

Product Catalog

RESIDENTIAL & COMMERCIAL IRRIGATION | *Built on Innovation®*

VOLUME 38

Hunter®



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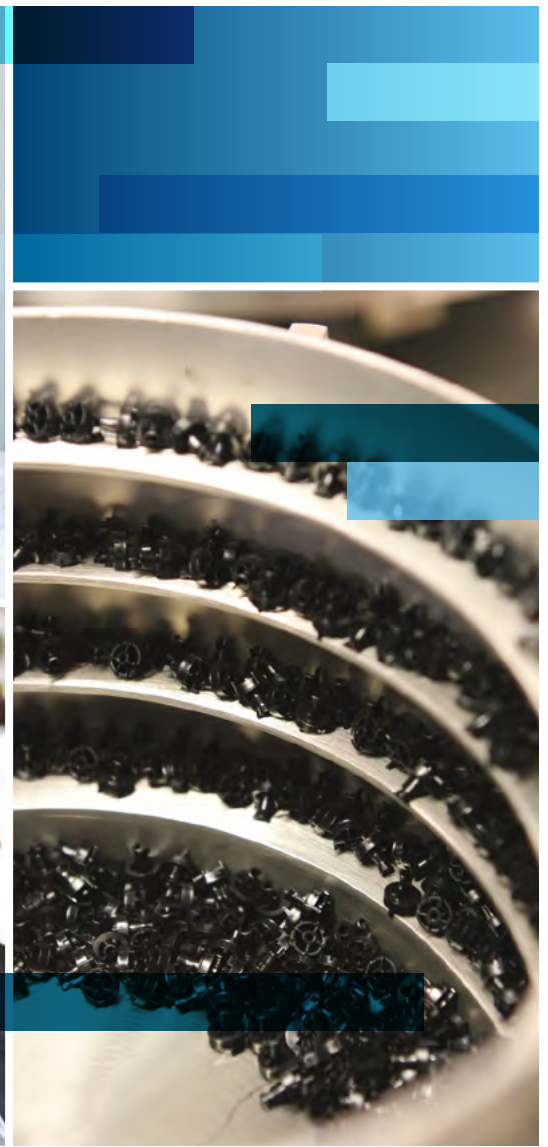
Advancing Irrigation Management **THROUGH LEADERSHIP AND INNOVATION**

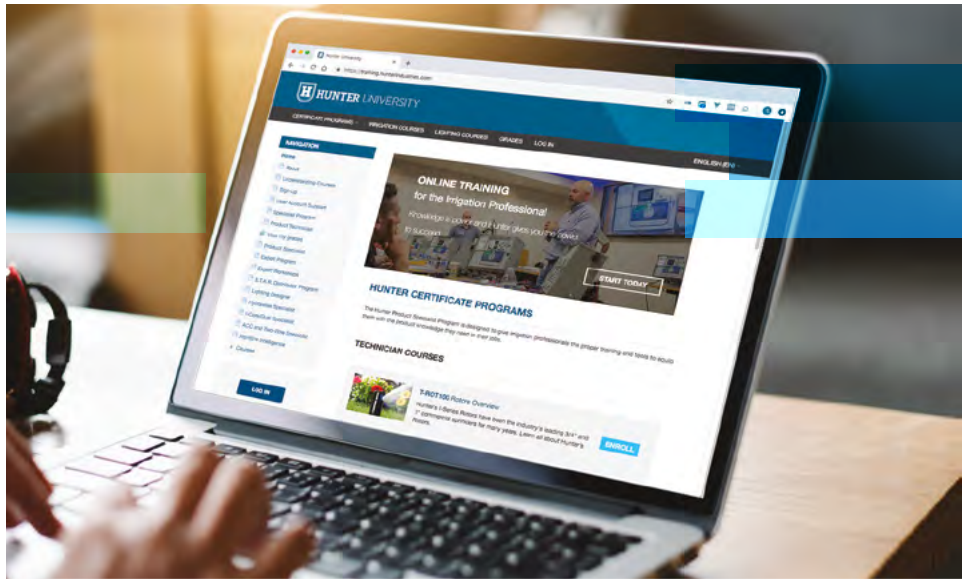
The need for cutting-edge technology and support continues to expand across all segments of the irrigation industry. Labor is increasingly hard to find. Water conservation is a rising concern. Your customers are demanding bold irrigation management solutions that cut costs while ensuring healthy, green landscapes.

These evolving needs call for trusted product solutions and unwavering partnership from manufacturers. **At Hunter Industries, innovation and customer satisfaction are integral parts of who we are.** We build performance, reliability, and efficiency into every product that we manufacture, and we back our solutions with the best training and technical support in the industry.

We are committed to advancing the boundaries of innovation wherever we do business. As we have for more than 38 years, we will always push ourselves to do better.

Thank you for choosing Hunter Industries. We're proud to stand with you to help solve your toughest irrigation challenges.





World-Class Education, Tools, and Support **FOR GREEN INDUSTRY PROFESSIONALS**

From product knowledge to technical support, we offer a full suite of tools, services, and programs to help your business grow:

- Gain valuable product knowledge with comprehensive online irrigation and lighting training certificate programs through **Hunter University**.
- Customize solutions and send bids directly to your customers with the **SiteRec App**.
- Simplify your Hunter ordering and design process with the **My List** feature.
- Show customers their projected savings in real time with the **Water Savings Calculator**.
- Eliminate the guesswork before starting a project with the **Hunter Dripline Calculator**.
- Earn points for irrigation and lighting product purchases and redeem them for exciting prizes through the **Hunter Preferred Program**.

We also have technical guides, CAD legends and details, an expansive video library, and an array of other helpful tools and services. **Visit hunterindustries.com/contractors today to learn how we can help you build your business.**

Follow us to stay on top of our latest product news, promotions, installation tips, and more!



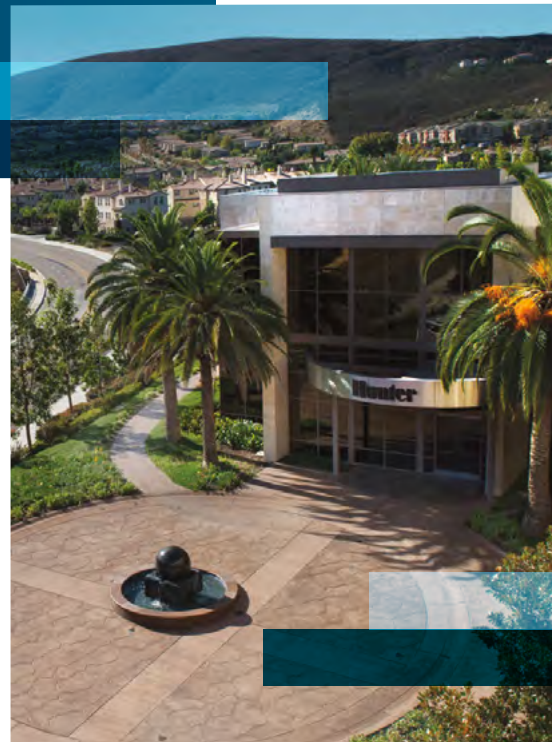
Hunter[®]

HUNTER FAMILY

of Companies

Hunter®

Founded in 1981, Hunter Industries is a family-owned, global manufacturer of best-in-class solutions for residential, commercial, municipal, agricultural, and golf course irrigation systems, as well as the outdoor lighting industry. CEO Greg Hunter and his executive staff provide leadership for our entire company. Our core mission will always remain the same: to deliver valued products and services backed by unwavering customer support, grow the company conscientiously, and remain true to the culture that makes our employees proud to work at Hunter. [Learn more at hunterindustries.com](http://hunterindustries.com).



Hunter®

GOLF IRRIGATION



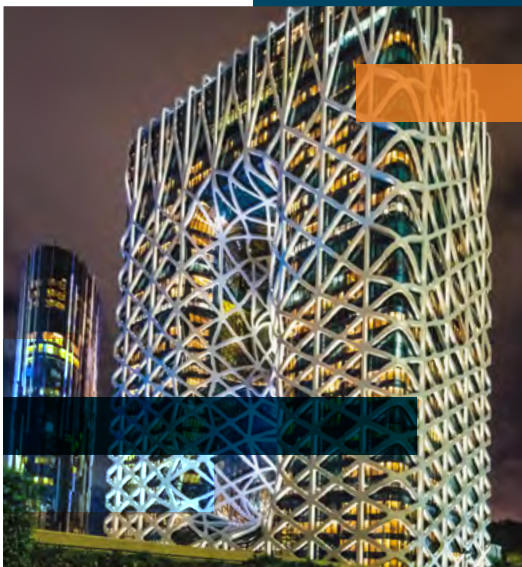
Hunter has been on the leading edge of golf course irrigation for more than three decades. We take pride in providing golf experts and professionals with the products, tools, and support they need to conceptualize, create, and manage world-class golf courses. [Learn more at hunterindustries.com/golf](http://hunterindustries.com/golf).



Senninger Irrigation is a principal designer and manufacturer of premier irrigation solutions for agricultural, horticultural, industrial, and wastewater applications. With over 50 years of experience in more than 50 countries worldwide, Senninger is one of the most trusted names in the agricultural irrigation industry. [Learn more at senninger.com.](http://senninger.com)

FXLuminaire

FX Luminaire is an industry-leading manufacturer of landscape and architectural lighting solutions. We focus on the advancement of LED technology and digital lighting control with smart home integration and zoning, dimming, and color generation capabilities. [Learn more at fxl.com.](http://fxl.com)



Lumascope transforms architecture into performance art with precision-engineered lighting solutions. Our global experts combine sophisticated design, advanced technologies, quality materials, and rigorous testing to manufacture comprehensive lighting systems that exceed expectations in a range of commercial and public-sector applications. [Learn more at lumascope.com.](http://lumascope.com)



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

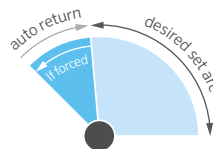


Nozzles are easier to differentiate in the field for simple installation and quick organization.

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	16
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 37'**
Flow: **0.64 to 5.3 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 37'
- Flow: 0.64 to 5.3 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-00



PGJ Reclaimed

Available as a factory-installed option on all models

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:



1/2" Swing Joints
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Hunter Flex^{SG}
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PGJ-00

Overall height: 7"
Exposed diameter: 1 1/8"
Inlet size: 1/2"

PGJ-04

Overall height: 7 1/8"
Pop-up height: 4"
Exposed diameter: 1 1/8"
Inlet size: 1/2"

PGJ-06

Overall height: 9 1/8"
Pop-up height: 6"
Exposed diameter: 1 1/8"
Inlet size: 1/2"

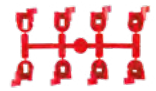
PGJ-12

Overall height: 16 3/8"
Pop-up height: 12"
Exposed diameter: 1 1/8"
Inlet size: 1/2"

PGJ RED NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
.75 ● Red	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 ● Red	30	18	0.85	0.51	0.58
	40	19	1.0	0.53	0.62
	50	19	1.1	0.59	0.68
1.5 ● Red	30	21	1.3	0.57	0.66
	40	22	1.5	0.60	0.69
	50	22	1.7	0.68	0.78
2.0 ● Red	30	24	1.7	0.57	0.66
	40	25	2.0	0.62	0.71
	50	25	2.3	0.71	0.82
2.5 ● Red	30	27	2.2	0.58	0.67
	40	28	2.5	0.61	0.71
	50	28	2.8	0.69	0.79
3.0 ● Red	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 ● Red	30	33	3.7	0.65	0.76
	40	34	4.0	0.67	0.77
	50	34	4.3	0.72	0.83
5.0 ● Red	30	36	4.7	0.70	0.81
	40	37	5.0	0.70	0.81
	50	37	5.3	0.75	0.86

PGJ NOZZLES



Bold = Recommended pressure

Note:

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

SRM

Radius: **15' to 30'**
Flow: **0.42 to 3.4 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: 6
- Radius: 15' to 30'
- Flow: 0.42 to 3.4 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

USER-INSTALLED OPTIONS

- Drain check valve (up to 7' of elevation) (P/N 462078SP)

SRM		SRM NOZZLES
Model	Description	
SRM-04	4" pop-up, adjustable arc, 6 standard nozzles	

SRM



SRM-04

Overall height: 6½"
Pop-up height: 4"
Exposed diameter: 1½"
Inlet size: ½"

SRM GREEN NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
.50 ● Dk. Green	30	15	0.42	0.36	0.41
	40	16	0.50	0.38	0.43
	50	17	0.58	0.39	0.45
.75 ● Dk. Green	30	15	0.42	0.36	0.41
	40	16	0.50	0.38	0.43
	50	17	0.58	0.39	0.45
1.0 ● Dk. Green	30	19	0.85	0.45	0.52
	40	20	1.0	0.48	0.56
	50	20	1.1	0.53	0.61
1.5 ● Dk. Green	30	23	1.3	0.47	0.55
	40	24	1.5	0.50	0.58
	50	25	1.7	0.52	0.60
2.0 ● Dk. Green	30	25	1.7	0.52	0.60
	40	26	2.0	0.57	0.66
	50	27	2.3	0.61	0.70
3.0 ● Dk. Green	30	28	2.5	0.61	0.71
	40	30	3.0	0.64	0.74
	50	30	3.4	0.73	0.84

Bold = Recommended pressure

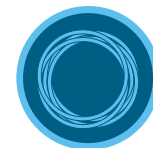
Note:

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}
Page 62

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

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

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: 7³/₈"
Pop-up height: 4"
Exposed diameter: 1³/₄"
Inlet size: ³/₄"

PGP GRAY LOW-ANGLE NOZZLE PERFORMANCE DATA

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

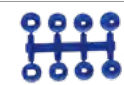
All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.

PGP BLUE NOZZLE PERFORMANCE DATA					
Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
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
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
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
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
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
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
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
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 47'**
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 47'
- 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-04 only (P/N 142300SP)
- HSJ-0 prefabricated ¾" PVC swing joint



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



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-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

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 47'
- 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: 7½"
Pop-up height: 4"
Exposed diameter: 1¾"
Inlet size: ¾"



I-20-06

Overall height: 9¾"
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
- 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: 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, MPR-25, MPR-30, MPR-35
- Warranty period: 5 years

FACTORY-INSTALLED OPTIONS

- Reclaimed water ID
- Blue #1.5-4.0 nozzles

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: 8¾"
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: 8¾"
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 = Factory-installed nozzle number 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 = Factory-installed nozzle number 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 = Factory-installed nozzle number 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	
				■	▲
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	
				■	▲
2.0 ● LA	30	25	1.6	0.49	0.57
	40	27	1.9	0.50	0.58
	50	28	2.1	0.52	0.60
	Gray	60	30	2.3	0.49
2.5 ● LA	30	27	2.1	0.55	0.64
	40	30	2.5	0.53	0.62
	50	33	2.8	0.49	0.57
	Gray	60	35	3.0	0.47
3.5 ● LA	30	29	2.8	0.64	0.74
	40	32	3.1	0.58	0.67
	50	35	3.5	0.55	0.64
	Gray	60	37	3.8	0.53
4.5 ● LA	30	29	3.4	0.78	0.90
	40	32	3.9	0.73	0.85
	50	35	4.4	0.69	0.80
	Gray	60	37	4.7	0.66

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

Bold = Recommended pressure

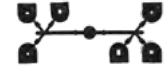
Note:

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	
				■	▲
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	
				■	▲
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	
				■	▲
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)

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

FACTORY-INSTALLED OPTIONS

- Reclaimed water ID
- High-speed rotation

USER-INSTALLED OPTIONS

- HSJ-1 prefabricated 1" PVC swing joint



I-25-04

Overall height: 7 7/8"
Pop-up height: 4"
Exposed diameter: 1 3/4"
Inlet size: 1"



I-25-06

Overall height: 10 1/4"
Pop-up height: 6"
Exposed diameter: 1 3/4"
Inlet size: 1"



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

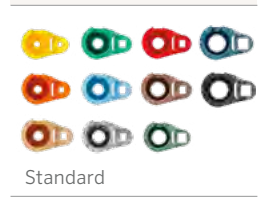
I-25 STANDARD NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
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
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
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	
				■	▲
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

I-25 NOZZLE



* 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-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 rotation

USER-INSTALLED OPTIONS

- HSJ-1 prefabricated 1" PVC swing joint



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-40-04

Overall height: 7 7/8"
Pop-up height: 4"
Exposed diameter: 2"
Inlet size: 1"



I-40-06

Overall height: 10 1/4"
Pop-up height: 6"
Exposed diameter: 2"
Inlet size: 1"

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 ON = Full-circle opposing nozzles ON-R = Full-circle opposing nozzles and reclaimed water ID 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	
				■	▲
08 (40)  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 (41)  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
13 (42)  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
15 (43)  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
23 (44)  Dk. Green	80	59	18.3	1.01	1.17
	60	62	21.3	1.07	1.23
	70	64	23.0	1.08	1.25
25 (45)  Dk. Blue	80	65	24.5	1.12	1.29
	90	66	25.9	1.14	1.32
	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	
				■	▲
08 (40)  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 (41)  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
13 (42)  Lt. Blue	80	47	13.0	1.13	1.31
	50	46	11.1	1.01	1.17
	60	47	12.3	1.07	1.24
15 (43)  Gray	70	48	13.3	1.11	1.28
	80	49	14.2	1.14	1.31
	50	51	13.8	1.02	1.18
23 (44)  Dk. Green	60	52	15.7	1.12	1.29
	70	53	16.6	1.14	1.31
	80	54	18.3	1.21	1.40
25 (45)  Dk. Blue	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
	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 Opposing Nozzle 360° Model



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

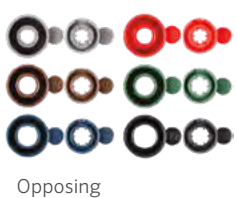
I-40 DUAL OPPOSING NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	Precip in/hr	
				■	▲
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

* Factory-installed nozzle

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



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-50-06-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 TURFCUPKIT140



I-50 Reclaimed

Available as a factory-installed option on all models

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	
				■	▲
8 (40) ● 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 (41) ● 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
13 (42) ● 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
15 (43) ● Gray	80	53	14.2	0.97	1.12
	50	54	13.8	0.91	1.05
	60	55	15.7	1.00	1.15
23 (44) ● Dk. Green	70	57	16.6	0.98	1.14
	80	59	18.3	1.01	1.17
	60	62	21.3	1.07	1.23
25 (45) ● Dk. Blue	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 (45) ● 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
25 (45) ● Dk. Blue	80	68	27.7	1.15	1.33
	90	69	29.5	1.19	1.38

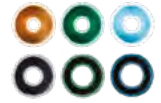
I-50 DUAL OPPOSING NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft	Flow GPM	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
20 ● Dk. Brown	80	62	17.8	0.45	0.51
	60	63	19.1	0.46	0.53
	70	64	20.9	0.49	0.57
23 ● Dk. Green	80	66	22.3	0.49	0.57
	90	66	23.9	0.53	0.61
	60	65	20.4	0.46	0.54
25 ● Dk. Blue*	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
28 ● Black	90	70	27.2	0.53	0.62
	70	70	28.9	0.57	0.66
	80	72	30.9	0.57	0.66
28 ● Black	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



Standard



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
- 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 ProTech TC™ 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-80-00-SS Riser Mount
I-80-00-SS-ON Riser Mount
Overall height: 9³/₈"
Exposed diameter: 2¹/₄"
Inlet size: 1¹/₂"

I-80-04-SS Pop-Up
I-80-04-SS-ON Pop-Up
Overall height: 9³/₈"
Pop-up height: 3³/₄"
Exposed diameter: 4³/₈"
Inlet size: 1¹/₂"



I-80-04-SS-TC Turf Cup
I-80-04-SS-ON-TC Turf Cup
Overall height: 11¹/₂"
Pop-up height: 3³/₄"
Exposed diameter: 3¹/₂"
Inlet size: 1¹/₂"



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-80-00-SS = Riser mount I-80-04-SS = 4" pop-up I-80-04-SS-TC = 4" pop-up with turf cup	Adjustable arc, stainless steel riser Adjustable arc, stainless steel riser, check valve Adjustable arc, stainless steel riser, check valve, factory-installed turf cup	(blank) = No option R = Reclaimed water ID* * TC reclaimed ID not available	#23 to #53 = Factory-installed nozzle number, no nozzle pack
I-80-00-SS-ON = Riser mount I-80-04-SS-ON = 4" pop-up I-80-04-SS-ON-TC = 4" pop-up with turf cup	Full-circle, opposing nozzle, stainless steel riser Full-circle, opposing nozzle, stainless steel riser, check valve Full-circle, opposing nozzle, stainless steel riser, check valve, factory-installed turf cup	(blank) = No option R = Reclaimed water ID* * TC reclaimed ID not available	#23 to #53 = Factory-installed nozzle number, no nozzle pack

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

Nozzle Set			Pressure	Radius	Flow	Precip in/hr	
			PSI	ft.	GPM	■	▲
Orange		Lt. Green	50	65	20.2	0.46	0.53
803603		Green	60	66	22.1	0.49	0.56
		315313	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		Lt. Green	65	71	28.3	0.54	0.62
803603		Blue	70	72	29.3	0.54	0.63
		315313	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		Lt. Green	65	72	30.6	0.57	0.66
803603		Gray	70	73	31.6	0.57	0.66
		315313	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		Lt. Green	65	76	34.9	0.58	0.67
803603		Red	70	78	36.2	0.57	0.66
		315313	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		Lt. Green	-	-	-	-	-
803603		Dk. Brown	70	81	41.2	0.60	0.70
		315313	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		Lt. Green	-	-	-	-	-
803603		Dk. Green	70	83	46.3	0.65	0.75
		315313	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		Lt. Green	-	-	-	-	-
803603		Dk. Blue	70	87	50.7	0.64	0.74
		315313	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	
				■	▲
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	
				■	▲
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



SWING JOINTS

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

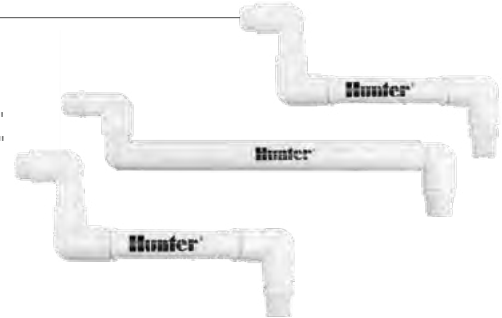
ROTORS

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 3/4"
- HSJ-1 = Model 1"
- HSJ-2 = Model 1 1/4"
- HSJ-3 = Model 1 1/2"



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 = 3/4" commercial swing joint HSJ-1 = 1" heavy-duty swing joint HSJ-2 = 1 1/4" heavy-duty swing joint HSJ-3 = 1 1/2" 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 198](#)

HUNTER CHECK VALVES

Model	Description
HC-50F-50F	1/2" female inlet x 1/2" female outlet
HC-50F-50M	1/2" female inlet x 1/2" male outlet
HC-75F-75M	3/4" female inlet x 3/4" 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 43**



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 SYSTEM





STK-1 / STK-2

Radius: **103' to 120'**
Flow: **74.5 to 92.0 GPM**

Top-quality ST System long-range rotors are dedicated to 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°

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 component part

USER-INSTALLED OPTIONS

- Rubber Cover Kit ST-90: P/N 234200
- Rubber Cover Kit STG-900: P/N 473900

ST ROTOR	
Model	Description
ST-90-XX	3" pop-up, jar top cap, adjustable arc, plastic riser, and NPT inlet threads, #73 or #83 pre-installed nozzle
STG-900-XX	3" pop-up, top service, adjustable arc, plastic riser, and Acme inlet threads, #73 or #83 pre-installed nozzle



ST-90*

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

* Not for use with the ST Vault



STG-900*

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

* For use with the ST173026B Vault

KIT CONFIGURATIONS

STK-1 / STK-2		
Kit Descriptions For specification ease and to ensure the correct product is installed, the ST System is available in the kit configurations below	STK-1 STG-900 Block System (remotely located valve)	STK-2 STG-900 VAH System (valve adjacent to head)
ST Rotor: Synthetic turf rotor without rubber cover kit	STG-900	STG-900
ST Vault: Vault with 3-piece polymer-concrete cover	ST-173026-B	ST-173026-B
ST Swing Joint: "VA" 2" PVC swing joint with 7 pivot points	ST-2008-VA	ST-2008-VA
ST Valve and Fitting Kit	—	ST-VBVF-K
ST Adapter Elbow Fitting*	239800	239800
ST Rotor Adapter Fitting**	239300	—
Rubber Cover Kit: STG-900 rubber cover kit	473900	473900
Quick-Coupler Valve: 1" inlet with ¼" outlet for key	HQ-5RC	HQ-5RC

Notes:

*ST Adapter Elbow Fitting connects ST-2008-VA swing joint to rotor adapter fitting (STK-1) also connects ST-VBVF-K to STG-900 rotor (STK-2)

**ST Rotor Adapter Fitting connects 239800 adapter elbow fitting to STG-900 rotor's Acme inlet (STK-1)

ST-90 / STG-900 NOZZLE PERFORMANCE DATA

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

Notes:

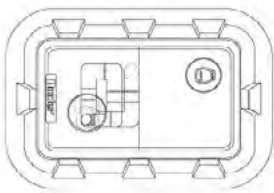
All precipitation rates calculated for 180° operation.
For precipitation rate of a 360° sprinkler, divide by 2.

