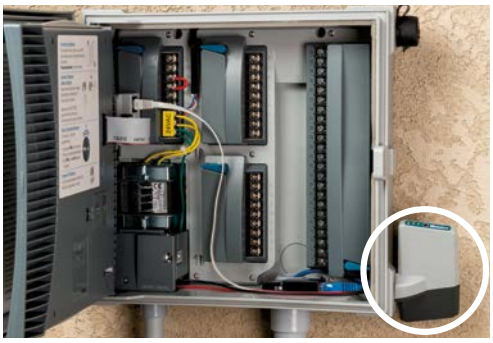
X2

X2 Controller with WAND Module installed

WAND
Wi-Fi accessory for X2 Controllers, managed by Hydrawise Software

page 101

ICC2



ICC2 Controller with LANKIT Module installed

WIFIKIT
Wi-Fi accessory for ICC2 Controllers, managed by Centralus Software

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LANKIT
Ethernet accessory for ICC2 Controllers, managed by Centralus Software

page 108

CELLKIT
Cellular accessory for ICC2 Controllers, managed by Centralus Software

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ACC2

ACC2 Controller with A2C-LTE Module installed

A2C-WIFI
Wi-Fi accessory for ACC2 Controllers, managed by Centralus Software

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A2C-LAN
Ethernet accessory for ACC2 Controllers, managed by Centralus Software

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A2C-LTE
Cellular accessory for ACC2 Controllers, managed by Centralus Software

page 111

SENSORS


Hunter®

SENSOR AND CONTROLLER COMPATIBILITY CHART

AC CONTROLLERS	SENSOR INPUTS	RAIN	SMART WEATHER ADJUST	FLOW	HIGH-FLOW SHUTOFF
X-CORE page 93	1	Mini-Clik, Rain-Clik	Solar Sync	N/A	Flow-Clik
X2 page 94	1	Mini-Clik, Rain-Clik	Hydrawise® Software	N/A	Flow-Clik
PRO-C page 95	1	Mini-Clik, Rain-Clik	Solar Sync	N/A	Flow-Clik
HC page 100	2	Mini-Clik, Rain-Clik	Hydrawise Software	HC Flow Meter	HC Flow Meter
PRO-HC page 102	2	Mini-Clik, Rain-Clik	Hydrawise Software	HC Flow Meter	HC Flow Meter
HPC page 103	1	Mini-Clik, Rain-Clik	Hydrawise Software	HC Flow Meter	HC Flow Meter
HCC page 104	2	Mini-Clik, Rain-Clik	Hydrawise Software	HC Flow Meter	HC Flow Meter
ICC2 page 109	1	Mini-Clik, Rain-Clik	Centralus Software, Solar Sync	N/A	Flow-Clik
ACC2 page 110	1 Solar Sync, 3 Clik, 6 Flow	Mini-Clik, Rain-Clik	Centralus Software, Solar Sync	Flow-Sync, WFS, HC Flow Meter, Other (K-Factor or Scaled Pulse)	Built-in Real-Time Flow Monitoring
BATTERY-OPERATED CONTROLLERS					
NODE page 115	1	Mini-Clik, Rain-Clik (wired)	N/A	N/A	N/A
NODE-BT page 116	2	Mini-Clik, Rain-Clik (wired)	N/A	N/A	N/A
XC HYBRID page 117	1	Mini-Clik, Rain-Clik (wired)	N/A	N/A	N/A

SOIL MOISTURE	FREEZE	WIND
Soil-Clik	Freeze-Clik, WRF-Clik	Wind-Clik, MWS
Soil-Clik	Freeze-Clik, WRF-Clik, Online Forecast Option	Wind-Clik, MWS, Online Forecast Option
Soil-Clik	Freeze-Clik, WRF-Clik	Wind-Clik, MWS
Soil-Clik	Freeze-Clik, WRF-Clik, Online Forecast Option	Wind-Clik, MWS Online Forecast Option
Soil-Clik	Freeze-Clik, WRF-Clik, Online Forecast Option	Wind-Clik, MWS, Online Forecast Option
Soil-Clik	Freeze-Clik, WRF-Clik, Online Forecast Option	Wind-Clik, MWS, Online Forecast Option
Soil-Clik	Freeze-Clik, WRF-Clik, Online Forecast Option	Wind-Clik, MWS, Online Forecast Option
Soil-Clik	Freeze-Clik, WRF-Clik, Online Forecast Option	Wind-Clik, MWS
Soil-Clik	Freeze-Clik, WRF-Clik, Online Forecast Option	Wind-Clik, MWS
N/A	Freeze-Clik	N/A
SC-Probe	Freeze-Clik	N/A
N/A	Freeze-Clik	N/A

Rain-Clik®

Mini-Clik®

Soil-Clik®

Freeze-Clik®

Wind-Clik®

MWS

Solar Sync®

Flow-Sync®

HC Flow Meter

Available wireless!

WFS

Flow-Clik®

SENSORS

RAIN-CLIK®

Sensor: **Rain, Freeze**

To prevent water waste, built-in Quick Response® Technology instantly shuts down irrigation as soon as it starts raining.

KEY BENEFITS

- Quick Response Technology triggers instant rain shutoff
- Freeze sensing model halts system operation at 37°F
- Wireless sensor kit simplifies installation
- Maintenance-free design with integrated battery for wireless models
- Adjustable vent ring allows for shorter or longer reset period
- Includes gutter bracket and wall mount with wireless models
- Compatible with most normally open or normally closed irrigation controllers

OPERATING SPECIFICATIONS

- Quick Response Technology:
  - Time to turn off irrigation system: approximately 2 to 5 minutes for Quick Response
  - Time to reset Quick Response: approximately 4 hours under dry, sunny conditions
  - Time to reset when fully wet: approximately 3 days under dry, sunny conditions
- All models switch rating (24 VAC): 3 A
- Wired models include 25' of 20 AWG sheathed, UL-approved wire
- Wireless model operating frequency: 433 MHz
- Wireless model range is 800' line of sight from sensor to receiver
- Multiple wireless receivers can be operated from a single wireless sensor
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

OPERATING SPECIFICATIONS

- Optional Gutter Mount for wired models (included with WR-CLIK and WRF-CLIK)
- Vandal-resistant Wireless Sensor Guard for flat surfaces or pole mounting (order sensor separately)
- Vandal-resistant Wireless Receiver Guard for pedestal mounting (order receiver separately)

Wired Rain-Clik Sensor
(with mounting arm)
Height: 2½"
Length: 7"
Width: 1"

SGM
optional gutter mount
Height: ½"
Length: 3"
Width: 1¼"

Wireless Rain-Clik Sensor
(with mounting arm)
Height: 3"
Length: 8"
Width: 1"

Wireless Receiver
(with wall mounting hardware)
Height: 3¼"
Length: 4"
Width: 1½"

Wireless Sensor Guard
(with mounting hardware)
Height: 2¾"
Length: 3¾"
Width: 1¼"

Wireless Receiver Guard
(with mounting hardware)
Height: 5"
Length: 4"
Width: 1¼"

RAIN-CLIK	
Model	**Description**
RAIN-CLIK	Wired Rain-Clik Sensor
RAIN-CLIK-NO	Wired Rain-Clik Sensor, normally open switch
RFC	Wired Rain/Freeze-Clik Sensor
WR-CLIK	Wireless Rain-Clik Sensor, Receiver, and Gutter Mount
WRF-CLIK	Wireless Rain/Freeze-Clik Sensor, Receiver, and Gutter Mount

Compatible with:

Waterproof Wire Connector
Page 125

MINI-CLIK®

Sensor: **Rain, Freeze**

This sensor halts scheduled irrigation when it detects a preset level of rain has fallen to stop water waste.

KEY BENEFITS

- Shuts off irrigation automatically when the sensor detects rainfall from ⅛" to ¾"
- Debris tolerant for reliable operation and no unnecessary shutdowns
- Compatible with most normally open or normally closed irrigation controllers

OPERATING SPECIFICATIONS

- Switch rating (24 VAC): 3 A
- Includes 25' of 20 AWG sheathed, UL-approved wire
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- Optional Gutter Mount (P/N SGM)

Mini-Clik Sensor
(with mounting arm)
Height: 2"
Length: 6"
Width: 1"

Mini-Clik Sensor
(with stainless steel enclosure)
Height: 5½"
Length: 3"
Width: 4'

MINI-CLIK	
Model	**Description**
MINI-CLIK	Mini-Clik Sensor
MINI-CLIK-NO	Mini-Clik Sensor, normally open switch
MINI-CLIK-C	Mini-Clik Sensor, conduit mount
SG-MC	Mini-Clik Sensor in a stainless steel sensor enclosure

Compatible with:

Waterproof Wire Connector
Page 125

SOIL-CLIK®

Sensor: **Soil Moisture**

This sensor prevents water waste by measuring soil moisture and shutting off irrigation when a preset level is reached.

KEY BENEFITS

- View current soil moisture level and status at a glance
- One-touch override allows soil moisture bypass for special conditions
- Low-voltage outdoor enclosure powered by host controller
- Connect to sensor inputs, or use to interrupt common wires in virtually any 24 VAC irrigation system
- Use with Solar Sync® Sensor for maximum water savings; **see page 139**

OPERATING SPECIFICATIONS

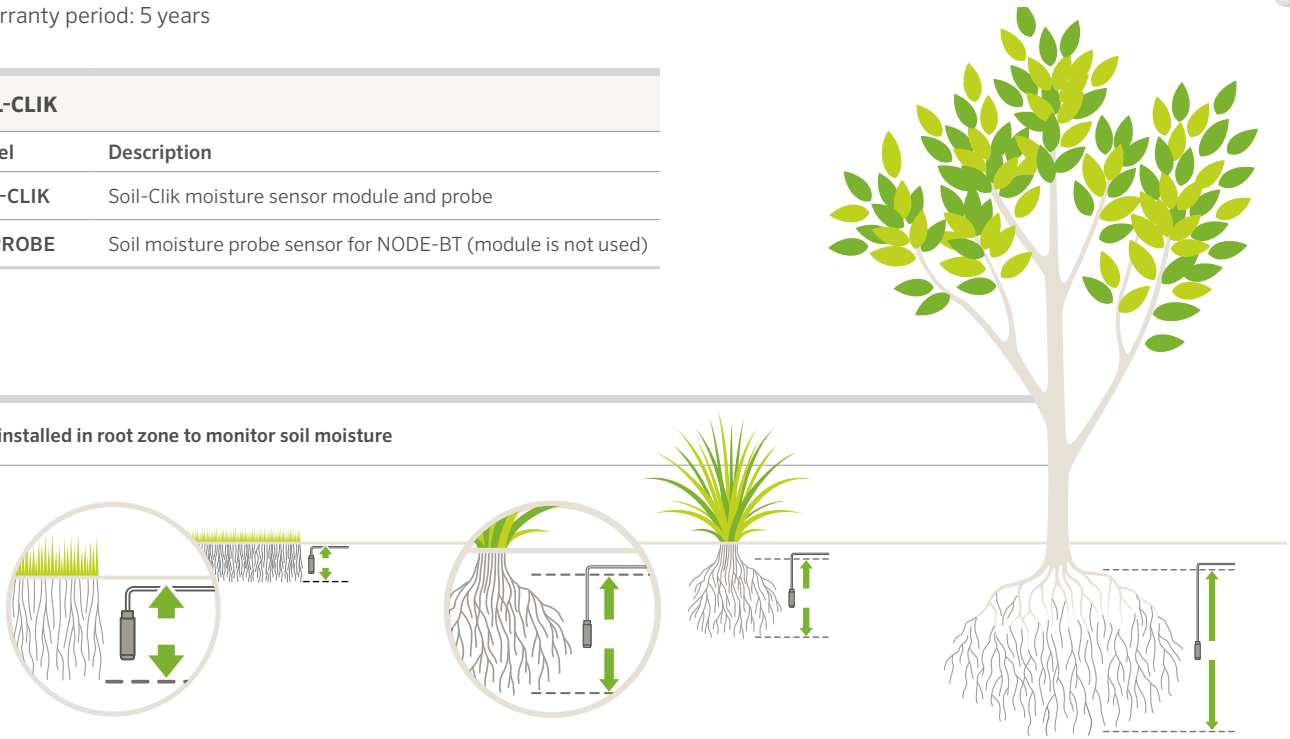
- Switch rating (24 VAC): 5 A
- Input power (24 VAC): 100 mA
- Output power: Normally closed, dry-contact closure
- 6' maximum distance from Soil-Clik module to controller
- 1,000' maximum distance from Soil-Clik module to sensor probe for AC installations
- 100' maximum distance for NODE-BT installations
- Sensor probe includes 30" of direct-burial wire
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

Soil-Clik Module
Height: 4½"
Length: 3½"
Width: 1¼"

Soil-Clik Probe
Height: 3¼"
Diameter: 1"

SOIL-CLIK	
Model	**Description**
SOIL-CLIK	Soil-Clik moisture sensor module and probe
SC-PROBE	Soil moisture probe sensor for NODE-BT (module is not used)

Probe installed in root zone to monitor soil moisture



In turf applications, the probe should be placed in the root zone, approximately 6" deep (adjust for actual turf conditions).

For shrubs or trees, select a deeper depth that matches the root zone. For new plantings, choose a spot halfway down the root ball, adjacent to native soil.

Compatible with:

Waterproof Wire Connector
Page 125

NODE-BT Controller
Page 116

FREEZE-CLIK®

Sensor: **Freeze**

Use this sensor to stop sprinklers from running during a freeze event and protect landscapes, walkways, and roadways from icy conditions.

KEY BENEFITS

- Automatically shuts off irrigation system when temperatures fall below 37°F
- Installs easily on automatic irrigation systems with no adjustments needed
- Use with other sensors to enhance overall efficiency of irrigation systems

Note: Not intended for agricultural applications

OPERATING SPECIFICATIONS

- Switch rating (24 VAC): 5 A
- Includes 25' of 20 AWG sheathed, two-conductor, UL-approved wire
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

FREEZE-CLIK	
Model	**Description**
FREEZE-CLIK	Wired freeze sensor

FREEZE-CLIK
Height: 2"
Length: 6"
Width: 1½"

Compatible with:

Waterproof Wire Connector
Page 125

WIND-CLIK®

Sensor: **Wind**

This sensor keeps water coverage efficient and pedestrian paths and roadways safe by shutting down irrigation when wind speeds increase.

KEY BENEFITS

- Shuts off irrigation when winds are high
- Works well with fountains to eliminate overspray in windy conditions
- Installs easily on automatic irrigation systems with quick adjustments
- Compatible with most normally open or normally closed irrigation controllers

OPERATING SPECIFICATIONS

- Switch rating (24 VAC): 5 A maximum
- Wind vane diameter: 5"
- Reset speed: 8 to 24 mph
- Mounts: Slip fits over 2" PVC pipe or attaches to ½" conduit with adapter (included)
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

WIND-CLIK	
Model	**Description**
WIND-CLIK	Wired wind sensor

WIND-CLIK
Height: 4"
Wind vane diameter: 5"

Compatible with:

Waterproof Wire Connector
Page 125

MWS

Sensor: **Wind, Rain, Freeze**

This all-in-one wind, rain, and freeze sensor prevents water waste when any sensor triggers a stop to the system.

KEY BENEFITS

- Compact sensor with built-in wind, rain, and freeze sensors
- Installs easily on automatic irrigation systems with limited adjustment
- Set wind actuation speed shutdown from 12 to 35 mph
- Set system shutdown from ⅛" to ¾" of rainfall
- Automatically shuts off system when temperatures fall below 37°F
- Mounts: Slip fits over 2" PVC pipe or attaches to ½" conduit with adapter (included)

OPERATING SPECIFICATIONS

- Switch rating (24 VAC): 5 A maximum
- Wind vane diameter: 5"
- Reset speed: 8 to 24 mph
- Includes 25' of 20 AWG sheathed, two-conductor, UL-approved wire
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

MWS
Height: 8"
Wind vane diameter: 5"

MWS-FR
Height: 8"
Wind vane diameter: 5"

MWS	
Model	**Description**
MWS	Weather station combines wind and rain sensors
MWS-FR	Weather station combines wind and rain sensors with a freeze sensor

Compatible with:

Waterproof Wire Connector
Page 125

SOLAR SYNC®

Sensor: **ET, Rain, Freeze**

This sensor automatically adjusts controller run times daily based on local climate conditions to reduce water usage and improve plant health.

KEY BENEFITS

- Automatically adjusts irrigation run times based on weather conditions using on-site solar radiation and air temperature
- Quick Response® Technology triggers instant rain shutoff
- Freeze sensing halts system operation at 37°F
- Wireless sensor kit simplifies installation
- Maintenance-free design with integrated battery for wireless models
- Adjustable vent ring allows for shorter or longer reset period
- Use with X-Core, Pro-C, ICC2, ACC2, and legacy ACC and I-Core® Controllers
- Manage remotely with Centralus™ Software for ICC2 and ACC2 installations

OPERATING SPECIFICATIONS

- Solar Sync Technology:
  - Adjusts run times daily 3 minutes before midnight using the last 3 days of ET (evapotranspiration) data
  - See calibration table on **page 201**
- Quick Response Technology:
  - Time to turn off irrigation system: approximately 2 to 5 minutes for Quick Response
  - Time to reset Quick Response: approximately 4 hours under dry, sunny conditions
  - Time to reset when fully wet: approximately 3 days under dry, sunny conditions
- All models switch rating (24 VAC): 3 A
- Wired models include 25' of 20 AWG sheathed, UL-approved wire
- Wireless model operating frequency: 433 MHz
- Wireless model range is 800' line of sight from sensor to receiver
- Multiple wireless receivers can be operated from a single wireless sensor
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- Vandal-resistant Wireless Sensor Guard for flat surfaces or pole mounting (order sensor separately)
- Vandal-resistant Wireless Receiver Guard for pedestal mounting (order receiver separately)

SOLAR SYNC	
Model	**Description**
SOLAR-SYNC-SEN	Wired Solar Sync Sensor and Gutter Mount
WSS-SEN	Wireless Solar Sync Sensor, Receiver, and Gutter Mount

Wired Solar Sync Sensor
(with mounting arm)
Height: 3"
Length: 8½"
Width: 1"

Wireless Solar Sync Sensor
Height: 4½"
Length: 8½"
Width: 1"

Wireless Solar Sync Receiver
(with wall-mounting kit)
Height: 5½"
Length: 1½"
Width: 1½"

Wireless Sensor Guard
(with mounting hardware)
Height: 2¾"
Length: 3¾"
Width: 1¼"

Wireless Receiver Guard
(with mounting hardware)
Height: 5"
Length: 4"
Width: 1¼"

Compatible with:

Centralus Software
Page 108

Waterproof Wire Connector
Page 125

EPA WaterSense Approved
Recognized as a responsible water-saving tool by the U.S. Environmental Protection Agency

FLOW-SYNC®

Sensor: **Flow**

KEY BENEFITS

- Simple-insertion flow sensor for metering and reacting to real-time flow conditions
- Provides station-level flow monitoring for reaction to high- or low-flow conditions, helping to protect against flood damage and erosion
- Compatible with Hunter ACC2 and legacy ACC and I-Core® Controllers, as well as ICD-SEN Sensor Decoders, for installation flexibility in a variety of settings
- Easy connection up to 1,000' from controller or sensor decoder
- Sensor is pre-calibrated for K-factor and Offset based on pipe size, allowing for quick setup and programming within the controller

OPERATING SPECIFICATIONS

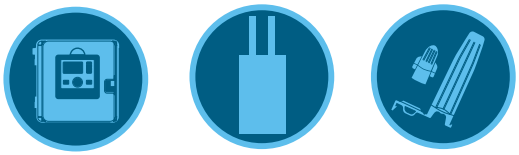
- Recommended pressure range: 0 to 220 PSI
- Pressure loss: < 1 PSI
- Sensor wiring: 2 x direct burial, 18 AWG or greater, color-coded or marked for polarity, up to 1,000' from the controller
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- FCT tee fittings for pipe installation

Impeller-type flow sensor, requires FCT fitting for pipe installation (order separately)

Compatible with:



ACC2 Controllers
Page 110

ICD-SEN Decoder
Page 120

Waterproof Splice Kit
Page 125

FLOW-SYNC	
Model	**Description**
HFS	Hunter Flow-Sync Sensor for use with ACC2 and legacy ACC and I-Core Controllers; sensor requires FCT fitting for pipe installation

REQUIRED USER-INSTALLED OPTION (SPECIFY SEPARATELY)	
Model	**Description**
FCT-100	1" Schedule 40 sensor receptacle tee
FCT-150	1½" Schedule 40 sensor receptacle tee
FCT-158	1½" Schedule 80 sensor receptacle tee
FCT-200	2" Schedule 40 sensor receptacle tee
FCT-208	2" Schedule 80 sensor receptacle tee
FCT-300	3" Schedule 40 sensor receptacle tee
FCT-308	3" Schedule 80 sensor receptacle tee
FCT-400	4" Schedule 40 sensor receptacle tee

FLOW RANGE		
Pipe Diameter	**Operating Range (GPM)**	
	Minimum	Suggested Maximum*
1"	2	17
1½"	5	35
2"	10	55
3"	28	120
4"	34	200

Note:

* Good design practice dictates the maximum flow not to exceed 5'/sec. Suggested maximum flow is based upon Class 200 IPS plastic pipe.

HC FLOW METER

Sensor: **Flow**

Detect, monitor, and report critical flow zone data via wired or wireless connection with this robust and simple-to-install flow sensor.

KEY BENEFITS

- Compatible with Hydrawise® enabled HC, Pro-HC, HPC, and HCC Controllers
- Provides station-level flow rates and totals
- Sends automatic alerts in the event of high-flow, low-flow, or unscheduled flow conditions
- Flow reports within Hydrawise Software can display total system water use and individual station water use for accurate water budgeting and tracking
- Robust brass construction with union fittings for easy installation and removal for winterization
- Analog dial on the face of the meter displays daily flow totals and a leak detector

OPERATING SPECIFICATIONS

- Scaled pulse output is pre-calibrated from the factory based on the size of the meter
- When wired directly to the controller, the meter must be installed with shielded, minimum 18 AWG wire, up to 1,000' from the controller
- Accuracy: ± 2% of reading at recommended flow
- HC Flow Meter pressure loss chart; **see page 197**
- Warranty period: 2 years

WIRELESS HC FLOW METER BENEFITS

- Add wireless communication to any HC Flow Meter (sensor sold separately)
- Send flow data wirelessly from the sensor to the controller, without the need to run wire or dig trenches

HC FLOW METER SPECIFICATIONS

	HC-075-FLOW (¾")	HC-100-FLOW (1")	HC-150-FLOW (1½")	HC-200-FLOW (2")
Minimum flow (GPM)	0.22	0.3	0.88	1.98
Maximum recommended flow (GPM)	15	30	66	105
Maximum flow rate (GPM)	21	34	88	132
Dial reading (U.S. gal)	1 pulse per 0.1 U.S. gal	1 pulse per 1 U.S. gal	1 pulse per 1 U.S. gal	1 pulse per 1 U.S. gal

WIRELESS HC FLOW METER OPERATING SPECIFICATIONS

- 500' range (line of sight) from transmitter to receiver
- Communication frequency: 900 MHz for use in North America
- Transmitter power supply: 3 AA batteries
- Receiver power supply: 24 VAC from host controller
- Warranty period: 2 years

HC-075-FLOW
(¾" male thread)
Height: 3⅛"
Length: 9⅛"
Depth: 3⅛"

HC-100-FLOW
(1" male thread)
Height: 3⅝"
Length: 10¼"
Depth: 3⅛"

HC-150-FLOW
(1½" male thread)
Height: 6¼"
Length: 16⅞"
Depth: 4⅞"

HC-200-FLOW
(2" male thread)
Height: 6¼"
Length: 17½"
Depth: 4⅞"

SENSORS

WIRELESS HC FLOW METER

WIRELESS HC FLOW METER MODELS

Model	Description
W-HC-FLOW	Wireless HC Flow Meter Kit, includes transmitter and receiver (domestic 900 MHz)
W-HC-FLOW-TR	Wireless HC Flow Meter, transmitter only (domestic 900 MHz)
W-HC-FLOW-R	Wireless HC Flow Meter, receiver only (domestic 900 MHz)
HC-075-FLOW	HC Flow Meter with ¾" male thread, U.S. gallons
HC-100-FLOW	HC Flow Meter with 1" male thread, U.S. gallons
HC-150-FLOW	HC Flow Meter with 1½" male thread, U.S. gallons
HC-200-FLOW	HC Flow Meter with 2" male thread, U.S. gallons

WFS

Sensor: **Flow**

Use this sensor to retrofit flow to existing systems that cross under asphalt, concrete, or other hardscapes.

KEY BENEFITS

- Wireless flow sensor saves time, materials, and labor
- Simple-insertion flow sensor for monitoring and reacting to real-time flow conditions
- Provides station-level flow monitoring for reaction to high- or low-flow conditions, helping to protect against waste and damage from leaks
- Compatible with Hunter ACC2 and legacy ACC and I-Core® Controllers for installation flexibility in a variety of settings
- Sensor is pre-calibrated for K-factor and Offset based on pipe size, allowing for quick setup and programming within the controller
- Multi-color LED on the receiver indicates proper communication to the transmitter, as well as remaining battery life

OPERATING SPECIFICATIONS

- Maximum distance sensor to receiver: 500'
- Recommended pressure range: 0 to 220 PSI
- Pressure loss: < 1 PSI
- Approvals: FCC and CE approved
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- FCT tee fittings for pipe installation

WFS Transmitter
Height: 5½"
Diameter: 4¼"

WFS Sensor
Height: 3¾"
Diameter: 2¼"

WFS Receiver
Height: 5"
Width: 3"
Depth: 1½"

Compatible with:

ACC2 Controllers
Page 110

WIRELESS FLOW SENSOR	
Model	**Description**
WFS	Wireless Flow Sensor Kit – Domestic 900 MHz
WFS-T	Wireless Flow Sensor Kit Transmitter Only – Domestic 900 MHz
WFS-R	Wireless Flow Sensor Kit Receiver Only – Domestic 900 MHz
WFS-ALKBATT	Wireless Flow Sensor Alkaline Battery with Cage

REQUIRED USER-INSTALLED OPTION (SPECIFY SEPARATELY)	
Model	**Description**
FCT-100	1" Schedule 40 sensor (white) receptacle tee
FCT-150	1½" Schedule 40 sensor (white) receptacle tee
FCT-158	1½" Schedule 80 sensor (gray) receptacle tee
FCT-200	2" Schedule 40 sensor (white) receptacle tee
FCT-208	2" Schedule 80 sensor (gray) receptacle tee
FCT-300	3" Schedule 40 sensor (white) receptacle tee
FCT-308	3" Schedule 80 sensor (gray) receptacle tee
FCT-400	4" Schedule 40 sensor (white) receptacle tee

FLOW RANGE

Pipe Diameter	Operating Range (GPM)	
	Minimum	Suggested Maximum*
1"	2	17
1½"	5	35
2"	10	55
3"	28	120
4"	34	200

Note:

* Good design practice dictates the maximum flow not to exceed 5'/sec. Suggested maximum flow is based upon Class 200 IPS plastic pipe.