Requires minimum 100 PSI dynamic pressure supplied to swing joint inlet.

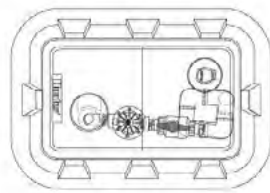
INSTALLATION DETAILS

STK-1

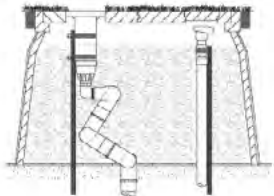
STK-2



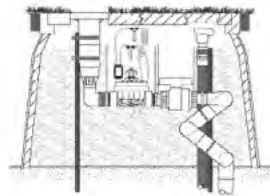
ON-FIELD SIDE



ON-FIELD SIDE



VIEW FROM ON-FIELD SIDE



VIEW FROM ON-FIELD SIDE

ST Rotor



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.

ST2008VA: 2" for ST-90, STG-900

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



Adapter fitting 239300

Connects 239800 elbow fitting to STG-900 Acme inlet rotor

Adapter fitting 239302

Connects 239800 elbow fitting to ST-90B BSP inlet rotor

ST VALVE SETS

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

STVBVFK: for STG-900 in STK-2 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.

ST173026B for STG-900 includes 2" thick 3-piece PC 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



① Quick Coupler

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.

ST-1600 / STK-6V

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

This ST System solution offers cleaning, cooling, and flushing capabilities to prepare synthetic sports fields for play.

KEY BENEFITS

- Nozzle choices: 6
- Standard nozzle: #20
- Nozzle range: #16 to #26
- Nozzle trajectory: 22.5°
- Isolated, grease-lubricated gear drive
- Factory-installed rubber logo cap (ST-1600B / ST-1600-HSB)
- Movable stops (left and right) arc adjustment
- Arc setting: 40° to non-reversing 360°
- Ratcheting nozzle turret
- Telescoping rubber infill barrier on riser
- Adjustable speed of rotation: 0 to 65 seconds (High-speed models, 180° at 120 PSI)
- Internal construction: brass, stainless steel, and ball bearings
- Optional infill barrier system (ST-1600B / ST-1600-HSB)
- 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

KIT CONFIGURATIONS

STK-6V		
Kit Description (Components are ordered individually)	STK-6V-HSB-2P High-Speed Pop-Up 2" Plastic Valve	STK-6V-HSB-3M High-Speed Pop-Up 3" Metal Valve
ST Rotor: Synthetic turf rotor	ST-1600-HS-B	ST-1600-HS-B
ST Infill Barrier System: Rubber cover kit	ST-IBS-1600	ST-IBS-1600
ST Bracket: Rotor hanger and elevation adjustment	ST-BKT-1600	ST-BKT-1600
ST Vault: 4-piece polymer-concrete cover set	ST-243636-B	ST-243636-B
ST Manifold: 3" fittings, isolation valve and drain valve	ST-BVF30-K	ST-BVF30-K
ST Valve: With remote on-off-auto selector	ST-V20-KVP	ST-V30-KV
ST Variable Speed Valve: Regulates opening speed	ST-NDL-K	ST-NDL-K
ST Support: Adjustable manifold support (2 required)	ST-SPT-K	ST-SPT-K
ST Inlet Hose: Flexible stainless steel alignment hose	ST-H30-K	ST-H30-K
Quick-Coupler Valve: 1" inlet, 1¼" outlet for key	HQ-5RC	HQ-5RC



ST-1600-HS-B (High-Speed)

Overall height: 22½"
Pop-up height: 5"
Diameter: 14"
Inlet size: 2" BSP*

* Adapter to 2" NPT nipple not required. Use BSP t.o.e. nipple adapter P/N 241400 if desired.



BR (High-Speed)

(Riser-Mounted Model)
Overall height: 8¾"
Diameter: 8¼"
Inlet size: 2" BSP*

* Adapter to 2" NPT nipple not required. Use BSP t.o.e. nipple adapter P/N 241400 if desired.



ST1600 Tool

P/N 517600SP
For gear drive installation and removal

ST Infill Barrier System

ST-IBS-1600

The unique IBS rubber cover kit includes vertical rubber barriers to retain infill material creating a safe transition where the rotor pops up. The IBS can also be trimmed to create a flat exposed surface area.

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

Rated to 500 PSI working pressure, this 3" galvanized ductile iron assembly includes Victaulic™ type grooved connections, a butterfly isolation valve, a point of connection for the quick coupler, and a 1" brass drain valve.

ST H-Block Manifold Supports

ST-SPT-K

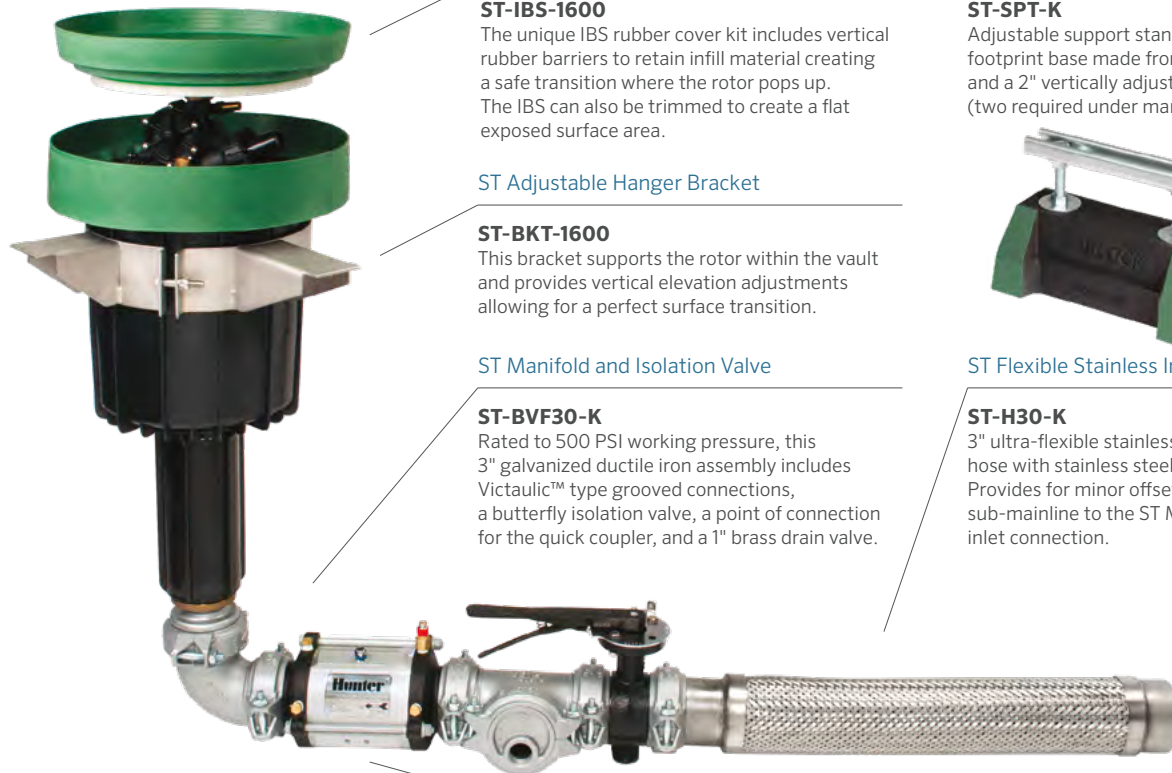
Adjustable support stands include a large footprint base made from recycled tire rubber and a 2" vertically adjustable support rail (two required under manifold).



ST Flexible Stainless Inlet Hose

ST-H30-K

3" ultra-flexible stainless steel corrugated hose with stainless steel support braiding. Provides for minor offset and alignment of sub-mainline to the ST Manifold's inlet connection.



ST Low-Loss, Slow-Opening Valve (Plastic)

For Flows Up to 200 GPM



ST-V20-KVP: Heavy-duty plastic control valve
Valve: 2" grooved Vic type
Opening speed: ST-NDL-K regulates/slow speed
Pressure loss: Ultra-low (1.5 PSI at 200 GPM)
Manual control: Remote on-off-auto selector and solenoid (not shown)

ST Low-Loss, Slow-Opening Valve (Metal)

ST-V30-KV: Heavy-duty metal control valve
Valve: 3" grooved Vic type
Opening speed: ST-NDL-K regulates/slow speed
Pressure loss: Ultra-low (2.0 PSI at 325 GPM)
Manual control: Remote on-off-auto selector and solenoid (not shown)

ST Rotors Have Many Uses

While ST Rotors are specifically designed for cleaning and cooling synthetic turf sports fields, they are also great for other applications such as pastures, horse arenas, dust control, and even casual natural turf areas.

INSIDE THE ST SYSTEM

Open access to all components for ease of ongoing maintenance



FROM THE TOP

Smooth and safe surface area with quick-access ports



SEAMLESS INTEGRATION

Blends in perfectly with the surrounding synthetic surface



Victaulic is a trademark of Victaulic Company.

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-V30KV 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-243636B: 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



ST-1600 Rotor in Action



ST-1600 SHORT-RADIUS NOZZLE KIT - P/N 959900 PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
8	45	67	23.3	1.00	1.15
	60	70	23.3	0.92	1.06
	70	72	25.5	0.95	1.09
	90	74	27.3	0.96	1.11
	100	76	29.2	0.97	1.12
10	45	74	32.4	1.14	1.32
	60	81	37.8	1.11	1.28
	70	84	42.5	1.16	1.34
	90	86	47.1	1.23	1.42
	100	88	51.0	1.27	1.46
12	45	84	46.2	1.26	1.46
	60	92	53.9	1.23	1.42
	70	94	60.5	1.32	1.52
	90	96	65.7	1.37	1.58
	100	98	71.8	1.44	1.66
14	45	91	60.7	1.41	1.63
	60	103	69.3	1.26	1.45
	70	105	78.2	1.37	1.58
	90	108	85.5	1.41	1.63
	100	110	92.5	1.47	1.70

ST-1600 NOZZLE PERFORMANCE DATA*

Nozzle	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr	
				■	▲
16 ●	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 ●	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 ●	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 ●	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 ●	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 ●	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 calculated for 180° operation. For precipitation rate of a 360° sprinkler, divide by 2.

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

ST-1200BR

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

The cost-effective ST-1200BR is the ideal riser-mount 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-1200BR

Overall height: 12"
Overall length: 12"
Overall width: 3¾"
Inlet size: 1½" NPT

Included
Short and long barrels

ST-1200BR NOZZLE PERFORMANCE DATA

Nozzle	Pressure PSI	Radius ft.	Flow GPM	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

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
- HSJ-5 for high-flow ST-1600B rotor with 2" inlet
- Available in popular inlet and outlet configurations

High-Flow Swing Joints

HSJ-4 = Model 2"
HSJ-5 = Model 3"



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
HSJ-5 = 3" heavy-duty swing joint	3 = 3" male NPT, horizontal side connection	8 = 2" male NPT	2 = Single top-out	12 = 12" lay arm

Examples:

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
HSJ-5-38-212 = HSJ 3" heavy-duty swing joint, 3" male NPT horizontal side connection to piping, 2" male NPT outlet to sprinkler, single top-out, and 12" lay arm

MP ROTATOR®

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

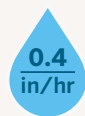
The multiple streams of the MP Rotator target all areas of the landscape evenly, resulting in superior uniformity over traditional spray nozzles and better wind resistance.

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.

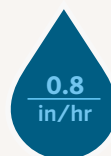
STANDARD MP Rotator



8-35 ft.

- Maximum water efficiency
- Slowest precipitation rate

MP800



6-16 ft.

- Small spaces
- Tight water windows

MP STRIPS



5 ft. wide

- Rectangular spaces
- Pair with either option

MP ROTATOR®

Radius: 8' to 35'

0.4
in/hr

The MP Rotator nozzle 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
- Adjustable arc only when MP Rotator is running for vandal resistance
- 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 pop-up for pressure regulation to 40 PSI for nominal radius settings
- Pair with Pro-Spray PRS30 pop-up for pressure regulation to 30 PSI for minimum radius settings

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 - SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Options
MP1000-90 = 8' to 15' radius, adjustable from 90° to 210°	(blank) = No option HT = Male threaded version <i>(Not available in 3500 and 1000-210)</i>
MP1000-210 = 8' to 15' radius, adjustable from 210° to 270°	
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°	

MP ROTATOR PERFORMANCE DATA

Arc	Pressure PSI	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°				
		Radius ft.	Flow GPM	Flow GPH	Precip in/hr ■ ▲	Radius ft.	Flow GPM	Flow GPH	Precip in/hr ■ ▲	Radius ft.	Flow GPM	Flow GPH	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
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
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
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
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
Page 61

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	
					■	▲
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
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
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
MP Right Corner Strip 	55	6 x 16	0.26	15.6
	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
MP Side Strip 	50	6 x 16	0.25	15.0
	55	6 x 16	0.26	15.6
	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 183** 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
 models



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
- Adjustable arc only when MP Rotator nozzle is running for vandal resistance
- 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 pop-up for pressure regulation to 40 PSI for nominal radius settings
- Pair with Pro-Spray PRS30 pop-up 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
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PRS30 and PRS40
Page 60 and Page 61

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		Precip in/hr		Radius ft.	Flow GPM	
			GPM	GPH	■	▲			
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	
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	
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	
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		Precip in/hr	
			GPM	GPH	■	▲
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
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
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
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
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	





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 pop-ups 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. The Pro-Spray cap 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					
PRE-INSTALLED 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	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				●	●
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 pre-installed 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" pre-installed 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: 1/4"
Inlet size: 1/2"



PSU-04

Retracted height: 7 1/4"
Pop-up height: 4"
Exposed diameter: 1/4"
Inlet size: 1/2"



PSU-06

Retracted height: 9 1/2"
Pop-up height: 6"
Exposed diameter: 1/4"
Inlet size: 1/2"

PS ULTRA - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 (OPTIONAL)

1 Model	2 Nozzles	3 Optional
PSU-02 = 2" pop-up PSU-04 = 4" pop-up PSU-06 = 6" pop-up	(blank) = Flush plug, no large filter screen 8A = 8' adjustable nozzle 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)	NFO = Nozzle filter only (available for 4" model only). Substitute standard installation of large inlet filter screen and receive unit with the nozzle filter 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
- PSU-04 - 12A - NFO = 4" pop-up, with a 12' adjustable nozzle, nozzle filter only

PS ULTRA STANDARD NOZZLES PERFORMANCE DATA

Arc	Pressure PSI	8A ● Brown 8' radius Adjustable from 0° to 360° Trajectory: 0°			10A ● Red 10' radius Adjustable from 0° to 360° Trajectory: 15°			12A ● Green 12' radius Adjustable from 0° to 360° Trajectory: 28°					
		Radius ft.	Flow GPM	Precip in/hr ■ ▲	Radius ft.	Flow GPM	Precip in/hr ■ ▲	Radius ft.	Flow GPM	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
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
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
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
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
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
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

Arc	Pressure PSI	15A ● Black 15' radius Adjustable from 0° to 360° Trajectory: 28°			17A ● Gray 17' radius Adjustable from 0° to 360° Trajectory: 28°				
		Radius ft.	Flow GPM	Precip in/hr ■ ▲	Radius ft.	Flow GPM	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
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
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
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
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
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
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 spray 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"
Shutoff



PROS-04

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



[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: 16⅞"
Pop-up height: 12"
Exposed diameter: 2¼"
Inlet size: ½"

PRS30

To maintain consistent performance and reduce water waste, the 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



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



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



FloGuard Technology



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



[A] PRS-12-SI-PRS30
[B] PRS-12-PRS30
Retracted height: 16⅞"
Pop-up height: 12"
Exposed diameter: 2¼"
Inlet size: ½"

PRS30 - SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Feature Options	3 Specialty Options
PRS-00-PRS30 = 30 PSI regulated shrub adapter PRS-04-PRS30 = 30 PSI regulated 4" pop-up PRS-06-PRS30 = 30 PSI regulated 6" pop-up PRS-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

PRS30 (SIDE INLET) MODELS

Model

PRS-06-SI-PRS30 = 30 PSI regulated 6" pop-up with side inlet

PRS-12-SI-PRS30 = 30 PSI regulated 12" pop-up with side inlet

Examples:

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

Compatible with:



Pro Adjustable Nozzles
Page 63
Pro-Spray Fixed Arc Nozzles
Page 66

PRS40

To optimize MP Rotator performance, the 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
- 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 comes standard (14' of elevation)

OPERATING SPECIFICATIONS

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

FACTORY-INSTALLED OPTIONS

- Reclaimed water identification
- FloGuard technology available for pop-up models

USER-INSTALLED OPTIONS

- 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: 16½"
Pop-up height: 12"
Exposed diameter: 2¼"
Inlet size: ½"

PRS40 - SPECIFICATION BUILDER: ORDER 1 + 2

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

Examples:

- PROS-04-PRS40-CV = 4" pop-up regulated at 40 PSI, drain check valve
- PROS-06-PRS40-CV-F = 6" pop-up regulated at 40 PSI, drain check valve, with FloGuard technology
- PROS-12-PRS40-CV-R = 12" pop-up regulated at 40 PSI, drain check valve, reclaimed body cap



Compatible with:



MP Rotator
Page 46 and Page 50

SPRAY ACCESSORIES

Spray accessories provide 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
- Pressure loss charts for SJ products on **page 198**

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

HUNTER SPIRAL BARB ELBOWS

Features

- Compatible with Flex_{SG} and other brands for a customized swing joint
- Acetal material for sharp barbs

Models

- HSBE-050: ½" male NPT x spiral barb elbow
- HSBE-075: ¾" male NPT x spiral barb elbow
- HSBE TOOL: Insert tool

Operating Specifications

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

FLEX_{SG} TUBING

Features

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

Models

- FLEX_{SG}: 100' roll
- FLEX_{SG}-18: 18" pre-cut lengths

Operating Specifications

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

PRO-SPRAY SHUTOFF CAP

Features

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

Models

- 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



SJ Swing Joint

6" and 12" links



Spiral Barb Elbows

P/N HSBE-TOOL, P/N HSBE-050, P/N HSBE-075



FLEX_{SG} Tubing

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



Pro-Spray Shutoff Cap

213600SP



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: 0°

10A

● Red

10' radius
Adjustable from
0° to 360°
Trajectory: 15°

Arc	Pressure PSI	Radius ft.	Flow GPM	Precip in/hr		Radius ft.	Flow GPM	Precip in/hr		Radius ft.	Flow GPM	Precip in/hr		Radius ft.	Flow GPM	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 12' radius
Adjustable from
0° to 360°
Trajectory: 28°
● Green

15A 15' radius
Adjustable from
0° to 360°
Trajectory: 28°
● Black

17A 17' radius
Adjustable from
0° to 360°
Trajectory: 28°
● Gray

Arc	Pressure PSI	Radius ft.	Flow			Radius ft.	Flow			Radius ft.	Flow		
			GPM	■	▲		GPM	■	▲		GPM	■	▲
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

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 5' radius
Fixed: ¼, ½, Full
● Blue Trajectory: 0°

8 8' radius
Fixed: ¼, ½, Full
● Brown Trajectory: 0°

10 10' radius
Fixed: ¼, ½, Full
● Red Trajectory: 15°

Arc	Position	Pressure PSI	5			8			10					
			Radius ft.	Flow GPM	Precip in/hr ■ ▲	Radius ft.	Flow GPM	Precip in/hr ■ ▲	Radius ft.	Flow GPM	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	Use Hunter 4A or 6A Nozzle			7	0.26	1.54	1.78	9	0.46	1.63	1.88	
		25	Use Hunter 4A or 6A Nozzle			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	Use Hunter 4A or 6A Nozzle			9	0.35	1.25	1.45	11	0.61	1.47	1.69	
		40	Use Hunter 4A or 6A Nozzle			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	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
		25	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
		30	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
		35	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
		40	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
270° 	TQ	20	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
		25	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
		30	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
		35	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
		40	Use Hunter 4A or 6A Nozzle			Use Hunter 8A Nozzle			Use Hunter 10A Nozzle					
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 12' radius
Fixed: ¼, ½, ⅓, ⅔, ¾, Full
● Green Trajectory: 28°

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

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

Arc	Position	Pressure PSI	12'			15'			17'					
			Radius ft.	Flow GPM	Precip in/hr ■ ▲	Radius ft.	Flow GPM	Precip in/hr ■ ▲	Radius ft.	Flow GPM	Precip in/hr ■ ▲			
90° Q	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	T	20	11	0.72	1.71	1.98	14	1.04	1.53	1.77	Use Hunter 17A Nozzle			
		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				
		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	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	TT	20	11	1.40	1.67	1.93	14	2.01	1.48	1.71	Use Hunter 17A Nozzle			
		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				
		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	TQ	20	11	1.61	1.67	1.93	14	2.34	1.48	1.71	Use Hunter 17A Nozzle			
		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				
		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	F	20	11	2.17	1.72	1.99	14	3.04	1.49	1.72	Use Hunter 17A Nozzle			
		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				
		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		*Precip in/hr
				GPM	GPH	
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		*Precip in/hr
				GPM	GPH	
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		*Precip in/hr
				GPM	GPH	
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 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

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



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'

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'

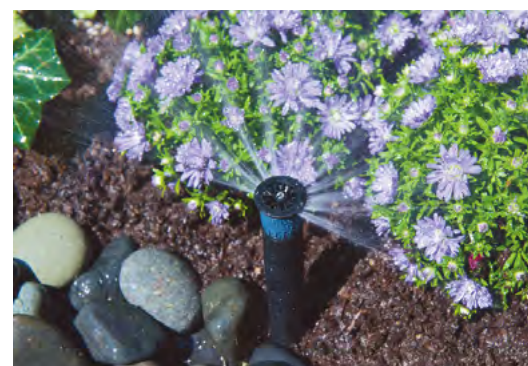
MODEL S-8A STREAM SPRAY NOZZLE PERFORMANCE DATA						
Arc	Pressure	Radius	Flow	Precip in/hr		
S-8A	PSI	ft.	GPM	■	▲	
90° 	20	7	0.29	2.28	2.63	
	25	8	0.32	1.93	2.22	
	30	8	0.38	2.11	2.43	
	35	8	0.41	2.29	2.64	
180° 	20	7	0.54	2.12	2.45	
	25	8	0.57	1.71	1.98	
	30	8	0.60	1.80	2.08	
	35	8	0.63	1.89	2.19	
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	Pressure	Radius	Flow	Precip in/hr		
S-16A	PSI	ft.	GPM	■	▲	
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	
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	
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

NOZZLES

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.



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



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



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®				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 REGULATION

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

For use with:
ICV, IBV

The Filter Sentry disc 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 & 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 regulation at the valve*
- DC-latching solenoid for battery-powered controllers (P/N 458200)
- Solenoid conduit cover (P/N 464322)

FACTORY-INSTALLED OPTIONS

- LS: Valve without solenoid
- DC: DC-latching solenoid for battery-powered controllers
- 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 83](#)



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



1" PGV	
Model	Description
PGV-100A	1" plastic angle valve, without flow control, female NPT inlet and outlet
PGV-100G	1" plastic globe valve, without flow control, female NPT inlet and outlet
PGV-100G-S	1" plastic globe valve, without flow control, slip inlet and outlet
PGV-100G-LS	1" plastic globe valve, without flow control, female NPT inlet and outlet, no solenoid
PGV-100-MB	1" plastic globe valve, without flow control, male NPT inlet, 1" outlet poly insert barb
PGV-100-MB125	1" plastic globe valve, without flow control, male NPT inlet, 1/4" outlet poly insert barb
PGV-100-MM	1" plastic globe valve, without flow control, male NPT inlet and outlet
PGV-101A	1" plastic angle valve, with flow control, female NPT inlet and outlet
PGV-101G	1" plastic globe valve, with flow control, female NPT inlet and outlet
PGV-101G-S	1" plastic globe valve, with flow control, slip inlet and outlet
PGV-101G-LS	1" plastic globe valve, with flow control, female NPT inlet and outlet, no solenoid
PGV-101-MB	1" plastic globe valve, with flow control, male NPT inlet, 1" outlet poly insert barb
PGV-101-MB125	1" plastic globe valve, with flow control, male NPT inlet, 1/4" outlet poly insert barb
PGV-101-MM	1" plastic globe valve, with flow control, male NPT inlet and outlet

PGV JAR-TOP	
Model	Description
PGV-100JT-G	1" plastic globe valve, jar-top bonnet, without flow control, female NPT inlet and outlet
PGV-100JT-G-LS	1" plastic globe valve, jar-top bonnet, without flow control, female NPT inlet and outlet, no solenoid
PGV-100JT-GS	1" plastic globe valve, jar-top bonnet, without flow control, female slip inlet and outlet
PGV-100JT-MB	1" plastic globe valve, jar-top bonnet, without flow control, male NPT inlet, 1" outlet poly insert barb
PGV-100JT-MB075	1" plastic globe valve, jar-top bonnet, without flow control, male NPT inlet, 3/4" outlet poly insert barb
PGV-100JT-MB125	1" plastic globe valve, jar-top bonnet, without flow control, male NPT inlet, 1/4" outlet poly insert barb
PGV-100JT-MM	1" plastic globe valve, jar-top bonnet, without flow control, male NPT inlet and outlet
PGV-101JT-G	1" plastic globe valve, jar-top bonnet, with flow control, female NPT inlet and outlet
PGV-101JT-G-LS	1" plastic globe valve, jar-top bonnet, with flow control, female NPT inlet and outlet, no solenoid
PGV-101JT-GS	1" plastic globe valve, jar-top bonnet, with flow control, female slip inlet and outlet
PGV-101JT-MB	1" plastic globe valve, jar-top bonnet, with flow control, male NPT inlet, 1" outlet poly insert barb
PGV-101JT-MB075	1" plastic globe valve, jar-top bonnet, with flow control, male NPT inlet, 3/4" outlet poly insert barb
PGV-101JT-MB125	1" plastic globe valve, jar-top bonnet, with flow control, male NPT inlet, 1/4" outlet poly insert barb
PGV-101JT-MM	1" plastic globe valve, jar-top bonnet, with flow control, 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



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 regulation at the valve*
- DC-latching solenoid for battery-powered controllers

FACTORY-INSTALLED OPTIONS

- LS: Valve without solenoid
- DC: DC-latching solenoid for battery-powered controllers

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 83**



PGV-075-ASV

Inlet diameter: 3/4"
Height: 5 1/2"
Length: 5 3/4"
Width: 2 1/2"



PGV-101-ASV

Inlet diameter: 1"
Height: 5 1/2"
Length: 6 1/4"
Width: 2 1/2"

Double-Beaded Diaphragm



PGV-ASV	
Model	Description
PGV-075-ASV	3/4" plastic anti-siphon electric valve, with flow control, NPT inlets
PGV-075-ASV-S	3/4" plastic anti-siphon electric valve, with flow control, slip inlets
PGV-075-ASV-LS	3/4" plastic anti-siphon electric valve, with flow control, NPT inlets, no solenoid
PGV-101-ASV	1" plastic anti-siphon electric valve, with flow control, NPT inlets
PGV-101-ASV-S	1" plastic anti-siphon electric valve, with flow control, slip inlets
PGV-101-ASV-LS	1" plastic anti-siphon electric valve, with flow control, NPT inlets, no solenoid

PGV-ASV PRESSURE LOSS IN PSI		
Flow (GPM)	3/4"	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" & 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

USER-INSTALLED OPTIONS

- Accu Sync® pressure regulation at the valve*
- DC-latching solenoid for battery-powered 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-powered controllers

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 83](#)

PGV 1½" & 2"	
Model	Description
PGV-151	1½" globe/angle valve with flow control
PGV-151-DC	1½" globe/angle valve with DC-latching solenoid
PGV-151-LS	1½" globe/angle valve less solenoid
PGV-201	2" globe/angle valve with flow control
PGV-201-DC	2" globe/angle valve with DC-latching solenoid
PGV-201-LS	2" globe/angle valve less solenoid



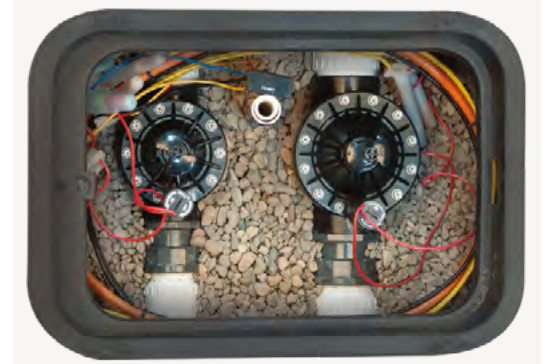
PGV-151

Inlet diameter: 1½"
Height: 7½"
Length: 5¾"
Width: 4½"

PGV-201

Inlet diameter: 2"
Height: 8"
Length: 6¾"
Width: 5¼"

PGV Installed



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

This dependable valve works seamlessly with highly demanding systems.

KEY BENEFITS

- Optional Filter Sentry® 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 regulation at the valve
- DC-latching solenoid for battery-powered 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-powered controllers
- 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 83](#)



ICV-101G

Inlet diameter: 1"
Height: 5½"
Length: 4¾"
Width: 4"



ICV-151G

Inlet diameter: 1½"
Height: 7⅞"
Length: 6⅞"
Width: 5½"



ICV-201G

Inlet diameter: 2"
Height: 7⅞"
Length: 6⅞"
Width: 5½"



ICV-301

Inlet diameter: 3"
Height: 10¾"
Length: 9"
Width: 7¾"



ICV-R

Inlet diameter: 1", 1½", 2", and 3"
Height: 7⅞"
Length: 6⅞"
Width: 5½"

Double-Beaded Diaphragm



Filter Sentry

ICV	
Model	Description
ICV-101G	1" globe valve with flow control
ICV-101G-FS	1" globe valve with flow control, Filter Sentry
ICV-101G-DC	1" globe valve with flow control, DC solenoid
ICV-101G-LS	1" globe valve with flow-control-less solenoid
ICV-101G-FS-DC	1" globe valve with flow control, Filter Sentry, DC solenoid
ICV-101G-FS-LS	1" globe valve with flow control, Filter Sentry-less solenoid
ICV-101G-FS-R	Reclaimed 1" globe valve with flow control, Filter Sentry
ICV-151G	1½" globe valve with flow control
ICV-151G-FS	1½" globe valve with flow control, Filter Sentry
ICV-151G-DC	1½" globe valve with flow control, DC solenoid
ICV-151G-FS-DC	1½" globe valve with flow control, Filter Sentry, DC solenoid
ICV-151G-FS-R	Reclaimed 1½" globe valve with flow control, Filter Sentry
ICV-201G	2" globe valve with flow control
ICV-201G-FS	2" globe valve with flow control, Filter Sentry
ICV-201G-DC	2" globe valve with flow control, DC solenoid
ICV-201G-LS	2" globe valve with flow-control-less solenoid
ICV-201G-FS-DC	2" globe valve with flow control, Filter Sentry, DC solenoid
ICV-201G-FS-LS	2" globe valve with flow control, Filter Sentry-less solenoid
ICV-201G-FS-R	Reclaimed 2" globe valve with flow control, Filter Sentry
ICV301	3" globe/angle valve with flow control
ICV301-FS	3" globe/angle valve with flow control, Filter Sentry
ICV301-DC	3" globe/angle valve with flow control, DC solenoid
ICV301-FS-DC	3" globe/angle valve with flow control, Filter Sentry, DC solenoid
ICV-301-FS-R	Reclaimed 3" globe/angle valve with flow control, Filter Sentry

**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

Double-Beaded Chlorine-Resistant Diaphragm



Filter Sentry

Captive Bonnet Bolts



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

USER-INSTALLED OPTIONS

- Accu Sync® pressure regulation at the valve*
- DC-latching solenoid for battery-powered controllers (P/N 458200)
- Solenoid conduit cover (P/N 464322)

FACTORY-INSTALLED OPTIONS

- DC: DC-latching solenoid for battery-powered controllers

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 83](#)

IBV	
Model	Description
IBV-101G-FS	1" NPT brass globe valve, with flow control, with factory-installed Filter Sentry diaphragm
IBV-151G-FS	1½" NPT brass globe valve, with flow control, with factory-installed Filter Sentry diaphragm
IBV-201G-FS	2" NPT brass globe valve, with flow control, with factory-installed Filter Sentry diaphragm
IBV-301G-FS	3" NPT brass globe valve, with flow control, with factory-installed Filter Sentry diaphragm
IBV-151G-FS-R	1½" NPT brass globe valve with purple ID tag, Filter Sentry, and chlorine-resistant purple diaphragm
IBV-201G-FS-R	2" NPT brass globe valve with purple ID tag, Filter Sentry, and chlorine-resistant purple diaphragm



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



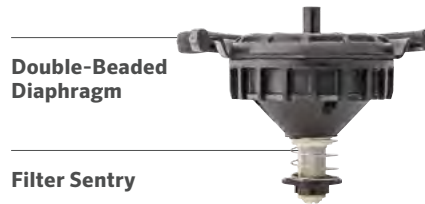
IBV-151G-FS
Inlet diameter: 1½"
Height: 6½"
Length: 6"
Width: 5¼"



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



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



Double-Beaded Diaphragm

Filter Sentry

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

ACCU SYNC®

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

ADJUSTABLE



AS-ADJ

Height with solenoid: 3/4"

ADAPTER



SOLENOID ADAPTER

FIXED



AS-30

Height with solenoid: 3/4"



AS-40

Height with solenoid: 3/4"



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



Quick Couplers

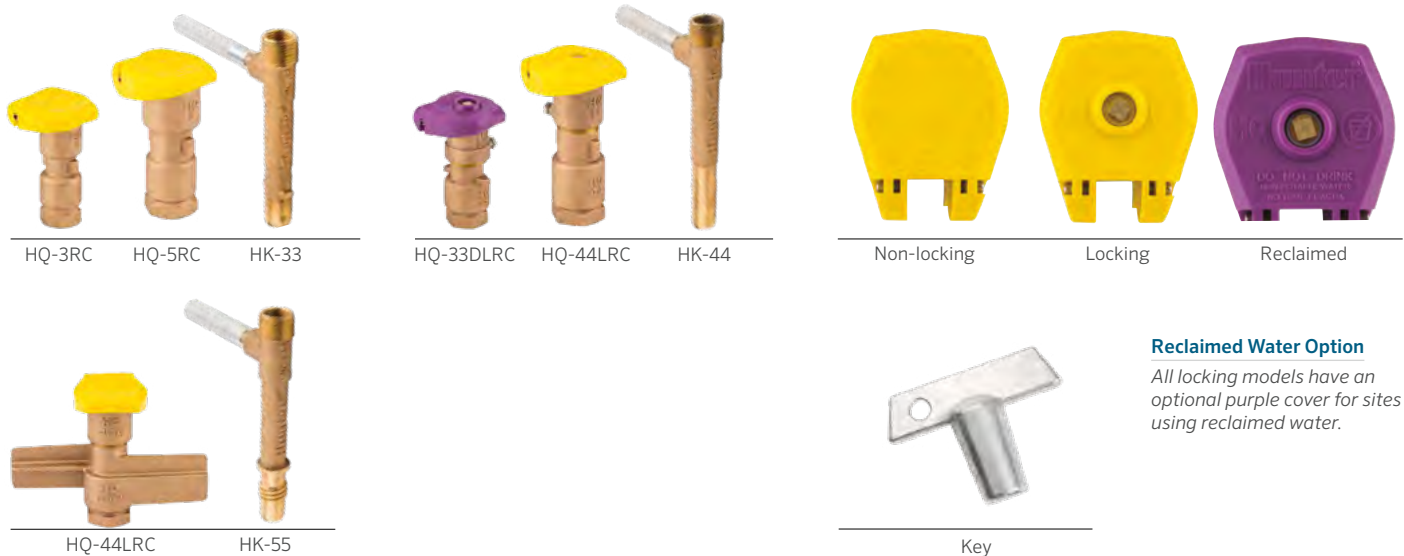
QUICK COUPLER, KEY, AND HOSE SWIVEL CHARTS

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



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
<p>HQ3 = ¾" inlet, 1-piece body, 2 slots</p> <p>HQ5 = 1" inlet, 1-piece body, 1 slot</p> <p>HQ33D = ¾" inlet, 2-piece body, 2 slots</p> <p>HQ44 = 1" inlet, 2-piece body, 1 slot or Acme key socket</p>	<p>RC = Yellow rubber cover</p> <p>LRC = Yellow locking rubber cover <i>(Not available for HQ3 body)</i></p>	<p>(blank) = No option</p> <p>AW = Acme key with anti-rotation wings <i>(Only available for HQ44 body)</i></p> <p>R = Purple locking cover <i>(reclaimed water ID; only available for LRC models)</i></p>

Examples:

HQ3-RC = HQ3 valve with rubber cover

HQ44-LRC = HQ44 valve with locking rubber cover

HQ44-LRC-R = HQ44 valve with locking rubber cover and reclaimed water ID

HQ44-LRC-AW-R = HQ44 valve, with locking rubber cover, Acme key socket with anti-rotation wings and reclaimed water ID

KEYS

Model	Compatible Valve	Compatible Swivel
HK33 = ¾" valve, ¾" key inlet	HQ3, HQ33	HSO
HK44 = 1" valve, 1" key inlet	HQ44	HS1, HS2
HK44A = 1" valve, Acme key inlet	HQ44AW	HS1, HS2
HK55 = 1" valve, 1¼" key inlet	HQ5	HS1, HS2

HS HOSE SWIVELS

Model	Compatible Key
HSO = ¾" inlet, ¾" hose outlet	HK33
HS1 = 1" inlet, ¾" hose outlet	HK44, HK44A, HK55
HS2 = 1" inlet, 1" hose outlet	HK44, HK44A, HK55

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



CONTROLLERS



HCC Wi-Fi



Hunter

CONTROLLER

SELECTION GUIDE

Platform

AC-Powered Controllers

STANDARD

Details on [page 90](#)

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 92](#)





X2™
Stations: 4, 6, 8, 14
[page 93](#)



Pro-C®
Stations: 4-16, 6, 12
[page 94](#)



 **I-Core®**
Stations: 6-42 conventional, 1-48 with two-wire
[page 95](#)



HYDRAWISE®


Details on [page 98](#)

Hydrawise is simple to set up, easy to use, and packed with helpful features. Built-in system monitoring and a suite of powerful tools make saving water and managing multi-site municipal properties, community tracks, and commercial projects more convenient than ever before.

HC
Stations: 6, 12
[page 100](#)




WAND for X2
Stations: 4, 6, 8, 14
[page 101](#)





HPC
Stations: 4-16
[page 102](#)



Pro-HC
Stations: 6, 12, 24
[page 103](#)



 **HCC**
Stations: 8-54 conventional, 1-54 with two-wire
[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 conventional, 1-54 with two-wire
[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

AC-Powered Controllers, Continued

IMMS™ ONLINE

Details on [page 112](#)

Simplify central control of Hunter ACC controllers and accessories with the web- or server-based IMMS software package.



ACC
Stations: 12–42 conventional, 1–99 with two-wire
[page 114](#)



Platform

Battery-Powered Controllers

INDEPENDENT

Details on [page 116](#)

Battery-powered 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 118](#)



XC Hybrid

Stations: 6, 12
[page 120](#)



BLUETOOTH®

Details on [page 116](#)

Bluetooth enabled, battery-powered controllers have all the benefits of independent battery controllers with convenient, on-site wireless control from a smartphone.

BTT

Zones: 1, 2
[page 117](#)



NODE-BT

Stations: 1, 2, 4
[page 119](#)



Look for this icon to identify controllers with two-wire compatibility. Save wire and easily expand the system as needed after installation.

STANDARD CONTROLLERS

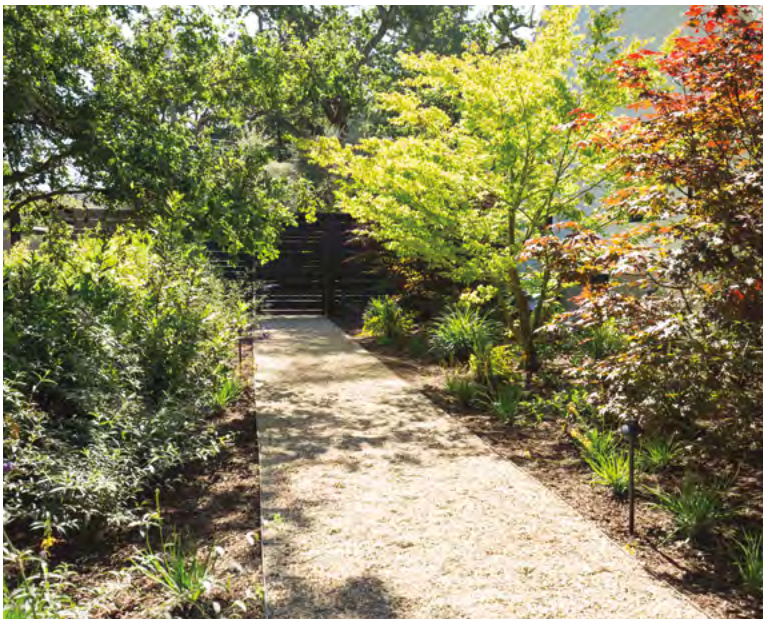
STANDARD CONTROLLERS



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	None	ROAM, ROAM XL	None
X2	14	1	None	ROAM, ROAM XL, Smartphone with Wi-Fi	Hydrawise, Wi-Fi
PRO-C	16	1	None	ROAM, ROAM XL	None
I-CORE	42, 48 two-wire	2 (Clik or Flow), 3 (Clik or Flow, in metal)	DUAL, 48 stations	ROAM, ROAM XL	None



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)
- Solar Sync® accessory saves 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™ 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
- Warranty period: 2 years



Plastic Indoor

Height: 6½"
Width: 5¾"
Depth: 2"



Plastic Outdoor

Height: 8¾"
Width: 7"
Depth: 3¾"

Compatible with:



**Solar Sync
Sensor**
Page 136



ROAM Remote
Page 127
ROAM XL Remote
Page 128



**Soil-Clik
Sensor**
Page 141

X-CORE	
Model	Description
XC-200i	2-station indoor controller, 120V wall adapter
XC-400i	4-station indoor controller, 120V wall adapter
XC-600i	6-station indoor controller, 120V wall adapter
XC-800i	8-station indoor controller, 120V wall adapter
XC-400	4-station outdoor controller, 120V transformer and plug with plastic cabinet
XC-600	6-station outdoor controller, 120V transformer and plug with plastic cabinet
XC-800	8-station outdoor controller, 120V transformer and plug with plastic cabinet



EPA WaterSense

Add the WaterSense-labeled Solar Sync sensor to improve the water efficiency of this controller.

X2™

This online-capable controller features 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™ 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 backups 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 rapid programming, online irrigation management, and controller status alerts
- Standard ABC programming with 6 programs and 6 start times or advanced schedules with 36 start times, and run times up to 24 hours
- Predictive Watering™ provides precise weather adjustments for maximum water savings
- Compatibility with Amazon Alexa™ and Control4® home automation
- See complete WAND Wi-Fi 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 IP44, UL, cUL, FCC, CE, RCM
- Approvals (module): Wi-Fi b/g/n, Bluetooth 5.0, UL, cUL, FCC, CE, RCM
- Warranty period: 2 years

X2	
Model	Description
X2-400	4-station controller, 120V internal transformer and plug with plastic cabinet
X2-600	6-station controller, 120V internal transformer and plug with plastic cabinet
X2-800	8-station controller, 120V internal transformer and plug with plastic cabinet
X2-1400	14-station controller, 120V internal transformer and plug with plastic cabinet
WAND	Wi-Fi module for Hydrawise water management software



X2
Height: 9"
Width: 7½"
Depth: 3½"



WAND Wi-Fi Module
Height: ¾"
Width: 2½"
Depth: 2½"

STANDARD CONTROLLERS

Compatible with:



Hydrawise Software
Page 98



Rain-Clik Sensor
Page 134



ROAM Remote
Page 127
ROAM XL Remote
Page 128



EPA WaterSense

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

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.

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 capacity from 4 to 16
 - Fixed PCC with 6- and 12-station options
- 3 independent irrigation programs (4 start times each) allow for customized scheduling
- 6-hour maximum station run time provides flexibility for differing application amount
- 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™ 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: UL, cUL, FCC, CE, RCM
- Warranty period: 2 years



Plastic Indoor

Height: 9"
Width: 10"
Depth: 4½"



Plastic Outdoor

Height: 9"
Width: 10"
Depth: 4½"

Compatible with:



**Solar Sync
Sensor**
Page 136



ROAM Remote
Page 127
ROAM XL Remote
Page 128



**PXSYNC
Accessory**
Visit fxl.com



EPA WaterSense

Add the WaterSense-labeled Solar Sync sensor to improve the water efficiency of this controller.

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	
Modules	Description
PCM-300	3-station plug-in module
PCM-900	9-station plug-in module (maximum, one per controller)

I-CORE®

Flow monitoring and two-wire capabilities make I-Core an ideal fit for standalone midsize commercial and high-end residential projects.

KEY BENEFITS

- Number of stations:
 - Conventional: 6 to 30 (plastic), 6 to 42 (metal and pedestals)
 - With DUAL® decoder: up to 48
- 4 independent irrigation programs (8 start times each) allow for customized scheduling
- 12-hour maximum station run time provides flexibility for lower-flow zones
- Any 2 programs can operate simultaneously for more efficient watering
- Sensor inputs:
 - 2 (plastic)
 - 3 (metal and pedestals)
- 1 P/MV output for pump start relay and master valve activation
- Flow-monitoring capabilities provide real-time water usage data
- Programmable No Water Window prevents all irrigation for a specified time frame
- High-visibility, backlit display with 6 selectable languages

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): 0.28 A
- Approvals: Plastic Wall Mount IP44, Metal IP56, Plastic Pedestal IP34, NEMA 3R, UL, cUL, FCC, CE, RCM
- Warranty period: 5 years



Plastic Wall Mount

Height: 11"
Width: 13¼"
Depth: 6¼"

Metal Wall Mount

(gray or stainless steel)
Height: 12¾"
Width: 15½"
Depth: 6½"



Plastic Pedestal

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



Metal Pedestal

(gray or stainless steel)
Height: 36"
Width: 15½"
Depth: 5"

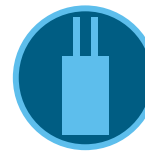
I-CORE	
Model	Description
IC-600-PL	Base 6-station controller, indoor/outdoor, plastic cabinet
IC-600-M	Base 6-station controller, indoor/outdoor, metal cabinet
IC-600-PP	Base 6-station controller, indoor/outdoor, plastic pedestal
IC-600-SS	Base 6-station controller, indoor/outdoor, stainless steel cabinet
ICM-600	6-station plug-in expansion module
ACC-PED	Metal pedestal, gray powder-coated, for use with I-Core and ACC metal controllers
PED-SS	Stainless steel pedestal for use with I-Core and ACC stainless steel controllers

DUAL	
Model	Description
DUAL48M	DUAL decoder output module, up to 48-stations maximum
DUAL-1	DUAL 1-station decoder (includes 2 DBRY-6 connectors)
DUAL-2	DUAL 2-station decoder (includes 2 DBRY-6 connectors)
DUAL-S	DUAL surge arrester (includes 4 DBRY-6 connectors)

Compatible with:



**Solar Sync
Sensor**
Page 136



DUAL Decoder
Page 125



**Flow-Sync
Sensor**
Page 138
WFS Sensor
Page 139



EPA WaterSense

Add the WaterSense-labeled Solar Sync sensor to improve the water efficiency of this controller.