FLOW-CLIK®

Sensor: **Flow**

Add high-flow shutoff capabilities to any irrigation controller with this simple, adjustable device.

KEY BENEFITS

- Automatically shuts down entire system if an overflow condition occurs, helping to protect against flood damage and erosion
- Single-button calibration to set highest flow rate
- User-adjustable timing and delay for sensor response
- Compatible with all Hunter AC-powered controllers for a variety of applications
- Multi-color LED indicates system status and if flow is within limits

OPERATING SPECIFICATIONS

- Recommended pressure range: 0 to 220 PSI
- Current draw (24 VAC): 0.025 A
- Switching current: 2 A maximum
- Sensor wiring: 2 x direct burial, 18 AWG or greater, color-coded or marked for polarity, up to 1,000' from the interface module
- Programmable start up delay: 0 to 300 seconds (allows for system hydraulics to stabilize and prevents false flow readings)
- Programmable interrupt period: 5 to 60 minutes (or option to reset manually)
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- FCT fittings for 1" to 4" pipe diameters

Flow-Clik sensor and module shown with required FCT fitting for pipe installation (sold separately)

Flow-Clik Module:
Height: 6"
Width: 5¾"
Depth: 2¼"

Flow-Clik Sensor
Height: 3½"
Diameter: 1½"

Compatible with:

Waterproof Splice Kit
Page 125

FLOW-CLIK	
Model	**Description**
FLOW-CLIK	Standard kit for all 24 VAC controllers. *Includes sensor and interface module, sensor requires FCT for pipe installation.*

REQUIRED USER-INSTALLED OPTION (SPECIFY SEPARATELY)	
Model	**Description**
FCT-100	1" Schedule 40 sensor (white) receptacle tee
FCT-150	1½" Schedule 40 sensor (white) receptacle tee
FCT-158	1½" Schedule 80 sensor (gray) receptacle tee
FCT-200	2" Schedule 40 sensor (white) receptacle tee
FCT-208	2" Schedule 80 sensor (gray) receptacle tee
FCT-300	3" Schedule 40 sensor (white) receptacle tee
FCT-308	3" Schedule 80 sensor (gray) receptacle tee
FCT-400	4" Schedule 40 sensor (white) receptacle tee

FLOW RANGE		
Pipe Diameter	**Operating Range (GPM)**	
	Minimum	Suggested Maximum*
1"	2	17
1½"	5	35
2"	10	55
3"	28	120
4"	34	200

Note:

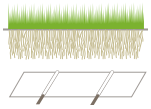
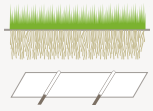
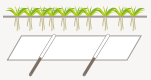
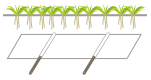
* Good design practice dictates the maximum flow not to exceed 5'/sec. Suggested maximum flow is based upon Class 200 IPS plastic pipe.


MICRO

MICRO IRRIGATION SOLUTIONS

From ultra-durable Hunter Dripline to our innovative Root Zone Watering System, Hunter's micro irrigation solutions are designed to apply water efficiently and precisely where it's needed. Choose the combination of products best suited for your application and plant type using the chart below.

COMMON MICRO APPLICATIONS GUIDE

APPLICATION	STANDARD DESIGN	ADVANCED DESIGN
TREES 	MLD, Emitters, Micro Sprays	HDL, Eco-Wrap, IH Risers, RZWS
MIXED PLANTINGS 	MLD, Micro Sprays, HDL, Single-Port Emitters	HDL-COP, Multi-Port Emitters, Eco-Wrap
SLOPED AREAS 	MLD, Micro Sprays, HDL-PC, HDL-R, Emitters, RZB	HDL-CV, Eco-Mat, Eco-Wrap, HDL-COP, IH Risers, RZWS
TURF 	HDL-COP	Eco-Wrap, Eco-Mat
SUBSURFACE 	HDL-COP	Eco-Wrap, Eco-Mat
SPARSE PLANTING 	Emitters, RZB	IH Risers
DENSE PLANTING 	Micro Sprays, HDL	HDL-COP, Eco-Wrap, Eco-Mat
GREEN ROOFS 	Eco-Mat	Eco-Mat
POTTED PLANTS 	Single-Port Emitters, Micro Sprays	MLD
RECLAIMED 	MLD, Micro Sprays, Emitters	HDL-R, IH Risers, RZWS

SOFT PIPE SYSTEMS

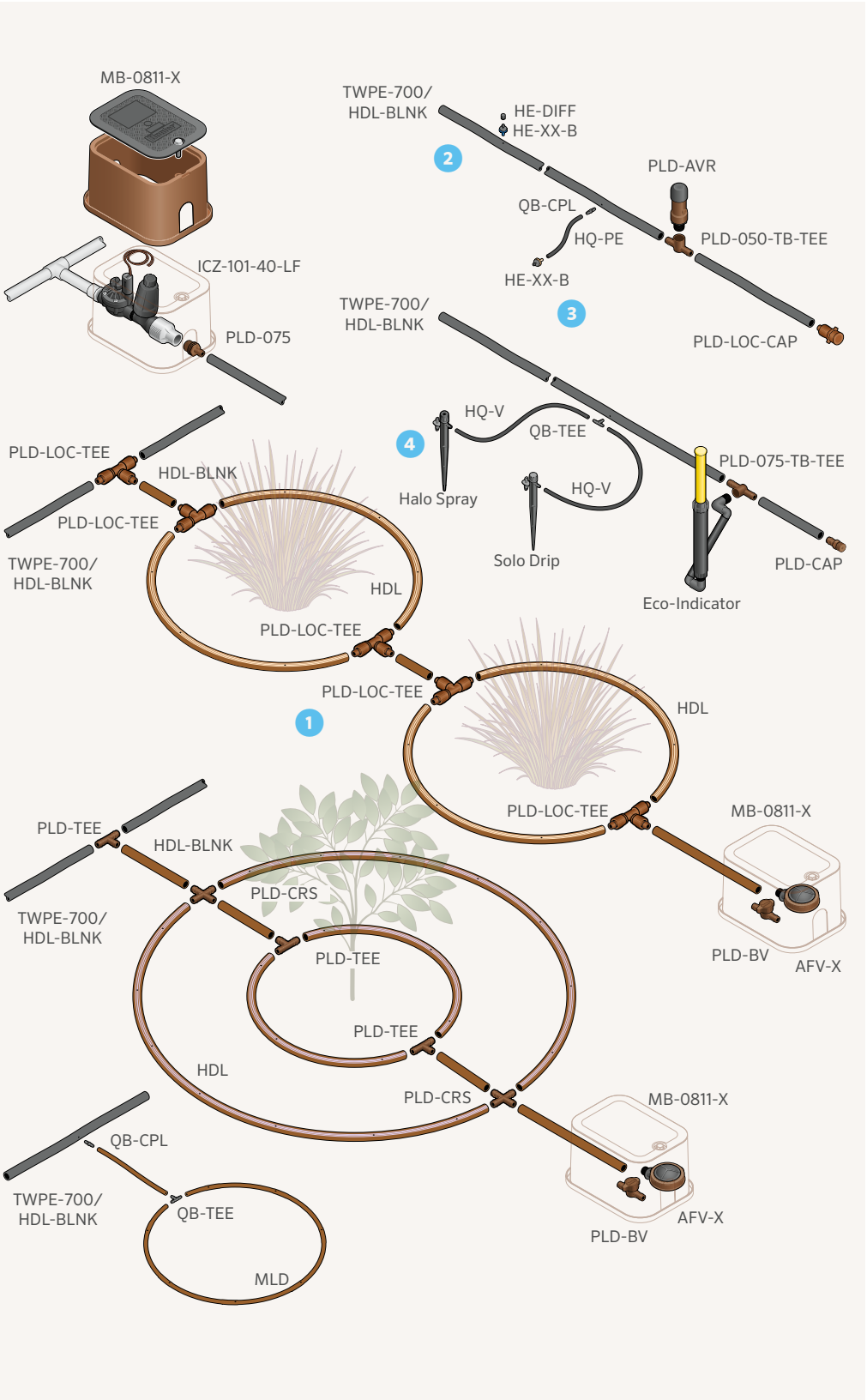
Using soft pipe to distribute irrigation water is acceptable in both commercial and residential applications. Polyethylene tubing is used in place of PVC and may be 1", ¾", or ½". Hunter offers a full suite of products that are compatible with soft pipe systems.

1 Tree and Shrub Rings:
- Convenient and efficient way to irrigate sparse plantings
- Use HDL or MLD to form the irrigation ring
- Connect with LOC Fittings for faster installation

2 ½" and ¼" Tubing:
- Use ½" polyethylene (TWPE) to distribute water
- Use ¼" PE (HQPE) or vinyl (HQV) to connect to emitters and Micro Sprays

3 Point-Source Emitters:
- Barbed emitters insert directly into PE tubing or at the end of ¼" vinyl/PE
- Color-coded flows (0.5, 1.0, 2.0, 4.0, 6.0 GPH)

4 Micro Spray Stakes:
- Use when higher flows are needed (0–30 GPH)
- Throw water from 0-12'



HARD PIPE SYSTEMS

From Multi-Port Emitters to Micro Sprays, Hunter offers a wide variety of products and accessories that are designed to complement hard pipe systems.

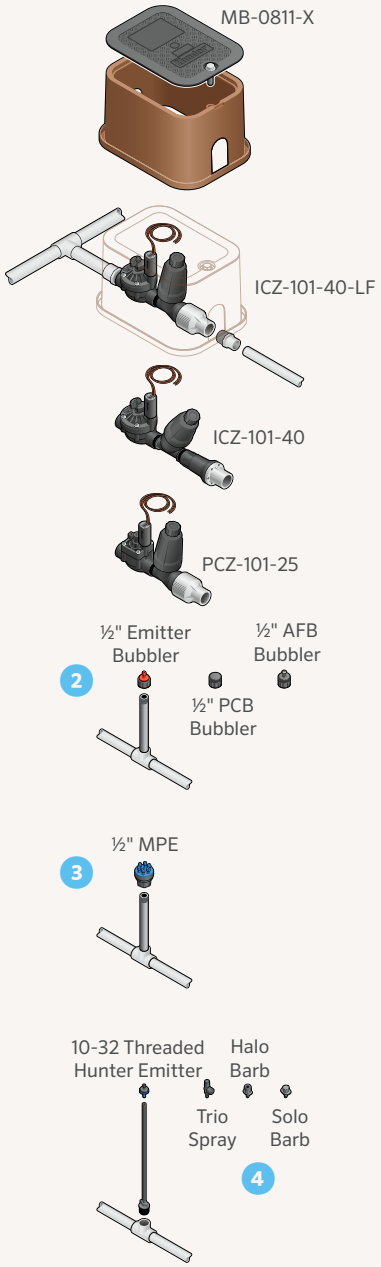
1 IH Risers:
- Ultra-durable point-to-point emitters
- Built-in check valve screen makes them great for slopes
- Wide variety of flows

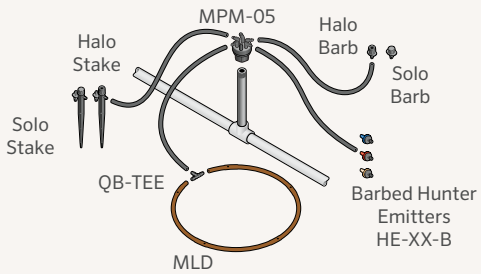
2 Point-Source Emitters:
- Color-coded flows (0.5, 1.0, 2.0, 4.0, 6.0 GPH)
- HEB (½" threaded emitter bubblers install directly onto ½" risers)
- HE-T (10-32 threaded emitters install onto rigid risers)

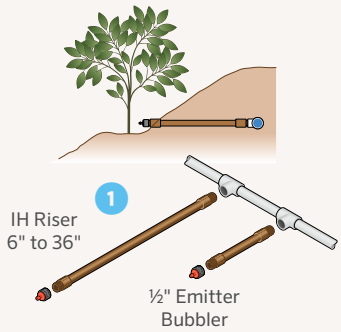
3 Multi-Port Emitters:
- Color-coded flows (0.5, 1.0, 2.0 GPH)
- Swivel barbs for directional flow
- Install directly onto ½" risers

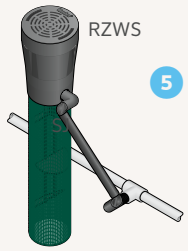
4 Micro Sprays:
- Ideal for higher flows (0-30 GPH)
- Diameter of throw from 0-12'
- Install directly onto rigid risers or on ¼" tubing

5 Root Zone Watering System:
- For deep root irrigating
- Allows oxygen to penetrate the soil
- Encourages healthier root growth









MICRO

PCZ

Make installations quick and easy with this robust, preassembled kit with stainless steel filtration and pressure regulation.

KEY BENEFITS

- Factory-assembled for quick and easy installation
- Valves 100% water-tested to ensure dependable operation
- Senninger regulator provides precise regulation to protect system from high pressure
- 150 mesh (100 microns) stainless steel screen for years of reliable filtration

FACTORY-INSTALLED OPTIONS

- 25 or 40 PSI regulator

USER-INSTALLED OPTIONS

- Reclaimed water ID handle for ACZ-075 and PCZ-101 (P/N 269205)

PCZ-101

- 1" x ¾" inline valve
- Pressure regulation: 25 or 40 PSI
- Flow: 0.5 to 15 GPM (30 to 900 GPH)
- Operating pressure: 20 to 120 PSI
- Operating temperature: up to 120°F
- 150 mesh (100 microns) stainless steel screen

SOLENOID OPERATING SPECIFICATIONS

- Heavy-duty solenoid: 24 VAC
  - 350 mA inrush current, 190 mA holding current, 60 Hz
  - 370 mA inrush current, 210 mA holding current, 50 Hz
- Warranty period: 2 years

PCZ-101
Height: 7"
Width: 3"
Length: 10"
1" inlet x ¾" outlet

DRIP CONTROL ZONE KITS

Model	Description
PCZ-101-25	1" PGV flow control valve with HFR-100-75 and 25 PSI regulator
PCZ-101-40	1" PGV flow control valve with HFR-100-75 and 40 PSI regulator

PCZ AND ACZ CONTROL ZONE KITS: PRESSURE REQUIREMENTS BASED ON FLOW

System Flow	PCZ-101-25 (25 PSI outlet)	PCZ-101-40 (40 PSI outlet)	ACZ-25 (25 PSI outlet)	ACZ-40 (40 PSI outlet)
GPM	Inlet pressure required to achieve desired outlet pressure (PSI)			
0.5	34	41	25	41
1	34	42	26	43
5	34	45	28	47
10	37	52	30	52
15	41	59	32	55

40 PSI pressure regulator may not be required if the dynamic pressure of an irrigation system is below 60 PSI.

25 PSI pressure regulator may not be required if the dynamic pressure of an irrigation system is below 45 PSI.

ACZ

This sturdy, preassembled kit includes filtration and pressure regulation for above-ground installations with no additional backflow prevention.

ACZ-075

- ¾" x ¾" anti-siphon valve
- Pressure regulation: 25 or 40 PSI
- Flow: 0.5 to 15 GPM (30 to 900 GPH)
- Operating pressure: 20 to 120 PSI
- Operating temperature: up to 120°F
- 150 mesh (100 microns) stainless steel screen

ACZ-101

- 1" x ¾" anti-siphon valve
- Pressure regulation: 25 or 40 PSI
- Flow: 0.5 to 15 GPM (30 to 900 GPH)
- Warranty period: 2 years
- Operating pressure: 20 to 120 PSI
- Operating temperature: up to 120°F
- 150 mesh (100 microns) stainless steel screen

ACZ-075
Height: 11½"
Width: 3"
Length: 12"
¾" inlet x ¾" outlet

ACZ-101
Height: 11½"
Width: 3"
Length: 12"
1" inlet x ¾" outlet

DRIP CONTROL ZONE KITS

Model	Description
ACZ-075-25	¾" PGV-ASV valve with HFR-075 and 25 PSI regulator
ACZ-075-40	¾" PGV-ASV valve with HFR-075 and 40 PSI regulator
ACZ-101-25	1" PGV-ASV valve with HFR-100-075 and 25 PSI regulator
ACZ-101-40	1" PGV flow control valve with HFR-100-75 and 40 PSI regulator

1" ICZ

The most durable kit in the industry is offered in low-, medium-, and high-flow options for diverse system needs.

KEY BENEFITS

- Highest-quality components
- Factory-assembled to save installation time
- Filter Sentry® diaphragm screen cleaning system (on all models except ICZ-101-LF)
- Wide flow range to cover most micro irrigation applications
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- 25 or 40 PSI regulator

USER-INSTALLED OPTIONS

- Reclaimed water ID handle (P/N 561205)

ICZ-101

- Factory-installed Filter Sentry
- Pressure regulation: 25 or 40 PSI
- Flow: 2 to 20 GPM (120 to 1,200 GPH)
- System operating pressure: up to 120 PSI
- Operating temperature: up to 120°F
- 150 mesh (100 microns) stainless steel screen
- 1" inlet and 1" outlet

ICZ-101-LF

- Pressure regulation: 25 or 40 PSI
- Flow 0.5 to 15 GPM (30 to 900 GPH)
- Fits Multi-Purpose Box
- System operating pressure: up to 120 PSI
- Operating temperature: up to 120°F
- 150 mesh (100 microns) stainless steel screen
- 1" inlet and ¾" outlet

ICZ-101-LF-R

- Pressure regulation: 25 or 40 PSI
- Flow 0.5 to 15 GPM (30 to 900 GPH)
- Fits Multi-Purpose Box
- System operating pressure: up to 120 PSI
- Operating temperature: up to 120°F
- 150 mesh (100 microns) stainless steel screen
- 1" inlet and ¾" outlet
- Reclaimed water ID tag, purple flow control knob, Filter Sentry, and purple chlorine-resistant diaphragm

SOLENOID OPERATING SPECIFICATIONS

- Heavy-duty solenoid: 24 VAC
  - 350 mA inrush current, 190 mA holding current, 60 cycles
  - 370 mA inrush current, 210 mA holding current, 50 cycles
- Warranty period: 5 years

ICZ-101
Height: 6¾"
Width: 4"
Length: 14"
1" inlet x 1" outlet

ICZ-101-LF
Height: 7"
Width: 4"
Length: 10½"
1" inlet x ¾" outlet

ICZ-101-LF-R
Height: 7"
Width: 4"
Length: 10½"
1" inlet x ¾" outlet

ICZ-101 KITS

GPM	Required Pressure for 25 PSI Outlet	Required Pressure for 40 PSI Outlet
2	35	52
5	35	52
7	36	54
10	40	58
15	46	66
20	60	82

ICZ-101 LOW-FLOW KITS

GPM	Required Pressure for 25 PSI Outlet	Required Pressure for 40 PSI Outlet
0.5	35	41
1	35	43
5	36	47
10	37	52
15	40	55

40 PSI pressure regulator may not be required if the dynamic pressure of an irrigation system is below 60 PSI.

25 PSI pressure regulator may not be required if the dynamic pressure of an irrigation system is below 45 PSI.

DRIP CONTROL ZONE KITS – SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Options
ICZ-101 = 1" ICV Filter Sentry globe valve with 1" HY100 filter and regulator	**25** = 25 PSI regulator
ICZ-101-LF = 1" ICV globe valve with 1" HFR-100-075 filter regulator	**40** = 40 PSI regulator
ICZ-101-LF-R = 1" ICV reclaimed valve with Filter Sentry and 1"x ¾" reclaimed Hunter Filter Regulator	

Example:
ICZ-101-40 = 1" ICV Filter Sentry globe valve with 1" HY100 filter and regulator, and 1" outlet 40 PSI regulator

1½" AND 2" ICZ

The toughest plastic valve available comes backed by glass-filled construction, a fabric-reinforced diaphragm, and a double-beaded diaphragm seal.

KEY BENEFITS

- Highest-quality components set Hunter kits apart
- Highest flow options in the industry
- Factory-assembled to save installation time
- Filter Sentry diaphragm screen cleaning system

USER-INSTALLED OPTIONS

- Reclaimed water ID handle (P/N 561205)

ICZ-151-XL

Operating Specifications

- Pressure regulation: 40 PSI
- Flow: 20 to 80 GPM
- Operating pressure: up to 120 PSI
- Operating temperature: up to 120°F
- Standard filter screen: 150 mesh (100 microns) SS
- Optional filter screens: 80 mesh (180 microns); 120 mesh (125 microns); SS
- Disc filter available: 120 mesh (125 microns)

ICZ-201-XL

- Pressure regulation: 40 PSI
- Flow: 20 to 100 GPM
- Operating pressure: up to 120 PSI
- Operating temperature: up to 120°F
- Standard filter screen: 150 mesh (100 microns) SS
- Optional filter screens: 80 mesh (180 microns); 120 mesh (125 microns); SS
- Disc filter available: 120 mesh (125 microns)

SOLENOID OPERATING SPECIFICATIONS

- Heavy-duty solenoid: 24 VAC
  - 350 mA inrush current, 190 mA holding current, 60 cycles
  - 370 mA inrush current, 210 mA holding current, 50 cycles
- Warranty period: 5 years
- Additional charts on **page 201**

ICZ-151-XL
Height: 9"
Width: 5½"
Length: 22½"
1½" inlet x 2" outlet

ICZ-201-XL
Height: 12"
Width: 7"
Length: 26"
2"inlet x 2" outlet

DRIP CONTROL ZONE KITS

Model	Descriptionv
ICZ-151-40-XL	1½" ICV globe valve with 1½" filter and single 2" regulator
ICZ-201-40-XL	2" ICV globe valve with 2" filter and single 2" regulator

ICZ-151 AND ICZ-201 KITS

Model	System Flow GPM	Required Pressure for 40 PSI Outlet
ICZ-151-40-XL	20	45
	30	50
	40	50
	50	50
	60	60
	70	60
	80	65
ICZ-201-40-XL	20	45
	30	45
	40	45
	50	50
	60	50
	70	50
	80	50
	90	55
	100	55

40 PSI pressure regulator may not be required if the dynamic pressure of an irrigation system is below 60 PSI.

FILTER REGULATORS

This all-in-one choice features a state-of-the-art Senninger regulator and a stainless steel filter screen.

KEY BENEFITS

- HFR-075 (Hunter filter regulator)
  - Compact, all-in-one filter and regulator minimize required valve box space
  - Senninger regulator provides precise regulation to protect system from high pressure
  - 150 mesh (100 microns) stainless steel screen for years of reliable filtration
  - Wide flow range covers most drip applications
- Warranty period: 2 years

HFR-075-25
HFR-075-40
Height: 7"
Width: 2¾"
Length: 6¼"
¾" inlet x ¾" outlet

HFR-100-075-25
HFR-100-075-40
Height: 7"
Width: 2¾"
Length: 6¼"
1" inlet x ¾"outlet

HFR-100-075-25-R
HFR-100-075-40-R
Height: 7"
Width: 2¾"
Length: 6¼"
1" inlet x ¾"outlet

HUNTER FILTER REGULATORS

Model	Description
HFR-075-25	¾" inlet x ¾" outlet, regulated at 25 PSI
HFR-075-40	¾" inlet x ¾" outlet, regulated at 40 PSI
HFR-100-075-25	1" inlet x ¾" outlet, regulated at 25 PSI
HFR-100-075-25-R	1" inlet x ¾" outlet, regulated at 25 PSI, reclaimed
HFR-100-075-40	1" inlet x ¾" outlet, regulated at 40 PSI
HFR-100-075-40-R	1" inlet x ¾" outlet, regulated at 40 PSI, reclaimed
133801	Reclaimed filter bonnet

HFR -FILTER REGULATOR KITS

Model	System Flow GPM	Required Pressure for 25 PSI Outlet
HFR-075-25	0.5	30
	2	30
	5	31
	10	33
	15	37
HFR-100-075-25	0.5	30
	2	30
	5	31
	10	32
	15	35

Model	System Flow GPM	Required Pressure for 40 PSI Outlet
HFR-075-40	0.5	45
	2	45
	5	46
	10	48
	15	54
HFR-100-075-40	0.5	45
	2	45
	5	46
	10	47
	15	52

With standard 150 mesh (100 microns) filter screen

FILTERS

For added durability, these simple yet rugged filters come standard with a stainless steel screen.

¾" AND 1" FILTER KEY BENEFITS

- Standard size of 150 mesh to collect debris and prevent system from clogging
- High-quality stainless steel screen
- Operating pressure: up to 120 PSI

1½" AND 2" FILTER KEY BENEFITS

- Glass-filled polypropylene for added strength and durability
- Operating pressure: up to 150 PSI
- Standard stainless steel screen: 150 mesh (100 microns)
- Large filtration screen provides longer life between cleanings
- Optional filter screens: 80 mesh (180 microns); 120 mesh (125 microns); SS
- Disc filter available: 120 mesh (125 microns)
- Warranty period: 2 years
- **See page 198** for pressure loss charts

HUNTER Y-FILTERS AND SCREENS

Size	Model	Description
¾" and 1"	**HY-075**	¾" inlet/outlet
	HY-100-075	1" inlet x ¾" outlet
	HY-100	1" inlet/outlet
	HY-100-R	1" inlet/outlet, with reclaimed bonnet
1½"	**HY-151**	1½" inlet/outlet
	HY-151-D	1½" disc filter with 120 mesh (125 microns)
	HY151SCREEN150	150 mesh screen for 1½" filter
	HY151SCREEN120	120 mesh screen for 1½" filter
	HY151SCREEN080	80 mesh screen for 1½" filter
	HY151DISC120	120 mesh disc for 1½" filter
2"	**HY-201**	2" inlet/outlet
	HY-201-D	2" disc filter with 120 mesh (125 microns)
	HY201SCREEN150	150 mesh screen for 2" filter
	HY201SCREEN120	120 mesh screen for 2" filter
	HY201SCREEN080	80 mesh screen for 2" filter
	HY201DISC120	120 mesh disc for 2" filter

Blue
80 mesh

Red
120 mesh

Black
150 mesh

Disc
120 mesh
(125 microns)

HY-075, HY-100, HY-100-075
Height: 6"
Width: 3"
Length: 5"

HY-100-R
Height: 6"
Width: 3"
Length: 5"

HY-151, HY-151-D
Height: 9"
Width: 5"
Length: 9"

HY-201, HY-201-D
Height: 12"
Width: 6¾"
Length: 11½"

SENNINGER® PRESSURE REGULATORS

Choose the most consistent and reliable pressure regulators in the industry.