HYDRAWISE[®] CONTROLLERS

HCC CONTROLLER PROGRAMMING INSTRUCTIONS **Hunter**

Thank you for purchasing a Hunter "Hydra-ready" controller.

Your digital controller for the HYDR[®] system is a Wi-Fi enabled and can be accessed via your smartphone or computer. For more information on your Hydrowise controller, please call our website at www.hunterirrigation.com.

The following instructions have completed the following:

1. Set up both your smartphone and your controller and in changing your system controller and your controller.
2. Set up both your smartphone and your controller and in changing your system and your controller and in changing your system.
3. Connect your controller to the internet and in changing your system.
4. Connect your controller to the internet and in changing your system.
5. Connect to program into the controller and in changing your system.
6. Connect to program into the controller and in changing your system.
7. Connect to program into the controller and in changing your system.

Wi-Fi Specs and Tips

The following Wi-Fi requirements and instructions apply to your Hunter Hydrowise ready controller:

For the Hunter HCC, HCC Pro, Pro 4, HCC Pro, and HCC Pro 4:

- The router must be a 2.4 GHz or 5 GHz router. If you have a dual band router (i.e., 2.4 GHz and 5 GHz), do not enable the 5 GHz signal.
- Some routers may require you to set the channel between 1 and 11.
- Set the security type to WPA2 or WPA3.

The controller will not connect unless you have a valid internet connection. You may need to check your internet connection or contact your internet service provider.

Hydrowise ready controllers cannot connect to guest networks or networks that use a captive portal to log in.

Controller Setup:

Basic: _____
 Name: _____
 SSID: _____
 Password: _____

Tip for programming of the controller:

• Enable the Wi-Fi protection on the controller, even if you are using a "guest" network. This will help protect your data from being intercepted.

• The Wi-Fi range should be at least 100 feet from the controller.

HYDRAWISE CONTROLLER COMPARISON CHART

CONTROLLER MODELS	MAXIMUM STATIONS	SENSOR INPUTS	TWO-WIRE	REMOTE CONTROL	WEB ACCESS	OUTDOOR LIGHTING CONTROL*
HC	12	2	None	Smartphone with Wi-Fi	Hydrawise, Wi-Fi	PXSYNC
WAND for X2	14	1	None	ROAM, ROAM XL, Smartphone with Wi-Fi	Hydrawise, Wi-Fi	PXSYNC
HPC	16	1	None	ROAM, ROAM XL, Smartphone with Wi-Fi	Hydrawise, Wi-Fi	PXSYNC
PRO-HC	24	2	None	Smartphone with Wi-Fi	Hydrawise, Wi-Fi	PXSYNC
HCC	54	2	EZDS, 54 stations	ROAM, ROAM XL, Smartphone with Wi-Fi	Hydrawise, Wi-Fi	PXSYNC

* To learn more about FX Luminaire lighting control solutions, visit fxl.com.



HYDRAWISE® SOFTWARE

The industry-best Hydrawise irrigation control 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 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.

SET UP IRRIGATION BY PROGRAM OR ZONE

Configure schedules exactly how you like: by program or zone. If you like to create schedules by program, you can keep your management style.

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
- 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.



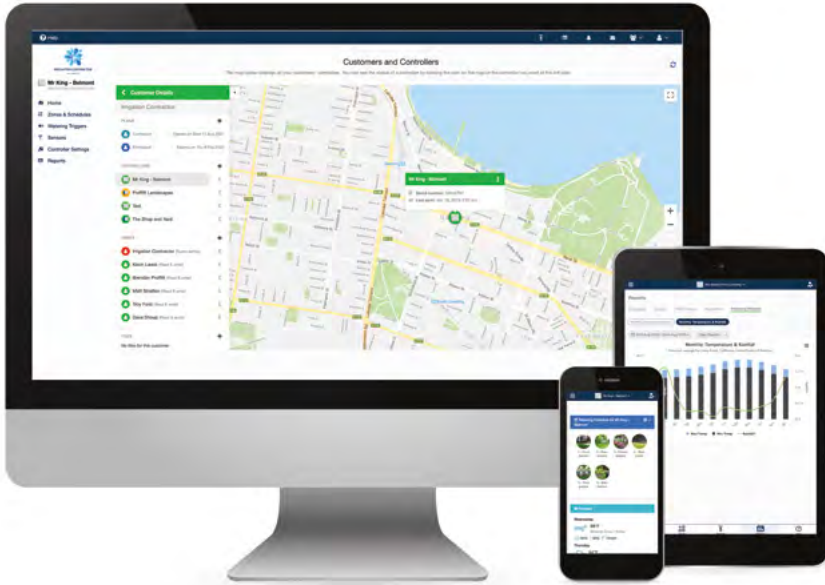
Manage from Anywhere

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 several industry-leading smart-home solutions.



Access to Hydrowise software is free for all users worldwide. For advanced features, annual software plans are available for purchase. [To learn more, visit hydrowise.com.](http://hydrowise.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



HPC Controller
4- to 16-station count



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



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



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

Not available for X2

HC

Perfect for residential projects, the HC controller provides smart water savings and remote irrigation management capabilities.

KEY BENEFITS

- Number of stations:
 - 6 or 12 (fixed indoor)
- Standard programming option allows for 6 independent irrigation programs and 6 start times per program
- Advanced programming option provides station-based programming with up to 6 total start times available
- 24-hour maximum station run time provides flexibility for low-flow zones
- 2 sensor inputs available for use with any Klik 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 Hydrowise® software
- 2¾" full-color touchscreen display for simple programming at the control panel
- Built-in milliamp sensor for wire fault detection and alerts (12-station model only)

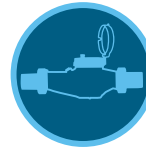
OPERATING SPECIFICATIONS

- 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: UL, cUL, FCC, CE, RCM
- Warranty period: 2 years



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

Compatible with:



HC Flow Meter
Page 137



Rain-Clik Sensor
Page 134



Soil-Clik Sensor
Page 141



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.

KEY BENEFITS

- Simple plug-in Wi-Fi option for any X2 controller model for online irrigation management
- Standard programming option allows for 6 independent irrigation programs and 6 start times per program
- Advanced programming option provides station-based programming with up to 6 total start times available
- Increase water savings by adding Hydrowise to your X2 controller
- Fast Bluetooth Wi-Fi network setup, or SoftAP or WPS configuration
- See complete X2 controller key benefits and specifications on **page 93**

OPERATING SPECIFICATIONS

- Approvals: Wi-Fi b/g/n, Bluetooth 5.0, UL, cUL, FCC, CE, RCM
- Warranty period: 2 years



WAND Wi-Fi Module
 Height: 3/4"
 Width: 2 1/8"
 Depth: 2 1/8"



WAND Module installed in the X2 controller

WAND WI-FI MODULE	
Model	Description
WAND	Wi-Fi module for Hydrowise water management software

WAND INSTALLATION



Compatible with:



**Rain-Clik
 Sensor**
 Page 134



ROAM Remote
 Page 127
ROAM XL Remote
 Page 128



**Soil-Clik
 Sensor**
 Page 141



EPA WaterSense Approved

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

HPC

Combine the modularity of the Pro-C® with Hydrowise® irrigation management software for a smart and flexible control solution.

KEY BENEFITS

- Number of stations:
 - Modular capacity from 4-16 stations permits simple system expansion
- Standard programming option allows for 6 independent irrigation programs and 6 start times per program
- Advanced programming option provides station-based programming with up to 6 total start times available
- 24-hour maximum station run time provides flexibility for low-flow zones
- 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 Hydrowise software
- 2¾" full-color touchscreen display for simple 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
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Approvals: Plastic IP44, UL, cUL, FCC, CE, RCM
- Warranty period: 2 years



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



HPC Face Panel

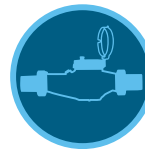
HPC

Model	Description
HPC-400	4-station base: Domestic 120 VAC indoor/outdoor controller
HPC-FP	Hydrowise retrofit front panel for Pro-C controllers (March 2014 or newer models)

PC-SERIES STATION EXPANSION

Model	Description
PCM-300	3-station plug-in module: Use to increase station count from 4 to 7, 10, or 13
PCM-900	9-station plug-in module: Use to increase station count from 7 to 16

Compatible with:



HC Flow Meter
Page 137



ROAM Remote
Page 127
ROAM XL Remote
Page 128



Rain-Clik Sensor
Page 134



EPA WaterSense Approved

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

PRO-HC

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

KEY BENEFITS

- Number of stations:
 - 6, 12, or 24
- Standard programming option allows for 6 independent irrigation programs and 6 start times per program
- Advanced programming option provides station-based programming with up to 6 total start times available
- 24-hour maximum station run time provides flexibility for low-flow zones
- 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 Hydrowise software
- 2¾" full-color touchscreen display for simple 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
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Approvals: Plastic IP44 (outdoor), UL, cUL, FCC, CE, RCM
- Warranty period: 2 years

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

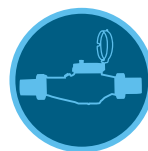


Pro-HC
(plastic indoor)
Height: 8¼"
Width: 9½"
Depth: 3½"



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

Compatible with:



HC Flow Meter
Page 137



Rain-Clik Sensor
Page 134



PXS SYNC Accessory
Visit fxl.com



EPA WaterSense Approved

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

HCC

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

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
- Advanced programming option provides station-based programming with up to 6 total start times available
- 24-hour maximum station run time provides flexibility for low-flow zones
- Any 2 programs or stations can operate simultaneously, providing more efficient watering
- 2 sensor inputs available for use with any Klik sensors and HC Flow Meter
- 1 P/MV output for pump start relay and master valve activation
- Wi-Fi enabled for quick connection to Hydrowise software
- 3¼" full-color touchscreen display for simple 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
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.56 A
- Approvals: Plastic Wall Mount IP44, NEMA 3R, Plastic Pedestal IP34, UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- Rain-Klik for rain sensor shutdown see [page 134](#)



Plastic

Height: 12"
Width: 13¾"
Depth: 5"

Metal

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



Metal Pedestal

(metal/stainless)
Height: 36"
Width: 11½"
Depth: 5"



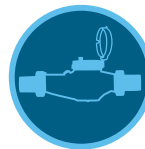
Plastic Pedestal

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
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
WIFI-EXT-KIT	Wi-Fi 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)
EZ-DM	54-station decoder output module (one per controller)
EZ-1	Single-station EZ decoder

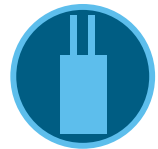
Compatible with:



HC Flow Meter
[Page 137](#)



ROAM Remote
[Page 127](#)
ROAM XL Remote
[Page 128](#)



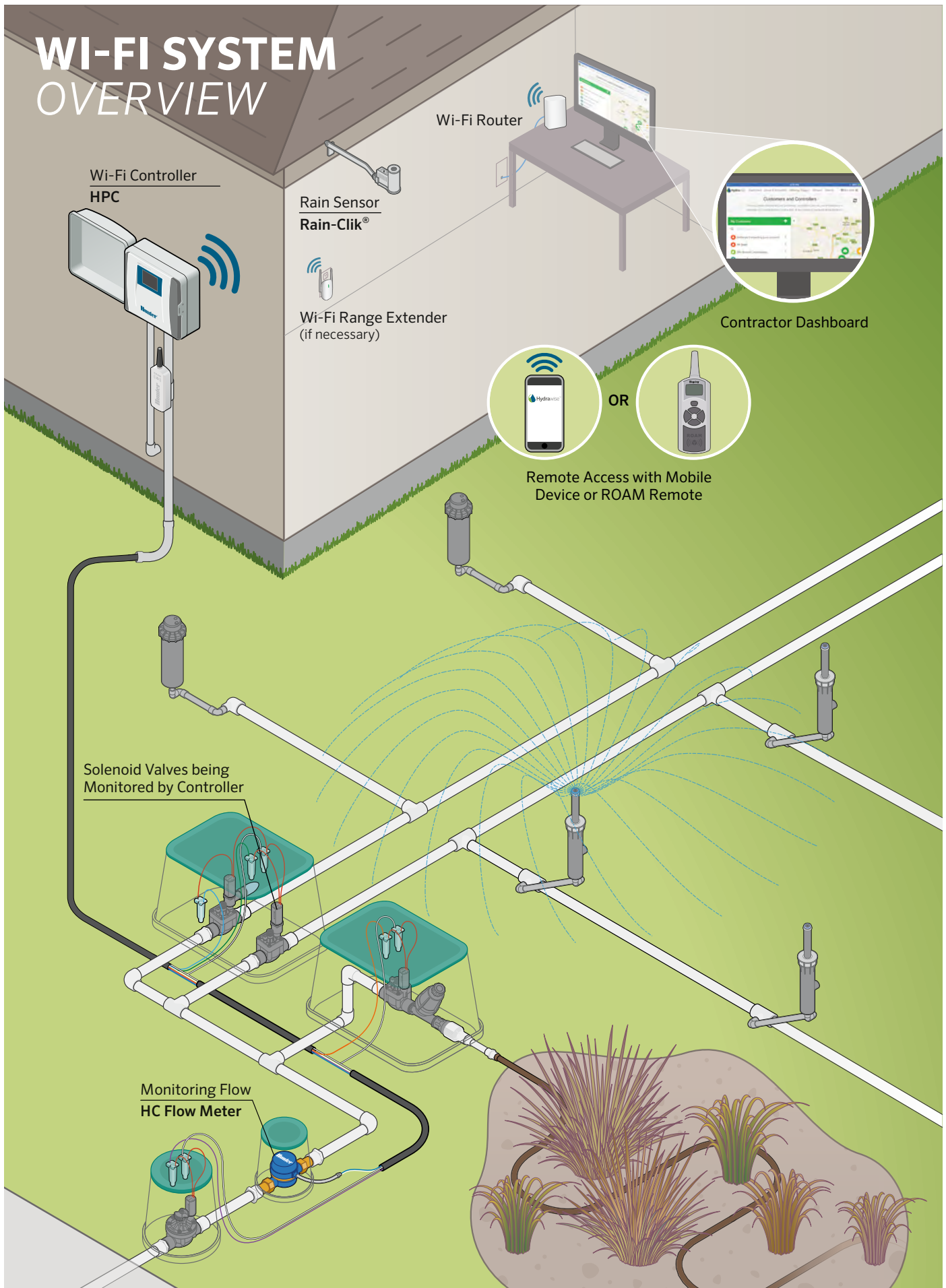
EZ Decoder System
[Page 124](#)

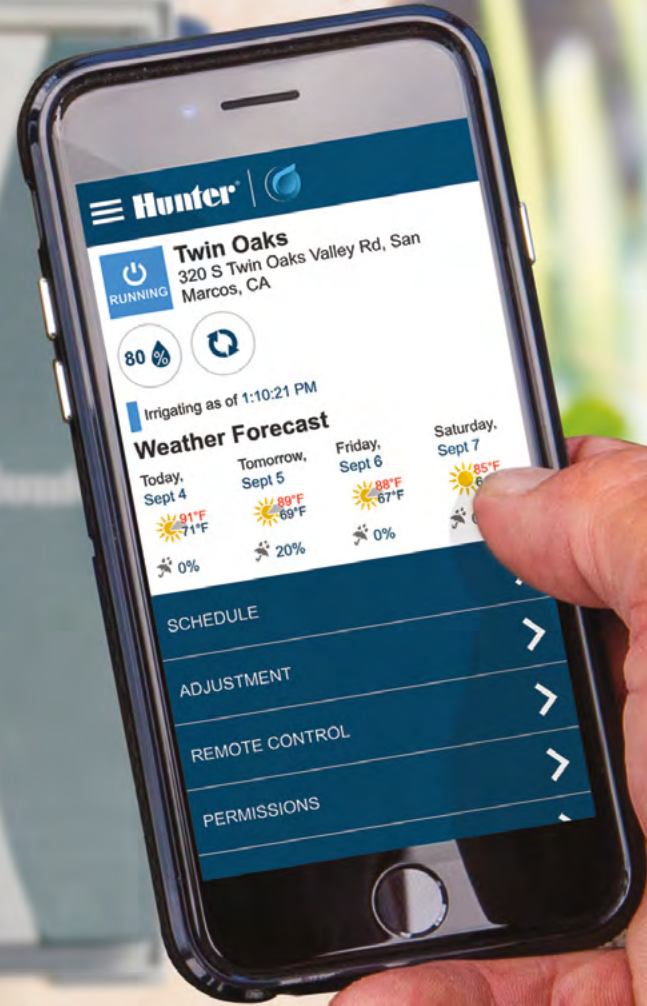


EPA WaterSense Approved

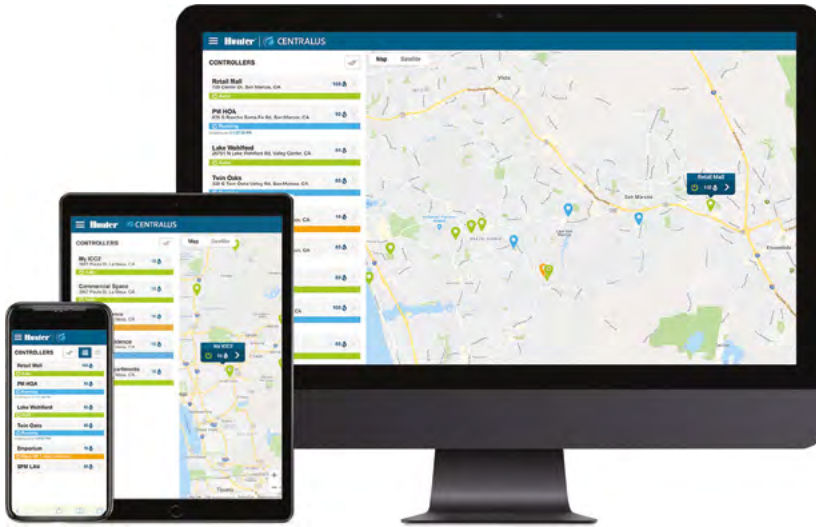
Recognized as a responsible water-saving tool by the U.S. Environmental Protection Agency

WI-FI SYSTEM OVERVIEW





CENTRALUS™ CONTROLLERS



Centralus Software

Enable ICC2 and ACC2 controllers with next-generation management technology.

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 or LAN communication module to the controller:

- ICC2: Add WIFIKIT or LANKIT
- ACC2: Add A2C-WIFI or A2C-LAN

CENTRALUS CONTROLLER COMPARISON CHART

CONTROLLER MODELS	MAXIMUM STATIONS	SENSOR INPUTS	TWO-WIRE	REMOTE CONTROL	WEB ACCESS
ICC2	54	1	EZDS, 54 stations	ROAM, ROAM XL, Smartphone with Wi-Fi	Centralus*: Wi-Fi, LAN
ACC2	54, 225 two-wire	3 Clik, 6 Flow	ICD, 225 stations	ROAM, ROAM XL, Smartphone with Wi-Fi,	Centralus*: Wi-Fi, LAN

*Cellular connections available in 2020.

CENTRALUS™ SOFTWARE

Add cloud-based control and monitoring for ICC2 and ACC2 controllers with the mobile-friendly Centralus irrigation management platform.

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
- Ethernet or Wi-Fi connectivity options
- Built-in Solar Sync® logic/Solar Sync Delay features for smart 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 (Internet Explorer® is no longer supported and may not display all screens correctly)
- Secure internet connection for web-hosted application

USER-INSTALLED OPTIONS

- Solar Sync smart weather sensors, one per controller
- Flow sensors including Flow-Sync, WFS, and other approved equals
- Connected controllers are compatible with ROAM/ROAM XL license-free remote control (pre-wired controller connection)

COMMUNICATION OPTIONS

- Ethernet with RJ-45 connection, low data requirements
- Wi-Fi 802.11 b/g/n, 2.4 GHz

COMMUNICATIONS	
Model	Description
WIFIKIT	ICC2 Wi-Fi connection
LANKIT	ICC2 LAN (Ethernet) connection
A2C-WIFI	ACC2 Wi-Fi connection
A2C-LAN	ACC2 LAN (Ethernet) connection



WIFIKIT
Height: 4¼"
Width: 2½" (installed)
Depth: 1¾"

COMMUNICATIONS ACCESSORIES	
Model	Description
WIFIEXTKIT	Antenna extension, conduit mount (up to 9' cable), use with A2C-WIFI only



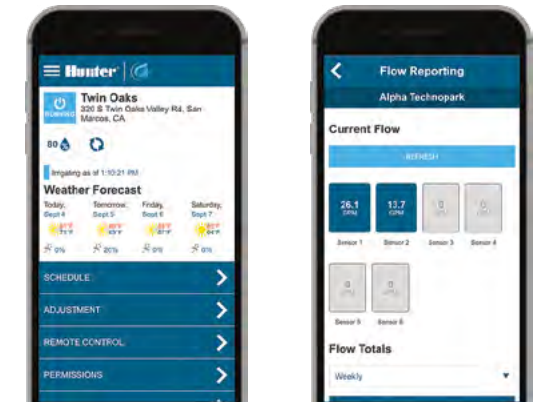
LANKIT
Height: 4¼"
Width: 2½" (installed)
Depth: 1¾"

Internet Explorer is a trademark of Microsoft Corporation.

ACC2 COMMUNICATION MODULE INSTALLATION



A2C-WIFI is installed behind the ACC2 facepack



Manage and monitor controllers from anywhere

WIFIKIT INSTALLATION



ICC2

This reliable control system can run conventional, two-wire, or hybrid operations with the option to upgrade to Centralus™ cloud-based 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) allow for customized scheduling
- 12-hour maximum station run time provides flexibility for low-flow zones
- Any 2 programs can operate simultaneously, providing more efficient watering
- 1 sensor input available for use with Solar Sync® or any Klik 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 IP44, Plastic Pedestal IP34, NEMA 3R, UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- WIFIKIT or LANKIT communications for Centralus web-based control
- Compatible with Flow-Klik® sensor for catastrophic high-flow shutdown see [page 140](#)

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 wall mount
ICC-PED-SS	Stainless steel pedestal for stainless wall 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)
EZ-DM	54-station decoder output module (one per controller)
EZ-1	Single-station EZ decoder



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"

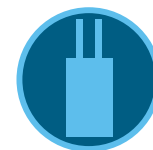
Compatible with:



Solar Sync Sensor
Page 136



ROAM Remote
Page 127
ROAM XL Remote
Page 128



EZ Decoder System
Page 124



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 make it the best choice for complex projects.

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
- Built-in Solar Sync® logic for smart water savings
- 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™ 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 IP44, Plastic Pedestal IP34, NEMA 3R, UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- ROAM/ROAM XL remote controls
- WSS-SEN or SOLAR-SYNC-SEN for automatic water savings
- Flow sensors (up to 6) including Flow-Sync, WFS, and other approved equals



Metal Wall Mount
(gray or stainless steel)
Height: 15⁷/₁₆"
Width: 15"
Depth: 6³/₈"



Plastic Wall Mount
Height: 16³/₈"
Width: 16¹/₂"
Depth: 6⁵/₈"



Metal Pedestal
(gray or stainless steel)
Height: 37"
Width: 15¹/₂"
Depth: 5"



Plastic Pedestal
Height: 39¹/₂"
Width: 23¹/₂"
Depth: 17"

Compatible with:



**Solar Sync
Sensor**
Page 136



**Flow-Sync
Sensor**
Page 138
WFS Sensor
Page 139



ROAM Remote
Page 127
ROAM XL Remote
Page 128



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 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 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
ACC-PED	Gray pedestal for wall mount
PED-SS	Stainless steel pedestal for wall mount

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 123](#)
- Up to 3 two-wire paths per output module
- Diagnostics including decoder inventory, wire tracker, solenoid finder, and more

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 - REVERSIBLE FACEPACK



IMMS™ ONLINE

Simplify central control of legacy Hunter ACC controllers and accessories with the web- or server-based IMMS software package.

KEY BENEFITS

- Browser-based programming and communication software
- Cloud access or user-hosted enterprise versions available
- Graphical user interface with customizable, map-based navigation
- Flow monitoring and reporting with Hunter ACC controllers
- Alarm reporting and detailed irrigation history reports
- Automatic SMS text notification of alarms to your mobile device
- Unique mobile view allows instant status updates and fast command functions
- Cell, Ethernet, UHF radio, and hardwire cable connectivity options
- APIs available for custom integration into management systems
- Built-in Solar Sync® logic/Solar Sync Delay features for smart water savings
- User administration with multiple levels of access



Add a visual dimension to central control with background map graphics

OPERATING SPECIFICATIONS

- Operates in most modern browsers (Internet Explorer® is no longer supported and may not display all screens correctly)
- Secure internet connection for web-hosted application

USER-INSTALLED OPTIONS

- Solar Sync Sensor smart weather sensors, one per controller
- Flow sensors including Flow-Sync, WFS, and other approved equals, one per controller
- ROAM/ROAM XL license-free remote control (pre-wired controller connection)

COMMUNICATION OPTIONS

- Cellular (LTE or 3G, where applicable)
- Ethernet with RJ-45 connection, low data requirements
- Shared connections via UHF radio or hardwire cable
 - Radio, 450-470 MHz narrow band
 - Hardwire, 4-20 mA via 4-conductor, shielded GCBL cable



Monitor and command IMMS-equipped controllers from your smartphone

Compatible with:



ACC Controller
Page 114



ROAM Remote
Page 127
ROAM XL Remote
Page 128



Solar Sync
Sensor
Page 136

Internet Explorer is a trademark of Microsoft Corporation.

COMMUNICATION MODEL CHART	
Model	Description
ACC-P2P-LTE*	Single-controller cell connection
ACC-COM-LTE*	Multi-controller cell connection
ACC-COM-LAN	Ethernet connection
ACC-COM-HWR	Radio & hardwire connection, use with:
RAD3	UHF radio
ACC-HWIM	Hardwire cable terminal & driver

Note:

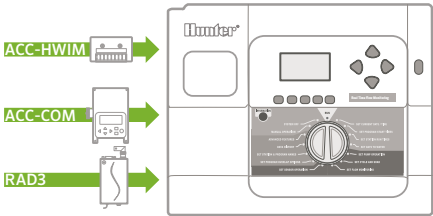
*Requires monthly cell service plan

COMMUNICATION ACCESSORIES MODEL CHART	
Model	Description
GCBL-XXX HARDWIRE CABLE	Add -100, -300, -500 for length in feet (30, 90, 150 m)
IMMS-ANT2	Antenna for plastic pedestal lid
IMMS-ANT3	Antenna for wall or pole mount
IMMS-ANTYAGI3	High-efficiency directional antenna (pole mount)
RA-5M	High-gain omnidirectional base antenna (roof or pole mount)
APPBRKT2	Comm module bracket for plastic pedestals

IMMS SOFTWARE	
Model	Description
IMMS4CD	IMMS graphics central control software

COMMUNICATION OPTIONS FOR ACC INTERFACE	
Model	Purpose
ACC-COM-HWR = Hardwire/radio module*	Supports hardwire and radio communication options
ACC-COM-LAN = Ethernet module*	Supports TCP/IP in Ethernet networks in addition to hardwire and radio sharing with local controllers
ACC-P2P-LTE = Single controller cellular data module	Supports LTE data communications for a single controller
ACC-COM-LTE = LTE cellular data module*	Supports mobile data connection via GPRS phone in addition to hardwire and radio sharing with local controllers

Note: * Also supports radio and hardwire

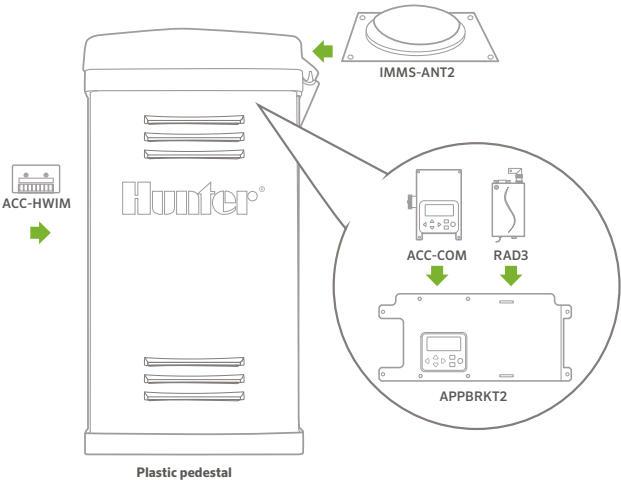


ACC wall-mount communication components

USER-INSTALLED OPTIONS (SPECIFY SEPARATELY)			
Model	Description		Purpose
ACC-HWIM	Hardwire interface module required for hardwire connections		Provides surge-protected terminals for hardwired cable connections
RAD3	UHF radio module (North America), 450-470 MHz		UHF radio module for wireless connections (license and antenna required and not included)
APPBRKT	Communication bracket for plastic pedestals		Holds comm modules and accessories in plastic pedestal (not required in wall mounts)
APPBRKT2	Communication bracket for newer plastic pedestals (April 2017)		Holds comm modules and accessories in new-style plastic pedestal
Model	Description	Options	Purpose
IMMS-CCC	Hardwire central interface	None = 120 VAC (North America) E = 230 VAC (Europe/ international power) A = 230 VAC (Australia)	Hardwired central interface for connection to site via direct wire (GCBL cable), supplied with USB cable for connection to central computer, and plug-in transformer
GCBL*	100 = 100' 300 = 300' 500 = 500'		Cable for all IMMS hardwired communications

Note: * GCBL also available in 1,000' increments (up to 4,000')

RADIO ANTENNA OPTIONS (SPECIFY SEPARATELY)	
Model	Description
IMMS-ANT2	Omnidirectional antenna fits ACC plastic pedestal lid
IMMS-ANT3	Omnidirectional antenna for wall or pole mount
IMMS-ANTYAGI3	High-efficiency directional antenna for pole mount
RA5M	High-gain omnidirectional mast antenna for roof or pole mount



ACC plastic pedestal communication components



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

Powerful features and simple programming are hallmarks of this proven, flow-monitoring commercial controller.

KEY BENEFITS

- Number of stations:
 - 12 to 99, for large projects
- 6 automatic programs (10 start times each)
- SSGs (Simultaneous Station Groups) to consolidate large systems
- Built-in Solar Sync® logic for smart water savings
- Real-time flow monitoring detects and diagnoses leaks with optional flow sensor
- Detailed alarm logs in plain language
- Programmable Rain Delay after sensor shutdown
- Easy Retrieve™ programming backup and restore
- Non-Water Windows to inhibit accidental irrigation
- Cycle and Soak, Delay Between Stations

OPERATING SPECIFICATIONS

- Transformer input: 120/230 VAC
- Maximum AC current draw: 120 VAC, 2A/230 VAC, 1 A
- Transformer output: 24 VAC, 4 A
- Station outputs: 0.56 A
- 2 P/MV outputs (24 VAC): 0.325 A each
- Simultaneous program operation: Up to 6 automatic programs
- Sensor inputs: 4 Clik, 1 Solar Sync, and 1 Flow sensor
- Approvals: Wall Mounts IP44, Plastic Pedestal IP34, NEMA 3R, UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

USER-INSTALLED OPTIONS

- Solar Sync smart weather sensor
- Flow sensor including Flow-Sync, WFS, and other approved equals
- ROAM/ROAM XL license-free remote control (pre-wired controller connection)
- Communication modules for IMMS™ central software on **page 112**



Metal Enclosures

(gray or stainless steel)
 Height: 12½"
 Width: 15½"
 Depth: 6¼"



Metal Pedestals

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

Plastic Pedestal

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

Compatible with:



**Solar Sync
 Sensor**
 Page 136



ROAM Remote
 Page 127
ROAM XL Remote
 Page 128



**Flow-Sync
 Sensor**
 Page 138
WFS Sensor
 Page 139



EPA WaterSense

Add the WaterSense-labeled Solar Sync sensor to improve the water efficiency of this controller.

ADDITIONAL SPECIFICATIONS BY MODEL

ACC-1200 CONVENTIONAL

- Number of stations:
 - 12 to 42
- Modular expansion in 6-station increments
- Extreme service lightning protection, standard on all output modules

ACC-1200 CONVENTIONAL MODELS	
Model	Description
A2C-1200-M	12-station base unit controller, expands to 54 stations, gray steel wall mount, outdoor
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

ACC-99D DECODER

- Number of stations:
 - 99 decoder stations
- Operates Hunter's premium ICD decoders over ID wire:
 - Up to 15,000' (12 AWG wire)
 - Up to 10,000' (14 AWG wire)
- Up to 6 two-wire paths for maximum flexibility
- 1-, 2-, 4-, and 6-station decoders plus ICD-SEN sensor input decoders
- See complete ICD decoder key benefits and specifications on [page 123](#)

ACC-99D DECODER	
Model	Description
ACC-99D	2-wire decoder controller with 99-station capacity, metal cabinet
ACC-99D-SS	2-wire decoder controller with 99-station capacity, stainless steel wall mount
ACC-99D-PP	2-wire decoder controller with 99-station capacity, plastic pedestal
ADM-99	Decoder output module

ACC ACCESSORIES FOR ALL MODELS

ACC ACCESSORIES	
Model	Description
ACC-PED	Gray pedestal for wall mount
PED-SS	Stainless steel pedestal for wall mount

ACC – CONTROL FOR COMMERCIAL PROJECTS





BATTERY-POWERED CONTROLLERS

BATTERY-OPERATED CONTROLLER COMPARISON CHART

CONTROLLER MODELS	MAXIMUM STATIONS	SENSOR INPUTS	REMOTE CONTROL	SOLAR
BTT	2	None	BTT Bluetooth App	None
NODE	6	1	None	SPNODE
NODE-BT	4	2	NODE-BT Bluetooth App	None
XC HYBRID	12	1	None	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
- Battery-operated tap timer with Bluetooth® control
- 1 smartphone manages an unlimited number of controllers
- 1-second to 24-hour run time with 4 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, perfect 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
- Secure passcode protection prevents unauthorized schedule changes
- Alkaline batteries included for quicker installation

OPERATING SPECIFICATIONS

- Two 1.5V AA alkaline batteries (included)
- BTT-100 flow rate: 5 to 17 GPM (60 to 1,000 GPH)
- BTT-200 flow rate: 4 to 15 GPM (48 to 900 GPH)
- Recommended pressure: 7 to 116 PSI
- Approvals: Plastic IPX6, Bluetooth 4.2 BLE, UL, cUL, FCC, CE, RCM
- Warranty period: 2 years

APP SPECIFICATIONS

- iOS® 9.0 or above
- Android™ 4.4 or above
- Maximum communication distance: 32'



BTT-100
Inlet diameter: 3/4"
Outlet diameter: 3/4"
Height: 5"
Width: 4 9/10"
Depth: 2 3/8"



BTT-200
Inlet diameter: 3/4"
Outlet diameter: 3/4"
Height: 6 1/8"
Width: 5 3/10"
Depth: 3"



BTT-LOC
(optional)
Inlet diameter: 3/4"
Outlet diameter: 16-18 mm dripline
Height: 2 3/4"
Width: 1 1/4"



Pressure Regulator
(optional)
Inlet diameter: 3/4"
Outlet diameter: 3/4"
Height: 3"
Width: 1 1/2"

BTT	
Model	Description
BTT-100	1-zone Bluetooth Tap Timer, 3/4" hose thread
BTT-200	2-zone Bluetooth Tap Timer, 3/4" hose thread
BTT-LOC	BTT adapter for 16-18 mm dripline

PRESSURE REGULATOR	
Model	Description
PRLG203FH3MH	20 PSI pressure regulator, 3/4" hose thread
PRLG253FH3MH	25 PSI pressure regulator, 3/4" hose thread
PRLG303FH3MH	30 PSI pressure regulator, 3/4" hose thread
PRLG403FH3MH	40 PSI pressure regulator, 3/4" hose thread

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BTT



NODE

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

KEY BENEFITS

- Number of stations:
 - 1, 2, 4, or 6
- Battery-operated controller for automatic irrigation without AC power
- 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
- 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 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 DC-latching solenoids (P/N 458200)
- 100' maximum wire runs, 18 AWG wire only
- Station output: 9-11 VDC
- P/MV output: 9-11 VDC
- Sensor inputs: 1
- Approvals: IP68, UL, cUL, FCC, CE, RCM
- Warranty period: 2 years



NODE
Diameter: 3½"
Height: 2½"



SPXCH
Solar panel kit (optional)
Height: 3¼"
Width: 3"
Depth: ⅝"

NODE



Compatible with:



**Mini-Click
Sensor**
Page 135



**Freeze-Click
Sensor**
Page 142

NODE	
Model	Description
NODE-100	Single-station battery controller and DC-latching solenoid
NODE-100-LS	Single-station battery controller
NODE-200	2-station battery controller
NODE-400	4-station battery controller
NODE-600	6-station battery controller
NODE-100-VALVE	Single-station battery controller with PGV-101G valve and DC-latching solenoid (NPT threads)
458200	DC-latching solenoid

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
- Bluetooth® battery-operated controller for automatic irrigation without AC power
- 1 smartphone manages an unlimited number of controllers
- Waterproof enclosure seal protects against water ingress
- Active station LEDs and battery-life LED indicator for battery 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
- Add soil moisture sensor for compliance with LEED projects and agricultural applications
- 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
- Secure passcode protection prevents unauthorized schedule changes
- Mounts to Hunter solenoids, pipes, flat surfaces, or inside the valve box

OPERATING SPECIFICATIONS

- One or two 9V alkaline batteries
- Operates DC-latching solenoids (P/N 458200)
- 100' maximum wire runs, 18 AWG wire only
- Station output: 9-11 VDC
- P/MV output: 9-11 VDC
- Sensor inputs: 2
- Approvals: IP68, Bluetooth 5.0 BLE, UL, cUL, FCC, CE, RCM
- Warranty period: 2 years

APP SPECIFICATIONS

- iOS® 9.0 or above
- Android™ 5.0 or above
- Maximum communication distance: 50'

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-200	2-station Bluetooth battery controller
NODE-BT-400	4-station Bluetooth battery controller
NODE-BT-100-VALVE	Single-station Bluetooth battery controller with PGV-101G valve and DC-latching solenoid (NPT threads)
458200	DC-latching solenoid
SC-PROBE	Soil probe for moisture sensing

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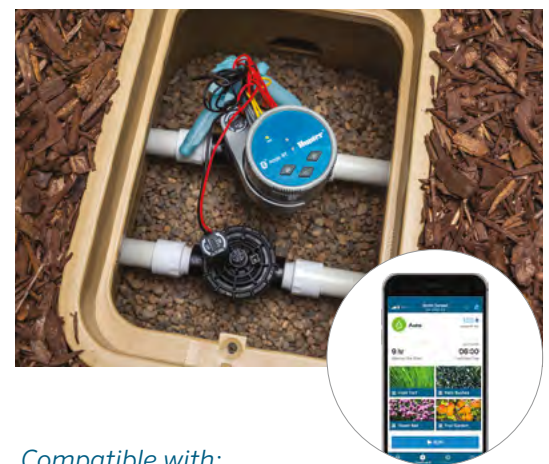


NODE-BT
Diameter: 3½"
Height: 3"

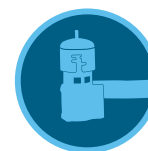


SC-PROBE Soil Moisture Sensor Probe
Diameter: 1"
Height: 3¼"
Controller to probe: 100' maximum
18 AWG direct-burial wire

NODE-BT



Compatible with:



**Mini-Clik
Sensor**
Page 135



**Freeze-Clik
Sensor**
Page 142

XC HYBRID

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

KEY BENEFITS

- Number of stations:
 - 6 or 12
- 3 power options: ambient-light-compatible solar panel, battery, or AC power
- Battery-life indicator for battery replacement
- 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 1.5V AA alkaline batteries
- Stainless steel model operated by six 1.5V C alkaline batteries
- Stainless steel solar model operates 1800 mAh solar panel with charging cell
- All models operate optional 24 VAC plug-in wall adapter (P/N 526500)
- Operates DC-latching solenoids (P/N 458200)
- Station output: 9-11 VDC
- P/MV output: 9-11 VDC
- Sensor inputs: 1
- Approvals: Plastic IP54, Stainless Steel IP24, UL, cUL, FCC, CE, RCM
- Warranty period: 2 years



Plastic
Height: 8 $\frac{5}{8}$ "
Width: 7"
Depth: 3 $\frac{3}{4}$ "



Stainless Steel
Height: 9 $\frac{3}{4}$ "
Width: 7 $\frac{3}{8}$ "
Depth: 4 $\frac{1}{4}$ "



Stainless Steel Solar
Height: 10 $\frac{3}{4}$ "
Width: 7 $\frac{3}{8}$ "
Depth: 4 $\frac{1}{4}$ "



SPXCH
Solar panel kit (optional)
Height: 3 $\frac{1}{4}$ "
Width: 3"
Depth: $\frac{5}{8}$ "

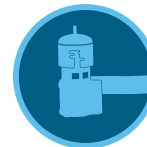


XCHSPB
Mounting bracket and hardware only (optional)



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

Compatible with:



Mini-Click Sensor
Page 135



Freeze-Click Sensor
Page 142

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
458200	DC-latching solenoid
526500	120VAC/24V plug-in wall adapter

MAXIMUM WIRE RUNS

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

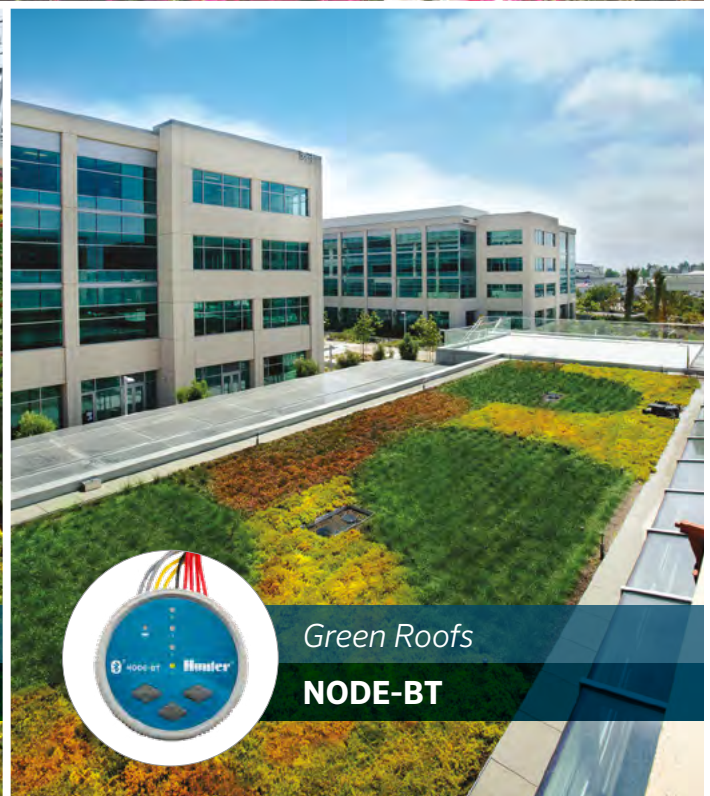
SUSTAINABLE SOLAR AND BATTERY-OPERATED CONTROLLERS PROVIDE EFFICIENT AUTOMATIC IRRIGATION SOLUTIONS FOR TRAFFIC MEDIANS, GREEN ROOFS, AND SITES WITHOUT POWER.



Traffic Medians
XC HYBRID



Nurseries
BTT



Green Roofs
NODE-BT

CONTROLLER DECODERS & ACCESSORIES

CONTROLLER DECODERS & ACCESSORIES

DBRY-6

Use this approved waterproof connector for all ICD, DUAL®, and Pilot® wiring connections.

KEY BENEFITS

- Compatible with EZ decoder connections, but not required
- UL Listed for 600V direct burial
- Improved red-and-yellow wire nut, eliminating the need for two different sizes
- A snap-lock feature that secures the wire nut in the bottom of the light blue waterproof tube
- 3 wire exit cutouts in the strain relief cap, to ease wire routing
- Meets Directive 2006/95/EC and IEC standards EN61984:2009, EN60998-1:2004, and EN60998-2-4:2005



Waterproof Wire Connectors

DBRY-6 MODULES

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)

ICD

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

KEY BENEFITS

- ICD decoders are compatible with Hunter ACC-99D and ACC2 Decoder controllers
- 1-, 2-, 4-, and 6-station versions provide maximum flexibility
- Sensor decoders allow flow and Clk 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

- ICD-HP wireless handheld programmer, see [page 126](#)



ICD-100, 200, ICD-SEN

Height: 3½"
Width: 1½"
Depth: ¾"

ICD-400, 600

Height: 3½"
Width: 1¾"
Depth: 1½"

DECODER MODULES

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 I-Core®/DUAL® systems	7,500' with I-Core/DUAL systems
10,000' with ACC/ICD systems	15,000' with ACC/ICD systems

EZ DECODER SYSTEM

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

KEY BENEFITS

- Number of stations:
 - Up to 54, plus a master valve
- 2 two-wire paths to the field for flexible system design and installation
- No special wire or connectors required
- No special grounding or surge arrestors required in-line, saves time and money 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 (maximum 54 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
- Wire paths possible over 3,000' (see wiring chart below)
- Each EZ-1 decoder has the capability to activate two standard 24 VAC solenoids
- Can operate any two decoders simultaneously for more efficient watering
- Approvals: UL, cUL, FCC, CE, RCM, Industry Canada
- EZ-1 decoders are IP68 rated, submersible
- Warranty period: 3 years

USER-INSTALLED OPTIONS

- Centralus™ with ICC2
- Hydrawise® with HCC
- ICV or PGV valves
- Pump start relays (PSR)

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
EZ-1	Single-station decoder with status LED



Decoder Output Module

Height: 4½"
Width: 2½"
Depth: 1⅝"



Single-Station Decoder

Height: 27⁄8"
Width: 1⅝"
Depth: ⅝"



EZ-1 single-station decoder with status LED

EZDM Installation



Compatible with:



HCC Controller
Page 104



ICC2 Controller
Page 109



ROAM Remote
Page 127
ROAM XL Remote
Page 128

DUAL®

Save materials and labor by adding this optional plug-in module to upgrade conventional I-Core® systems to two-wire control.