KEY BENEFITS

- Maintains consistent preset outlet pressure preventing damage to system components
- 100% water-tested to ensure accuracy and dependable operation
- Install above or below ground for project design convenience
- Tamper-proof construction provides reliability and long life

OPERATING SPECIFICATIONS

- PRL (¾"):
  - Flow range: 0.5 to 8.0 GPM
  - Maximum inlet pressure*: 100 to 120 PSI
- PRLV (¾", 1"):
  - Flow range: 0.5 to 18 GPM
  - Maximum inlet pressure: 125 PSI
- PMR-MF (¾", 1"):
  - Flow range: 2 to 20 GPM
  - Maximum inlet pressure*: 100 to 130 PSI
- Warranty period: 2 years

*Maximum recommended inlet pressure should not exceed 80 PSI above nominal model pressure

PRL - Pressure-Regulating
Low-Flow
Width: 2"
Length: 4½"
Inlet/outlet: ¾"

PRLV - Pressure-Regulating Limit Valve
Wide-Range Flow
Width: 2½"
Length: 5¾"
Inlet/outlet: ¾"

PMR-MF - Pressure-Master Regulator
Medium-Flow
Width: 2½"
Length: 5⅛" (¾" model), 5¾" (1" model)
Inlet/outlet: ¾" or 1"

The pressure regulator will maintain the predetermined operating pressure provided that the inlet pressure is at least 5 PSI above the expected outlet pressure, but not exceeding the maximum operating pressure.

PRL (¾")

Model	Pressure	Inlet	Outlet
PRL203F3F	20 PSI	¾"	¾"
PRL253F3F	25 PSI	¾"	¾"
PRL303F3F	30 PSI	¾"	¾"
PRL353F3F	35 PSI	¾"	¾"
PRL403F3F	40 PSI	¾"	¾"

PRLV (¾")

Model	Pressure	Inlet	Outlet
PRLV20MF3F3FV	20 PSI	¾"	¾"
PRLV30MF3F3FV	30 PSI	¾"	¾"
PRLV40MF3F3FV	40 PSI	¾"	¾"

PRLV (1")

Model	Pressure	Inlet	Outlet
PRLV40MF4F4FV	40 PSI	1"	1"
PRLV50MF4F4FV	50 PSI	1"	1"
PRLV60MF4F4FV	60 PSI	1"	1"

PMR-MF (¾")

Model	Pressure	Inlet	Outlet
PMR20MF3F3FV	20 PSI	¾"	¾"
PMR25MF3F3FV	25 PSI	¾"	¾"
PMR30MF3F3FV	30 PSI	¾"	¾"
PMR35MF3F3FV	35 PSI	¾"	¾"
PMR40MF3F3FV	40 PSI	¾"	¾"
PMR50MF3F3FV	50 PSI	¾"	¾"

PMR-MF (1")

Model	Pressure	Inlet	Outlet
PMR20MF4F4FV	20 PSI	1"	1"
PMR25MF4F4FV	25 PSI	1"	1"
PMR30MF4F4FV	30 PSI	1"	1"
PMR35MF4F4FV	35 PSI	1"	1"
PMR40MF4F4FV	40 PSI	1"	1"

SENNINGER® PRESSURE REGULATORS

Top-performing Senninger regulators are the best in the industry.

KEY BENEFITS

- Each regulator maintains a constant preset outlet pressure based on its flow/inlet pressure.
- 100% water-tested for accuracy
- Very low hysteresis and friction loss helps maintain accurate regulation
- Can be installed above or below ground
- Patented tamper-proof design
- No external metal parts for excellent corrosion resistance

OPERATING SPECIFICATIONS

- PRLG (¾"):
  - Flow range: 0.5 to 7.0 GPM
  - Maximum inlet pressure*: 100 to 120 PSI

PRLG (¾" HOSE THREAD)			
Model	**Pressure**	**Inlet**	**Outlet**
PRLG203FH3MH	20 PSI	¾"	¾"
PRLG253FH3MH	25 PSI	¾"	¾"
PRLG303FH3MH	30 PSI	¾"	¾"
PRLG403FH3MH	40 PSI	¾"	¾"

*Maximum recommended inlet pressure should not exceed 80 PSI above nominal model pressure

- PRU:
  - Flow range: 20 to 100 GPM
  - Maximum inlet pressure: 120 PSI
- Warranty period: 2 years

PRU-40			
Model	**Pressure**	**Inlet**	**Outlet**
PRU-40	40 PSI	2"	2"

PRLG - Pressure Regulator
Landscape Grade
Width: 1½"
Length: 3"
Inlet: ¾" FHT x Outlet: ¾" MHT

PRU - Pressure Regulator Ultra
Width: 4½"
Length: 9"
Inlet/outlet: 2"

The pressure regulator will maintain the predetermined operating pressure provided that the inlet pressure is at least 5 PSI above the expected outlet pressure, but not exceeding the maximum operating pressure.

DRIPLINE SYSTEMS

Ultra-durable Hunter Dripline (HDL) is easy to install and provides maximum longevity in the field. HDL works efficiently and effectively to use as little water as possible and keep plants thriving.

1. The dripline grid is a common installation practice either at grade or subsurface. Establishing consistent laterals in dense plantings provides a quick and simple approach to irrigating a planted area.

2. Arranging the dripline through a series of plants is an accepted and reliable method of irrigation. Ensure the dripline has emission points near or around each plant.

A Multi-Purpose Box:
- 10" x 7" opening
- Five color options for lids

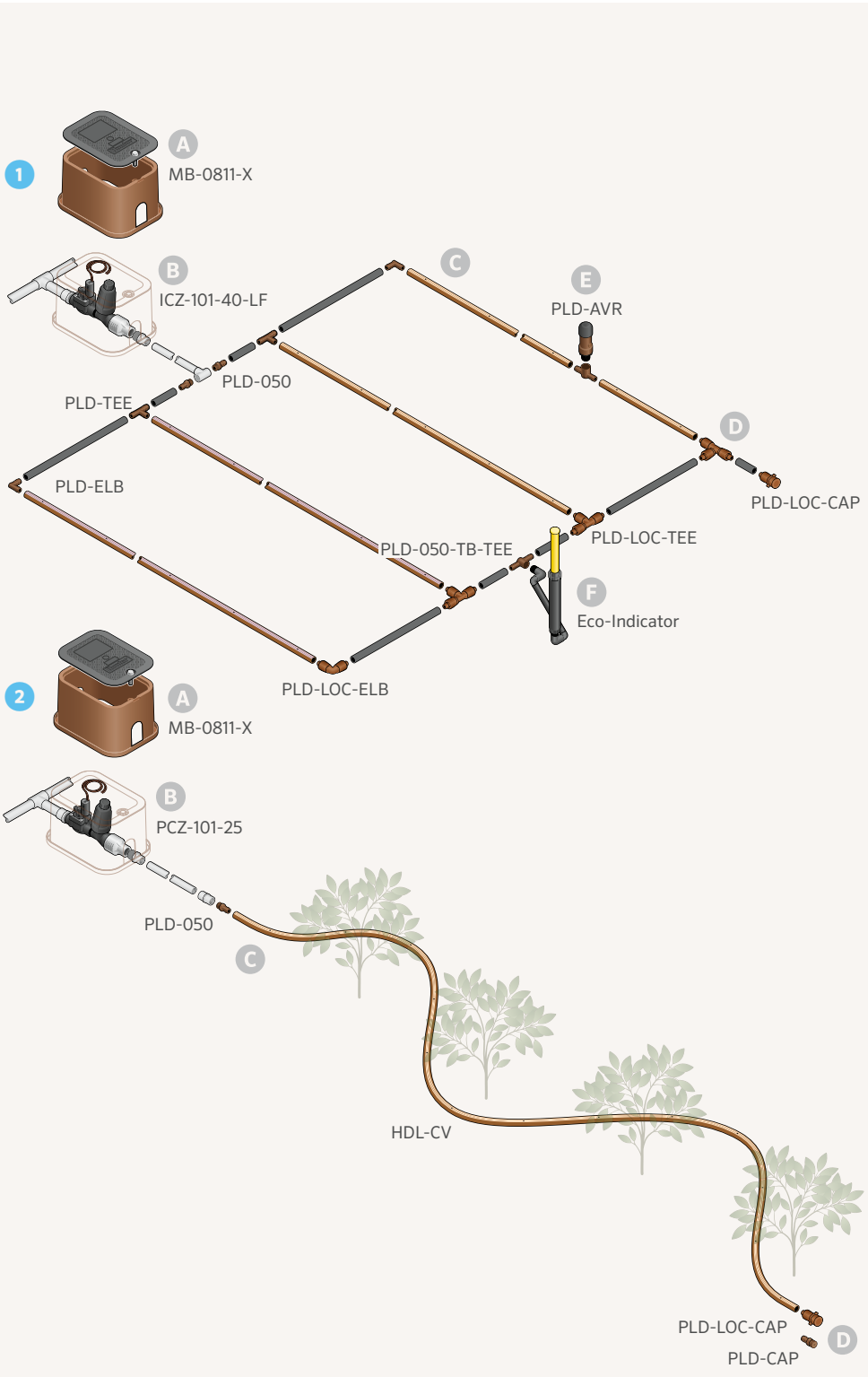
B Control Zone Kit:
- Factory-assembled for quick and easy installation
- Low-, medium-, and high-flow kits

C HDL:
- All versions are pressure-compensating
- Colored stripes indicate flow
- Stretch-wrapped coils make installation simple and clean
- Four dripline options to choose from: HDL-CV, HDL-PC, HDL-R, HDL-CO

D Fittings:
- Double-barb holds fittings tight
- LOC Fittings can be reused

E Air/Vacuum Relief Valve:
- Helps prevent water hammer and tubing collapse
- Use at high point(s) in zone

F Eco-Indicator Tool:
- Pops up at 12 PSI and shows system is running
- Reveals when system pressure drops too low



HDL-CV

Increase drip system efficiency with pressure compensation, flow indication stripes, and a 6' check height.

KEY BENEFITS

- Pressure-compensating emitters for consistent flow and uniform coverage
- Non-draining check valve (CV) prevents low-point pooling and allows all emitters to open/close at the same time for greater system efficiency
- Check height of 6' minimizes system drainage and runoff
- Anti-siphon feature prevents debris from entering emitter at system shutdown
- Color-coded stripes provide easy identification of flow
- UV resistance facilitates product longevity
- Stretch-wrapped coils stay intact and make installation quick and easy
- Superior grit tolerance provided by proprietary emitter design with multiple inlet filters, a wide turbulent labyrinth, and a full-size outlet pool

PRODUCT SPECIFICATIONS

- Available flow rates: 0.4, 0.6, 0.9 GPH
- Available emitter spacing: 12", 18", 24"
- Tubing dimensions: 0.660" x 0.560" (outside/inside diameter)
- Available without emitter (HDL-BLNK)

OPERATING SPECIFICATIONS

- Operating range: 15 to 60 PSI
- Minimum filtration: 120 mesh (125 microns)
- Warranty period: 5 years (plus 2 additional years for environmental stress cracking)

HDL-CV

Coil with Stretch Wrap

HDL-CV – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Spacing	3 Length	4 Options
HDL-04 = 0.4 GPH flow	**12** = 12"	**100** = 100'	**CV** = Pressure-compensating with check valve
HDL-06 = 0.6 GPH flow	**18** = 18"	**250** = 250'	
HDL-09 = 0.9 GPH flow	**24** = 24"	**500** = 500'	
		1K = 1,000'	

Example:
HDL-06-12-250-CV = 0.6 GPH, 12" emitter spacing, 250' coil with check valve

HDL-BLNK – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Length		3 Options
HDL-BLNK = No emitters	**100** = 100'	**500** = 500'	**(BLANK)** = Brown
	250 = 250'	**1K** = 1,000'	**R** = Purple stripes

Example:
HDL-BLNK-250 = No emitters, 250' coil

HUNTER DRIPLINE COLOR CODE

STRIPE COLOR
- 0.9 GPH - Black
- 0.6 GPH - Gray
- 0.4 GPH - Tan

TUBING COLOR
- HDL-CV - Dark brown tubing, pressure-compensating with check valve

MAXIMUM RUN LENGTHS

HDL-CV – 0.4 GPH

Pressure (PSI)	Emitter Spacing (in.) 12	18	24
15	205	289	367
20	289	404	513
25	339	479	604
30	380	535	679
40	438	623	788
50	489	691	872
60	529	747	947

HDL-CV – 0.6 GPH

Pressure (PSI)	Emitter Spacing (in.) 12	18	24
15	171	239	304
20	239	336	426
25	280	398	501
30	314	441	560
40	363	516	653
50	404	570	722
60	438	619	784

HDL-CV – 0.9 GPH

Pressure (PSI)	Emitter Spacing (in.) 12	18	24
15	117	164	211
20	164	233	292
25	192	273	348
30	217	307	389
40	251	355	451
50	280	395	501
60	302	429	541

HDL-PC & HDL-R

Maximize drip system longevity with robust material construction and pressure compensation for standard and reclaimed applications.

KEY BENEFITS

- Pressure-compensating emitters for consistent flow and uniform coverage
- Color-coded stripes provide easy identification of flow
- UV resistance facilitates product longevity
- Stretch-wrapped coils stay intact and make installation quick and easy
- Superior grit tolerance provided by proprietary emitter design with multiple inlet filters, a wide turbulent labyrinth, and a full-size outlet pool
- Reclaimed product (HDL-R) identified by purple stripes assists in visual identification when using non-potable water

PRODUCT SPECIFICATIONS

- Available flow rates: 0.6, 0.9 GPH
- Available emitter spacing: 12", 18", 24"
- Tubing dimensions: 0.660" x 0.560" (outside/inside diameter)

OPERATING SPECIFICATIONS

- Operating range: 10 to 60 PSI
- Minimum filtration: 120 mesh (125 microns)
- Warranty period: 5 years (plus 2 additional years for environmental stress cracking)

HDL-PC

HDL-R (Reclaimed)

HDL – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Spacing	3 Length	4 Options
HDL-06 = 0.6 GPH flow	**12** = 12"	**100** = 100'	**PC** = Pressure-compensating
HDL-09 = 0.9 GPH flow	**18** = 18"	**250** = 250'	**R** = Reclaimed
	24 = 24"	**500** = 500'	
		1K = 1,000'	

Example:
HDL-09-12-1K-PC = 0.9 GPH, 12" emitter spacing, 1,000" coil with PC emitter
Note: Two HDL-PC products are available in 100' coils: HDL-06-12-100-PC and HDL-09-12-100-PC

HUNTER DRIPLINE COLOR CODE

STRIPE COLOR	TUBING COLOR
0.9 GPH - Black	HDL-PC - Light brown tubing pressure-compensating
0.6 GPH - Gray	HDL-R - Light brown with purple stripe - pressure-compensating reclaimed
Reclaimed - Purple	

MAXIMUM RUN LENGTHS

HDL-PC/R – 0.4 GPH

Pressure (PSI)	Emitter Spacing (in.) 12	18	24
10	205	285	361
15	285	404	511
20	339	475	604
25	380	532	675
30	411	582	735
40	463	657	831
50	507	719	912
60	548	772	981

HDL-PC/R – 0.6 GPH

Pressure (PSI)	Emitter Spacing (in.) 12	18	24
10	168	236	298
15	236	333	423
20	280	395	501
25	314	441	560
30	339	482	610
40	385	545	688
50	419	594	753
60	451	638	810

HDL-PC/R – 0.9 GPH

Pressure (PSI)	Emitter Spacing (in.) 12	18	24
10	114	164	208
15	164	233	292
20	192	273	348
25	214	304	385
30	236	333	419
40	267	376	479
50	292	414	523
60	314	441	560

HDL-COP

Minimize the risk of root intrusion by adding copper to industry-leading Hunter Dripline.

KEY BENEFITS

- Copper oxide in the emitter provides root intrusion resistance
- Copper will not leach into soil
- Slow-draining check valve (CV) emitters prevent low-point pooling and boost system efficiency
- Pressure-compensating emitters provide consistent flow over the entire lateral length
- Anti-siphon feature prevents debris from entering emitter
- Color-coded stripes provide easy identification of flow
- UV resistance facilitates product longevity
- Stretch-wrapped coils stay intact and make installation quick and easy
- Multiple inlet filters in the emitter and a wide turbulent labyrinth provide superior grit tolerance
- Full-sized emitter outlet pool and raised wall inhibit debris and roots from entering the emitter

HDL-COP

Coil with Stretch Wrap

PRODUCT SPECIFICATIONS

- Available flow rates: 0.6, 0.9 GPH
- Available emitter spacing: 12", 18"
- Tubing dimensions: 0.660" x 0.560" (outside/inside diameter)

OPERATING SPECIFICATIONS

- Operating range: 15 to 60 PSI
- Minimum filtration: 120 mesh (125 microns)
- Warranty period: 5 years (plus 2 additional years for environmental stress cracking)

HDL-COP – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Spacing	3 Length	4 Type
HDL-06 = 0.6 GPH flow	**12** = 12"	**250** = 250'	**COP** = Copper
HDL-09 = 0.9 GPH flow	**18** = 18"	**1K** = 1000'	

Example:
HDL-06-12-250-COP = Copper HDL, 0.6 GPH, 12" emitter spacing, 250' coil

MAXIMUM RUN LENGTHS

HDL-COP – 0.6 GPH

Pressure (PSI)	Emitter Spacing (in.) 12	18
15	171	239
20	239	336
25	280	398
30	314	441
40	363	516
50	404	570
60	438	619

HDL-COP – 0.9 GPH

Pressure (PSI)	Emitter Spacing (in.) 12	18
15	117	164
20	164	233
25	192	273
30	217	307
40	251	355
50	280	395
60	302	429

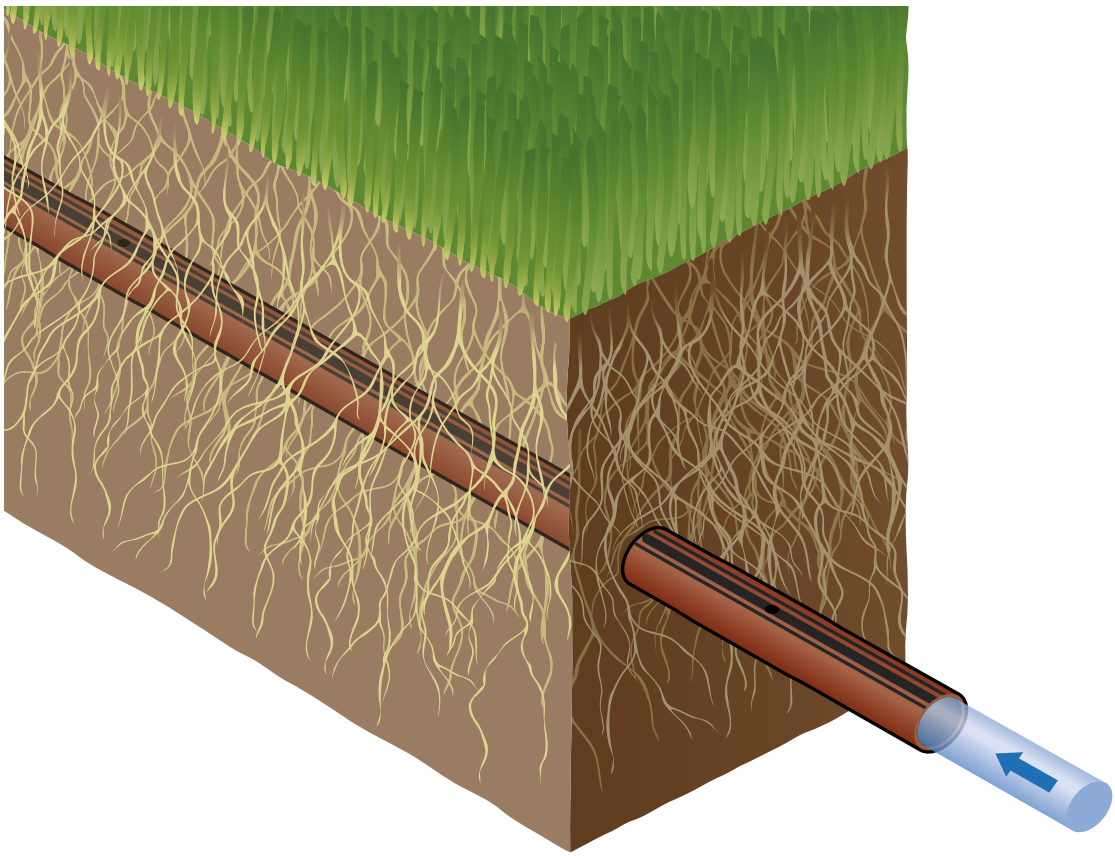
HDL-COP

HOW IT WORKS

Hunter Dripline is known for having an industry-leading emitter with a high level of grit tolerance, accurate flows, and very high burst ratings. This robust emitter is now provided with the added protection of copper, which has been scientifically proven to inhibit root growth. HDL-COP is designed with copper particles infused directly into the emitter. These benefits are long-lasting and provide an effective, nontoxic, and noncorrosive method for aiding in the prevention of root intrusion.

HOW TO IRRIGATE SUBSURFACE

Effective subsurface irrigation requires a different technique than overhead irrigation. Shorter cycles and more frequent watering will assist in maintaining proper soil moisture, oxygenation of the soil, and the prevention of root intrusion. For more information, visit **hunter.info/hdlsubsurfacepdf**.



LOC FITTINGS

LOC Fittings are compatible with any nominal ½" tubing and dripline for quicker installs and easy repairs.

KEY BENEFITS

- Glass-filled polypropylene for added durability
- Thread lock connection method provides a secure connection while still allowing flexibility for service and system changes

PRODUCT SPECIFICATIONS

- Use with HDL, TWPE, or other 16/17/18 mm dripline or tubing

OPERATING SPECIFICATIONS

- Operating pressure range: up to 145 PSI
- Warranty period: 2 years

FITTINGS

PLD-LOC 075
¾" male pipe thread x LOC

PLD-LOC 050
½" male pipe Tread x LOC

PLD-LOC CAP
End cap x LOC

PLD-LOC ELB
Locking elbow

PLD-LOC CPL
Locking coupler

PLD-LOC FHS
¾" female hose swivel x LOC

PLD-LOC TEE
Locking tee

MICRO

17 MM BARB FITTINGS

Acetal construction holds vinyl and PE tubing for an ideal low-cost choice when installing dripline.

KEY BENEFITS

- Acetal material provides a secure connection
- Dual barb removes the need for clamps

PRODUCT SPECIFICATIONS

- Use with HDL or other 17 mm dripline
- For installations with PLD-IAC/PLD-IAE grommets, use an 11⁄16" spade drill bit to cut into the PVC

OPERATING SPECIFICATIONS

- Operating pressure range: up to 100 PSI
- Warranty period: 1 year

FITTINGS

PLD-050
½" MPT x 17 mm barb

PLD-ELB
17 mm barb elbow

PLD-075
¾" MPT x 17 mm barb

PLD-CPL
17 mm barb coupling

PLD-CAP
17 mm barb x ½" MPT with cap

PLD-075-TB-TEE
17 mm barb tee x ¾" thread

PLD-BV
17 mm barb Shut-off valve

PLD-TEE
17 mm barb tee

PLD-050-TB-TEE
½" FPT x 17 mm barb tee

PLD-IAC
(with grommet) Insert adapter x 17 mm coupling

PLD-IAE
(with grommet) Insert adapter x 17 mm elbow

PLD-CRS
17 mm barb cross

PLD-075-TB-ELB
¾" FPT x 17 mm barb elbow

SUBSURFACE SYSTEMS

Subsurface drip irrigation systems can be extremely effective at saving water and encouraging root growth. Hunter is the only manufacturer to offer three tiers of top-quality subsurface irrigation solutions: HDL-COP Dripline, the Eco-Wrap System, and the Eco-Mat System.

1 **Eco-Mat** offers 30% greater efficiency than any other bare subsurface dripline product. It installs under the soil like a blanket of water, ready for the roots to absorb what they need.

2 **Eco-Wrap** provides resistance to root intrusion while enhancing the capillary action and efficiency of the system. Eco-Wrap combines the quality of HDL with the wicking properties of polyethylene fleece.

A **Entry Manifold:**
- PVC (for stability) or polyethylene
- Assemble with either 17 mm or LOC Fittings

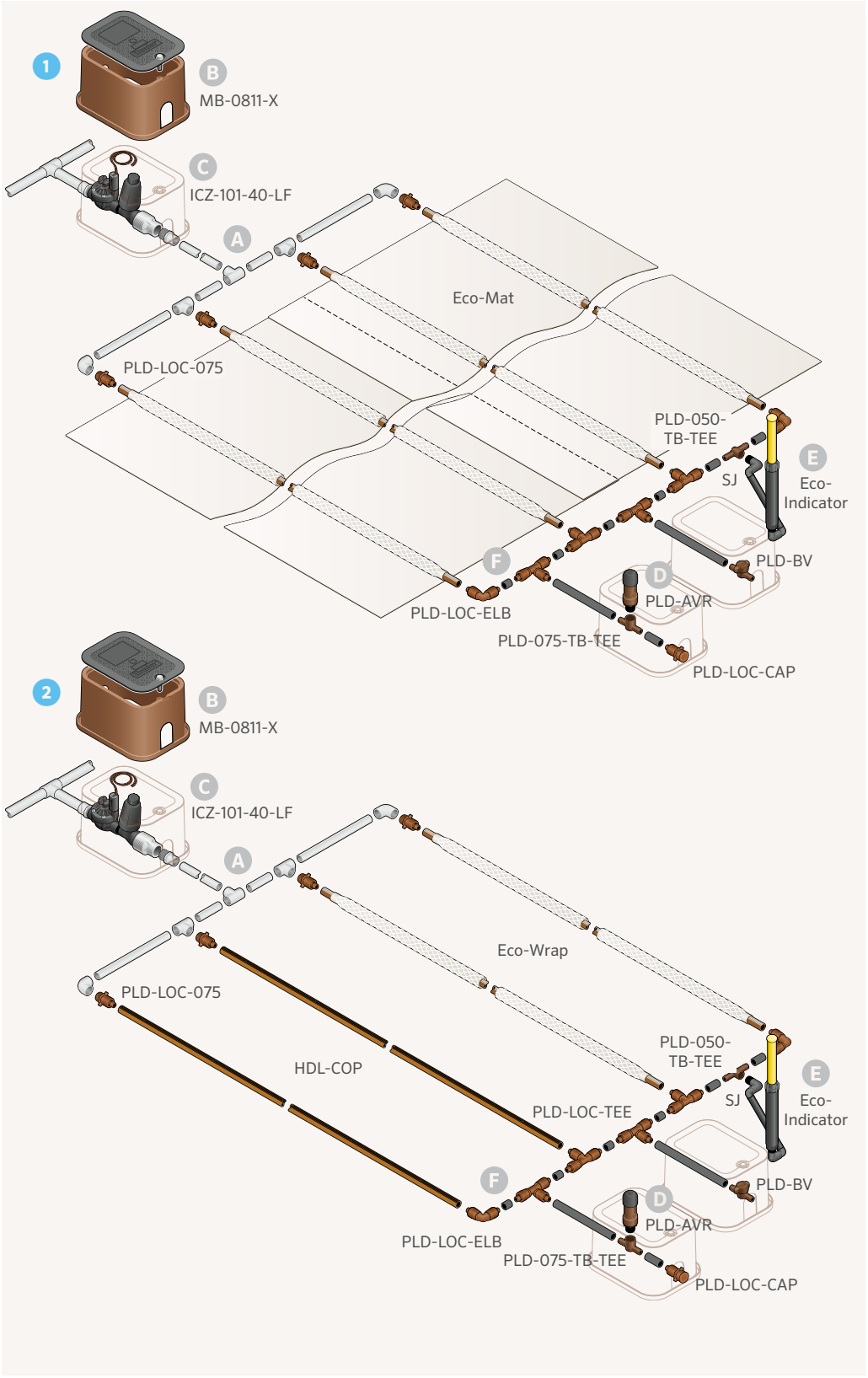
B **Multi-Purpose Box:**
- 10" x 7" opening
- Five color options for lids

C **Control Zone Kit:**
- Factory-assembled for quick and easy installation
- Low-, medium-, and high-flow kits

D **Air/Vacuum Relief Valve:**
- Helps prevent water hammer and tubing collapse
- Use at high point(s) in zone

E **Eco-Indicator Tool:**
- Pops up at 12 PSI and shows system is running
- Reveals when system pressure drops too low

F **Fittings:**
- Double-barb holds fittings tight
- LOC Fittings can be reused



ECO-MAT®

Irrigate plants below the root zone for maximum efficiency with a combination of fleece-wrapped dripline and fleece blanket.