KEY BENEFITS

- DUAL48M output module enables up to 48 stations in any I-Core configuration
- 3 separate two-wire paths provide flexibility in system design and installation
- 1- and 2-station decoders for use with a variety of valve manifolds
- Field-programmable decoders do not require serial numbers
 - Decoders can be programmed before installation at the DUAL48M interface
 - Wireless programming with ICD-HP allows for decoder programming or re-programming after installation to the two-wire path
 - DUAL-S external surge protection module provides additional protection
- DUAL48M output module displays decoder programming, operation, and diagnostic information for assistance with maintenance and troubleshooting
- DUAL48M may be installed with conventional modules for hybrid operations
- Solenoid finder feature aids in locating decoders and valves in the field

OPERATING SPECIFICATIONS

- Maximum recommended distance, decoder to solenoid: 100'
- Maximum distance to decoder via two-wire path:
 - 14 AWG wire path: 5,000'
 - 12 AWG wire path: 7,500'
- Approvals: UL, cUL, FCC, CE, RCM
- Decoder rating: IP68 submersible
- Warranty period: 5 years



DUAL48M Decoder Output Module

Height: 1¾"
Width: 4¾"
Depth: 4"



DUAL Decoders

Height: 3¾"
Width: 1¾"
Depth: 7⁄8"

Surge Arrester

Height: 27⁄8"
Width: 17⁄8"
Depth: 2"

DUAL		
Base Model	Plus	Description
IC-600-PL	DUAL48M	48-station controller, indoor/outdoor, plastic cabinet
IC-600-M	DUAL48M	48-station controller, indoor/outdoor, metal cabinet
IC-600-PP	DUAL48M	48-station controller, indoor/outdoor, plastic pedestal
IC-600-SS	DUAL48M	48-station controller, indoor/outdoor, stainless steel cabinet
DUAL Model	Description	
DUAL48M	DUAL decoder output module, up to 48-station maximum	
DUAL-1	DUAL 1-station decoder (includes 2 DBRY-6 connectors)	
DUAL-2	DUAL 2-station decoder (includes 2 DBRY-6 connectors)	
DUAL-S	DUAL surge arrester (includes 4 DBRY-6 connectors)	

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

ICD-HP

Gain wireless, handheld programming and diagnostic capabilities for Hunter ICD and 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 Klik and Flow sensors, plus built-in multimeter
- Communicates with decoder through plastic case: wireless electromagnetic induction saves waterproof connectors
- Compatible with Hunter ICD, DUAL, and Pilot® series decoders
- 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

- FCC, CE, C-tick



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

ROAM

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, I-Core®, ACC, and ACC2 controllers provides remote operation 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



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

OPTIONS (SPECIFY SEPARATELY)	
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

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, I-Core®, ACC, and ACC2 controllers provides remote operation for a wide variety of landscapes
- 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
(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)

OPTIONS (SPECIFY SEPARATELY)

Model	Description
258200	Wall-mount bracket for SmartPort
ROAMXL-CASE	Plastic carrying case
ROAM-WH	SmartPort wiring harness (length: 6')
ROAM-SCWH	Shielded SmartPort wiring harness (length: 25')

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, UL, CE, NEMA 3R rated
- 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 AMPS	Max. Resistive AMPS	Coil VA				Coil VA			
	HP at 120 VAC	HP at 230 VAC	HP at 230 VAC			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.

PSRB

For distant pump starts that require more power, choose the PSRB.

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, UL, CE, NEMA 3R rated
- Warranty period: 2 years



PSRB Pump Start Relay Booster

Height: 8¾"
Width: 7"
Depth: 3¾"

PUMP START RELAY BOOSTER	
Model	Description
PSRB	Use to boost controller output power available to operate larger pump start relays if necessary



SENSORS



SENSORS

SENSOR AND CONTROLLER COMPATIBILITY CHART

AC CONTROLLER MODELS	SENSOR INPUTS	RAIN	SMART WEATHER ADJUST	FLOW	HIGH-FLOW SHUTOFF
X-CORE page 92	1	Mini-Clik, Rain-Clik	Solar Sync	None	Flow-Clik
X2 page 93	1	Mini-Clik, Rain-Clik	Hydrawise® Online	None	Flow-Clik
PRO-C page 94	1	Mini-Clik, Rain-Clik	Solar Sync	None	Flow-Clik
I-CORE page 95	2 (Plastic), 3 (Metal and Pedestals)	Mini-Clik, Rain-Clik	Solar Sync	Flow-Sync, WFS, Other (K-Factor)	Built-in Real-Time Flow Monitoring
HC page 100	2	Mini-Clik, Rain-Clik	Hydrawise Online	HC Flow Meter	Flow-Clik
HPC page 102	1	Mini-Clik, Rain-Clik	Hydrawise Online	HC Flow Meter	Flow-Clik
PRO-HC page 103	2	Mini-Clik, Rain-Clik	Hydrawise Online	HC Flow Meter	Flow-Clik
HCC page 104	2	Mini-Clik, Rain-Clik	Hydrawise Online	HC Flow Meter	Flow-Clik
ICC2 page 109	1	Mini-Clik, Rain-Clik	Centralus online, Solar Sync	None	Flow-Clik
ACC page 114	4 Clik, 1 Flow	Mini-Clik, Rain-Clik	Solar Sync	Flow-Sync, WFS, Other (K-Factor)	Built-in Real-Time Flow Monitoring
ACC2 page 110	1 Solar Sync, 3 Clik, 6 Flow	Mini-Clik, Rain-Clik	Centralus Online, Solar Sync	Flow-Sync, WFS, HC Flow Meter, Other (K-Factor or Scaled Pulse)	Built-in Real-Time Flow Monitoring
BATTERY CONTROLLER MODELS					
NODE page 118	1	Mini-Clik, Rain-Clik	None	None	None
NODE-BT page 119	2	Mini-Clik, Rain-Clik	None	None	None
XC HYBRID page 120	1	Mini-Clik, Rain-Clik	None	None	None

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	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	Wind-Clik, MWS
Soil-Clik	Freeze-Clik, WRF-Clik, Online Forecast Option	Wind-Clik, MWS
None	Freeze-Clik	None
SC-Probe	Freeze-Clik	None
None	Freeze-Clik	None



Rain-Clik®



Mini-Clik®



Solar Sync®



HC Flow Meter



Flow-Sync®



WFS



Flow-Clik®



Soil-Clik®



Freeze-Clik®



Wind-Clik®



MWS

RAIN-CLIK®

To prevent water waste, built-in Quick Response® technology instantly shuts down irrigation as soon as it starts raining.

KEY BENEFITS

- Instant Quick Response rain shutoff and freeze shutoff at 37°F
- Maintenance-free design with integrated battery for wireless models
- Adjustable vent ring allows for shorter or longer reset period
- Rugged polycarbonate housing and metal extension arm
- Includes gutter bracket and wall mount with wireless models
- Compatible with most normally open or normally closed irrigation controllers

OPERATING SPECIFICATIONS

- Quick Response:
 - 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, two-conductor, 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

Sensor: **Rain, Freeze**



RAIN-CLIK/RFC
(with mounting arm)
Height: 2½"
Length: 7"



SGM
Optional gutter mount
Height: ½"
Length: 3"



WR-CLIK/WRF-CLIK
(with mounting arm)
Height: 3"
Length: 8"



Wireless Receiver
(with mounting hardware)
Height: 3¼"
Length: 4"



Wireless Sensor Guard
(with mounting hardware)
Height: 2¾"
Length: 3¾"
Depth: 1¼"



Wireless Receiver Guard
(with mounting hardware)
Height: 5"
Length: 4"
Depth: 1¼"

RAIN-CLIK

Model	Description
RAIN-CLIK	Wired Rain-Clik sensor
RFC	Wired Rain/Freeze-Clik sensor
WR-CLIK	Wireless Rain-Clik sensor and receiver
WRF-CLIK	Wireless Rain/Freeze-Clik sensor and receiver
SGM	Optional gutter mount (included with WR-CLIK and WRF-CLIK)
WS-GUARD	Vandal-resistant wireless sensor guard for flat surfaces or pole mounting (order sensor separately)
WR-GUARD	Vandal-resistant wireless receiver guard for pedestal mounting (order receiver separately)

MINI-CLI[®]

Sensor: **Rain**

This sensor halts scheduled irrigation when it detects a preset level of rain has fallen to stop water waste.

KEY BENEFITS

- Shuts off sprinkler system automatically when it rains
- Adjustable from 1/8" to 3/4" of rainfall
- Debris tolerant for reliable operation
- Mountable to gutters using (P/N SGM)
- Stainless steel guard with Mini-Clik sensor for commercial applications (P/N SG-MC)
- Compatible with most irrigation controllers

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

MINI-CLI [®]	
Model	Description
MINI-CLI [®]	Wired rain sensor
MINI-CLI [®] -NO	Wired rain sensor with normally open switch
SG-MC	Stainless steel sensor guard with Mini-Clik sensor
SGM	Optional gutter mount

MINI-CLI[®] INSTALLATION



MINI-CLI[®]

Height: 2"
Length: 6"



SG-MC

Stainless steel sensor guard enclosure for Mini-Clik (includes Mini-Clik)
Height: 5 1/2"
Length: 3"
Width: 4"



SGM

Optional gutter mount
Height: 1/2"
Length: 3"

SOLAR SYNC®

This sensor automatically adjusts controller run times daily based on local climate conditions to reduce water usage and improve plant health.

Sensor: **ET, Rain, Freeze**

KEY BENEFITS

- Automatically adjusts irrigation duration based on weather conditions using on-site solar radiation and air temperature
- Quick Response® instant rain shutoff and freeze shutoff at 37°F
- Maintenance-free design with integrated battery for wireless models
- Adjustable vent ring allows for shorter or longer reset period
- Rugged polycarbonate housing and metal extension arm
- Includes gutter bracket and wall mount with wireless models
- Use with Hunter standard controllers, Centralus™ with ICC2 or ACC2, and IMMS™ online central control installations

OPERATING SPECIFICATIONS

- Solar Sync:
 - Adjusts run times daily 3 minutes before midnight using the last 3 days of ET (evapotranspiration) data
- Quick Response:
 - 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, two-conductor, 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



Wired Solar Sync Sensor

(with mounting arm)

Height: 3"
Width: 8½"
Depth: 1"



Wireless Solar Sync Sensor

Height: 4½"
Width: 8½"
Depth: 1"



Wireless Solar Sync Receiver

(with wall mounting kit)
Height: 5½"
Width: 1½"
Depth: 1½"



Wireless Sensor Guard

(with mounting hardware)
Height: 2¾"
Width: 3¾"
Depth: 1¼"



Wireless Receiver Guard

(with mounting arm)
Height: 5"
Width: 4"
Depth: 1¼"

SOLAR SYNC	
Model	Description
SOLAR-SYNC-SEN	Solar Sync sensor, wire, and gutter mount
WSS-SEN	Wireless Solar Sync sensor, receiver, and gutter mount
WS-GUARD	Vandal-resistant wireless sensor guard for flat surfaces or pole mounting (order sensor separately)
WR-GUARD	Vandal-resistant wireless receiver guard for pedestal mounting (order receiver separately)



EPA WaterSense Approved

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

HC FLOW METER

Sensor: **Flow**

Detect, monitor, and report critical flow zone data and total system flows with this robust and simple-to-install flow sensor.

KEY BENEFITS

- Compatible with HC, HPC, Pro-HC, and HCC
- Provides station-level flow 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
- Meter must be hardwired to the controller via shielded, minimum 18 AWG wire, up to 1,000' from the controller
- Temperature range (water): up to 100°F
- Accuracy: ± 2% of reading at recommended flow
- Warranty period: 2 years



HC-075-FLOW

($\frac{3}{4}$ " MNPT coupling)
 Height: 3 $\frac{1}{8}$ "
 Length: 9 $\frac{1}{8}$ "
 Depth: 3 $\frac{1}{8}$ "
 Weight: 2.1 lbs

HC-150-FLOW

(1 $\frac{1}{2}$ " MNPT coupling)
 Height: 6 $\frac{1}{4}$ "
 Length: 16 $\frac{7}{8}$ "
 Depth: 4 $\frac{7}{8}$ "
 Weight: 14.5 lbs

HC-100-FLOW

(1" MNPT coupling)
 Height: 3 $\frac{3}{8}$ "
 Length: 10 $\frac{1}{4}$ "
 Depth: 3 $\frac{1}{8}$ "
 Weight: 3.1 lbs

HC-200-FLOW

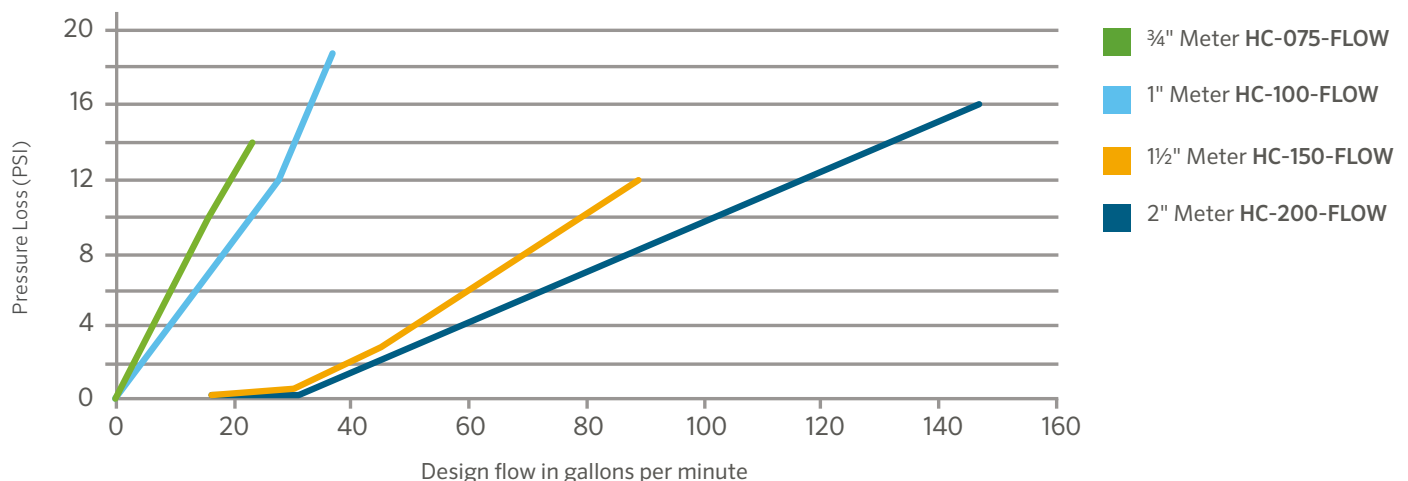
(2" MNPT coupling)
 Height: 6 $\frac{1}{4}$ "
 Length: 17 $\frac{1}{2}$ "
 Depth: 4 $\frac{7}{8}$ "
 Weight: 16.3 lbs

SENSORS

HC FLOW METER SPECIFICATIONS

	HC-075-FLOW ($\frac{3}{4}$ ")	HC-100-FLOW (1")	HC-150-FLOW (1 $\frac{1}{2}$ ")	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

HC FLOW METER Pressure Loss Chart



FLOW-SYNC®

Sensor: **Flow**

This cost-effective flow sensor is designed for use with commercial controllers.

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 I-Core®, ACC, and ACC2 controllers, as well as ICD-SEN sensor decoders, for flexible installation in a variety of projects
- 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)

FLOW-SYNC

Model	Description
HFS	Hunter Flow-Sync sensor, use with I-Core, ACC, and ACC2 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.

WFS

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 I-Core®, ACC, and ACC2 controllers for flexible installation in a variety of projects
- 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

Sensor: **Flow**



WFS

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-LITHBATT	Wireless Flow Sensor Lithium Battery
WFS-ALKBATT	Wireless Flow Sensor Alkaline Battery with Cage

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.

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-CLIK®

Add high-flow shutoff capabilities to any irrigation controller with this simple, adjustable device.

Sensor: **Flow**

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-Click sensor and module shown with required FCT fitting for pipe installation (sold separately)

FLOW-CLIK

Model	Description
FLOW-CLIK	Standard kit for all 24 VAC controllers. <i>Includes sensor and interface module, sensor requires FCT for pipe installation.</i>

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.

SOIL-CLIK®

Sensor: **Soil Moisture**

This sensor prevents water waste by measuring soil moisture and shutting off irrigation when a pre-set 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

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
- Approvals: UL, cUL, FCC, CE, RCM
- Warranty period: 5 years

Soil-Clik Module

Height: 4½"
Width: 3½"
Depth: 1¼"
Power: 24 VAC, 100 mA max
Wire leads: 31½"



Soil-Clik Probe

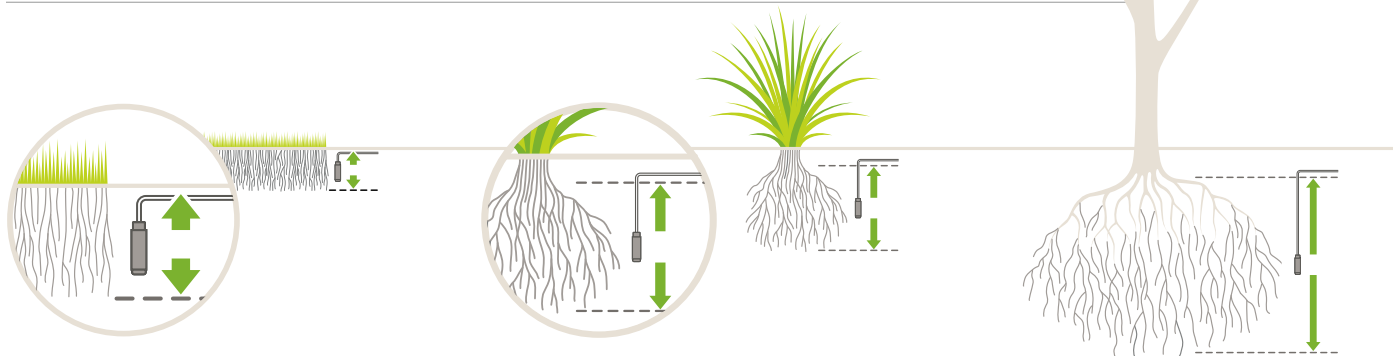
Diameter: ¼"
Height: 3¼"
Wire to probe: 1,000' max
18 AWG direct-burial wire
Wire leads: 31½"



SENSORS

SOIL-CLIK	
Model	Description
SOIL-CLIK	Soil-Clik moisture sensor module and probe
SC-PROBE	Soil moisture probe sensor for NODE-BT

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.

FREEZE-CLI[®]

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

Sensor: **Freeze**



FREEZE-CLI[®]

Height: 2"
Length: 6"

FREEZE-CLI[®]

Model	Description
FREEZE-CLI [®]	Wired freeze sensor

WIND-CLI[®]

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
- Includes 25' of 20 AWG sheathed, two-conductor, UL-approved wire
- 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

Sensor: **Wind**



WIND-CLI[®]

Height: 4"
Wind vane diameter: 5"

WIND-CLI[®]

Model	Description
WIND-CLI [®]	Wired wind sensor

MWS

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 1/8" to 3/4" of rainfall
- Automatically shuts off system when temperatures fall below 37°F
- Mounts: Slip fits over 2" PVC pipe or attaches to 1/2" 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	
Model	Description
MWS	Weather station combines wind and rain sensors
MWS-FR	Weather station combines wind and rain sensors with a freeze sensor

Sensor: **Wind, Rain, Freeze**



MWS

Height: 8"
Wind vane diameter: 5"



MWS-FR

Height: 8"
Wind vane diameter: 5"




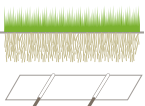
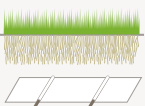

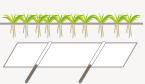
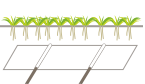




MICRO

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:

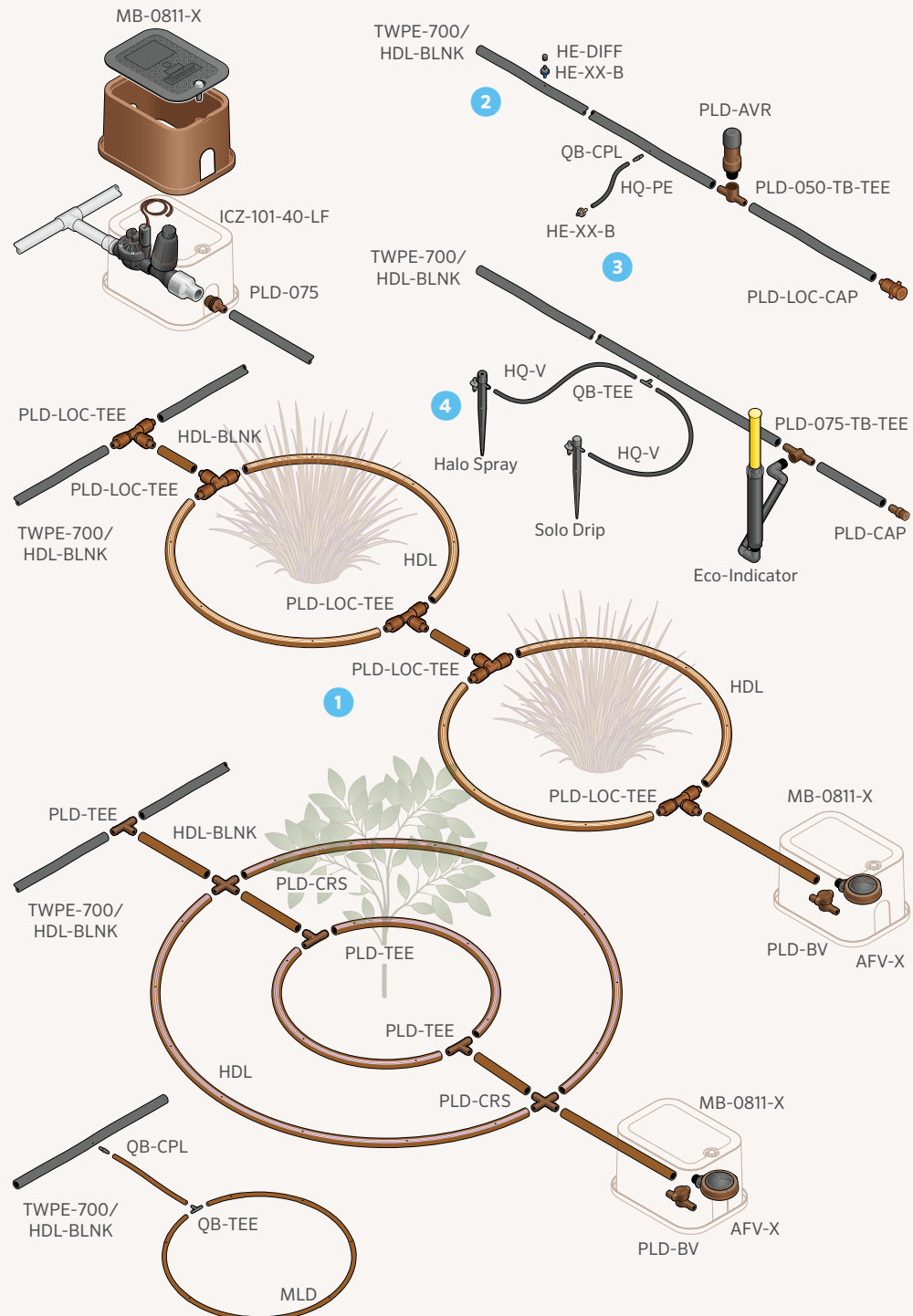
- Use ½" polyethylene (TWPE) to distribute water
- Use ¼" PE (HQPE) or vinyl (HQV) to connect to emitters and micro sprays

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 (1/2" threaded emitter bubblers install directly onto 1/2" risers)
- HE-T (10-32 threaded emitters install onto rigid risers)