KEY BENEFITS

- Anti-siphon feature and fleece wrap protect against debris and root intrusion
- Saves 20–40% more water than standard products due to superior capillary movement of water to the entire root zone, promoting healthier root growth
- Non-draining, pressure-compensating emitters open/close simultaneously, maximizing efficiency
- Check height of 6' minimizes system drainage and runoff

OPERATING SPECIFICATIONS

- Operating range: 15 to 50 PSI
- Minimum filtration: 120 mesh (125 microns)
- Compatible with LOC and 17 mm insert barb fittings
- Air relief recommended for sloping conditions greater than 6'
- Recommended installation depth: turf (4" to 6"); other (4" to 14")
- May use in conjunction with Eco-Wrap System
- Warranty period: 5 years (plus 2 additional years for environmental stress cracking)

PRODUCT SPECIFICATIONS

- Flow rate: 0.6 GPH; 0.83 in/hr
- Emitter spacing: 12"
- Lateral row spacing: 14"
- Product width: 32"
- Roll length: mini roll = 100'; standard roll = 295'
- Tubing dimensions: 0.660" x 0.560" (outside/inside diameter)
- Water-holding capacity: 0.5 gallons
- Approximate coverage per roll: mini roll = 250 ft²; Standard roll = 737 ft²
- Example calculation based on area 40' x 80':

$$\text{Roll Qty.} = \frac{\text{Irrigated landscape area}}{\text{Area of roll coverage}} = \frac{3{,}200\ \text{ft}^2}{737\ \text{ft}^2} = 4.34 \text{ (round up to 5 rolls)}$$

ECO-MAT			
Model	**Pressure**	**Inlet**	**Outlet**
ECO-MAT	Subsurface drip mat, 32" wide, 295' long, 17 mm dripline		
ECO-MAT-17-100	Subsurface drip mat, 32" wide, 100' long, 17 mm dripline		

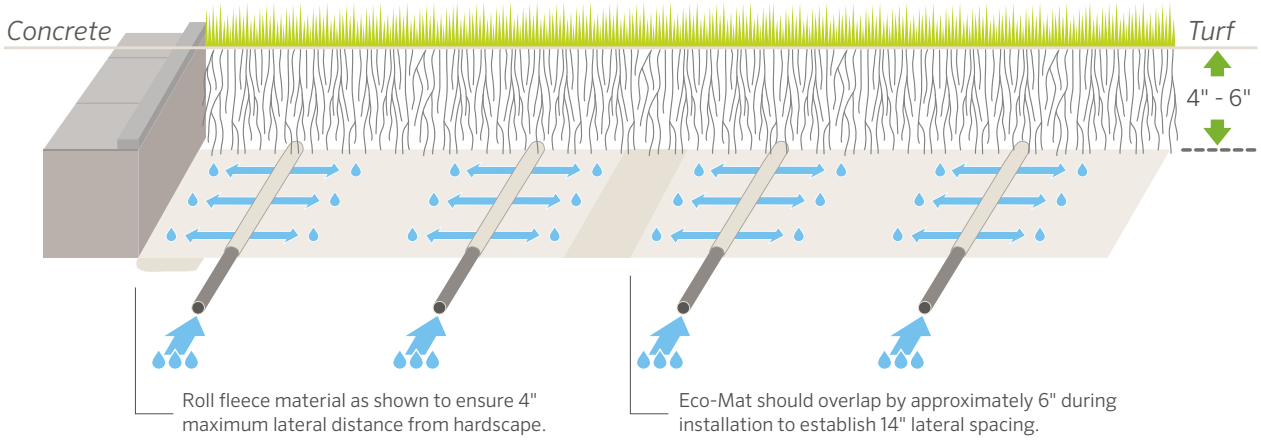
Eco-Mat

Eco-Mat Installed

Compatible with:

Soil-Clik
Page 136

Eco-Indicator
Page 164



ECO-WRAP®

Irrigate more efficiently than blank dripline with fleece-wrapped dripline.

KEY BENEFITS

- Perfect for narrow areas that are difficult to irrigate with standard methods
- Anti-siphon feature and fleece wrap protect against debris and root intrusion
- Saves 20–40% more water than standard products due to superior capillary movement of water to the entire root zone, promoting healthier root growth
- Non-draining, pressure-compensating emitters open/close simultaneously, maximizing efficiency
- Check height of 6' minimizes system drainage and runoff

OPERATING SPECIFICATIONS

- Flow rate: 0.6 GPH
- Emitter spacing: 12"
- Tubing dimensions: 0.660" x 0.560" (outside/inside diameter)
- Roll length: 250'
- Accepts 17 mm barb or LOC Fittings
- Warranty period: 5 years (plus 2 additional years for environmental stress cracking)

PRODUCT SPECIFICATIONS

- Operating range: 15 to 50 PSI
- Minimum filtration: 120 mesh (125 microns)
- Air relief recommended for sloping conditions greater than 6'
- Recommended installation depth: turf (4" to 6"); other (4" to 8")
- Compatible with Eco-Mat System

ECO-WRAP

Model	Description
ECO-WRAP-17	HDL-CV with subsurface fleece sleeve

MAXIMUM RUN LENGTH FOR ECO-MAT AND ECO-WRAP

Pressure (PSI)	Length (ft.)
15	171
20	239
25	280
30	314
40	363
50	404
60	438

Eco-Wrap

For maximum run lengths, reference the Maximum Run Length Chart on page 156. Use 0.6 GPH for flow and 12" emitter spacing.

Eco-Wrap Installed

Compatible with:

Soil-Clik
Page 136

Eco-Indicator
Page 164

SUPPLY TUBING

UV-resistant polyethylene makes this 0.700" x 0.600" solution a useful addition to drip systems.

KEY BENEFITS

- Thick wall and UV resistance provide durability and longevity
- Kink resistance for added flexibility and quicker installation

PRODUCT SPECIFICATIONS

- 0.700" x 0.600" (outside x inside diameter)

OPERATING SPECIFICATIONS

- Operating pressure range: up to 80 PSI
- Warranty period: 2 years

½" PE Tubing

½" PE TUBING – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Tubing Diameter	3 Length
TWPE = Thick-walled polyethylene tubing	**700** = 0.700" outside diameter	**100** = 100' **250** = 250' **500** = 500' **1K** = 1,000'

Example:
TWPE-700-250 = ½" polyethylene tubing in a 250' roll

ECO-INDICATOR

Confirm system operation and adequate pressure with this handy visual tool.

KEY BENEFITS

- Visible yellow stem indicates when system is in operation
- Stem pops up when pressure exceeds 12 PSI and assists in confirming low pressures if not raised

OPERATING SPECIFICATIONS

- Operating pressure: up to 80 PSI
- Indication of system operation: above 12 PSI
- Warranty period: 2 years

Eco-Indicator Installed

ECO-ID
Retracted height: 7¼"
Popup height: 4"
Exposed diameter: 1¼"
Inlet size: ½" FTP
Pair with subsurface Eco-Mat® and Eco-Wrap® Systems

MLD

Use this ¼" dripline solution for tight spaces and raised planters.

KEY BENEFITS

- Superior flexibility makes MLD an excellent choice for small spaces and raised containers
- Properly irrigates without being intrusive to the landscape

PRODUCT SPECIFICATIONS

- Colors: brown or black polyethylene
- Emitter spacing: 6" or 12"
- Coil sizes: 100' or 250'
- 0.250" x 0.175" (outside/inside diameters)
- Use with ¼" barb fittings

OPERATING SPECIFICATIONS

- Pressure range: 10 to 40 PSI
- Minimum filtration: 150 mesh (120 microns)
- Maximum run lengths: 6" spacing = 15'; 12" spacing = 30'
- Warranty period: 2 years

MLD

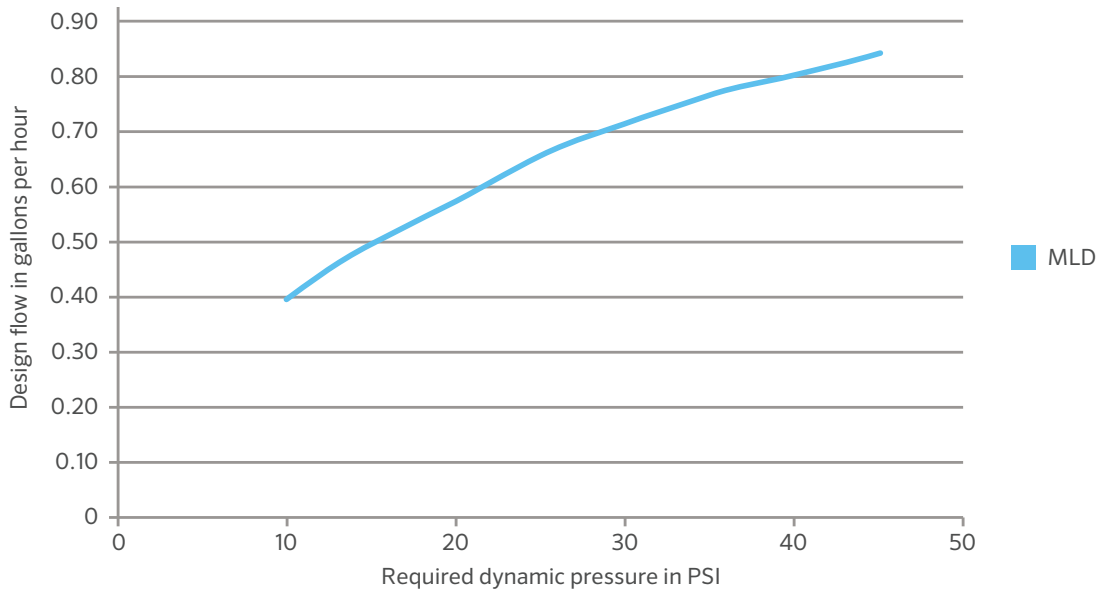
MLD Installed

MLD – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Spacing	3 Length	4 Options
MLD-05	**06** = 6"	**100** = 100'	**BL** = Black
	12 = 12"	**250** = 250'	**(blank)** = Brown

Example:
MLD-05-12-250 = 0.5 GPH mini landscape dripline with 12" spacing in a 250' roll, brown

MLD FLOW CHART



DISTRIBUTION TUBING

Add stability and flexibility when using Point-Source Emitters or Micro Sprays.

KEY BENEFITS

- High quality vinyl or polyethylene securely connects to acetal ¼" fittings
- Vinyl is more flexible, but it softens in high heat and should be used in cooler climates
- Polyethylene performs well in warmer climates

PRODUCT SPECIFICATIONS

- Material: polyethylene or vinyl
- Coil sizes: 100', 250', and 1,000'

OPERATING SPECIFICATIONS

- Operating pressure range: up to 60 PSI
- Warranty period: 2 years

¼" Tubing

¼" TUBING – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Tubing Diameter	3 Length
HQPE = Polyethylene tubing **HQV** = Vinyl tubing	**250** = 0.250" outside diameter	**100** = 100' **250** = 250' **1K** = 1,000'

Example:
HQPE-250-1K = ¼" polyethylene tubing in a 1,000' roll

¼" BARBED FITTINGS

Ensure a superior hold with robust acetal construction.

KEY BENEFITS

- Acetal material provides a secure connection
- Goof plug lays flat to help prevent leaking

PRODUCT SPECIFICATIONS

- Fits Hunter MLD and Distribution Tubing

OPERATING SPECIFICATIONS

- Pressure range: up to 60 PSI
- Warranty period: 1 year

QB-TEE
¼" barb tee

QB-ELB
¼" barb elbow

QB-CPL
¼" barb coupling

QB-CRS
¼" barb cross

GP-025
Goof plug

¼" Barb Fittings:

Use with MLD or any vinyl or polyethylene ¼" tubing, UV-stabilized materials, and durable single barb connection

IH RISERS

Simplify point-to-point irrigation with vandal-resistant, heavy-duty IH Risers.

KEY BENEFITS

- Heavy-duty, military-grade, vandal-resistant design
- Made of flexible PVC for durability
- Brown components blend in with landscape
- Accepts any ½" FPT emitter
- Ideal for slopes
- Pre-assembly reduces labor by up to 50%
- At-grade or below-grade installation
- Available in multiple lengths for easy assembly
- Pre-assembled with ½" MPT adapter and specified emitter with check valve
- Available as components for custom assemblies
- Check valve holds back 12' of head

OPERATING SPECIFICATIONS

- Maximum flow: 7 GPM
- Maximum pressure: 60 PSI
- Warranty period: 2 years

RECOMMENDED GLUES FOR FLEXIBLE PVC

- IPS® Weld-On®:
  - P-68™ primer (recommended for PVC fittings only)
  - P-70™ primer (may be used but P-68 is suggested)
  - 795™ Flex PVC cement
- Christy's®:
  - Purple Primer® or Red Hot Clear Primer® (fittings only)
  - Flex Pro PVC pipe cement
  - Red Hot Blue Glue® (not specialized for flexible PVC)

IH Risers with Emitters – SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Riser Length	2 Emitter Flow with Check Valve Screen	3 Fitting Options
IH-06 = 6" riser	**05-CV** = 0.5 GPH	**(blank)** = Brown
IH-12 = 12" riser	**10-CV** = 1.0 GPH	**R** = Reclaimed (purple fitting)
IH-18 = 18" riser	**20-CV** = 2.0 GPH	
IH-24 = 24" riser	**40-CV** = 4.0 GPH	
IH-36 = 36" riser	**60-CV** = 6.0 GPH	

Example:
IH-12-10-CV = 12" irrigation hose riser with 1.0 GPH emitter with brown fittings

IH RISER COMPONENTS SOLD SEPARATELY

Model	Description
SCREEN-CV	Filter screen with 12' check valve
IH-FIT-3850	⅜" x ½" MPT IH fitting
IH-FIT-3850-R	⅜" x ½" MPT IH fitting (reclaimed)
IH-250	250' length of 12" flexible PVC irrigation hose
IPS-050-250	250' length of ½" IPS

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IH RISERS

FACTORY ASSEMBLED IH RISERS
Riser, filter screen, and emiter

SCREEN-CV
Filter screen with 12' check valve

IH-FIT-3850, IH-FIT-3850-R
⅜" x ½" MPT IH fitting

IPS-050-250

IH-250

Flexible PVC for creating headers or custom risers

POINT-SOURCE EMITTERS

Ensure accurate irrigation for mixed and sparse plantings with a wide range of flow rates.

KEY BENEFITS

- Pressure-compensating for consistent and reliable flow
- Color-coded by flow for easy identification in the field
- Earth-tone colors blend in well with the surrounding environment
- Three inlet variations: ¼" barb, 10-32 thread, ½" FPT
- Coined edges for easy grip
- Self-piercing barb
- Optional diffuser cap
- Self-flushing diaphragm

OPERATING SPECIFICATIONS

- Recommended pressure range: 20 to 50 PSI
- Minimum filtration: 150 mesh; 100 microns
- Warranty period: 2 years

½" FEMALE THREAD (BROWN BASE) WITH CHECK VALVE SCREEN

	Model	Inlet Type	Flow (GPH)
Blue	HEB-05-CV	½" female thread	0.5
Black	HEB-10-CV	½" female thread	1.0
Red	HEB-20-CV	½" female thread	2.0
Tan	HEB-40-CV	½" female thread	4.0
Orange	HEB-60-CV	½" female thread	6.0

EMITTER MODEL CHART

	Model	Inlet Type	Flow (GPH)
Blue	HE-050-B	Self-piercing barb	0.5
Black	HE-10-B	Self-piercing barb	1.0
Red	HE-20-B	Self-piercing barb	2.0
Tan	HE-40-B	Self-piercing barb	4.0
Orange	HE-60-B	Self-piercing barb	6.0
Blue	HE-050-T	10-32 thread	0.5
Black	HE-10-T	10-32 thread	1.0
Red	HE-20-T	10-32 thread	2.0
Tan	HE-40-T	10-32 thread	4.0
Orange	HE-60-T	10-32 thread	6.0
Blue	HEB-05	½" female thread	0.5
Black	HEB-10	½" female thread	1.0
Red	HEB-20	½" female thread	2.0
Tan	HEB-40	½" female thread	4.0
Orange	HEB-60	½" female thread	6.0

DIFFUSER CAP
(HE-DIFF)
Use for flows higher than 2 GPH to diffuse the water and prevent erosion

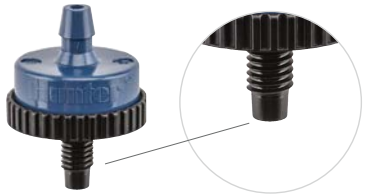
½" FEMALE THREAD
Brown base matches IH Risers and blends into landscaping

SCREEN-CV
Filter screen with 12' check valve

Inlet Options

① Self-piercing barb

② 10-32 thread



③ ½" female thread

MULTI-PORT EMITTERS

Use these emitters to irrigate groups of plants effectively from one source.

KEY BENEFITS

- Six pressure-compensating emitter ports provide consistent and reliable flow
- Color-coded by flow for easy identification
- Earth-tone colors blend in with surrounding landscape
- Swivel elbows assist in placing water directly to plant
- Multi-Port Manifold (MPM) provides unrestricted flow for each outlet

PRODUCT SPECIFICATIONS

- Available in ½" FNPT
- Available flows: 0.5, 1.0, 2.0 GPH
- PVC cap plugs port when not being used

OPERATING SPECIFICATIONS

- Pressure range: 10 to 50 PSI
- Minimum filtration: 150 mesh
- Warranty period: 2 years

MULTI-PORT EMITTER MODEL CHART

	Model	Flow (GPH)
Blue	MPE-05	0.5
Black	MPE-10	1.0
Red	MPE-20	2.0
Gray	MPM-050	N/A

Multi-Port Emitter

Multi-Port Manifold
(MPM-050)
Unrestricted flow through outlets as indicated by gray color. Use with ¼" distribution tubing and a barbed emitter at the end (available in ½" FPT). Allows water to be directed to as many as six different locations.

Emitter Caps
(MPE-CAPS)
Plug unused ¼" barbed emitter outlets. Use with Hunter Multi-Port Emitters.

Hunter Emitter Multi-Tool
P/N HEMT
(Punches pilot holes and pellets, inserts and removes emitters, cuts tubing)

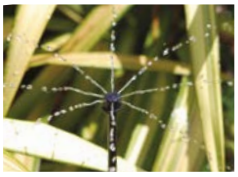
Pocket Punch
P/N POCKETPUNCH
(Punches, inserts, and removes emitters)

MICRO SPRAYS

Apply water accurately for small-area coverage.

SOLO-DRIP

- Eight streams of water for thorough coverage
- Adjustable cap for flow and radius adjustment



SOLO-DRIP PERFORMANCE DATA

Pressure PSI	Flow GPH	Throw Diameter ft.
15	0–11	0–1.5
20	0–12.5	0–1.9
30	0–15.7	0–2.7

Note: Adjustable to maximum (approximately 20 clicks)

HALO-SPRAY

- Adjustable umbrella of water
- Adjustable cap for flow and radius adjustment

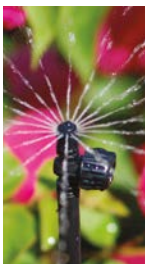
HALO-SPRAY PERFORMANCE DATA

Pressure PSI	Flow GPH	Throw Diameter ft.
15	0–14	0–5.8
20	0–16	0–7.7
30	0–20	0–11.5

Note: Adjustable to maximum (approximately 14 clicks)

TRIO-SPRAY

- Full-, half-, and quarter-circle configurations
- Adjustable cap for flow and radius adjustment



TRIO-SPRAY PERFORMANCE DATA

Pressure PSI	Flow GPH	Spray Pattern ft. Diameter in Throw 360° x 18 Hole	Radius of Throw 180°	Radius of Throw 90°
10	0–16.7	0–17	0–7	0–6
15	0–20.3	0–19	0–8	0–7
20	0–23.4	0–20	0–9	0–8
25	0–26.1	0–22	0–10	0–9
30	0–28.6	0–23	0–11	0–10

SD-T **HS-T** **TS-T-F**

SD-B **HS-B** **TS-T-H**

SD-B-STK
Height: 6"

HS-B-STK
Height: 6"

TS-T-Q

B = Barbed, F = Full, H = Half, Q = Quarter, STK = Stake, T = Threaded

For a more robust overhead micro spray system, pair Short-Radius Micro Spray Nozzles with Pro-Spray Sprinkler Bodies:

Short-Radius Micro Spray Nozzles
Page 71

RIGID RISERS

These risers maintain their stiffness even when used with Micro Sprays, making them a perfect choice for high-throw applications.

KEY BENEFITS

- For rugged system designs
- Accepts 10-32 threaded components
- Perfect for annual flower beds and planters
- Inlet configurations: ½" FPT, ¼" barb, or blank
- HDPE construction

OPERATING SPECIFICATIONS

- Warranty period: 1 year

RIGID RISER MODEL CHART

Model	Description
RR12	12" Rigid Riser
RR12-T	12" Rigid Riser with ½" threaded base
RR12-B	12" Rigid Riser with ¼" barb base

Rigid Riser
Available in 12" inlet options

MULTI-PURPOSE BOX

This sturdy box is just the right size to provide protection and easy access to essential irrigation components.

KEY BENEFITS

- Small footprint in a sturdy, durable box
- Five color offerings blend in with any environment
- Overlapping lid prevents debris from entering box
- Knock-out bolt hole
- UV-protected, non-slip lid

PRODUCT SPECIFICATIONS

- Fits small control zone kits and other assorted components
- Durable HDPE construction
- ⅜" bolt included with every box
- Warranty period: 2 years

MULTI-PURPOSE BOX

Model	Description
MB-0811	Multi-Purpose Box with standard brown lid
MB-0811-G	Multi-Purpose Box with green lid
MB-0811-T	Multi-Purpose Box with tan lid
MB-0811-R	Multi-Purpose Box with purple lid
MB-0811-B	Multi-Purpose Box with black lid
MB-BOX	Multi-Purpose Box (box only)
MB-LID	Multi-Purpose Box (lid only, brown)
MB-LID-G	Multi-Purpose Box (lid only, green)
MB-LID-T	Multi-Purpose Box (lid only, tan)
MB-LID-R	Multi-Purpose Box (lid only, purple)
MB-LID-B	Multi-Purpose Box (lid only, black)

Multi-Purpose Box
Top
Width: 7½"
Length: 10½"

Bottom
Width: 8½"
Length: 11½"

Height: 8"

MB-LID-B

MB-LID-G

MB-LID

MB-LID-R

MB-LID-T

Multi-Purpose Box Installed

AIR/VACUUM RELIEF VALVE

Prevent water hammer and system collapse by discharging air during startup and allowing air to enter during shutdown.

KEY BENEFITS

- Releases air pockets without premature closure
- Leak-free closure after release
- Helps prevent system collapse through vacuum relief

PRODUCT SPECIFICATIONS

- UV-protected and corrosion-resistant material

OPERATING SPECIFICATIONS

- Pressure range: up to 80 PSI
- Warranty period: 2 years

AVR-075
Height: 5"
Width: 2"
Inlet: ¾" MPT

PLD-AVR
Height: 1"
Width: ¾"
Inlet: ½"

Air/Vacuum Relief Valve Installed

AUTOMATIC FLUSH VALVE

Keep laterals clean by automatically flushing water, air, and debris at each system startup.

KEY BENEFITS

- Flushes debris automatically at every system startup
- Reversible diaphragm to coordinate with low or high flow
- Lateral placement provides better grit tolerance

PRODUCT SPECIFICATIONS

- Removable top for diaphragm maintenance

OPERATING SPECIFICATIONS

- Pressure range: up to 60 PSI
- Low-flow diaphragm side: 2 to 5 GPM
- High-flow diaphragm side: 5 to 12 GPM
- AFV075: Auto flush at 5 PSI
- Warranty period: 1 Year

AFV-B
Automatic Flush Valve with 17 mm barb connection

AFV-T
Automatic Flush Valve with ½" MPT connection

AFV075
Automatic Flush Valve with ¾" FNPT connection

Automatic Flush Valve Installed

RZWS

Deliver water across all levels of the root zone for high-efficiency subsurface irrigation of trees and shrubs.