3 Multi-Port Emitters:

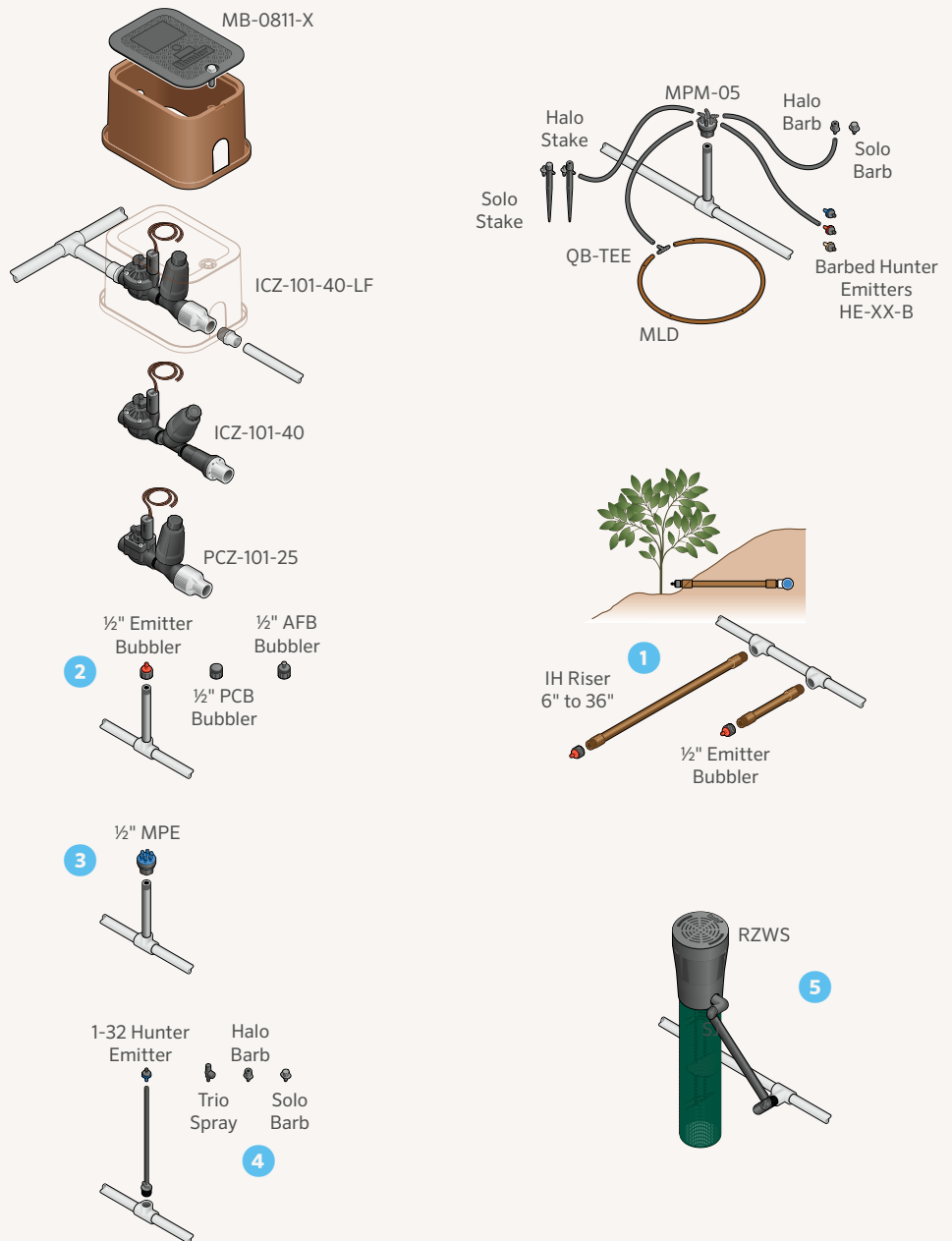
- Color-coded flows (0.5, 1.0, 2.0 GPH)
- Swivel barbs for directional flow
- Install directly onto 1/2" risers

4 Micro Sprays:

- Ideal for higher flows (0-30 GPH)
- Diameter of throw from 0-12'
- Install directly onto rigid risers or on 1/4" tubing

5 Root Zone Watering System:

- For deep root irrigating
- Allows oxygen to penetrate the soil
- Encourages healthier root growth



PCZ

Make installations quick and easy with this robust, pre-assembled 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 at 25 PSI outlet	ACZ at 25 PSI outlet	PCZ at 40 PSI outlet	ACZ at 40 PSI outlet
GPM	Dynamic Pressure*	Dynamic Pressure*	Dynamic Pressure**	Dynamic Pressure**
0.5	34	25	41	41
1	34	26	42	43
5	34	28	45	47
10	37	30	52	52
15	41	32	59	55

*Minimum inlet pressure required to achieve 25 PSI on the outlet side
**Minimum inlet pressure required to achieve 40 PSI on the outlet side

ACZ

This sturdy, pre-assembled 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-100-075 and 25 PSI regulator
ACZ-075-40	¾" PGV-ASV valve with HFR-100-075 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



ICZ-101
Height: 6¾"
Width: 4"
Length: 14"
1" inlet x 1" outlet

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)
- Operating pressure: 20 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
- Operating pressure: 20 to 120 PSI
- Operating temperature: up to 120°F
- 150 mesh; 100 microns stainless steel screen
- 1" inlet and ¾" outlet



ICZ-101-LF
Height: 7"
Width: 4"
Length: 10½"
1" inlet x 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
- Operating pressure: 20 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



ICZ-101-LF-R
Height: 7"
Width: 4"
Length: 10½"
1" inlet x ¾" outlet

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 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

Dynamic pressure required for designated outlet pressure

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" 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

- Pressure regulation: 40 PSI
- Flow: 20 to 60 GPM
- Operating pressure: up to 120 PSI
- Operating temperature: up to 120°F
- 150 mesh; 100 micron stainless steel screen
- 1½" inlet x 2" outlet

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: 12"
Width: 5½"
Length: 22½"
1½" inlet x single 2" outlet

DRIP CONTROL ZONE KITS

Model	Description
ICZ-151-40-XL	1½" ICV globe valve with 1½" filter and single 2" regulator

ICZ-151-40-XL

GPM	Required Pressure for 40 PSI Outlet
20	46
30	50
40	54
50	63
60	75
70	82

For inlet pressures below 60 PSI, pressure regulation may not be required

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
- HY-075 (Hunter Y-filter)
 - 150 mesh (100 microns) stainless steel screen for years of reliable filtration
 - Wide flow range covers most drip applications
- Warranty period: 2 years

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-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

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
- Polypropylene body
- 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 with 150 mesh
- Large filtration screen provides longer life in between cleanings
- Optional screens of 80 and 120 mesh
- Disc filter available (125 microns)
- Warranty period: 2 years



**HY-075, HY-100,
HY-100-075**
Height: 6"
Width: 3"
Length: 5"



**HY-075, HY-100,
HY-100-075**
Height: 6"
Width: 3"
Length: 5"



HY-151
Height: 9"
Width: 5"
Length: 9"



HY-201
Height: 12"
Width: 6¾"
Length: 11½"

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 125 micron (120 mesh)
	HY151SCREEN150	150 mesh screen for 1½" filter
	HY151SCREEN120	120 mesh screen for 1½" filter
	HY151SCREEN080	80 mesh screen for 1½" filter
2"	HY151DISC120	120 mesh disc for 1½" filter
	HY-201	2" inlet/outlet
	HY-201-D	2" disc filter 125 micron (120 mesh)
	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

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
- PRM-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 (¾")			
Model	Pressure	Inlet	Outlet
PRL203F3F	20 PSI	¾" FPT	¾" FPT
PRL253F3F	25 PSI	¾" FPT	¾" FPT
PRL303F3F	30 PSI	¾" FPT	¾" FPT
PRL353F3F	35 PSI	¾" FPT	¾" FPT
PRL403F3F	40 PSI	¾" FPT	¾" FPT

PRLV (¾")			
Model	Pressure	Inlet	Outlet
PRLV20MF3F3FV	20 PSI	¾" FPT	¾" FPT
PRLV30MF3F3FV	30 PSI	¾" FPT	¾" FPT
PRLV40MF3F3FV	40 PSI	¾" FPT	¾" FPT

PRLV (1")			
Model	Pressure	Inlet	Outlet
PRLV40MF4F4FV	40 PSI	1" FPT	1" FPT
PRLV50MF4F4FV	50 PSI	1" FPT	1" FPT
PRLV60MF4F4FV	60 PSI	1" FPT	1" FPT

PMR-MF (¾")			
Model	Pressure	Inlet	Outlet
PMR20MF3F3FV	20 PSI	¾" FPT	¾" FPT
PMR25MF3F3FV	25 PSI	¾" FPT	¾" FPT
PMR30MF3F3FV	30 PSI	¾" FPT	¾" FPT
PMR35MF3F3FV	35 PSI	¾" FPT	¾" FPT
PMR40MF3F3FV	40 PSI	¾" FPT	¾" FPT
PMR50MF3F3FV	50 PSI	¾" FPT	¾" FPT

PMR-MF (1")			
Model	Pressure	Inlet	Outlet
PMR20MF4F4FV	20 PSI	1" FPT	1" FPT
PMR25MF4F4FV	25 PSI	1" FPT	1" FPT
PMR30MF4F4FV	30 PSI	1" FPT	1" FPT
PMR35MF4F4FV	35 PSI	1" FPT	1" FPT
PMR40MF4F4FV	40 PSI	1" FPT	1" FPT



PRL - Pressure-Regulating Low-Flow
 Width: 1 9/16"
 Length: 4 1/2"
 ¾" FPT inlet x ¾" outlet FPT



PRLV - Pressure-Regulating Limit Valve Wide-Range Flow
 Width: 2 1/2"
 Length: 5 1/2"
 ¾" FPT inlet x ¾" outlet FPT



PMR-MF - Pressure-Master Regulator Medium-Flow
 Width: 2 1/2"
 Length: 5 1/2" (¾" model), 5 1/2" (1" model)
 1" FPT inlet x 1" outlet

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.

MICRO

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
- PRU:
 - Flow range: 20 to 100 GPM
 - Maximum inlet pressure: 120 PSI
- Warranty period: 2 years

*Maximum recommended inlet pressure should not exceed 80 PSI above nominal model pressure



PRLG - Pressure Regulator

Landscape Grade

Width: 1½"

Length: 3½"

¾" FHT inlet x ¾" MHT outlet



PRU - Pressure Regulator Ultra

Width: 4½"

Length: 9"

2" FPT inlet x 2" FPT outlet

PRLG (¾" HOSE THREAD)

Model	Pressure	Inlet	Outlet
PRLG203FH3MH	20 PSI	¾" FHT	¾" MHT
PRLG253FH3MH	25 PSI	¾" FHT	¾" MHT
PRLG303FH3MH	30 PSI	¾" FHT	¾" MHT
PRLG403FH3MH	40 PSI	¾" FHT	¾" MHT

PRU-40

Model	Pressure	Inlet	Outlet
PRU-40	40 PSI	2" FPT	2" FPT

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:

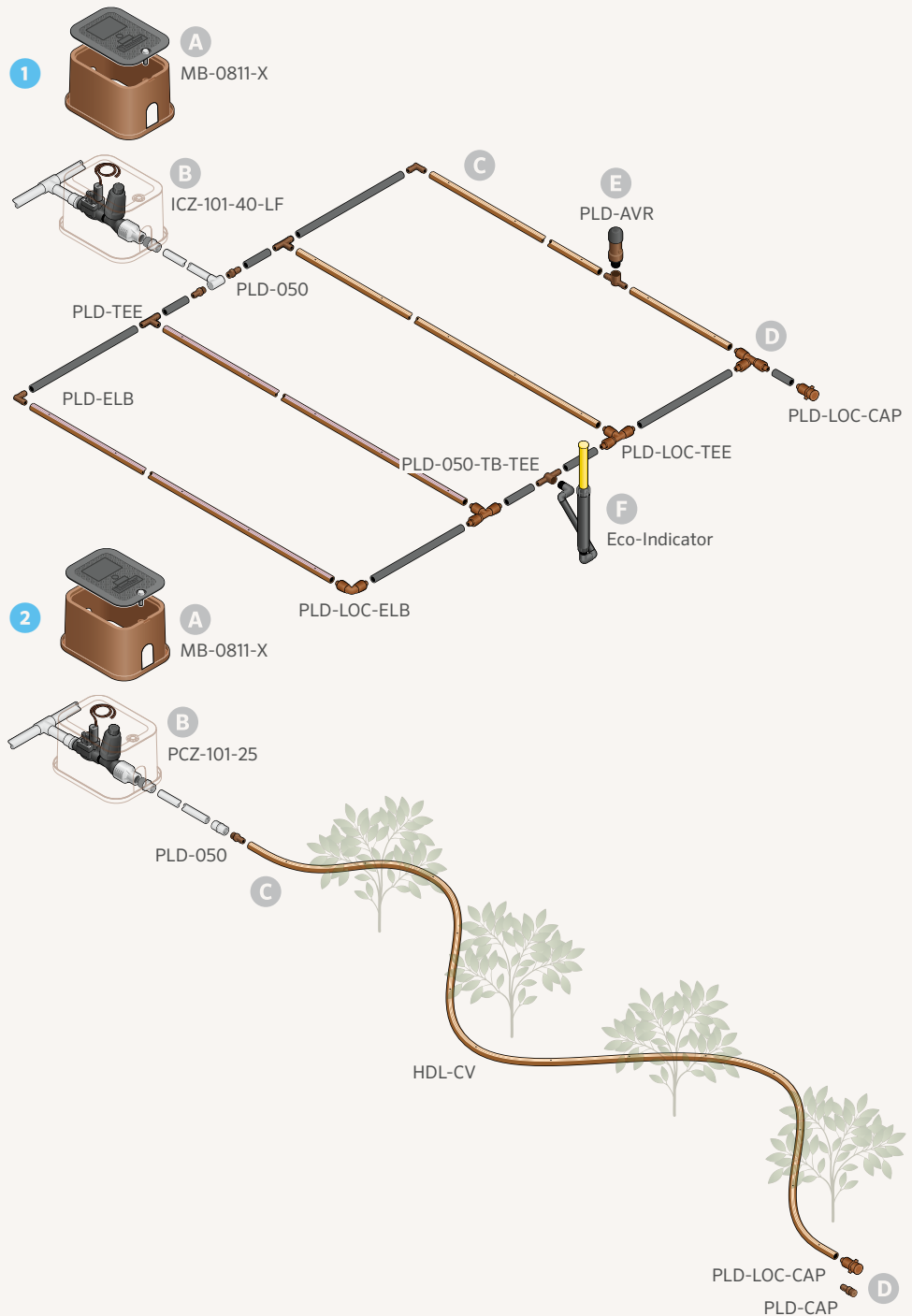
- Double-barb holds fittings tight
- LOC fittings can be reused

E Air/Vacuum Relief Valve:

- Helps prevent water hammer and tubing collapse
- Use at high point(s) in zone

F Eco-Indicator:

- 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



HUNTER DRIPLINE COLOR CODE

- | | |
|---------------------|--|
| STRIPE COLOR | TUBING COLOR |
| ● 0.9 GPH - Black | ● HDL-CV - Dark brown tubing, pressure-compensating with check valve |
| ○ 0.6 GPH - Gray | |
| ○ 0.4 GPH - Tan | |

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'		(BLANK) = Brown R = Purple stripes
			250 = 250'		
			500 = 500'		
			1K = 1,000'		

Examples:
HDL-BLNK-250 = No emitters, 500' coil with purple stripes
HDL-BLNK-500-R = No emitters, 250' coil

MAXIMUM RUN LENGTHS

HDL-CV - 0.4 GPH				HDL-CV - 0.6 GPH				HDL-CV - 1.0 GPH			
Pressure (PSI)	Emitter Spacing (in.)			Pressure (PSI)	Emitter Spacing (in.)			Pressure (PSI)	Emitter Spacing (in.)		
	12	18	24		12	18	24		12	18	24
15	205	289	367	15	171	239	304	15	117	164	211
20	289	404	513	20	239	336	426	20	164	233	292
25	339	479	604	25	280	398	501	25	192	273	348
30	380	535	679	30	314	441	560	30	217	307	389
40	438	623	788	40	363	516	653	40	251	355	451
50	489	691	872	50	404	570	722	50	280	395	501
60	529	747	947	60	438	619	784	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
- Check height of 6' minimizes system drainage and runoff
- Color-coded stripes provide easy identification of flow
- UV Resistant 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)



HUNTER DRIPLINE COLOR CODE

- STRIPE COLOR**
- 0.9 GPH - Black
 - 0.6 GPH - Gray
 - Reclaimed - Purple

- TUBING COLOR**
- HDL-PC - Light brown tubing pressure-compensating
 - HDL-R - Light brown with purple stripe - pressure-compensating reclaimed

MICRO

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

MAXIMUM RUN LENGTHS

HDL-PC/R - 0.4 GPH				HDL-PC/R - 0.6 GPH				HDL-PC/R - 0.9 GPH			
Pressure (PSI)	Emitter Spacing (in.)			Pressure (PSI)	Emitter Spacing (in.)			Pressure (PSI)	Emitter Spacing (in.)		
	12	18	24		12	18	24		12	18	24
10	205	285	361	10	168	236	298	10	114	164	208
15	285	404	511	15	236	333	423	15	164	233	292
20	339	475	604	20	280	395	501	20	192	273	348
25	380	532	675	25	314	441	560	25	214	304	385
30	411	582	735	30	339	482	610	30	236	333	419
40	463	657	831	40	385	545	688	40	267	376	479
50	507	719	912	50	419	594	753	50	292	414	523
60	548	772	981	60	451	638	810	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

PRODUCT SPECIFICATIONS

- Available flow rates: 0.6, 0.9 GPH
- Available emitter spacing: 12"
- 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)

AVAILABLE MODELS

- HDL-09-12-250-COP
- HDL-09-12-1K-COP
- HDL-06-12-250-COP
- HDL-06-12-1K-COP

MAXIMUM RUN LENGTHS

HDL-COP - 0.6 GPH		HDL-COP - 0.9 GPH	
Pressure (PSI)	Emitter Spacing (in.)	Pressure (PSI)	Emitter Spacing (in.)
15	171	15	117
20	239	20	164
25	280	25	192
30	314	30	217
35	339	35	236
40	363	40	251
45	385	45	267
50	404	50	280
55	419	55	292
60	438	60	302



HDL-CV



Coil with Stretch Wrap

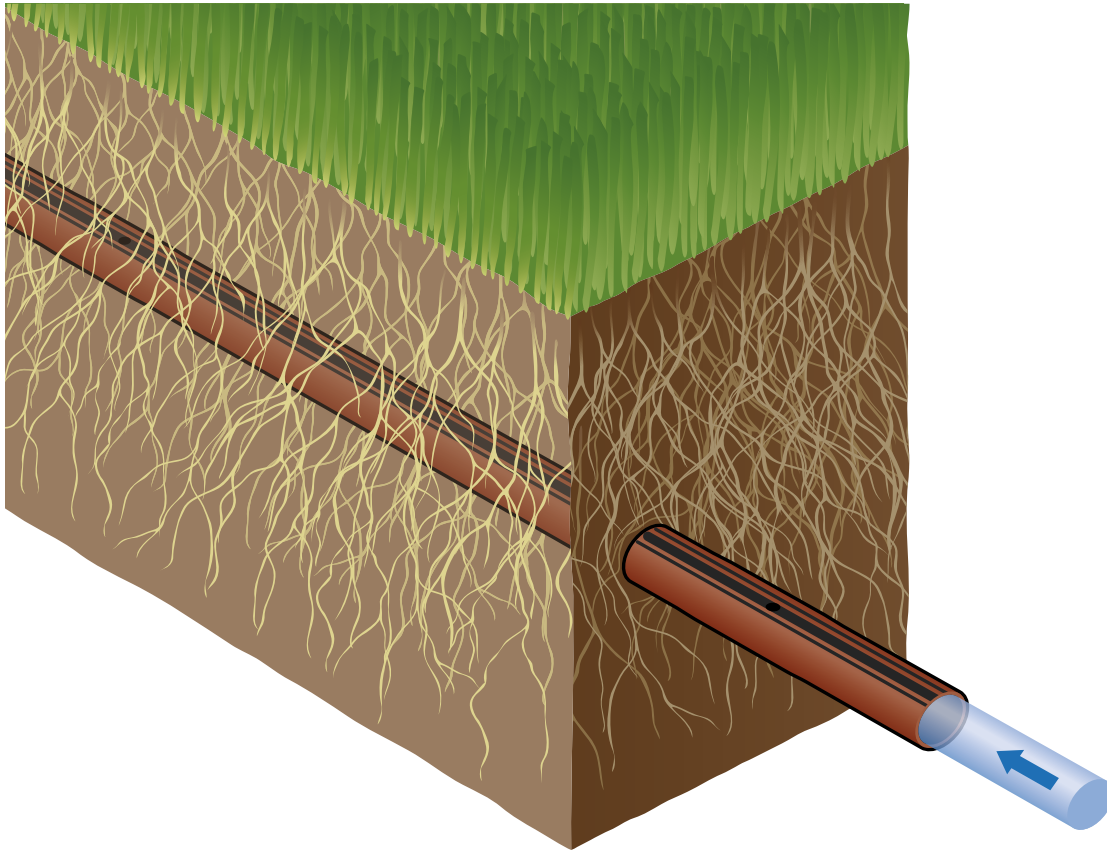
HDL-COP

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 hunterindustries.com/sites/default/files/subsurfaceguidelineshdl.pdf



LOC FITTINGS

LOC fittings are compatible with any nominal 1/2" 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
- For installations with PLD-IAC/PLD-IAE grommets, use an 1/16" spade drill bit to cut into the PVC

OPERATING SPECIFICATIONS

- Operating pressure range: up to 145 PSI
- Warranty period: 2 years

FITTINGS



PLD-LOC 075
3/4" male pipe thread x LOC



PLD-LOC 050
1/2" 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
3/4" female hose swivel x LOC



PLD-LOC TEE
Locking tee

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 1/16" spade drill bit to cut into the PVC

OPERATING SPECIFICATIONS

- Operating pressure range: up to 100 PSI
- Warranty period: 1 year

FITTINGS



PLD-050
1/2" MPT x 17 mm barb



PLD-ELB
17 mm barb elbow



PLD-075
3/4" MPT x 17 mm barb



PLD-CPL
17 mm barb coupling



PLD-CAP
17 mm barb x 1/2" MPT with cap



PLD-075-TB-TEE
17 mm barb tee x 3/4" thread



PLD-BV
17 mm barb Shut-off valve



PLD-TEE
17 mm barb tee



PLD-050-TB-TEE
1/2" 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
3/4" 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, Eco-Wrap fleece-wrapped dripline, and Eco-Mat specialized fleece mat.