KEY BENEFITS

- Patented StrataRoot™ Baffle System diverts water to all levels of the root zone
  while adding strength to the unit
- Durable locking cap for vandal resistance
- Pressure-compensating bubbler for accurate water flow
- Built-in Hunter Swing Joint for direct installation to ½" PVC fitting
- Preassembled for fast installation

OPERATING SPECIFICATIONS

- Bubbler flow rates: 0.25 or 0.50 GPM
- Recommended pressure range: 15 to 70 PSI
- Warranty period: 2 years

FACTORY-INSTALLED OPTIONS

- Check valve (HCV)
- Locking reclaimed water purple cap

USER-INSTALLED OPTIONS

- Fabric sleeve to prevent soil intrusion in sandy areas for 18" and 36" models (P/N RZWS-SLEEVE)
- Replacement cap for 18" and 36" models (P/N 913300SP)
- Locking reclaimed purple cap for 18" and 36" models (P/N 913301SP)
- Reclaimed water purple cap for 10" model (P/N RZWS10-RCC)

ROOT ZONE WATERING SYSTEM – SPECIFICATION BUILDER: Order 1 + 2 + 3

1 Model	2 Bubbler Flow Rate	3 Options
RZWS-10 = 10" Root Zone Watering System	**25** = 0.25 GPM	**(blank)** = No option
RZWS-18 = 18" Root Zone Watering System	**50** = 0.50 GPM	**CV** = Check valve
RZWS-36 = 36" Root Zone Watering System	**(blank)** = No bubbler or swing joint	**R** = Reclaimed cap
		CV-R = Check valve with reclaimed cap

Examples:
RZWS-10-50-CV = 10" Root Zone Watering System at 0.50 GPM, with check valve
RZWS-36-25-CV-R = 36" Root Zone Watering System at 0.25 GPM, with check valve and reclaimed cap

RZWS-10
Tube diameter: 2"
Cap diameter: 3"
Length: 10"

RZWS-18
Tube diameter: 3"
Cap diameter: 4¾"
Length: 18"

RZWS-36
Tube diameter: 3"
Cap diameter: 4¾"
Length: 36"

Reclaimed models available (Add -R to model number)

ADDITIONAL OPTION (SPECIFY SEPARATELY)

RZWS-SLEEVE = Field-installed sleeve made from filter fabric

RZB

This accessory for small trees and shrubs assists in delivering water to roots.

KEY BENEFITS

- Solid mesh tube with perforated top to complement overhead or drip irrigation systems
- Allows oxygen and natural precipitation to reach the root zone
- Easy installation that directs overhead and drip irrigation to the root zone
- Warranty period: 1 year

RZB
Diameter: 2"
Length: 9"

RECLAIMED

EMBRACE THE POWER OF PURPLE

with our complete line of reclaimed water products

ROTORS

PGJ

- PGJ-00-R
- PGJ-04-R
- PGJ-06-R
- PGJ-12-R

PGP ULTRA

- PGP-00-CV-R
- PGP-00-CV-R-PRB
- PGP-04-CV-R
- PGP-04-CV-R-PRB
- PGP-06-CV-R
- PGP-12-CV-R

I-20

- I-20-00-R
- I-20-00-R-PRB
- I-20-04-R
- I-20-04-SS-R
- I-20-04-R-PRB
- I-20-04-SS-R-PRB
- I-20-06-R
- I-20-06-SS-R
- I-20-06-R-PRB
- I-20-06-SS-R-PRB
- I-20-12-R

I-25

- I-25-04-R
- I-25-04-SS-R
- I-25-06-R
- I-25-06-SS-R

I-40

- I-40-04-SS-R
- I-40-04-SS-ON-R
- I-40-06-SS-R
- I-40-06-SS-ON-R

I-50

- I-50-06-SS-R
- I-50-06-SS-ON-R

Rotors Key

00 - Shrub
04 - 4" pop-up
06 - 6" pop-up
12 - 12" pop-up
CV - Check valve
SS - Stainless steel
ON - Opposing nozzles
PRB - Pressure-regulated body
ARV - Adjustable arc
3RV - Full-circle

ROTORS

I-80

- I-80-04-SS-R
- I-80-04-SS-ON-R

I-90

- I-90-ARV
- I-90-3RV

SPRAYS

PRO-SPRAY

- PROS-00-R
- PROS-04-CV-R
- PROS-06-CV-R
- PROS-12-CV-R
- PROS-RC-CAP-SP (snap-on)
- 458520SP = ID cap (threaded)

PRO-SPRAY PRS30

- PROS-00-PRS30-R
- PROS-04-PRS30-CV-R
- PROS-06-PRS30-CV-R
- PROS-12-PRS30-CV-R
- PROS-04-PRS30-CV-F-R
- PROS-06-PRS30-CV-F-R
- PROS-12-PRS30-CV-F-R
- 458560 = ID cap

PRO-SPRAY PRS40

- PROS-00-PRS40-R
- PROS-04-PRS40-CV-R
- PROS-06-PRS40-CV-R
- PROS-12-PRS40-CV-R
- PROS-04-PRS40-CV-F-R
- PROS-06-PRS40-CV-F-R
- PROS-12-PRS40-CV-F-R
- 458562 = ID cap

Sprays Key

00 - Shrub
04 - 4" pop-up
06 - 6" pop-up
12 - 12" pop-up
CV - Check valve

BUBBLERS

BUBBLERS

PCB-25-R
PCB-50-R
PCB-10-R
PCB-20-R

Bubblers Key

25 - 0.25 GPM
50 - 0.50 GPM
10 - 1.00 GPM
20 - 2.00 GPM

VALVES

ICV

ICV-101G-FS-R
ICV-151G-FS-R
ICV-201G-FS-R
ICV-301-FS-R
561205 = ICV-101-201 series ID handle
515005 = ICV-301 series ID handle

IBV

IBV-101G-FS-R
IBV-151G-FS-R
IBV-201G-FS-R
IBV-301G-FS-R

QUICK COUPLERS

HQ-33-DLRC-R
HQ-44-LRC-R
HQ-44-LRC-AW-R
HQ-5-LRC-R

DRIP CONTROL ZONE KITS

ICZ-101-25-LF-R
ICZ-101-40-LF-R
HFR-100-075-25-R
HFR-100-075-40-R

Valves Key

FS - Filter Sentry® Mechanism
*** Note:** IBV purple tags are user-installed options.

Quick Couplers Key

LRC - Locking rubber cover
RC - Rubber cover
AW - Acme key with anti-rotation wheels

MICRO

IH RISERS

IH-RISER-XX-R
IH-XX-YY-CV-R
IH-FIT-3850-R

RZWS

RZWS-10-R
RZWS-10-25-R
RZWS-10-50-R
RZWS-10-25-CV-R
RZWS-10-50-CV-R
RZWS-18-R
RZWS-18-25-R
RZWS-18-50-R
RZWS-18-25-CV-R
RZWS-18-50-CV-R
RZWS-36-R
RZWS-36-25-R
RZWS-36-50-R
RZWS-36-25-CV-R
RZWS-36-50-CV-R
913301SP (purple cap for 18" and 36")
RZWS10-RCC (purple cap for 10")

HDL

HDL-06-12-250-R
HDL-06-12-500-R
HDL-06-12-1K-R
HDL-06-18-250-R
HDL-06-18-500-R
HDL-06-18-1K-R
HDL-06-24-250-R
HDL-06-24-1K-R
HDL-09-12-250-R
HDL-09-12-500-R
HDL-09-12-1K-R
HDL-09-18-250-R
HDL-09-18-500-R
HDL-09-18-1K-R
HDL-09-24-250-R
HDL-09-24-250-R
HDL-09-24-1K-R
HDL-BLNK-250-R
HDL-BLNK-500-R
HDL-BLNK-1K-R

MULTI-PURPOSE BOX

MB-0811-R
MB-LID-R (lid only)

Micro Key

IH Risers
XX - Riser length (06, 12, 18, 24, or 36 inches)
YY - Emitter flow (0.5, 1.0, 2.0, 4.0, or 6.0 GPH)
CV - Check valve (standard)

RZWS
10 - 10" length
18 - 18" length
36 - 36" length
25 - 0.25 GPM
50 - 0.50 GPM
CV - Check valve

HDL
BLNK - No emitter
HDL-04 - 0.4 GPH
HDL-06 - 0.6 GPH
HDL-09 - 0.9 GPH
12 - 12" spacing
18 - 18" spacing
24 - 24" spacing
250 - 250' length
500 - 500' length
1K - 1,000' length

TOOLS

SPOTSHOT HOSE-END NOZZLE

MODELS

- ¾" hose thread inlet – P/N 160700
- 1" hose thread inlet – P/N 160705

KEY BENEFITS

- Variable nozzle stream choices:
  - Fan: Broad, light stream for turf hot spots
  - Soak: Medium stream for dust-control areas
  - Jet: Tight, focused stream for power washing

OPERATING SPECIFICATIONS

- Flow – 35 GPM at 80 PSI*

* Not recommended for residential use with regulated, low-pressure, or low-flow conditions

SpotShot Hose-End Nozzle
¾" P/N 160700SP
1" P/N 160705SP

Pitot Gauge
P/N 280100SP
Used to check operating pressure of rotor sprinklers

MP Gauge Assembly
P/N MPGAUGE
Used to check operating pressure on spray body sprinklers

Hand Pump
P/N 217500SP
Used to remove water from flooded areas during service and installation

Nozzle Insertion Collar
P/N 123200SP

Hunter Wrench
P/N 172000SP

T-Handle Tool
P/N 319100SP

Nozzle Removal/ Installation Tool
P/N 803700
I-80, G85B, G885 Short and Mid-Range Nozzles

Snap Ring Tool
P/N 251000SP
I-80 Installation and removal

TECHNICAL INFORMATION

PRECIPITATION RATES

In this section, the "Sprinkler Spacing Method–Any Arc and Any Spacing" equation is used to calculate precipitation rates. The first set of equations with the ■ shows the precipitation rate for the sprinklers when they are laid out in a square pattern. The next set with the ▲ shows the precipitation rate for the sprinklers laid out in an equilateral triangular spacing pattern. This is the "Sprinkler Spacing Method–Equilateral Triangular Spacing" equation.

WHAT IS "PRECIPITATION RATE"?

If someone said they were caught in a rainstorm that dropped one inch of water in an hour, you would have some idea of how "hard" or "heavily" the rain came down. A rainstorm that covers an area with one inch of water in one hour has a "precipitation rate" of one inch per hour (1 in/hr or 25 mm/hr). Similarly, the precipitation rate is the "speed" at which a sprinkler or an irrigation system applies water.

MATCHED PRECIPITATION RATES

A zone or system in which all the heads have similar precipitation rates is said to have "matched precipitation rates." Systems that have matched precipitation rates reduce wet and dry spots and minimize run times, which reduces water consumption and lowers costs. Knowing that sprinkler spacing, flow rates, and arcs of coverage affect precipitation rates, a general guideline is: as the spray arc doubles, so should the flow.

90° Arc = 1 GPM
(0.23 m^3/hr; 3.8 l/min)

180° Arc = 2 GPM
(0.45 m^3/hr; 7.6 l/min)

360° Arc = 4 GPM
(0.91 m^3/hr; 15.1 l/min)

The flow rate of half-circle heads must be two times the flow rate of the quarter-circle heads, and the full-circle heads must have two times the flow rate of the half-circle heads. In the illustration, the same amount of water is applied to each quarter circle area and precipitation is therefore matched.

CALCULATING PRECIPITATION RATES

Depending upon the construction of the irrigation system, the precipitation rate may be calculated by either a Sprinkler Spacing or a Total Area method.

Sprinkler Spacing Method (■)
The precipitation rate should be calculated for each individual zone. If all sprinkler heads on the zone have the same spacing, flow rate, and arc of coverage, use one of the following formulas:

Any Arc and Any Spacing (■):

$$\text{P.R. (in/hr)} = \frac{\text{Flow Rate (GPM) for any Arc x 34,650}}{\text{Degrees of Arc x Head Spacing (ft.) x Row Spacing (ft.)}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow Rate } (m^3/hr) \text{ for any Arc x 360,000}}{\text{Degrees of Arc x Head Spacing (m) x Row Spacing (m)}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow Rate (l/min) for any Arc x 21,600}}{\text{Degrees of Arc x Head Spacing (m) x Row Spacing (m)}}$$

Sprinkler Spacing Method (▲)
The precipitation rate should be calculated for each individual zone. If all sprinkler heads on the zone have the same spacing, flow rate, and arc of coverage, use one of the following formulas:

Equilateral Triangular Spacing (▲):

$$\text{P.R. (in/hr)} = \frac{\text{Flow Rate (GPM) for any Arc x 34,650}}{\text{Degrees of Arc x (Head Spacing)}^2 \text{ x 0.866}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow Rate } (m^3/hr) \text{ for any Arc x 360,000}}{\text{Degrees of Arc x (Head Spacing)}^2 \text{ x 0.866}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow Rate (l/min) for any Arc x 21,600}}{\text{Degrees of Arc x (Head Spacing)}^2 \text{ x 0.866}}$$

Total Area Method
The precipitation rate for a "system" is the average precipitation rate of all sprinklers in an area, regardless of the spacing, flow rate, or arc for each head. The Total Area Method calculates all the flows of all of the heads in any given area.

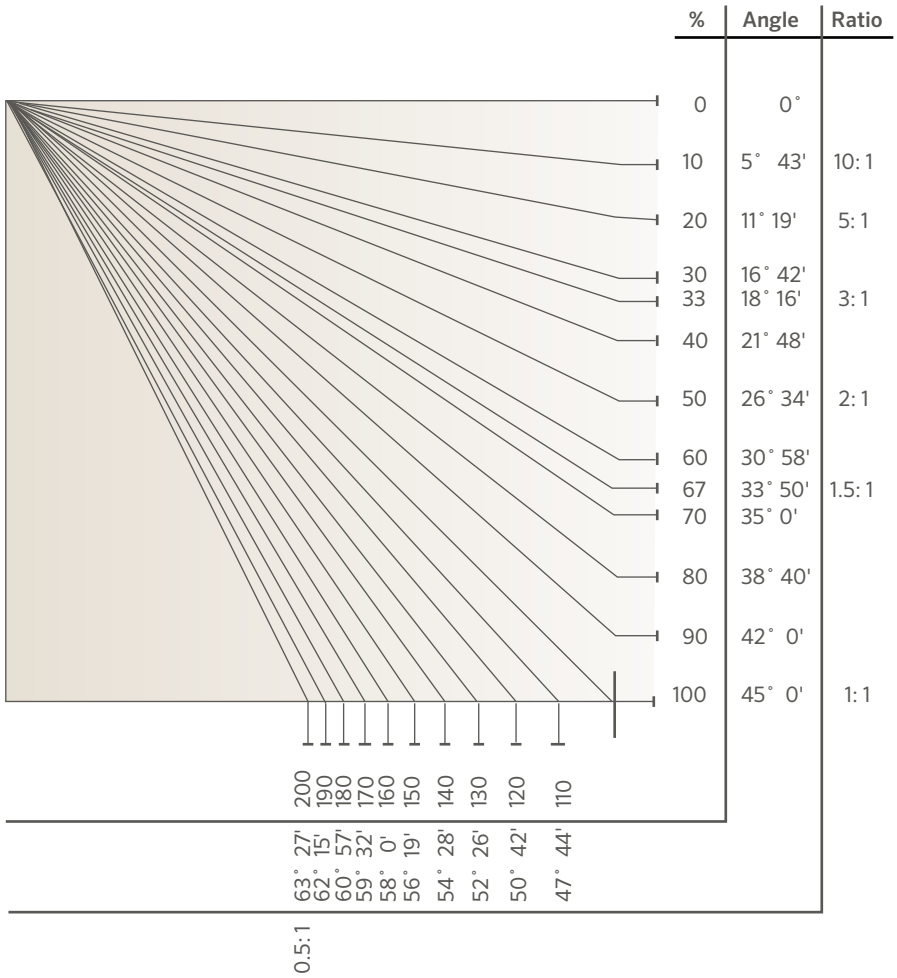
$$\text{P.R. (in/hr)} = \frac{\text{Flow (GPM) x 96.25}}{\text{Total Area (ft.)}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow } (m^3/hr) \text{ x 1,000}}{\text{Total Area } (m^2)}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow (l/min) x 60}}{\text{Total Area } (m^2)}$$

SLOPE EQUIVALENTS/IRRIGATION

PERCENT, ANGLE, RATIO



SLOPE IRRIGATION: Maximum precipitation rates for slopes in in/hr

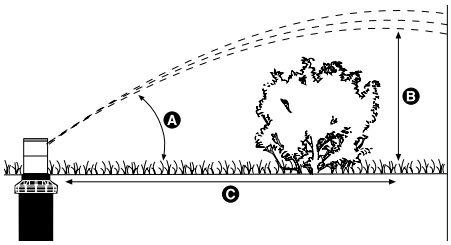
Soil Texture	0 to 5% Slope		5 to 8% Slope		8 to 12% Slope		12%+ Slope	
	Cover	Bare	Cover	Bare	Cover	Bare	Cover	Bare
Coarse sandy soils	2.0	2.0	2.0	1.5	1.5	1.0	1.0	0.5
Coarse sandy soils over compact subsoils	1.75	1.5	1.25	1.0	1.0	0.75	0.75	0.4
Light sandy loams uniform	1.75	1.0	1.25	0.8	1.0	0.6	0.75	0.4
Light sandy loams over compact subsoils	1.25	0.75	1.0	0.5	0.75	0.4	0.5	0.3
Uniform silt loams	1.0	0.5	0.8	0.4	0.6	0.3	0.4	0.2
Silt loams over compact subsoil	0.6	0.3	0.5	0.25	0.4	0.15	0.3	0.1
Heavy clay or clay loam	0.2	0.15	0.15	0.10	0.12	0.08	0.1	0.06

Notes:

The maximum precipitation values listed below are those suggested by the United States Department of Agriculture. The values are average and may vary with respect to actual soil and groundcover conditions.

HEIGHT OF SPRAY

The trajectory and spray height of the water stream leaving a sprinkler nozzle is important information when designing and installing irrigation systems.



These rotor nozzle trajectory charts are designed to help determine how close a sprinkler can be placed to an object such as a fence or hedge without obstructing the spray pattern. All information shown is at optimum operating pressures.

HUNTER NOZZLE HEIGHT AND TRAJECTORY CHART

Model	Nozzle No.	Pressure (PSI)	Degrees of Trajectory	Max Height of Spray	Distance from Head to Maximum Height (ft.)
MP ROTATOR®	800SR	40	18	18"	Varies
	815	40	15	12"	Varies
	1000	40	20	20"	Varies
	2000	40	26	45"	Varies
	3000	40	26	79"	Varies
	3500	40	26	79"	Varies
	Corner	40	14	14"	Varies
	Side Strip	40	16	19"	Varies
	Left Strip	40	16	18"	Varies
PGJ / SRM	0.50	40	10	2'	4
	0.75	40	10	2'	4
	1.0	40	10	2'	8
	1.5	40	10	3'	12
	2.0	40	15	5'	16
	2.5	40	15	5'	20
	3.0	40	15	5'	20
	4.0	40	15	5'	22
PGP® RED NOZZLES	1	50	26	7'	22
	2	50	26	7'	22
	3	50	26	8'	23
	4	50	26	8'	23
	5	50	27	9'	26
	6	50	27	10'	28
	7	50	26	11'	30
	8	50	26	11'	30
	9	50	27	12'	32
	10	60	25	13'	32
	11	60	25	13'	38
	12	60	25	13'	40
PGP LOW-ANGLE GRAY NOZZLES	4	50	15	5'	22
	5	50	15	4'	22
	6	50	14	4'	22
	7	50	14	4'	22
	8	50	14	5'	24
	9	50	15	5'	26
	10	60	15	6'	30
PGP BLUE NOZZLES	1.5	45	25	8'	23
	2.0	45	25	8'	23
	2.5	45	25	9'	26
	3.0	45	25	10'	28
	4.0	45	25	11'	30
	5.0	45	25	11'	30
	6.0	55	25	12'	32
	8.0	55	25	13'	32
PGP ULTRA/I-20 DARK BLUE NOZZLES	1.0	50	26	8'	23
	1.5	50	26	8'	23
	2.0	50	27	9'	26
	3.0	50	27	10'	28
	3.5	50	26	11'	30
	4.0	50	26	11'	30
	6.0	50	27	12'	32
	8.0	60	25	13'	32
PGP ULTRA/I-20 BLUE NOZZLES	1.5	45	25	8'	23
	2.0	45	25	8'	23
	2.5	45	25	9'	26
	3.0	45	25	10'	28
	4.0	45	25	11'	30
	5.0	45	25	11'	30
	6.0	55	25	12'	32
	8.0	55	25	13'	32

HEIGHT OF SPRAY

HUNTER NOZZLE HEIGHT AND TRAJECTORY CHART

Model	Nozzle No.	Pressure (PSI)	Degrees of Trajectory	Max Height of Spray	Distance from Head to Maximum Height (ft.)
PGP® Ultra/I-20 Low-Angle Gray Nozzles	2.0LA	50	13	5	22
	2.5LA	50	13	4	22
	3.5LA	50	13	4	22
	4.5LA	50	13	4	22
PGP Ultra/I-20 Short-Radius Black Nozzles	0.5	50	15	5	8
	1.0	50	14	6	9
	2.0	50	3	1	6
PGP Ultra/I-20 Short-Radius Black Nozzles	0.75	50	22	7	13
	1.5	50	18	7	13
	3.0	50	8	1	6
PGP Ultra/I-20 MPR-25 Red Nozzles	Q - 90	45	22	3	15
	T - 120	45	21	4	14
	H - 180	45	24	4	14
	F - 360	45	22	4	10
PGP Ultra/I-20 MPR-30 Lt. Green Nozzles	Q - 90	45	28	5	18
	T - 120	45	14	3	17
	H - 180	45	16	4	16
	F - 360	45	18	2	13
PGP Ultra/I-20 MPR-35 Tan Nozzles	Q - 90	45	28	6	19
	T - 120	45	28	6	18
	H - 180	45	16	4	17
	F - 360	45	14	3	12
I-25	4	50	25	9	22
	7	50	25	10	28
	8	50	25	11	28
	10	60	25	12	30
	13	60	25	13	31
	15	60	25	12	31
	18	60	25	15	34
	20	70	25	15	35
	23	70	25	16	38
	25	70	25	16	38
	28	70	25	17	40
I-40/I-50 Adjustable	8	50	25	12	32
	10	60	25	14	32
	13	60	25	14	34
	15	60	25	15	42
	23	70	25	17	46
	25	70	25	17	48
I-40/I-50-ON	15	50	25	15	42
	18	60	25	16	43
	20	60	25	17	45
	23	60	25	17	46
	25	70	25	17	48
	28	70	25	17	50

HEIGHT OF SPRAY

HUNTER NOZZLE HEIGHT AND TRAJECTORY CHART

Model	Nozzle No.	Pressure (PSI)	Degrees of Trajectory	Max Height of Spray	Distance from Head to Maximum Height (ft.)
I-80 & I-90 ADV	23	80	22.5	14	37
	25	80	22.5	15	40
	33	80	22.5	15	42
	38	80	22.5	16	48
	43	80	22.5	16	48
	48	80	22.5	17	54
	53	80	22.5	17	56
	63	80	22.5	18	64
	73	80	22.5	19	68
I-80-ON & I-90 36V	23	80	22.5	7	34
	25	80	22.5	8	36
	33	80	22.5	8	38
	38	80	22.5	9	40
	43	80	22.5	9	41
	48	80	22.5	10	43
	53	80	22.5	11	45
	63	80	22.5	12	48
	73	80	22.5	13	52

CONVERSION FACTORS

CONVERSION FACTORS			
To Convert	**From**	**To**	**Multiply By**
Area	acres	foot^2	43560
	acres	meter^2	4046.8
	meter^2	foot^2	10.764
	foot^2	inch^2	144
	inch^2	centimeter^2	6.452
	hectares	meter^2	10000
	hectares	acres	2.471
Power	kilowatts	horsepower	1.341
Flow	foot^3/minute	meter^3/second	0.0004719
	foot^3/second	meter^3/second	0.02832
	yards^3/minute	meter^3/second	0.01274
	gallon/minute	meter^3/hour	0.22716
	gallon/minute	liter/minute	3.7854
	gallon/minute	liter/second	0.06309
	meter^3/hour	liter/minute	16.645
	meter^3/hour	liter/second	0.2774
	liter/minute	liter/second	60
Length	foot	inch	12
	inch	centimeter	2.54
	foot	meter	0.30481
	kilometer	miles	0.6214
	miles	foot	5280
	miles	meter	1609.34
	millimeter	inch	0.03937
Pressure	PSI	kilopascals	6.89476
	PSI	bar	0.068948
	bar	kilopascals	100
	PSI	feet of head	2.31
Velocity	feet/second	meter/second	0.3048
Volume	feet^3	gallon	7.481
	feet^3	liter	28.32
	meter^3	feet^3	35.31
	meter^3	yard^3	1.3087
	yard^3	feet^3	27
	yard^3	gallon	202
	acres/feet	foot^3	43,560
	gallon	meter^3	0.003785
	gallon	liter	3.785
	imperial gallon	gallon	1.833

FRICTION LOSS CHARTS

WATER METER PRESSURE LOSS CHART: Typical Pressure Loss (PSI)

Flow (GPM)	⅝"	¾"	1"	1½"	2"	3"	4"	Flow (GPM)
1	0.2	0.1						1
2	0.3	0.2						2
3	0.4	0.3						3
4	0.6	0.5	0.1					4
5	0.9	0.6	0.2					5
6	1.3	0.7	0.3					6
7	1.8	0.8	0.4					7
8	2.3	1.0	0.5					8
9	3.0	1.3	0.6					9
10	3.7	1.6	0.7					10
11	4.4	1.9	0.8					11
12	5.1	2.2	0.9					12
13	6.1	2.6	1.0					13
14	7.2	3.1	1.1					14
15	8.3	3.6	1.2					15
16	9.4	4.1	1.4	0.4				16
17	10.7	4.6	1.6	0.5				17
18	12.0	5.2	1.8	0.6				18
19	13.4	5.8	2.0	0.7				19
20	15.0	6.5	2.2	0.8				20
22		7.9	2.8	1.0				22
24		9.5	3.4	1.2				24
26		11.2	4.0	1.4				26
28		13.0	4.6	1.6				28
30		15.0	5.3	1.8	0.7			30
32			6.0	2.1	0.8			32
34			6.9	2.4	0.9			34
36			7.8	2.7	1.0			36
38			8.7	3.0	1.2			38
40			9.6	3.3	1.3			40
42			10.6	3.6	1.4			42
44			11.7	3.9	1.5			44
46			12.8	4.2	1.6			46
48			13.9	4.5	1.7			48
50			15.0	4.9	1.9			50
52				5.3	2.1			52
54				5.7	2.2			54
56				6.2	2.3			56
58				6.7	2.5			58
60				7.2	2.7	1.0		60
65				8.3	3.2	1.1		65
70				9.8	3.7	1.3		70
75				11.3	4.3	1.5		75
80				12.8	4.9	1.6	0.7	80
90				16.1	6.2	2.0	0.8	90
100				20.0	7.8	2.5	0.9	100
110					9.5	2.9	1.0	110
120					11.3	3.4	1.2	120
130					13.0	3.9	1.4	130
140					15.1	4.5	1.6	140
150					17.3	5.1	1.8	150
160					20.0	5.8	2.1	160
170						6.5	2.4	170
180						7.2	2.7	180
190						8.0	3.0	190
200						9.0	3.2	200
220						11.0	3.9	220
240						13.0	4.7	240
260						15.0	5.5	260
280						17.3	6.3	280
300						20.0	7.2	300
350							10.0	350
400							13.0	400
450							16.2	450
500							20.0	500
75% of max meter capacity	**15 GPM**	**22.5 GPM**	**37.5 GPM**	**75 GPM**	**120 GPM**	**225 GPM**	**375 GPM**	**75% of max meter capacity**

Notes: Shaded areas represent velocities over 5 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS - TYPE K COPPER TUBING

ASTM B88 C = 140 • PSI loss per 100 ft. of pipe

Nominal Size	½"		⅝"		¾"		1"		1¼"		1½"		2"		2½"		3"	
Pipe ID	0.527		0.652		0.745		0.995		1.245		1.481		1.959		2.435		2.907	
Pipe OD	0.625		0.750		0.875		1.125		1.375		1.625		2.125		2.625		3.125	
Avg. Wall	0.049		0.049		0.065		0.065		0.065		0.072		0.083		0.095		0.109	
Flow (GPM)	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss
1	1.47	1.09	0.96	0.39	0.74	0.20	0.41	0.05	0.26	0.02								
2	2.94	3.94	1.92	1.40	1.47	0.73	0.82	0.18	0.53	0.06								
3	4.41	8.35	2.88	2.97	2.21	1.55	1.24	0.38	0.79	0.13								
4	5.88	14.23	3.84	5.05	2.94	2.64	1.65	0.65	1.05	0.22								
5	7.35	21.51	4.80	7.64	3.68	3.99	2.06	0.98	1.32	0.33								
6	8.81	30.15	5.76	10.70	4.41	5.59	2.47	1.37	1.58	0.46	1.12	0.20						
7	10.28	40.12	6.72	14.24	5.15	7.44	2.88	1.82	1.84	0.61	1.30	0.26						
8	11.75	51.37	7.68	18.24	5.88	9.53	3.30	2.33	2.11	0.78	1.49	0.34						
9	13.22	63.90	8.64	22.68	6.62	11.85	3.71	2.90	2.37	0.97	1.67	0.42						
10	14.69	77.66	9.60	27.57	7.35	14.41	4.12	3.52	2.63	1.18	1.86	0.51						
12			11.52	38.64	8.82	20.20	4.95	4.94	3.16	1.66	2.23	0.71	1.28	0.18				
14			13.44	51.41	10.29	26.87	5.77	6.57	3.69	2.21	2.60	0.95	1.49	0.24				
16			15.36	65.83	11.76	34.41	6.59	8.42	4.21	2.83	2.98	1.22	1.70	0.31				
18			17.28	81.88	13.23	42.80	7.42	10.47	4.74	3.52	3.35	1.51	1.91	0.39				
20					14.70	52.02	8.24	12.72	5.26	4.28	3.72	1.84	2.13	0.47				
22					16.17	62.06	9.07	15.18	5.79	5.10	4.09	2.19	2.34	0.56	1.51	0.19	1.06	0.08
24					17.64	72.91	9.89	17.84	6.32	5.99	4.46	2.58	2.55	0.66	1.65	0.23	1.16	0.10
26							10.71	20.69	6.84	6.95	4.84	2.99	2.76	0.77	1.79	0.27	1.26	0.11
28							11.54	23.73	7.37	7.97	5.21	3.43	2.98	0.88	1.93	0.30	1.35	0.13
30							12.36	26.96	7.90	9.06	5.58	3.89	3.19	1.00	2.06	0.35	1.45	0.15
32							13.19	30.39	8.42	10.21	5.95	4.39	3.40	1.12	2.20	0.39	1.54	0.16
34							14.01	34.00	8.95	11.42	6.32	4.91	3.61	1.26	2.34	0.44	1.64	0.18
36							14.84	37.79	9.48	12.70	6.70	5.46	3.83	1.40	2.48	0.49	1.74	0.20
38							15.66	41.77	10.00	14.04	7.07	6.03	4.04	1.55	2.61	0.54	1.83	0.23
40							16.48	45.94	10.53	15.43	7.44	6.63	4.25	1.70	2.75	0.59	1.93	0.25
42							17.31	50.28	11.06	16.89	7.81	7.26	4.47	1.86	2.89	0.65	2.03	0.27
44									11.58	18.41	8.18	7.91	4.68	2.03	3.03	0.70	2.12	0.30
46									12.11	19.99	8.56	8.59	4.89	2.20	3.17	0.76	2.22	0.32
48									12.63	21.63	8.93	9.30	5.10	2.38	3.30	0.83	2.32	0.35
50									13.16	23.33	9.30	10.03	5.32	2.57	3.44	0.89	2.41	0.38
55									14.48	27.84	10.23	11.96	5.85	3.07	3.78	1.06	2.66	0.45
60									15.79	32.70	11.16	14.05	6.38	3.60	4.13	1.25	2.90	0.53
65									17.11	37.93	12.09	16.30	6.91	4.18	4.47	1.45	3.14	0.61
70									18.43	43.51	13.02	18.70	7.44	4.79	4.82	1.66	3.38	0.70
75											13.95	21.24	7.97	5.45	5.16	1.89	3.62	0.80
80											14.88	23.94	8.51	6.14	5.50	2.13	3.86	0.90
85											15.81	26.79	9.04	6.87	5.85	2.38	4.10	1.01
90											16.74	29.78	9.57	7.63	6.19	2.65	4.35	1.12
95											17.67	32.91	10.10	8.44	6.54	2.93	4.59	1.24
100											18.60	36.19	10.63	9.28	6.88	3.22	4.83	1.36
110													11.69	11.07	7.57	3.84	5.31	1.62
120													12.76	13.01	8.26	4.51	5.79	1.91
130													13.82	15.08	8.95	5.23	6.28	2.21
140													14.88	17.30	9.63	6.00	6.76	2.54
150													15.95	19.66	10.32	6.82	7.24	2.88
160													17.01	22.16	11.01	7.69	7.72	3.25
170													18.07	24.79	11.70	8.60	8.21	3.63
180															12.39	9.56	8.69	4.04
190															13.07	10.57	9.17	4.46
200															13.76	11.62	9.66	4.91
220															15.14	13.87	10.62	5.86
240															16.51	16.29	11.59	6.88
260															17.89	18.90	12.55	7.98
280															19.27	21.68	13.52	9.15
300																	14.48	10.40
320																	15.45	11.72
340																	16.42	13.11
360																	17.38	14.58
380																	18.35	16.11
400																		
420																		
440																		
460																		
480																		
500																		

Notes: Shaded areas represent velocities over 7 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS - TYPE L COPPER TUBING

ASTM B88 C = 140 • PSI loss per 100 ft. of pipe

Nominal Size	½"		⅝"		¾"		1"		1¼"		1½"		2"		2½"		3"	
Pipe ID	0.545		0.666		0.785		1.025		1.265		1.505		1.985		2.465		2.945	
Pipe OD	0.625		0.750		0.875		1.125		1.375		1.625		2.125		2.625		3.125	
Avg. Wall	0.040		0.042		0.045		0.050		0.055		0.060		0.070		0.080		0.090	
Flow (GPM)	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss
1	1.37	0.93	0.92	0.35	0.66	0.16	0.39	0.04	0.25	0.02								
2	2.75	3.35	1.84	1.26	1.32	0.57	0.78	0.15	0.51	0.06								
3	4.12	7.09	2.76	2.67	1.99	1.20	1.17	0.33	0.76	0.12								
4	5.49	12.09	3.68	4.56	2.65	2.05	1.55	0.56	1.02	0.20								
5	6.87	18.27	4.60	6.89	3.31	3.09	1.94	0.85	1.27	0.30								
6	8.24	25.61	5.52	9.65	3.97	4.34	2.33	1.18	1.53	0.43	1.08	0.18						
7	9.62	34.07	6.44	12.84	4.63	5.77	2.72	1.58	1.78	0.57	1.26	0.24						
8	10.99	43.63	7.36	16.45	5.30	7.39	3.11	2.02	2.04	0.72	1.44	0.31						
9	12.36	54.26	8.28	20.45	5.96	9.19	3.50	2.51	2.29	0.90	1.62	0.39						
10	13.74	65.95	9.20	24.86	6.62	11.17	3.88	3.05	2.55	1.10	1.80	0.47						
12			11.04	34.85	7.95	15.66	4.66	4.28	3.06	1.54	2.16	0.66	1.24	0.17				
14			12.88	46.36	9.27	20.83	5.44	5.69	3.57	2.04	2.52	0.88	1.45	0.23				
16			14.72	59.37	10.59	26.68	6.21	7.28	4.08	2.62	2.88	1.12	1.66	0.29				
18			16.56	73.84	11.92	33.18	6.99	9.06	4.59	3.25	3.24	1.40	1.86	0.36				
20					13.24	40.33	7.77	11.01	5.10	3.96	3.60	1.70	2.07	0.44				
22					14.57	48.11	8.54	13.14	5.61	4.72	3.96	2.03	2.28	0.53	1.48	0.18	1.03	0.08
24					15.89	56.53	9.32	15.44	6.12	5.55	4.32	2.38	2.49	0.62	1.61	0.22	1.13	0.09
26							10.10	17.90	6.63	6.43	4.68	2.76	2.69	0.72	1.75	0.25	1.22	0.11
28							10.87	20.54	7.14	7.38	5.04	3.17	2.90	0.82	1.88	0.29	1.32	0.12
30							11.65	23.33	7.65	8.38	5.40	3.60	3.11	0.94	2.01	0.33	1.41	0.14
32							12.43	26.30	8.16	9.45	5.76	4.06	3.31	1.05	2.15	0.37	1.51	0.15
34							13.20	29.42	8.67	10.57	6.12	4.54	3.52	1.18	2.28	0.41	1.60	0.17
36							13.98	32.71	9.18	11.75	6.48	5.05	3.73	1.31	2.42	0.46	1.69	0.19
38							14.76	36.15	9.69	12.99	6.84	5.58	3.93	1.45	2.55	0.51	1.79	0.21
40							15.53	39.75	10.20	14.28	7.21	6.13	4.14	1.59	2.69	0.56	1.88	0.23
42							16.31	43.51	10.71	15.63	7.57	6.71	4.35	1.75	2.82	0.61	1.98	0.26
44									11.22	17.04	7.93	7.32	4.56	1.90	2.95	0.66	2.07	0.28
46									11.73	18.50	8.29	7.94	4.76	2.07	3.09	0.72	2.16	0.30
48									12.24	20.02	8.65	8.60	4.97	2.24	3.22	0.78	2.26	0.33
50									12.75	21.59	9.01	9.27	5.18	2.41	3.36	0.84	2.35	0.35
55									14.02	25.76	9.91	11.06	5.70	2.88	3.69	1.00	2.59	0.42
60									15.30	30.26	10.81	13.00	6.21	3.38	4.03	1.18	2.82	0.50
65									16.57	35.10	11.71	15.07	6.73	3.92	4.36	1.37	3.06	0.57
70									17.85	40.26	12.61	17.29	7.25	4.50	4.70	1.57	3.29	0.66
75											13.51	19.65	7.77	5.11	5.04	1.78	3.53	0.75
80											14.41	22.14	8.28	5.76	5.37	2.01	3.76	0.84
85											15.31	24.77	8.80	6.44	5.71	2.25	4.00	0.94
90											16.21	27.54	9.32	7.16	6.04	2.50	4.23	1.05
95											17.11	30.44	9.84	7.91	6.38	2.76	4.47	1.16
100											18.01	33.47	10.35	8.70	6.71	3.03	4.70	1.28
110													11.39	10.38	7.39	3.62	5.17	1.52
120													12.43	12.20	8.06	4.25	5.65	1.79
130													13.46	14.15	8.73	4.93	6.12	2.07
140													14.50	16.23	9.40	5.66	6.59	2.38
150													15.53	18.44	10.07	6.43	7.06	2.70
160													16.57	20.78	10.74	7.24	7.53	3.05
170													17.60	23.25	11.41	8.11	8.00	3.41
180															12.09	9.01	8.47	3.79
190															12.76	9.96	8.94	4.19
200															13.43	10.95	9.41	4.61
220															14.77	13.07	10.35	5.50
240															16.12	15.35	11.29	6.46
260															17.46	17.80	12.23	7.49
280															18.80	20.42	13.17	8.59
300																	14.11	9.76
320																	15.05	11.00
340																	15.99	12.31
360																	16.94	13.69
380																	17.88	15.13
400																		
420																		
440																		
460																		
480																		
500																		

Notes: Shaded areas represent velocities over 7 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS - SCHEDULE 40 STEEL

ASTM B53 C = 100 • PSI loss per 100 ft. of pipe

Nominal Size	½"		¾"		1"		1¼"		1½"		2"		2½"		3"		4"	
Pipe ID	0.622		0.824		1.049		1.38		1.610		2.067		2.469		3.068		4.026	
Plpe OD	0.842		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500	
Avg. Wall	0.110		0.113		0.133		0.140		0.145		0.154		0.203		0.216		0.237	
Flow (GPM)	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss
1	1.05	0.91	0.60	0.23	0.37	0.07	0.21	0.02	0.16	0.01								
2	2.11	3.28	1.20	0.84	0.74	0.26	0.43	0.07	0.31	0.03								
3	3.16	6.95	1.80	1.77	1.11	0.55	0.64	0.14	0.47	0.07								
4	4.22	11.85	2.40	3.02	1.48	0.93	0.86	0.25	0.63	0.12								
5	5.27	17.91	3.00	4.56	1.85	1.41	1.07	0.37	0.79	0.18								
6	6.33	25.10	3.61	6.39	2.22	1.97	1.29	0.52	0.94	0.25	0.57	0.07						
7	7.38	33.40	4.21	8.50	2.60	2.63	1.50	0.69	1.10	0.33	0.67	0.10						
8	8.44	42.77	4.81	10.88	2.97	3.36	1.71	0.89	1.26	0.42	0.76	0.12						
9	9.49	53.19	5.41	13.54	3.34	4.18	1.93	1.10	1.42	0.52	0.86	0.15						
10	10.55	64.65	6.01	16.45	3.71	5.08	2.14	1.34	1.57	0.63	0.95	0.19						
12	12.65	90.62	7.21	23.06	4.45	7.12	2.57	1.88	1.89	0.89	1.15	0.26	0.80	0.11				
14			8.41	30.68	5.19	9.48	3.00	2.50	2.20	1.18	1.34	0.35	0.94	0.15				
16			9.61	39.29	5.93	12.14	3.43	3.20	2.52	1.51	1.53	0.45	1.07	0.19				
18			10.82	48.87	6.67	15.10	3.86	3.97	2.83	1.88	1.72	0.56	1.20	0.23				
20			12.02	59.40	7.42	18.35	4.28	4.83	3.15	2.28	1.91	0.68	1.34	0.28				
22			13.22	70.87	8.16	21.89	4.71	5.76	3.46	2.72	2.10	0.81	1.47	0.34	0.95	0.12	0.55	0.03
24					8.90	25.72	5.14	6.77	3.78	3.20	2.29	0.95	1.61	0.40	1.04	0.14	0.60	0.04
26					9.64	29.83	5.57	7.85	4.09	3.71	2.48	1.10	1.74	0.46	1.13	0.16	0.65	0.04
28					10.38	34.22	6.00	9.01	4.41	4.25	2.67	1.26	1.87	0.53	1.21	0.18	0.70	0.05
30					11.12	38.88	6.43	10.24	4.72	4.83	2.86	1.43	2.01	0.60	1.30	0.21	0.76	0.06
32					11.86	43.81	6.86	11.54	5.04	5.45	3.06	1.62	2.14	0.68	1.39	0.24	0.81	0.06
34					12.61	49.02	7.28	12.91	5.35	6.10	3.25	1.81	2.28	0.76	1.47	0.26	0.86	0.07
36					13.35	54.49	7.71	14.35	5.67	6.78	3.44	2.01	2.41	0.85	1.56	0.29	0.91	0.08
38							8.14	15.86	5.98	7.49	3.63	2.22	2.54	0.94	1.65	0.33	0.96	0.09
40							8.57	17.44	6.30	8.24	3.82	2.44	2.68	1.03	1.73	0.36	1.01	0.10
42							9.00	19.09	6.61	9.02	4.01	2.67	2.81	1.13	1.82	0.39	1.06	0.10
44							9.43	20.81	6.93	9.83	4.20	2.91	2.94	1.23	1.91	0.43	1.11	0.11
46							9.86	22.59	7.24	10.67	4.39	3.16	3.08	1.33	1.99	0.46	1.16	0.12
48							10.28	24.44	7.56	11.55	4.58	3.42	3.21	1.44	2.08	0.50	1.21	0.13
50							10.71	26.36	7.87	12.45	4.77	3.69	3.35	1.55	2.17	0.54	1.26	0.14
55							11.78	31.45	8.66	14.86	5.25	4.40	3.68	1.85	2.38	0.64	1.38	0.17
60							12.85	36.95	9.44	17.45	5.73	5.17	4.02	2.18	2.60	0.76	1.51	0.20
65							13.93	42.86	10.23	20.24	6.21	6.00	4.35	2.53	2.82	0.88	1.64	0.23
70									11.02	23.22	6.68	6.88	4.69	2.90	3.03	1.01	1.76	0.27
75									11.81	26.39	7.16	7.82	5.02	3.29	3.25	1.14	1.89	0.31
80									12.59	29.74	7.64	8.82	5.35	3.71	3.47	1.29	2.01	0.34
85									13.38	33.27	8.12	9.86	5.69	4.15	3.68	1.44	2.14	0.38
90											8.59	10.96	6.02	4.62	3.90	1.60	2.27	0.43
95											9.07	12.12	6.36	5.10	4.12	1.77	2.39	0.47
100											9.55	13.33	6.69	5.61	4.33	1.95	2.52	0.52
110											10.50	15.90	7.36	6.70	4.77	2.33	2.77	0.62
120											11.46	18.68	8.03	7.87	5.20	2.73	3.02	0.73
130											12.41	21.66	8.70	9.12	5.63	3.17	3.27	0.85
140											13.37	24.85	9.37	10.47	6.07	3.64	3.52	0.97
150													10.04	11.89	6.50	4.13	3.78	1.10
160													10.71	13.40	6.94	4.66	4.03	1.24
170													11.38	15.00	7.37	5.21	4.28	1.39
180													12.05	16.67	7.80	5.79	4.53	1.54
190													12.72	18.43	8.24	6.40	4.78	1.71
200													13.39	20.26	8.67	7.04	5.03	1.88
220															9.54	8.40	5.54	2.24
240															10.40	9.87	6.04	2.63
260															11.27	11.45	6.54	3.05
280															12.14	13.13	7.05	3.50
300															13.00	14.92	7.55	3.98
320															13.87	16.81	8.05	4.48
340																	8.56	5.01
360																	9.06	5.57
380																	9.57	6.16
400																	10.07	6.77
420																	10.57	7.42
440																	11.08	8.08
460																	11.58	8.78
480																	12.08	9.50
500																	12.59	10.24

Notes: Shaded areas represent velocities over 7 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS - CLASS 160 PVC IPS PLASTIC PIPE

ASTM D2241 (1120, 1220) SDR 26 C = 150 • PSI loss per 100 ft. of pipe

Nominal Size	½"		¾"		1"		1¼"		1½"		2"		2½"		3"		4"	
Avg. ID	0.696		0.910		1.175		1.512		1.734		2.173		2.635		3.21		4.134	
Pipe OD	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500	
Avg. Wall	0.072		0.070		0.070		0.074		0.083		0.101		0.120		0.145		0.183	
Min. Wall	0.062		0.060		0.060		0.064		0.073		0.091		0.110		0.135		0.173	
Flow (GPM)	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss
1	0.84	0.25	0.49	0.07	0.30	0.02	0.18	0.01	0.14	0.00								
2	1.68	0.90	0.99	0.24	0.59	0.07	0.36	0.02	0.27	0.01	0.17	0.00						
3	2.53	1.90	1.48	0.52	0.89	0.15	0.54	0.04	0.41	0.02	0.26	0.01						
4	3.37	3.24	1.97	0.88	1.18	0.25	0.71	0.07	0.54	0.04	0.35	0.01	0.24	0.00				
5	4.21	4.89	2.46	1.33	1.48	0.38	0.89	0.11	0.68	0.06	0.43	0.02	0.29	0.01				
6	5.05	6.86	2.96	1.86	1.77	0.54	1.07	0.16	0.81	0.08	0.52	0.03	0.35	0.01	0.24	0.00		
7	5.90	9.12	3.45	2.47	2.07	0.71	1.25	0.21	0.95	0.11	0.60	0.04	0.41	0.01	0.28	0.01		
8	6.74	11.68	3.94	3.17	2.36	0.91	1.43	0.27	1.09	0.14	0.69	0.05	0.47	0.02	0.32	0.01		
9	7.58	14.53	4.43	3.94	2.66	1.14	1.61	0.33	1.22	0.17	0.78	0.06	0.53	0.02	0.36	0.01		
10	8.42	17.66	4.93	4.79	2.96	1.38	1.78	0.40	1.36	0.21	0.86	0.07	0.59	0.03	0.40	0.01		
12	10.11	24.75	5.91	6.71	3.55	1.94	2.14	0.57	1.63	0.29	1.04	0.10	0.71	0.04	0.48	0.01		
14	11.79	32.93	6.90	8.93	4.14	2.58	2.50	0.76	1.90	0.39	1.21	0.13	0.82	0.05	0.55	0.02		
16	13.48	42.16	7.88	11.44	4.73	3.30	2.86	0.97	2.17	0.50	1.38	0.17	0.94	0.06	0.63	0.02	0.38	0.01
18	15.16	52.44	8.87	14.23	5.32	4.10	3.21	1.20	2.44	0.62	1.56	0.21	1.06	0.08	0.71	0.03	0.43	0.01
20			9.85	17.29	5.91	4.99	3.57	1.46	2.71	0.75	1.73	0.25	1.18	0.10	0.79	0.04	0.48	0.01
22			10.84	20.63	6.50	5.95	3.93	1.74	2.99	0.90	1.90	0.30	1.29	0.12	0.87	0.04	0.53	0.01
24			11.82	24.24	7.09	6.99	4.28	2.05	3.26	1.05	2.07	0.35	1.41	0.14	0.95	0.05	0.57	0.02
26			12.81	28.11	7.68	8.11	4.64	2.38	3.53	1.22	2.25	0.41	1.53	0.16	1.03	0.06	0.62	0.02
28			13.80	32.25	8.27	9.30	5.00	2.73	3.80	1.40	2.42	0.47	1.65	0.18	1.11	0.07	0.67	0.02
30			14.78	36.64	8.87	10.57	5.35	3.10	4.07	1.59	2.59	0.53	1.76	0.21	1.19	0.08	0.72	0.02
32					9.46	11.91	5.71	3.49	4.34	1.79	2.76	0.60	1.88	0.23	1.27	0.09	0.76	0.03
34					10.05	13.32	6.07	3.91	4.61	2.01	2.94	0.67	2.00	0.26	1.35	0.10	0.81	0.03
36					10.64	14.81	6.42	4.34	4.88	2.23	3.11	0.74	2.12	0.29	1.43	0.11	0.86	0.03
38					11.23	16.37	6.78	4.80	5.16	2.46	3.28	0.82	2.23	0.32	1.50	0.12	0.91	0.04
40					11.82	18.00	7.14	5.28	5.43	2.71	3.46	0.90	2.35	0.35	1.58	0.14	0.95	0.04
42					12.41	19.70	7.50	5.78	5.70	2.97	3.63	0.99	2.47	0.39	1.66	0.15	1.00	0.04
44					13.00	21.47	7.85	6.30	5.97	3.23	3.80	1.08	2.59	0.42	1.74	0.16	1.05	0.05
46					13.59	23.32	8.21	6.84	6.24	3.51	3.97	1.17	2.70	0.46	1.82	0.18	1.10	0.05
48					14.18	25.23	8.57	7.40	6.51	3.80	4.15	1.27	2.82	0.50	1.90	0.19	1.15	0.06
50					14.78	27.21	8.92	7.98	6.78	4.10	4.32	1.37	2.94	0.53	1.98	0.20	1.19	0.06
55							9.82	9.52	7.46	4.89	4.75	1.63	3.23	0.64	2.18	0.24	1.31	0.07
60							10.71	11.18	8.14	5.74	5.18	1.91	3.53	0.75	2.38	0.29	1.43	0.08
65							11.60	12.97	8.82	6.66	5.62	2.22	3.82	0.87	2.57	0.33	1.55	0.10
70							12.49	14.88	9.50	7.64	6.05	2.55	4.11	1.00	2.77	0.38	1.67	0.11
75							13.38	16.90	10.18	8.68	6.48	2.89	4.41	1.13	2.97	0.43	1.79	0.13
80							14.28	19.05	10.86	9.78	6.91	3.26	4.70	1.28	3.17	0.49	1.91	0.14
85									11.53	10.94	7.34	3.65	4.99	1.43	3.37	0.55	2.03	0.16
90									12.21	12.16	7.78	4.06	5.29	1.59	3.56	0.61	2.15	0.18
95									12.89	13.45	8.21	4.48	5.58	1.76	3.76	0.67	2.27	0.20
100									13.57	14.79	8.64	4.93	5.88	1.93	3.96	0.74	2.39	0.22
110									14.93	17.64	9.50	5.88	6.46	2.30	4.36	0.88	2.63	0.26
120											10.37	6.91	7.05	2.71	4.75	1.04	2.86	0.30
130											11.23	8.02	7.64	3.14	5.15	1.20	3.10	0.35
140											12.10	9.20	8.23	3.60	5.54	1.38	3.34	0.40
150											12.96	10.45	8.81	4.09	5.94	1.57	3.58	0.46
160											13.82	11.77	9.40	4.61	6.34	1.76	3.82	0.52
170											14.69	13.17	9.99	5.16	6.73	1.97	4.06	0.58
180													10.58	5.73	7.13	2.19	4.30	0.64
190													11.16	6.34	7.52	2.42	4.54	0.71
200													11.75	6.97	7.92	2.67	4.77	0.78
220													12.93	8.31	8.71	3.18	5.25	0.93
240													14.10	9.77	9.50	3.74	5.73	1.09
260															10.29	4.33	6.21	1.27
280															11.09	4.97	6.68	1.45
300															11.88	5.65	7.16	1.65
320															12.67	6.37	7.64	1.86
340															13.46	7.12	8.12	2.08
360															14.25	7.92	8.59	2.31
380																	9.07	2.56
400																	9.55	2.81
420																	10.03	3.08
440																	10.50	3.35
460																	10.98	3.64
480																	11.46	3.94
500																	11.94	4.25

Notes: Shaded areas represent velocities over 5 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS - CLASS 200 PVC IPS PLASTIC PIPE

ASTM D2241 (1120, 1220) SDR 21 C = 150 • PSI loss per 100 ft. of pipe

Nominal Size	Class 315: ½"		¾"		1"		1¼"		1½"		2"		2½"		3"		4"		6"	
Avg. ID	0.696		0.910		1.169		1.482		1.700		2.129		2.581		3.146		4.046		5.955	
Pipe OD	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
Avg. Wall	0.072		0.070		0.073		0.089		0.100		0.123		0.147		0.177		0.227		0.335	
Min. Wall	0.062		0.060		0.063		0.079		0.090		0.113		0.137		0.167		0.214		0.316	
Flow (GPM)	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss
1	0.84	0.25	0.49	0.07	0.30	0.02	0.19	0.01	0.14	0.00										
2	1.68	0.90	0.99	0.24	0.60	0.07	0.37	0.02	0.28	0.01	0.18	0.00								
3	2.53	1.90	1.48	0.52	0.90	0.15	0.56	0.05	0.42	0.02	0.27	0.01								
4	3.37	3.24	1.97	0.88	1.19	0.26	0.74	0.08	0.56	0.04	0.36	0.01	0.24	0.01						
5	4.21	4.89	2.46	1.33	1.49	0.39	0.93	0.12	0.71	0.06	0.45	0.02	0.31	0.01						
6	5.05	6.86	2.96	1.86	1.79	0.55	1.11	0.17	0.85	0.09	0.54	0.03	0.37	0.01	0.25	0.00				
7	5.90	9.12	3.45	2.47	2.09	0.73	1.30	0.23	0.99	0.12	0.63	0.04	0.43	0.02	0.29	0.01				
8	6.74	11.68	3.94	3.17	2.39	0.94	1.49	0.30	1.13	0.15	0.72	0.05	0.49	0.02	0.33	0.01				
9	7.58	14.53	4.43	3.94	2.69	1.17	1.67	0.37	1.27	0.19	0.81	0.06	0.55	0.02	0.37	0.01				
10	8.42	17.66	4.93	4.79	2.99	1.42	1.86	0.45	1.41	0.23	0.90	0.08	0.61	0.03	0.41	0.01				
12	10.11	24.75	5.91	6.71	3.58	1.98	2.23	0.63	1.69	0.32	1.08	0.11	0.73	0.04	0.49	0.02				
14	11.79	32.93	6.90	8.93	4.18	2.64	2.60	0.83	1.98	0.43	1.26	0.14	0.86	0.06	0.58	0.02				
16	13.48	42.16	7.88	11.44	4.78	3.38	2.97	1.07	2.26	0.55	1.44	0.18	0.98	0.07	0.66	0.03	0.40	0.01		
18	15.16	52.44	8.87	14.23	5.37	4.21	3.34	1.33	2.54	0.68	1.62	0.23	1.10	0.09	0.74	0.03	0.45	0.01		
20			9.85	17.29	5.97	5.11	3.72	1.61	2.82	0.83	1.80	0.28	1.22	0.11	0.82	0.04	0.50	0.01		
22			10.84	20.63	6.57	6.10	4.09	1.92	3.11	0.99	1.98	0.33	1.35	0.13	0.91	0.05	0.55	0.01		
24			11.82	24.24	7.17	7.17	4.46	2.26	3.39	1.16	2.16	0.39	1.47	0.15	0.99	0.06	0.60	0.02		
26			12.81	28.11	7.76	8.31	4.83	2.62	3.67	1.34	2.34	0.45	1.59	0.18	1.07	0.07	0.65	0.02		
28			13.80	32.25	8.36	9.53	5.20	3.01	3.95	1.54	2.52	0.52	1.71	0.20	1.15	0.08	0.70	0.02		
30			14.78	36.64	8.96	10.83	5.57	3.41	4.24	1.75	2.70	0.59	1.84	0.23	1.24	0.09	0.75	0.03		
32					9.55	12.21	5.94	3.85	4.52	1.97	2.88	0.66	1.96	0.26	1.32	0.10	0.80	0.03	0.37	0.00
34					10.15	13.66	6.32	4.31	4.80	2.21	3.06	0.74	2.08	0.29	1.40	0.11	0.85	0.03	0.39	0.00
36					10.75	15.18	6.69	4.79	5.08	2.45	3.24	0.82	2.20	0.32	1.48	0.12	0.90	0.04	0.41	0.01
38					11.35	16.78	7.06	5.29	5.36	2.71	3.42	0.91	2.33	0.36	1.57	0.14	0.95	0.04	0.44	0.01
40					11.94	18.45	7.43	5.82	5.65	2.98	3.60	1.00	2.45	0.39	1.65	0.15	1.00	0.04	0.46	0.01
42					12.54	20.20	7.80	6.37	5.93	3.27	3.78	1.09	2.57	0.43	1.73	0.16	1.05	0.05	0.48	0.01
44					13.14	22.02	8.17	6.94	6.21	3.56	3.96	1.19	2.69	0.47	1.81	0.18	1.10	0.05	0.51	0.01
46					13.73	23.91	8.55	7.54	6.49	3.86	4.14	1.29	2.82	0.51	1.90	0.19	1.15	0.06	0.53	0.01
48					14.33	25.87	8.92	8.15	6.78	4.18	4.32	1.40	2.94	0.55	1.98	0.21	1.20	0.06	0.55	0.01
50					14.93	27.90	9.29	8.79	7.06	4.51	4.50	1.51	3.06	0.59	2.06	0.23	1.25	0.07	0.58	0.01
55							10.22	10.49	7.76	5.38	4.95	1.80	3.37	0.71	2.27	0.27	1.37	0.08	0.63	0.01
60							11.15	12.33	8.47	6.32	5.40	2.11	3.67	0.83	2.47	0.32	1.50	0.09	0.69	0.01
65							12.07	14.30	9.18	7.33	5.85	2.45	3.98	0.96	2.68	0.37	1.62	0.11	0.75	0.02
70							13.00	16.40	9.88	8.41	6.30	2.81	4.29	1.10	2.89	0.42	1.74	0.12	0.81	0.02
75							13.93	18.63	10.59	9.56	6.75	3.20	4.59	1.25	3.09	0.48	1.87	0.14	0.86	0.02
80							14.86	21.00	11.29	10.77	7.20	3.60	4.90	1.41	3.30	0.54	1.99	0.16	0.92	0.02
85									12.00	12.05	7.65	4.03	5.21	1.58	3.50	0.60	2.12	0.18	0.98	0.03
90									12.71	13.40	8.10	4.48	5.51	1.76	3.71	0.67	2.24	0.20	1.04	0.03
95									13.41	14.81	8.55	4.95	5.82	1.94	3.92	0.74	2.37	0.22	1.09	0.03
100									14.12	16.28	9.00	5.45	6.12	2.13	4.12	0.81	2.49	0.24	1.15	0.04
110											9.90	6.50	6.74	2.55	4.53	0.97	2.74	0.29	1.27	0.04
120											10.80	7.63	7.35	2.99	4.95	1.14	2.99	0.34	1.38	0.05
130											11.70	8.85	7.96	3.47	5.36	1.32	3.24	0.39	1.50	0.06
140											12.60	10.16	8.57	3.98	5.77	1.52	3.49	0.45	1.61	0.07
150											13.50	11.54	9.19	4.52	6.18	1.73	3.74	0.51	1.73	0.08
160											14.40	13.01	9.80	5.10	6.60	1.95	3.99	0.57	1.84	0.09
170													10.41	5.70	7.01	2.18	4.24	0.64	1.96	0.10
180													11.02	6.34	7.42	2.42	4.49	0.71	2.07	0.11
190													11.64	7.01	7.83	2.67	4.74	0.79	2.19	0.12
200													12.25	7.71	8.24	2.94	4.98	0.86	2.30	0.13
220													13.47	9.19	9.07	3.51	5.48	1.03	2.53	0.16
240													14.70	10.80	9.89	4.12	5.98	1.21	2.76	0.18
260															10.72	4.78	6.48	1.41	2.99	0.21
280															11.54	5.48	6.98	1.61	3.22	0.25
300															12.37	6.23	7.48	1.83	3.45	0.28
320															13.19	7.02	7.98	2.06	3.68	0.31
340															14.02	7.86	8.47	2.31	3.91	0.35
360															14.84	8.73	8.97	2.57	4.14	0.39
380																	9.47	2.84	4.37	0.43
400																	9.97	3.12	4.60	0.48
420																	10.47	3.42	4.83	0.52
440																	10.97	3.72	5.06	0.57
460																	11.46	4.04	5.29	0.62
480																	11.96	4.37	5.52	0.67
500																	12.46	4.72	5.75	0.72

Notes: Shaded areas represent velocities over 5 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS - CLASS 315 PVC IPS PLASTIC PIPE

ASTM D2241 (1120, 1220) SDR 13.5 C = 150 • PSI loss per 100 ft. of pipe

Nominal Size	½"		¾"		1"		1¼"		1½"		2"		2½"		3"		4"		6"	
Avg. ID	0.696		0.874		1.101		1.394		1.598		1.983		2.423		2.948		3.794		5.583	
Pipe OD	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
Avg. Wall	0.072		0.088		0.107		0.133		0.151		0.196		0.226		0.274		0.353		0.521	
Min. Wall	0.062		0.078		0.097		0.123		0.141		0.176		0.213		0.259		0.333		0.491	
Flow (GPM)	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss
1	0.84	0.25	0.53	0.08	0.34	0.03	0.21	0.01	0.16	0.00										
2	1.68	0.90	1.07	0.30	0.67	0.10	0.42	0.03	0.32	0.02	0.21	0.01								
3	2.53	1.90	1.60	0.63	1.01	0.20	0.63	0.06	0.48	0.03	0.31	0.01								
4	3.37	3.24	2.14	1.07	1.35	0.35	0.84	0.11	0.64	0.06	0.42	0.02	0.28	0.01						
5	4.21	4.89	2.67	1.61	1.68	0.53	1.05	0.17	0.80	0.09	0.52	0.03	0.35	0.01						
6	5.05	6.86	3.20	2.26	2.02	0.74	1.26	0.23	0.96	0.12	0.62	0.04	0.42	0.02	0.28	0.01				
7	5.90	9.12	3.74	3.01	2.36	0.98	1.47	0.31	1.12	0.16	0.73	0.06	0.49	0.02	0.33	0.01				
8	6.74	11.68	4.27	3.86	2.69	1.25	1.68	0.40	1.28	0.20	0.83	0.07	0.56	0.03	0.38	0.01				
9	7.58	14.53	4.81	4.80	3.03	1.56	1.89	0.49	1.44	0.25	0.93	0.09	0.63	0.03	0.42	0.01				
10	8.42	17.66	5.34	5.83	3.37	1.90	2.10	0.60	1.60	0.31	1.04	0.11	0.69	0.04	0.47	0.02				
12	10.11	24.75	6.41	8.17	4.04	2.66	2.52	0.84	1.92	0.43	1.25	0.15	0.83	0.06	0.56	0.02				
14	11.79	32.93	7.48	10.87	4.71	3.53	2.94	1.12	2.24	0.58	1.45	0.20	0.97	0.08	0.66	0.03				
16	13.48	42.16	8.55	13.92	5.39	4.53	3.36	1.44	2.56	0.74	1.66	0.26	1.11	0.10	0.75	0.04	0.45	0.01		
18	15.16	52.44	9.61	17.32	6.06	5.63	3.78	1.79	2.88	0.92	1.87	0.32	1.25	0.12	0.85	0.05	0.51	0.01		
20			10.68	21.05	6.73	6.84	4.20	2.17	3.20	1.12	2.08	0.39	1.39	0.15	0.94	0.06	0.57	0.02		
22			11.75	25.11	7.40	8.16	4.62	2.59	3.52	1.33	2.28	0.47	1.53	0.18	1.03	0.07	0.62	0.02		
24			12.82	29.50	8.08	9.59	5.04	3.04	3.83	1.57	2.49	0.55	1.67	0.21	1.13	0.08	0.68	0.02		
26			13.89	34.21	8.75	11.12	5.46	3.53	4.15	1.82	2.70	0.64	1.81	0.24	1.22	0.09	0.74	0.03		
28			14.96	39.25	9.42	12.76	5.88	4.05	4.47	2.08	2.91	0.73	1.95	0.27	1.31	0.11	0.79	0.03		
30			16.02	44.60	10.10	14.50	6.30	4.60	4.79	2.37	3.11	0.83	2.08	0.31	1.41	0.12	0.85	0.04		
32					10.77	16.34	6.72	5.18	5.11	2.67	3.32	0.93	2.22	0.35	1.50	0.14	0.91	0.04	0.42	0.01
34					11.44	18.28	7.14	5.80	5.43	2.98	3.53	1.04	2.36	0.39	1.60	0.15	0.96	0.04	0.45	0.01
36					12.12	20.32	7.56	6.45	5.75	3.32	3.74	1.16	2.50	0.44	1.69	0.17	1.02	0.05	0.47	0.01
38					12.79	22.46	7.98	7.13	6.07	3.67	3.94	1.28	2.64	0.48	1.78	0.19	1.08	0.05	0.50	0.01
40					13.46	24.70	8.40	7.84	6.39	4.03	4.15	1.41	2.78	0.53	1.88	0.20	1.13	0.06	0.52	0.01
42					14.14	27.04	8.82	8.58	6.71	4.41	4.36	1.54	2.92	0.58	1.97	0.22	1.19	0.07	0.55	0.01
44					14.81	29.47	9.24	9.35	7.03	4.81	4.57	1.68	3.06	0.63	2.07	0.24	1.25	0.07	0.58	0.01
46					15.48	32.00	9.66	10.15	7.35	5.22	4.77	1.83	3.20	0.69	2.16	0.27	1.30	0.08	0.60	0.01
48					16.16	34.62	10.08	10.98	7.67	5.65	4.98	1.98	3.34	0.75	2.25	0.29	1.36	0.08	0.63	0.01
50					16.83	37.34	10.50	11.85	7.99	6.09	5.19	2.13	3.47	0.80	2.35	0.31	1.42	0.09	0.65	0.01
55							11.55	14.13	8.79	7.27	5.71	2.54	3.82	0.96	2.58	0.37	1.56	0.11	0.72	0.02
60							12.60	16.60	9.59	8.54	6.23	2.99	4.17	1.13	2.82	0.43	1.70	0.13	0.79	0.02
65							13.65	19.26	10.39	9.91	6.74	3.47	4.52	1.31	3.05	0.50	1.84	0.15	0.85	0.02
70							14.70	22.09	11.18	11.37	7.26	3.98	4.86	1.50	3.29	0.58	1.98	0.17	0.92	0.03
75							15.75	25.10	11.98	12.91	7.78	4.52	5.21	1.70	3.52	0.66	2.13	0.19	0.98	0.03
80							16.80	28.29	12.78	14.55	8.30	5.09	5.56	1.92	3.76	0.74	2.27	0.22	1.05	0.03
85									13.58	16.28	8.82	5.70	5.91	2.15	3.99	0.83	2.41	0.24	1.11	0.04
90									14.38	18.10	9.34	6.33	6.25	2.39	4.23	0.92	2.55	0.27	1.18	0.04
95									15.18	20.01	9.86	7.00	6.60	2.64	4.46	1.02	2.69	0.30	1.24	0.05
100									15.98	22.00	10.38	7.70	6.95	2.90	4.69	1.12	2.83	0.33	1.31	0.05
110											11.41	9.18	7.64	3.46	5.16	1.33	3.12	0.39	1.44	0.06
120											12.45	10.79	8.34	4.07	5.63	1.57	3.40	0.46	1.57	0.07
130											13.49	12.51	9.03	4.72	6.10	1.82	3.68	0.53	1.70	0.08
140											14.53	14.35	9.73	5.41	6.57	2.08	3.97	0.61	1.83	0.09
150											15.56	16.31	10.42	6.15	7.04	2.37	4.25	0.69	1.96	0.11
160											16.60	18.38	11.12	6.93	7.51	2.67	4.54	0.78	2.09	0.12
170													11.81	7.76	7.98	2.99	4.82	0.87	2.23	0.13
180													12.51	8.62	8.45	3.32	5.10	0.97	2.36	0.15
190													13.20	9.53	8.92	3.67	5.39	1.08	2.49	0.16
200													13.90	10.48	9.39	4.03	5.67	1.18	2.62	0.18
220													15.29	12.50	10.33	4.81	6.24	1.41	2.88	0.22
240													16.68	14.69	11.27	5.66	6.80	1.66	3.14	0.25
260															12.21	6.56	7.37	1.92	3.40	0.29
280															13.15	7.52	7.94	2.20	3.67	0.34
300															14.08	8.55	8.50	2.50	3.93	0.38
320															15.02	9.64	9.07	2.82	4.19	0.43
340															15.96	10.78	9.64	3.16	4.45	0.48
360															16.90	11.98	10.20	3.51	4.71	0.54
380																	10.77	3.88	4.97	0.59
400																	11.34	4.27	5.24	0.65
420																	11.90	4.67	5.50	0.71
440																	12.47	5.09	5.76	0.78
460																	13.04	5.53	6.02	0.84
480																	13.61	5.98	6.28	0.91
500																	14.17	6.45	6.54	0.98

Notes: Shaded areas represent velocities over 5 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS - SCHEDULE 40 PVC IPS PLASTIC PIPE

ASTM D1785 (1120, 1220) C = 150 • PSI loss per 100 ft. of pipe

Nominal Size	½"		¾"		1"		1¼"		1½"		2"		2½"		3"		4"		5"	
Avg. ID	0.602		0.804		1.029		1.360		1.590		2.047		2.445		3.042		3.998		6.031	
Pipe OD	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
Avg. Wall	0.119		0.123		0.143		0.150		0.155		0.164		0.215		0.229		0.251		0.297	
Min. Wall	0.109		0.113		0.133		0.140		0.145		0.154		0.203		0.216		0.237		0.280	
Flow (GPM)	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss
1	1.13	0.50	0.63	0.12	0.39	0.04	0.22	0.01	0.16	0.00										
2	2.25	1.82	1.26	0.44	0.77	0.13	0.44	0.03	0.32	0.02	0.19	0.00								
3	3.38	3.85	1.89	0.94	1.16	0.28	0.66	0.07	0.48	0.03	0.29	0.01								
4	4.50	6.55	2.52	1.60	1.54	0.48	0.88	0.12	0.65	0.06	0.39	0.02	0.27	0.01						
5	5.63	9.91	3.16	2.42	1.93	0.73	1.10	0.19	0.81	0.09	0.49	0.03	0.34	0.01						
6	6.75	13.89	3.79	3.40	2.31	1.02	1.32	0.26	0.97	0.12	0.58	0.04	0.41	0.02	0.26	0.01				
7	7.88	18.48	4.42	4.52	2.70	1.36	1.54	0.35	1.13	0.16	0.68	0.05	0.48	0.02	0.31	0.01				
8	9.01	23.66	5.05	5.79	3.08	1.74	1.76	0.45	1.29	0.21	0.78	0.06	0.55	0.03	0.35	0.01				
9	10.13	29.43	5.68	7.20	3.47	2.17	1.99	0.56	1.45	0.26	0.88	0.08	0.61	0.03	0.40	0.01				
10	11.26	35.77	6.31	8.75	3.85	2.63	2.21	0.68	1.61	0.32	0.97	0.09	0.68	0.04	0.44	0.01				
12	13.51	50.14	7.57	12.27	4.62	3.69	2.65	0.95	1.94	0.44	1.17	0.13	0.82	0.05	0.53	0.02				
14	15.76	66.71	8.84	16.32	5.39	4.91	3.09	1.26	2.26	0.59	1.36	0.17	0.96	0.07	0.62	0.03				
16	18.01	85.42	10.10	20.90	6.17	6.29	3.53	1.62	2.58	0.76	1.56	0.22	1.09	0.09	0.71	0.03	0.41	0.01		
18	20.26	106.24	11.36	25.99	6.94	7.82	3.97	2.01	2.90	0.94	1.75	0.28	1.23	0.12	0.79	0.04	0.46	0.01		
20			12.62	31.59	7.71	9.51	4.41	2.45	3.23	1.14	1.95	0.33	1.36	0.14	0.88	0.05	0.51	0.01		
22			13.89	37.69	8.48	11.35	4.85	2.92	3.55	1.37	2.14	0.40	1.50	0.17	0.97	0.06	0.56	0.02		
24			15.15	44.28	9.25	13.33	5.29	3.43	3.87	1.60	2.34	0.47	1.64	0.20	1.06	0.07	0.61	0.02		
26			16.41	51.36	10.02	15.46	5.74	3.98	4.20	1.86	2.53	0.54	1.77	0.23	1.15	0.08	0.66	0.02		
28			17.67	58.91	10.79	17.73	6.18	4.56	4.52	2.13	2.73	0.62	1.91	0.26	1.23	0.09	0.71	0.02		
30			18.94	66.94	11.56	20.15	6.62	5.19	4.84	2.42	2.92	0.71	2.05	0.30	1.32	0.10	0.77	0.03		
32					12.33	22.71	7.06	5.85	5.16	2.73	3.12	0.80	2.18	0.34	1.41	0.12	0.82	0.03	0.36	0.00
34					13.10	25.41	7.50	6.54	5.49	3.06	3.31	0.89	2.32	0.38	1.50	0.13	0.87	0.03	0.38	0.00
36					13.87	28.24	7.94	7.27	5.81	3.40	3.51	0.99	2.46	0.42	1.59	0.14	0.92	0.04	0.40	0.01
38					14.64	31.22	8.38	8.04	6.13	3.76	3.70	1.10	2.59	0.46	1.68	0.16	0.97	0.04	0.43	0.01
40					15.41	34.33	8.82	8.84	6.46	4.13	3.89	1.21	2.73	0.51	1.76	0.18	1.02	0.05	0.45	0.01
42					16.18	37.58	9.26	9.67	6.78	4.52	4.09	1.32	2.87	0.56	1.85	0.19	1.07	0.05	0.47	0.01
44					16.95	40.96	9.71	10.54	7.10	4.93	4.28	1.44	3.00	0.61	1.94	0.21	1.12	0.06	0.49	0.01
46					17.73	44.47	10.15	11.45	7.42	5.35	4.48	1.57	3.14	0.66	2.03	0.23	1.17	0.06	0.52	0.01
48					18.50	48.12	10.59	12.39	7.75	5.79	4.67	1.69	3.28	0.71	2.12	0.25	1.23	0.07	0.54	0.01
50					19.27	51.90	11.03	13.36	8.07	6.25	4.87	1.83	3.41	0.77	2.20	0.27	1.28	0.07	0.56	0.01
55							12.13	15.94	8.88	7.45	5.36	2.18	3.75	0.92	2.42	0.32	1.40	0.08	0.62	0.01
60							13.24	18.72	9.68	8.75	5.84	2.56	4.09	1.08	2.65	0.37	1.53	0.10	0.67	0.01
65							14.34	21.72	10.49	10.15	6.33	2.97	4.44	1.25	2.87	0.43	1.66	0.11	0.73	0.02
70							15.44	24.91	11.30	11.65	6.82	3.41	4.78	1.43	3.09	0.50	1.79	0.13	0.79	0.02
75							16.54	28.31	12.10	13.23	7.30	3.87	5.12	1.63	3.31	0.56	1.91	0.15	0.84	0.02
80							17.65	31.90	12.91	14.91	7.79	4.36	5.46	1.84	3.53	0.63	2.04	0.17	0.90	0.02
85									13.72	16.69	8.28	4.88	5.80	2.06	3.75	0.71	2.17	0.19	0.95	0.03
90									14.52	18.55	8.76	5.43	6.14	2.29	3.97	0.79	2.30	0.21	1.01	0.03
95									15.33	20.50	9.25	6.00	6.48	2.53	4.19	0.87	2.42	0.23	1.07	0.03
100									16.14	22.55	9.74	6.59	6.82	2.78	4.41	0.96	2.55	0.25	1.12	0.03
110											10.71	7.87	7.51	3.31	4.85	1.14	2.81	0.30	1.23	0.04
120											11.68	9.24	8.19	3.89	5.29	1.34	3.06	0.36	1.35	0.05
130											12.66	10.72	8.87	4.52	5.73	1.56	3.32	0.41	1.46	0.06
140											13.63	12.30	9.55	5.18	6.17	1.79	3.57	0.47	1.57	0.06
150											14.61	13.97	10.24	5.89	6.61	2.03	3.83	0.54	1.68	0.07
160											15.58	15.75	10.92	6.63	7.05	2.29	4.08	0.61	1.79	0.08
170													11.60	7.42	7.50	2.56	4.34	0.68	1.91	0.09
180													12.28	8.25	7.94	2.85	4.59	0.75	2.02	0.10
190													12.97	9.12	8.38	3.15	4.85	0.83	2.13	0.11
200													13.65	10.03	8.82	3.46	5.11	0.92	2.24	0.12
220													15.01	11.96	9.70	4.13	5.62	1.09	2.47	0.15
240													16.38	14.06	10.58	4.85	6.13	1.28	2.69	0.17
260															11.46	5.63	6.64	1.49	2.92	0.20
280															12.35	6.46	7.15	1.71	3.14	0.23
300															13.23	7.34	7.66	1.94	3.37	0.26
320															14.11	8.27	8.17	2.19	3.59	0.30
340															14.99	9.25	8.68	2.45	3.81	0.33
360															15.87	10.29	9.19	2.72	4.04	0.37
380																	9.70	3.01	4.26	0.41
400																	10.21	3.31	4.49	0.45
420																	10.72	3.62	4.71	0.49
440																	11.23	3.95	4.94	0.53
460																	11.74	4.28	5.16	0.58
480																	12.25	4.64	5.38	0.63
500																	12.76	5.00	5.61	0.68

Notes: Shaded areas represent velocities over 5 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS - POLYETHYLENE PLASTIC PIPE ID CONTROLLED

PE 3408 ASTM D2239 C = 140 • PSI loss per 100 ft. of pipe

Nominal Size / Avg. ID	½" 0.622		¾" 0.824		1" 1.049		1¼" 1.380		1½" 1.610		2" 2.067		2½" 2.469		3" 3.068		4" 4.026	
Flow (GPM)	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss	Velocity FPS	PSI Loss
1	1.05	0.49	0.60	0.12	0.37	0.04	0.21	0.01	0.16	0.00								
2	2.11	1.76	1.20	0.45	0.74	0.14	0.43	0.04	0.31	0.02	0.19	0.01						
3	3.16	3.73	1.80	0.95	1.11	0.29	0.64	0.08	0.47	0.04	0.29	0.01						
4	4.22	6.35	2.40	1.62	1.48	0.50	0.86	0.13	0.63	0.06	0.38	0.02	0.27	0.01				
5	5.27	9.60	3.00	2.44	1.85	0.76	1.07	0.20	0.79	0.09	0.48	0.03	0.33	0.01				
6	6.33	13.46	3.61	3.43	2.22	1.06	1.29	0.28	0.94	0.13	0.57	0.04	0.40	0.02	0.26	0.01		
7	7.38	17.91	4.21	4.56	2.60	1.41	1.50	0.37	1.10	0.18	0.67	0.05	0.47	0.02	0.30	0.01		
8	8.44	22.93	4.81	5.84	2.97	1.80	1.71	0.47	1.26	0.22	0.76	0.07	0.54	0.03	0.35	0.01		
9	9.49	28.52	5.41	7.26	3.34	2.24	1.93	0.59	1.42	0.28	0.86	0.08	0.60	0.03	0.39	0.01		
10	10.55	34.67	6.01	8.82	3.71	2.73	2.14	0.72	1.57	0.34	0.95	0.10	0.67	0.04	0.43	0.01		
12			7.21	12.37	4.45	3.82	2.57	1.01	1.89	0.48	1.15	0.14	0.80	0.06	0.52	0.02		
14			8.41	16.45	5.19	5.08	3.00	1.34	2.20	0.63	1.34	0.19	0.94	0.08	0.61	0.03		
16			9.61	21.07	5.93	6.51	3.43	1.71	2.52	0.81	1.53	0.24	1.07	0.10	0.69	0.04	0.40	0.01
18			10.82	26.21	6.67	8.10	3.86	2.13	2.83	1.01	1.72	0.30	1.20	0.13	0.78	0.04	0.45	0.01
20			12.02	31.85	7.42	9.84	4.28	2.59	3.15	1.22	1.91	0.36	1.34	0.15	0.87	0.05	0.50	0.01
22					8.16	11.74	4.71	3.09	3.46	1.46	2.10	0.43	1.47	0.18	0.95	0.06	0.55	0.02
24					8.90	13.79	5.14	3.63	3.78	1.72	2.29	0.51	1.61	0.21	1.04	0.07	0.60	0.02
26					9.64	16.00	5.57	4.21	4.09	1.99	2.48	0.59	1.74	0.25	1.13	0.09	0.65	0.02
28					10.38	18.35	6.00	4.83	4.41	2.28	2.67	0.68	1.87	0.28	1.21	0.10	0.70	0.03
30					11.12	20.85	6.43	5.49	4.72	2.59	2.86	0.77	2.01	0.32	1.30	0.11	0.76	0.03
32					11.86	23.50	6.86	6.19	5.04	2.92	3.06	0.87	2.14	0.36	1.39	0.13	0.81	0.03
34					12.61	26.29	7.28	6.92	5.35	3.27	3.25	0.97	2.28	0.41	1.47	0.14	0.86	0.04
36							7.71	7.69	5.67	3.63	3.44	1.08	2.41	0.45	1.56	0.16	0.91	0.04
38							8.14	8.50	5.98	4.02	3.63	1.19	2.54	0.50	1.65	0.17	0.96	0.05
40							8.57	9.35	6.30	4.42	3.82	1.31	2.68	0.55	1.73	0.19	1.01	0.05
42							9.00	10.24	6.61	4.83	4.01	1.43	2.81	0.60	1.82	0.21	1.06	0.06
44							9.43	11.16	6.93	5.27	4.20	1.56	2.94	0.66	1.91	0.23	1.11	0.06
46							9.86	12.12	7.24	5.72	4.39	1.70	3.08	0.71	1.99	0.25	1.16	0.07
48							10.28	13.11	7.56	6.19	4.58	1.84	3.21	0.77	2.08	0.27	1.21	0.07
50							10.71	14.14	7.87	6.68	4.77	1.98	3.35	0.83	2.17	0.29	1.26	0.08
55							11.78	16.87	8.66	7.97	5.25	2.36	3.68	0.99	2.38	0.35	1.38	0.09
60							12.85	19.82	9.44	9.36	5.73	2.77	4.02	1.17	2.60	0.41	1.51	0.11
65									10.23	10.86	6.21	3.22	4.35	1.36	2.82	0.47	1.64	0.13
70									11.02	12.45	6.68	3.69	4.69	1.55	3.03	0.54	1.76	0.14
75									11.81	14.15	7.16	4.19	5.02	1.77	3.25	0.61	1.89	0.16
80									12.59	15.95	7.64	4.73	5.35	1.99	3.47	0.69	2.01	0.18
85									13.38	17.84	8.12	5.29	5.69	2.23	3.68	0.77	2.14	0.21
90											8.59	5.88	6.02	2.48	3.90	0.86	2.27	0.23
95											9.07	6.50	6.36	2.74	4.12	0.95	2.39	0.25
100											9.55	7.15	6.69	3.01	4.33	1.05	2.52	0.28
110											10.50	8.53	7.36	3.59	4.77	1.25	2.77	0.33
120											11.46	10.02	8.03	4.22	5.20	1.47	3.02	0.39
130											12.41	11.62	8.70	4.89	5.63	1.70	3.27	0.45
140											13.37	13.33	9.37	5.61	6.07	1.95	3.52	0.52
150													10.04	6.38	6.50	2.22	3.78	0.59
160													10.71	7.19	6.94	2.50	4.03	0.67
170													11.38	8.04	7.37	2.79	4.28	0.74
180													12.05	8.94	7.80	3.11	4.53	0.83
190													12.72	9.88	8.24	3.43	4.78	0.92
200													13.39	10.87	8.67	3.78	5.03	1.01
220															9.54	4.50	5.54	1.20
240															10.40	5.29	6.04	1.41
260															11.27	6.14	6.54	1.64
280															12.14	7.04	7.05	1.88
300															13.00	8.00	7.55	2.13
320															13.87	9.02	8.05	2.40
340																	8.56	2.69
360																	9.06	2.99
380																	9.57	3.30
400																	10.07	3.63
420																	10.57	3.98
440																	11.08	4.33
460																	11.58	4.71
480																	12.08	5.09
500																	12.59	5.49

Notes: Shaded areas represent velocities over 5 fps. Use with caution when water hammer is a concern.

FRICTION LOSS CHARTS

TABLE OF APPROXIMATE PRESSURE LOSSES FOR PIPE FITTINGS (LISTED IN EQUIVALENT FEET OF PIPE)

Steel Fitting Type	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	6"	8"
Coupling	0.6	0.8	1	1.2	1.5	2	2.5	3	4	6	8
Run of St. Tee	1	1	1.5	2	2	2.5	3	4	5	7	10
Tee, Side Outlet	3	4.5	5	7	9	11	13	16	20	31	42
Tee, Run Reduced ½"	1.5	2.5	3	4	5	6	7	8	12	16	20
Elbow, 90°	1.5	2.5	3	4	5	6	7	8	12	16	20
Elbow, 45°	0.75	1	1.3	1.7	2	2.5	3	3.5	5	7.5	10
Corporation Stop	9	9	9	9	9	9					
Curb Stop	6	6	7	7	8	8					

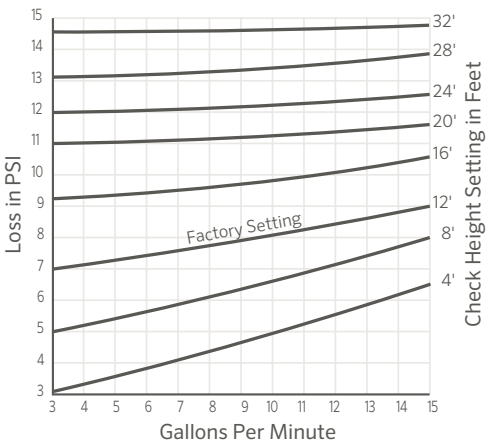
Plastic IPS or Copper Fitting Type	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	6"	8"
Coupling	1.5	2.5	3.0	3.0	4.0	6.0	7.0	8.0	11.0	18.0	24.0
Run of St. Tee	2.5	3.0	4.0	5.0	6.0	8.0	9.0	11.0	15.0	21.0	28.0
Tee, Side Outlet	7.0	9.0	12.0	15.0	18.0	24.0	30.0	36.0	45.0	70.0	90.0
Tee, Run Reduced ½"	3.5	4.5	6.0	8.0	9.0	11.0	14.0	17.0	24.0	34.0	45.0
Elbow, 90°	3.5	4.5	6.0	8.0	9.0	11.0	14.0	17.0	24.0	34.0	45.0
Elbow, 34°	1.5	2.0	3.0	3.5	4.0	5.0	7.0	8.0	10.0	16.0	20.0

To use this chart, multiply the approximate "equivalent feet of pipe" value by the proper pipe pressure loss per 100 ft. rating, then divide by 100. The result is the fitting loss in PSI.

Note: It is recommended that the charts above only be used when the manufacturer's recommended pressure loss values are not available.

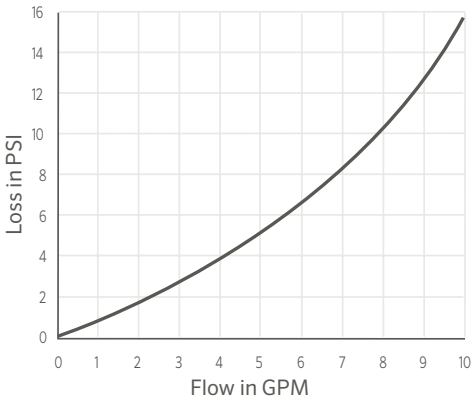
ACCESSORY PRESSURE LOSS CHARTS

HCV PRESSURE LOSS CHART



See the Hunter Check Valve product page for more information; **page 34**

SJ SWING JOINT FRICTION LOSS



See the Spray Acessories page for more information; **page 64**

PRESSURE LOSS CHARTS

BTT 1-ZONE Inlet Size ¾", Flow Rate: 1-8 GPM

GPM	Pressure Loss
1	4
2	5
3	6
4	8
5	11
6	15
7	20
8	26

Note: Maximum flow at 50 PSI

BTT 2-ZONE Inlet Size ¾", Flow Rate: 1-8 GPM

GPM	Pressure Loss
1	2
2	3
3	5
4	7
5	10
6	14
7	18
8	24

Note: Maximum flow at 50 PSI (1-zone activated)

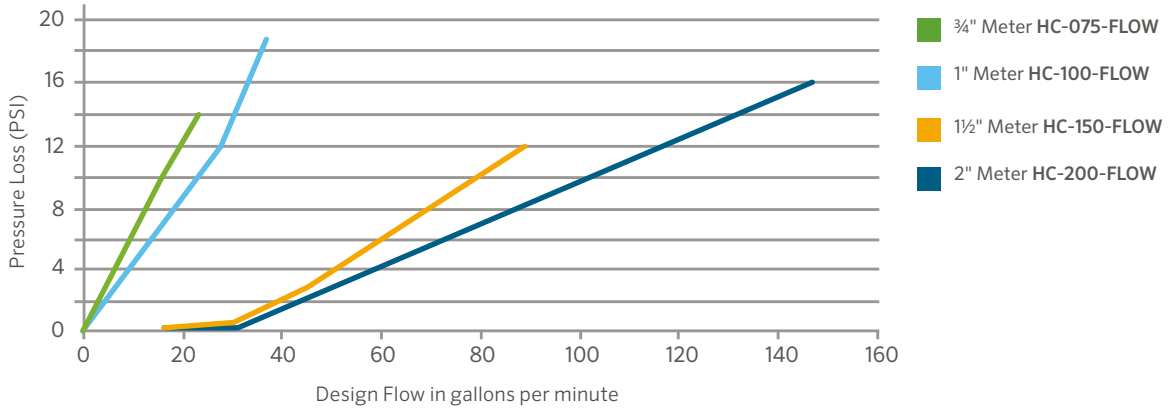
For applications requiring higher efficiency and lower pressure loss, use Hunter valves and dripline products.

HY FILTER PRESSURE LOSS IN PSI (AT OPTIMAL FLOWS)

Flow (GPM)	*HY-075 ¾"	*HY-100 1"	*HY-151 1½"	**HY-151-D 1½"	**HY-201 2"	**HY-201-D 2"
0.5	0	0				
2	0	0				
5	1	1				
7	2	2				
10	3	3				
15	6	6				
20	11	11	0	0	0	0
30			1	1	0	0
40			1	2	0	1
50			2	3	1	1
60			3	4	1	2
70			3	4	1	2
80			4	5	2	3
90					2	3
100					3	4

Notes: *With Standard 150 Mesh screen **With Standard 120 Mesh Disc

HC FLOW METER Pressure Loss Chart



WIRE DATA

STANDARD ANNEALED COPPER AT 68°F (20°C)						
American Wire Gauge	**Common Metric Equivalent** (mm^2)	**Diameter** (mils)	**Diameter** (mm)	**Cross-Sectional Area** (mm^2)	**Resistance** (Per mft ohms)	**Resistance** (Per km ohms)
1	50	289.3	7.348	42.4	0.924	0.407
2	35	257.6	6.543	33.6	0.156	0.513
3		229.4	5.827	26.7	0.197	0.647
4	25	204.3	5.189	21.1	0.249	0.815
5		181.9	4.62	16.8	0.313	1.028
6	16	162	4.115	13.3	0.395	1.297
7		144.3	3.665	10.6	0.498	1.634
8	10	128.5	3.264	8.36	0.628	2.061
9		114.4	2.906	6.63	0.793	2.6
10	6	101.9	2.588	5.26	0.999	3.277
11		90.7	2.3	4.17	1.26	4.14
12	4	80.8	2.05	3.31	1.59	5.21
13		72	1.83	2.63	2	6.56
14	2.5	64.1	1.63	1.63	2.52	8.28
15		57.1	1.45	1.65	3.18	10.4
16	1.5	50.8	1.29	1.31	4.02	13.2
17		45.3	1.15	1.04	5.05	16.6
18	0.75	40.3	1.02	0.82	6.39	21
19		35.9	0.912	0.65	8.05	26.4
20	0.5	32	0.813	0.52	10.1	33.2

PSR WIRE DATA

MAXIMUM WIRE LENGTH						
Model	**18 AWG**	**16 AWG**	**14 AWG**	**12 AWG**	**10 AWG**	**8 AWG**
PSR-22	243 ft.	386 ft.	616 ft.	976 ft.	1551 ft.	2463 ft.
PSR-52	134 ft.	214 ft.	341 ft.	540 ft.	859 ft.	1365 ft.
PSR-53	134 ft.	214 ft.	341 ft.	540 ft.	859 ft.	1365 ft.

For more information, see the Pump Start Relay on page 128.

WIRE SIZING

REQUIRED INFORMATION

1) Actual one-way length of wire between the controllers and the power source or the controllers and valves

2) Allowable voltage loss along the wire circuit

3) Accumulative current flowing through the wire section being sized in amperes

RESISTANCE IS CALCULATED USING THIS FORMULA:

$$R = \frac{1000 \times AVL}{2L \times I}$$

R = Maximum allowable resistance of wire in ohms per 1,000'

AVL = Allowable voltage loss

L = Wire length (one way)

I = Inrush current

AVL for controller power wire sizing is calculated by subtracting the minimum operating voltage required by the controller from the minimum available voltage at the power source.

AVL for valve wire sizing is calculated by subtracting minimum solenoid operating voltage from controller output voltage. This number will vary depending on the manufacturer and in some cases with line pressure.

VALVE WIRE SIZING EXAMPLE

Given: The distance from the controller to the valve is 1,800'. The controller output is 24 VAC. The valve has a minimum operating voltage of 20 VAC and an inrush current of 370 mA (0.37 A).

$$R = \frac{1{,}000 \times 4}{2\,(1{,}800) \times 0.37}$$

$$R = \frac{4{,}000}{1{,}332}$$

$$R = 3.00 \text{ ohms/1,000 ft.}$$

So, wire resistance cannot exceed 3.00 ohms per 1,000'. Now go to table #1 and select the proper wire size. Since 18 gauge wire has more resistance than 3.00 ohms per 1,000', choose 14 gauge wire.

Table 2 is a quick reference and is set up to provide maximum wire runs given the information at the bottom of the table.

TABLE 1 - RESISTANCE OF COPPER WIRE

Wire Size (AWG)	Resistance at 20° C (68° F) (ohms per 1,000')
18	6.39
16	4.02
14	2.52
12	1.59
10	1
8	0.63
6	0.4
4	0.25

TABLE 2 - VALVE WIRE SIZING

Ground Wire	Control Wire						
	18	16	14	12	10	8	6
18	850	1040	1210	1350	1460	1540	1590
16	1040	1340	1650	1920	2150	2330	2440
14	1210	1650	2150	2630	3080	3450	3700
12	1350	1920	2630	3390	4170	4880	5400
10	1460	2150	3080	4170	5400	6670	7690
8	1540	2330	3450	4880	6670	8700	10530
6	1590	2440	3700	5400	7690	10530	13330

Notes:

Maximum one-way distance in feet between controller and valve heavy-duty solenoid: 24 VAC, 350 mA inrush current, 190 mA holding current, 60 Hz; 370 mA inrush current, 210 mA holding current, 50 Hz.

Table 2 is for a single active solenoid. With two solenoids operating simultaneously on the same wires, the wire distances should be halved.

DC-LATCHING SOLENOID

KEY BENEFITS

- Compatible with all Hunter irrigation valves
- Compatible with NODE, NODE-BT, and XC Hybrid systems
- Captive plunger offers easy servicing of solenoid
- Manual quarter-turn on/off control

OPERATING SPECIFICATIONS

- Minimum opening/operating voltage: 6 VDC
- Maximum recommended voltage: 9 VDC
- Coil resistance: 4.8 ohms nominal
- Pulse width: 250 milliseconds
- Wire leads: 22" of 18 AWG black/red UL-approved wire

Note: See battery-operated controller product pages for wiring distances

For AC Solenoid specifications, see Valve product pages starting on **page 78**

DC-Latching Solenoid
(P/N 458200)
One black (common) wire and one red (station) wire

SOLAR SYNC® CALIBRATION TABLE

Use this table to identify your region and select the closest region number based upon average July ET or peak summer ET. For more information, visit **hunter.info/ReferenceMap and hunter.info/SeasonalAdjustment.**

CALIBRATION AND SETUP PERIOD

Based upon the ET of your region using the average July ET or peak summer ET. This is the preferred option when selecting your region.	Based upon the temperature for your region using the average July or the driest month high temperature (not the highest temperature for July).	Based upon the general description of your region.	Region
July* ET is 0.17" or less per day	Temperature for July* is 65°–75°F	U.S. Northern States, Costal Regions	1
July* ET is 0.18"–0.23" per day	Temperature for July* is 75°–85°F	Mountains, U.S. North Inland States	2
July* ET is 0.24"–0.29" per day	Temperature for July* is 85°–95°F	U.S. Southern States, Inland and High Deserts	3
July* ET is 0.30" or more per day	Temperature for July* is 95°–105°F	Deserts	4

Notes: * For Southern Hemisphere locations, use the month of January.

ADDITIONAL DATA

MAXIMUM NUMBER OF WIRES TO BE IN STALLED IN CONDUIT OR SLEEVING

Wire Size (AWG)	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	Wire Size (AWG)
18	6	12	20	35	49	80	110	175					18
16	5	10	16	30	42	67	97	150					16
14	4	6	10	18	25	40	56	88	120	150			14
12	3	5	7	15	20	33	50	75	102	130	205		12
10	1	3	6	13	16	27	40	63	85	110	170		10
8	1	2	4	6	9	16	25	35	50	65	105	150	8
6	1	1	3	3	5	10	15	22	32	40	63	92	6
4		1	1	2	4	7	10	16	24	30	48	70	4
2		1	1	2	2	5	9	12	18	22	36	54	2
0			1	1	2	3	5	8	12	15	24	36	0
00			1	1	1	2	4	7	10	14	21	31	00
000				1	1	2	3	6	8	11	18	26	000
0000				1	1	1	2	5	7	10	15	22	0000

STATEMENT OF WARRANTY

Hunter Residential and Commercial Irrigation Products

Hunter Industries Incorporated ("Hunter") warrants the following products to be free of defects in materials or workmanship under normal use in landscape irrigation applications for the specified period of time outlined below from the original date of manufacture:

ONE YEAR	**ROTORS**	SRM	**MICRO**	Micro Sprays, PLD Fittings, Rigid Risers, Air/Vacuum Relief Valves, RZB
TWO YEARS	**ROTORS**	PGP-ADJ, PGJ, HCV	**CONTROLLERS**	ACC (Legacy), BTT, Hydrawise controllers (HC, WAND, PHC, HPC, and HCC), I-Core/DUAL Families (Legacy), NODE, NODE-BT, Pro-C Families, PSR, ROAM, X2, XC Hybrid, and X-Core
	SPRAYS	PS Ultra Family, SJ, FlexSG, HSBE Family	**SENSORS**	HC Flow Meter (wired and wireless)
	NOZZLES	Spray Nozzles, PCN, PCB, AFB, MSBN	**MICRO**	ACZ, Accu Sync, PCZ, RZWS, Point-Source Emitters, Tubing, Multi-Port Emitters, IH Risers, MLD, Eco-Indicator, Multi-Purpose Box, Senninger Regulators, PLD-LOC Fittings
	VALVES	PGV Family	**TOOLS**	SpotShot
	CENTRAL	IMMS Central Control Products (Legacy), A2C-WIFI, A2C-LAN, A2C-LTE, LANKIT, WIFIKIT, CELLKIT		
THREE YEARS	**CONTROLLERS**	ROAM XL, EZ Decoder System, EZ-DT	**MP ROTATOR**	All
FIVE YEARS	**ROTORS**	PGP Ultra, I-20, I-25, I-40, I-50, I-80, and I-90 Families	**CONTROLLERS**	ACC2, ICC2, ICD Decoders, ICD-HP
	SPRAYS	Pro-Spray, Pro-Spray PRS30, and Pro-Spray PRS40 Families	**SENSORS**	Clik Sensors, Flow-Sync, MWS, Solar Sync, Wireless Flow Sensor
	VALVES	HQ, ICV, IBV	**MICRO**	ICZ, HDL, HDL-COP**, Eco-Mat, Eco-Wrap

Hunter Golf and ST System Irrigation Products*

Hunter will repair, replace, or repurchase, at its sole discretion, any defective component* assemblies contained within the Golf and ST products listed below by category, returned freight prepaid, from the date of manufacture within a period of:

ONE YEAR	**GOLF CONTROLLERS**	Pilot Command Center Software, Pilot-FC, Pilot-FI, Pilot Hub
THREE YEARS	**GOLF ROTORS**	TTS-800 Series, G-800 Series, G-900 Series, B-Series
	GOLF TWO-WAY MODULES	Pilot 100, Pilot 200, Pilot 400, Pilot 600
FIVE YEARS	**GOLF ROTORS**	The golf rotor component warranty is extended to 5 years with a one-for-one purchase of an HSJ Swing Joint from an authorized Hunter Golf distributor.
	SWING JOINTS	HSJ-0, HSJ-1, HSJ-2, HSJ-3
	ST ROTORS	ST-90, STG-900, ST-1200, ST-1600
	ST ACCESSORIES	All models starting with "ST"
	COMPUTER, PRINTERS & ACCESSORIES, MAINTENANCE RADIO & BATTERY	Equipment manufacturer's warranty (no Hunter warranty)

* Warranty covers repair, replacement, or repurchase of individual defective component assemblies contained within the product. Returns of complete finished goods are not allowed under warranty without prior approval from the Hunter Product Manager.

If used for agricultural applications, Hunter limits the warranty for its valves, spray, MP Rotator, and rotor products to a period of one (1) year from the original date of manufacture. This agriculture limitation supersedes all other warranties expressed or implied.

**While the use of copper does not completely remove the chance of root intrusion, it has been shown to assist in its prevention when coupled with proper irrigation scheduling.

Hunter® | *Built on Innovation®*

Statement of Warranty, Continued

If a defect in a Hunter product is discovered during the applicable warranty period, Hunter will repair or replace, at its option, the product or the defective part. This warranty does not extend to repairs, adjustments, or replacement of a Hunter product or part that results from misuse, negligence, alteration, modification, tampering, or improper installation and/or maintenance of the product. This warranty extends only to the original installer of the Hunter product. If a defect arises in a Hunter product during the warranty period, contact your local Hunter Authorized Distributor.

Hunter's warranty applies only to products installed as specified and used as intended for irrigation purposes. Hunter's warranty shall be limited to defects in materials and workmanship during the warranty period, and shall not extend to situations in which the product was subjected to improper design, installation, operation, maintenance, application, abuse, improper electrical current, grounding, service other than by Hunter authorized agents, operating conditions other than that for which it was designed, or in systems using water containing corrosive chemicals, electrolytes, sand, dirt, silt, rust, or agents that otherwise attack and degrade plastics. Hunter's warranty does not cover component failures caused by lightning strikes, electrical power surges, or unconditioned power supplies. If products are repurchased, the price to Distributor for such products in effect at the time of return will apply.

Hunter's obligation to repair, replace, or repurchase its products or product components as set forth above is the sole and exclusive warranty extended by Hunter. There are no other warranties, expressed or implied, including warranties of merchantability and warranties of fitness for a particular purpose. Hunter will not be liable to a distributor or to any other party in strict liability, tort, contract, or any other manner for any damages caused or claimed to be caused as a result of any design of or defect in Hunter's products, or for any special, incidental, or consequential damages of any nature.

Where applicable, Hunter's statement of warranty complies with local directives.

If you have any questions concerning the warranty or its application, please email support@hunterindustries.com.

ASAE CERTIFICATION STATEMENT

Hunter Industries Incorporated certifies that pressure, flow rate, and radius data for these products were determined and listed in accordance with ASAE Standard S398.1, Procedure for Sprinkler Testing and Performance Reporting, and are representative of performance of production sprinklers at the time of publication. Actual product performance may differ from the published specifications due to normal manufacturing variations and sample selection. All other specifications are solely the recommendation of Hunter Industries Incorporated.

Helping our customers succeed is what drives us. While our passion for innovation and engineering is built into everything we do, it is our commitment to exceptional support that we hope will keep you in the Hunter family of customers for years to come.

Gregory R. Hunter, CEO of Hunter Industries

Gene Smith, President, Landscape Irrigation and Outdoor Lighting

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