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:**

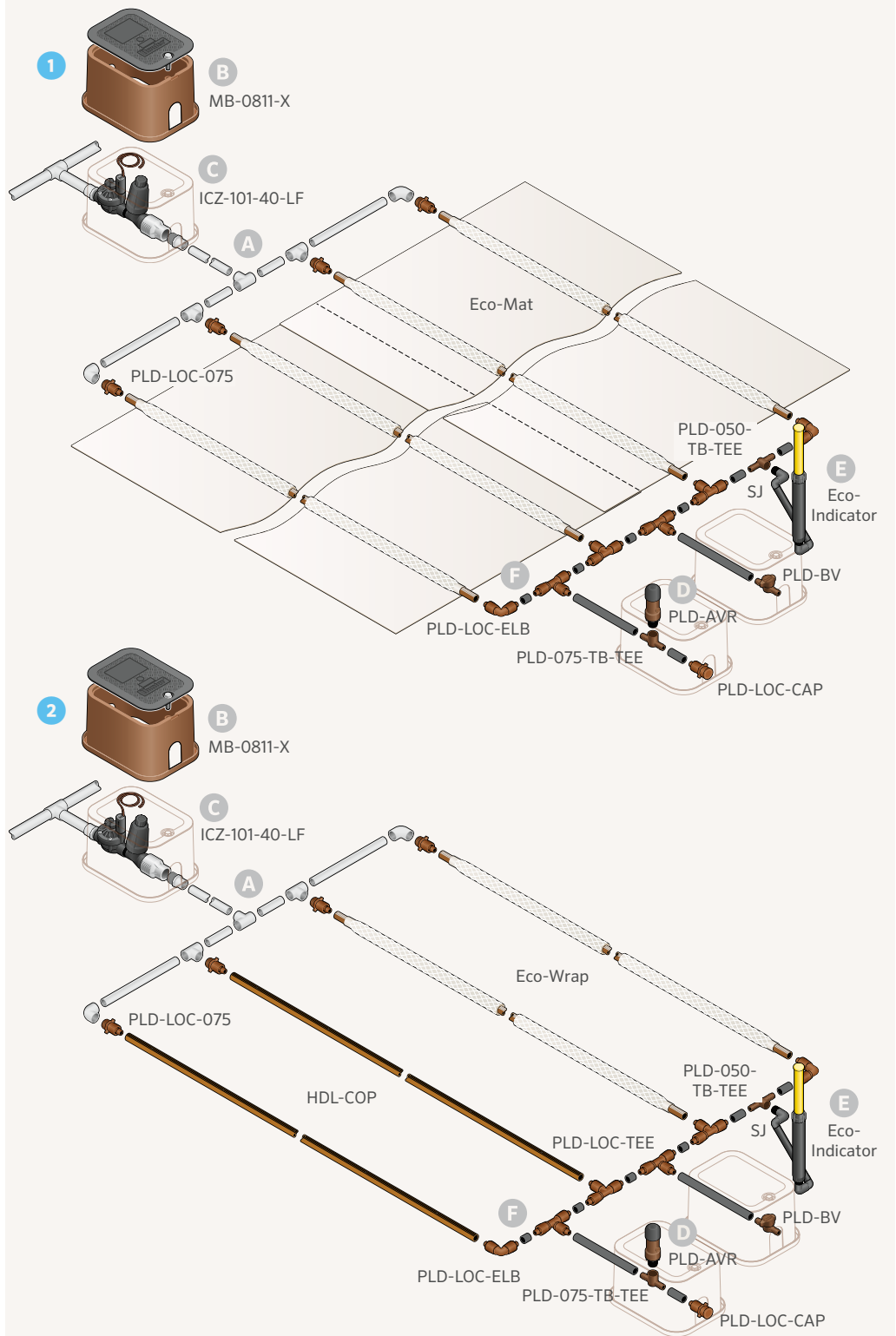
- Helps prevent water hammer and tubing collapse
- Use at high point(s) in zone

E **Eco-Indicator:**

- 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
- Warranty period: 5 years (plus 2 additional years for environmental stress cracking)

Eco-Mat Installed



Compatible with:



Soil-Clik
Page 141

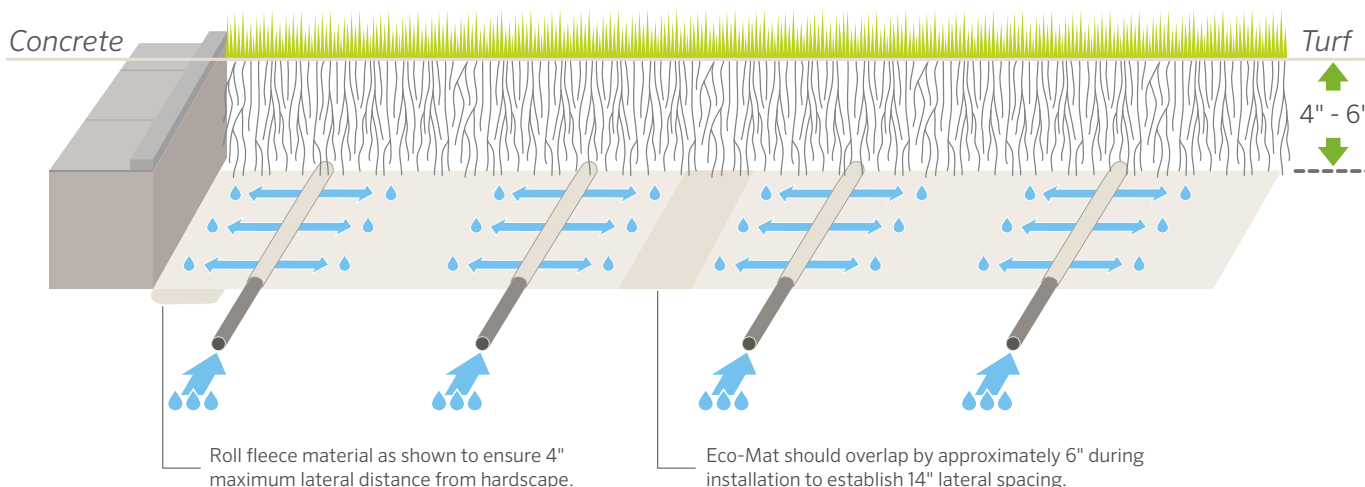


Eco-Indicator
Page 164

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 = 830 ft²
- Example calculation based on area 40' x 80':

$$\text{Qty.} = \frac{\text{Irrigated landscape area}}{\text{Area of roll coverage}} = \frac{3,200 \text{ ft}^2}{830 \text{ ft}^2} = 3.8 \text{ (round up to 4 rolls)}$$



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

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 141



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



1/2" PE Tubing

1/2" 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 = 1/2" 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

Pair with Eco-Mat® and Eco-Wrap® subsurface systems.

MLD

Use this 1/4" 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 1/4" barb fittings

OPERATING SPECIFICATIONS

- Pressure range: 10-40 PSI
- Minimum filtration: 150 mesh; 120 microns
- Maximum run lengths: 6" spacing = 15'; 12" spacing = 30'
- Warranty period: 2 years



MLD

MLD Installed



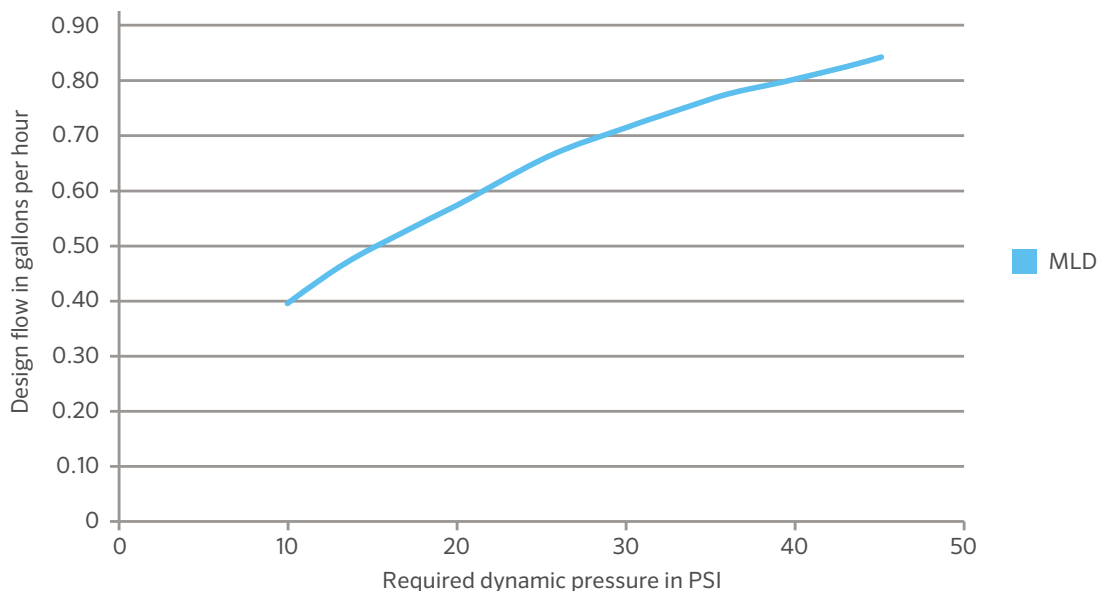
MLD - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1	Model	2	Spacing	3	Length	4	Options
	MLD-05		06 = 6" 12 = 12"		100 = 100' 250 = 250'		BL = Black (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		250 = 0.250" outside diameter		100 = 100'
	HQV = Vinyl tubing				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 tubings

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



SCREEN-CV

Filter screen with 12' check valve.



IH-FIT-3850

¾" x ½" MPT
IH fitting



IH-FIT-3850-R

¾" x ½" MPT
IH fitting
(reclaimed)

IH Risers with Emitters - SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Riser Length	2 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	¾" x ½" MPT IH fitting
IH-FIT-3850-R	¾" x ½" MPT IH fitting (reclaimed)
IH-250	250' length of 12" flexible PVC irrigation hose
IPS-050-250	250' length of ½" IPS



IPS-050-250

Flexible PVC for creating headers or custom risers



IH-250

IPS, Weld-On, P-68, P-70, and 795 are trademarks of IPS Corporation. Christy's, Purple Primer, Red Hot Clear Primer, and Red Hot Blue Glue are trademarks of T. Christy Enterprises.

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)

	Model	Inlet Type	Flow (GPH)
● Blue	HEB-05-BR	½" female thread	0.5
● Black	HEB-10-BR	½" female thread	1.0
● Red	HEB-20-BR	½" female thread	2.0
● Tan	HEB-40-BR	½" female thread	4.0
● Orange	HEB-60-BR	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



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)

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



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
- MPM (Multi-Port Manifold) 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.



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



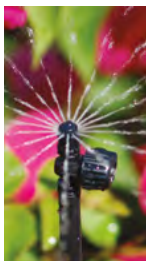
HALO-SPRAY PERFORMANCE DATA

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° 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

HS-B-STK

TS-T-Q

Height: 6"

Height: 6"

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 sprinklers:



Short-Radius Micro Spray Nozzles
Page 69

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
RR18	18" rigid riser
RR18-T	18" rigid riser with ½" threaded base
RR18-B	18" rigid riser with ¼" barb base



Rigid Riser

Available in 12" and 18" 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
- 3/8" 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

MICRO

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: 3/4" MPT



PLD-AVR

1/2" Air/vacuum relief valve

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
- Warranty period: 1 year



AFV-B

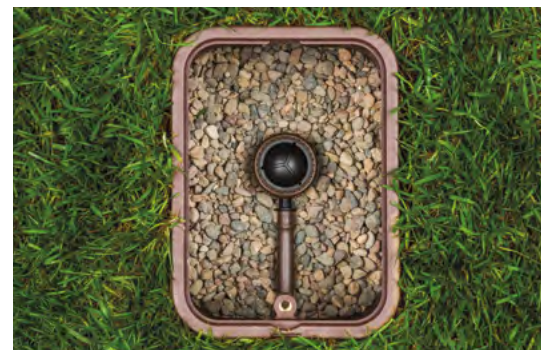
Automatic flush valve with
17 mm barb connection



AFV-T

Automatic flush valve with
1/2" MPT 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™ baffles divert 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
- Pre-assembled 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)



RZWS-10

Diameter: 2"
Length: 10"

RZWS-18

Tube diameter: 3"
Cap diameter: 4¾"
Length: 18"

RZWS-36

Tube diameter: 3"
Diameter: 4¾"
Length: 36"



Reclaimed models available
(Add -R to model number)

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

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



RECLAIMED

RECLAIMED

EMBRACE THE POWER OF PURPLE

with our complete line of reclaimed water products

ROTORS



PGJ	PGP ULTRA	I-20	I-25	I-40	I-50
PGJ-00-R	PGP-00-CV-R	I-20-00-R	I-25-04-R	I-40-04-SS-R	I-50-06-SS-R
PGJ-04-R	PGP-00-CV-R-PRB	I-20-00-R-PRB	I-25-04-SS-R	I-40-04-SS-ON-R	I-50-06-SS-ON-R
PGJ-06-R	PGP-04-CV-R	I-20-04-R	I-25-06-R	I-40-06-SS-R	
PGJ-12-R	PGP-04-CV-R-PRB	I-20-04-SS-R	I-25-06-SS-R	I-40-06-SS-ON-R	
	PGP-12-CV-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			

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-90
I-80-00-SS-R	I-90-ARV
I-80-04-SS-R	I-90-3RV
I-80-00-SS-ON-R	
I-80-04-SS-ON-R	

SPRAYS



PRO-SPRAY	PRO-SPRAY PRS30	PRO-SPRAY PRS40
PROS-00-R	PROS-00-PRS30-R	PROS-00-PRS40-R
PROS-04-CV-R	PROS-04-PRS30-CV-R	PROS-04-PRS40-CV-R
PROS-06-CV-R	PROS-06-PRS30-CV-R	PROS-06-PRS40-CV-R
PROS-12-CV-R	PROS-12-PRS30-CV-R	PROS-12-PRS40-CV-R
PROS-RC-CAP-SP (snap-on)	458560 = ID cap	458562 = ID cap
458520SP = ID cap (threaded)		

Sprays Key

00 - Shrub
04 - 4" pop-up
06 - 6" pop-up
12 - 12" pop-up
CV - Check valve

RECLAIMED

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-301G-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 COUPLER

- HQ-33DLRC-R
- HQ-44LRC-R
- HQ-44LRC-AW-R
- HQ-5LRC-R



DRIP CONTROL ZONE KITS

- ICZ-101-25-LF-R
- ICZ-101-40-LF-R
- HFR-100-075-25-R = Filter with 25 PSI regulator only
- HFR-100-075-40-R = Filter with 40 PSI regulator only

Valves Key

- FS - Filter Sentry®
- LRC - Locking rubber cover
- RC - Rubber cover
- AW - Acme key with anti-rotation wheels

* Note: IBV purple tags are user-installed options.

Quick Coupler 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-09-24-1K-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

- 12 - 12" riser
- 18 - 18" riser
- 24 - 24" riser
- XX - Riser length (06, 12, 18, 24, 36) inches
- YY - Emitter flow (0.5, 1.0, 2.0, 4.0, 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



SpotShot Hose-End Nozzle

¾" P/N 160700SP
1" P/N 160705SP

OPERATING SPECIFICATIONS

- Flow - 35 GPM at 80 PSI*

* Not recommended for residential use with regulated, low-pressure, or low-flow conditions



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



I-80 Turf Cup Tool

P/N 991300SP
Arc Adjustment, Riser Hold-up, Turf Cup Remove/Install



I-80 Body Plug

P/N 996500SP



Snap Ring Tool

P/N 984400SP
I-80 Installation Removal

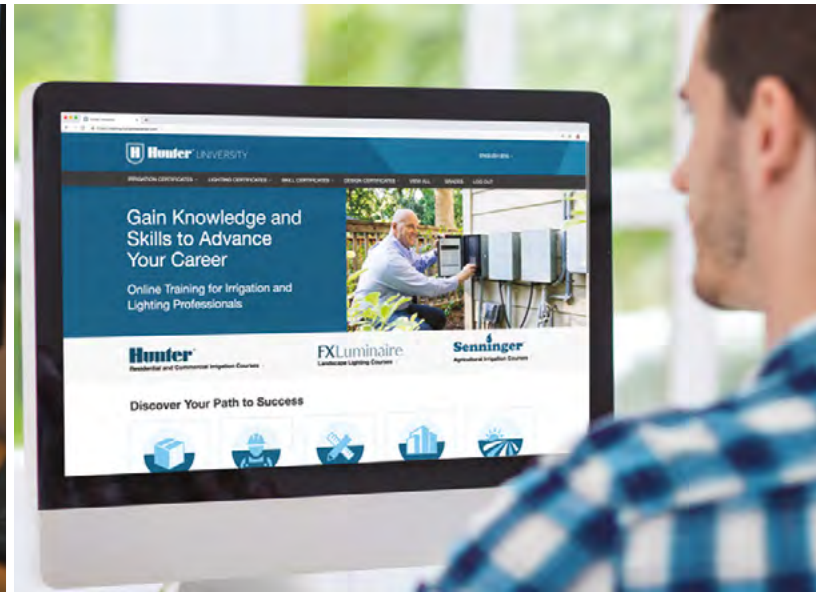
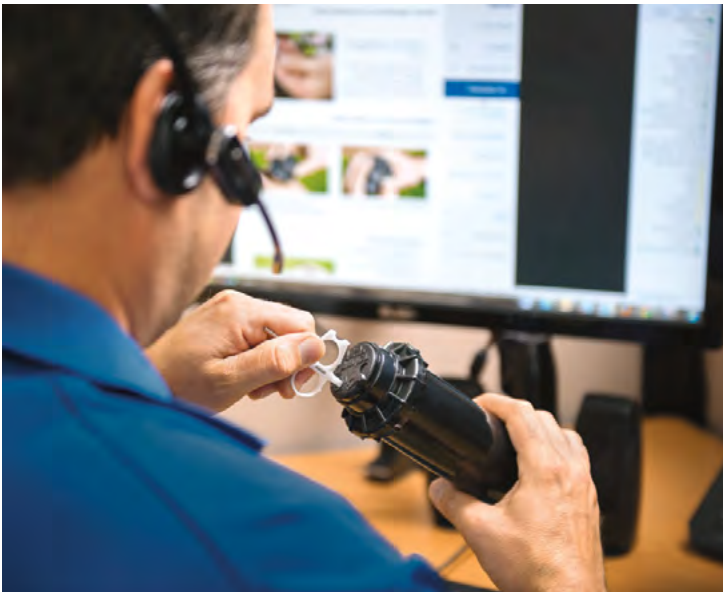


TECHNICAL INFORMATION



TECHNICAL INFORMATION





HUNTER

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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 (■):

$$\begin{aligned} \text{P.R. (in/hr)} &= \frac{\text{Flow Rate (GPM) for any Arc} \times 34,650}{\text{Degrees of Arc} \times \text{Head Spacing (ft.)} \times \text{Row Spacing (ft.)}} \\ \text{P.R. (mm/hr)} &= \frac{\text{Flow Rate (m}^3\text{/hr) for any Arc} \times 360,000}{\text{Degrees of Arc} \times \text{Head Spacing (m)} \times \text{Row Spacing (m)}} \\ \text{P.R. (mm/hr)} &= \frac{\text{Flow Rate (l/min) for any Arc} \times 21,600}{\text{Degrees of Arc} \times \text{Head Spacing (m)} \times \text{Row Spacing (m)}} \end{aligned}$$

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 (▲):

$$\begin{aligned} \text{P.R. (in/hr)} &= \frac{\text{Flow Rate (GPM) for any Arc} \times 34,650}{\text{Degrees of Arc} \times (\text{Head Spacing})^2 \times 0.866} \\ \text{P.R. (mm/hr)} &= \frac{\text{Flow Rate (m}^3\text{/hr) for any Arc} \times 360,000}{\text{Degrees of Arc} \times (\text{Head Spacing})^2 \times 0.866} \\ \text{P.R. (mm/hr)} &= \frac{\text{Flow Rate (l/min) for any Arc} \times 21,600}{\text{Degrees of Arc} \times (\text{Head Spacing})^2 \times 0.866} \end{aligned}$$

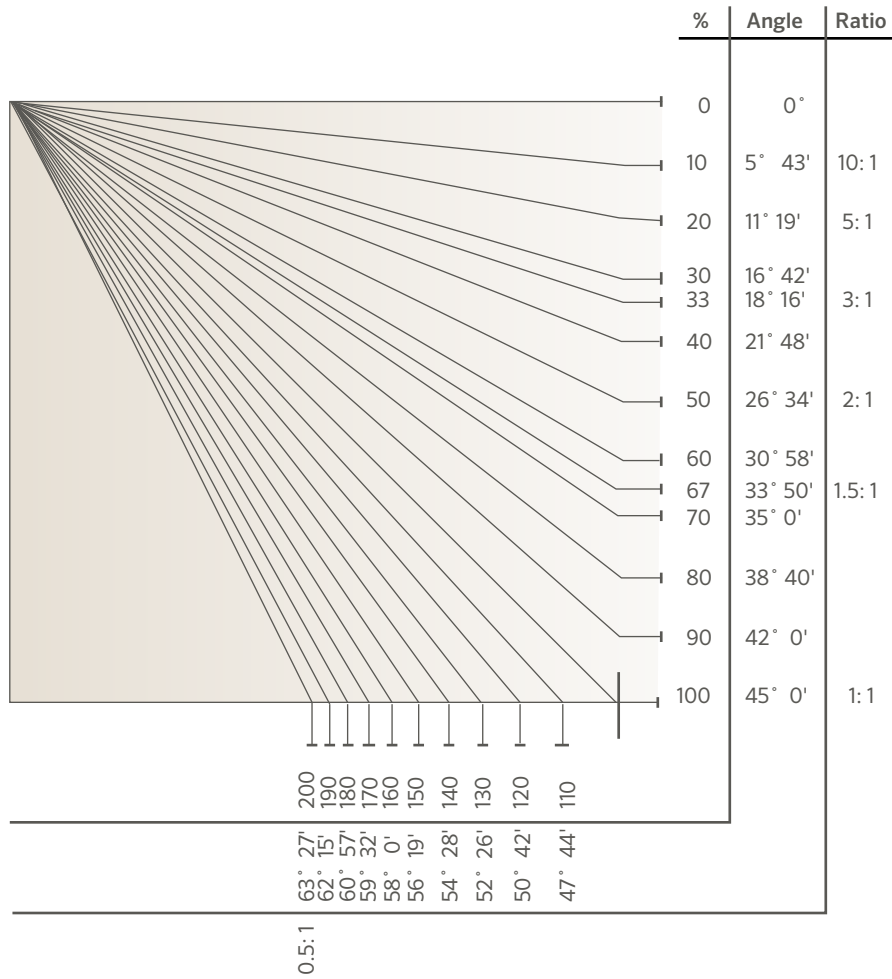
Total Area Method

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.

$$\begin{aligned} \text{P.R. (in/hr)} &= \frac{\text{Flow (GPM)} \times 96.25}{\text{Total Area (ft.)}} \\ \text{P.R. (mm/hr)} &= \frac{\text{Flow (m}^3\text{/hr)} \times 1,000}{\text{Total Area (m}^2\text{)}} \\ \text{P.R. (mm/hr)} &= \frac{\text{Flow (l/min)} \times 60}{\text{Total Area (m}^2\text{)}} \end{aligned}$$

SLOPE EQUIVALENTS/IRRIGATION

PERCENT, ANGLE, RATIO



SLOPE IRRIGATION: Maximum precipitation rates for slopes in in/hr

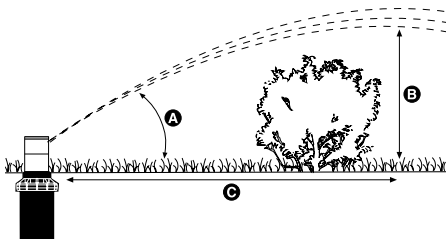
Soil Texture	0 to 5% Slope		5 to 8% Slope		8 to 12% Slope		12%+ Slope	
	Cover	Bare	Cover	Bare	Cover	Bare	Cover	Bare
Coarse sandy soils	2.0	2.0	2.0	1.5	1.5	1.0	1.0	0.5
Coarse sandy soils over compact subsoils	1.75	1.5	1.25	1.0	1.0	0.75	0.75	0.4
Light sandy loams uniform	1.75	1.0	1.25	0.8	1.0	0.6	0.75	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 Left Strip	40 40	16 16	19" 18"	Varies Varies	
PGJ	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	12	5'	20	
	3.0	40	15	5'	20	
	4.0	40	15	5'	22	
	5.0	40	15	6'	24	
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
	5	50	25	11	28
	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
I-40/I-50-ON	25	70	25	17	48
	28	70	25	17	50
	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	15	80	22.5	12	30
	18	80	22.5	13	32
	20	80	22.5	14	34
	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 Low-Angle	15	80	22.5	12	32
	18	80	22.5	13	34
	20	80	22.5	14	38
	23	80	22.5	14	41
	25	80	22.5	15	46
	33	80	22.5	15	46
	38	80	22.5	16	50
	43	80	22.5	16	54
	48	80	22.5	17	56
	53	80	22.5	17	58
	63	80	22.5	18	62
	73	80	22.5	19	68
I-80 & I-90 ADV Low-Angle	15	80	22.5	6	28
	18	80	22.5	7	30
	20	80	22.5	7	32
	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
I-80-ON & I-90 36V	15	80	22.5	6	28
	18	80	22.5	7	30
	20	80	22.5	7	32
	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	

FRICITION LOSS CHARTS

WATER METER PRESSURE LOSS CHART: Typical Pressure Loss (PSI)

Flow (GPM)	5/8"	3/4"	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.

FRICITION LOSS CHARTS - TYPE K COPPER TUBING

ASTM B88 C = 140 • PSI loss per 100 ft. of pipe

Nominal Size Pipe ID Pipe OD Avg. Wall	½"		¾"		1"		1¼"		1½"		2"		2½"		3"				
	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			
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			
26							10.71	20.69	6.84	6.95	4.84	2.99	2.76	0.77	1.79	0.27			
28							11.54	23.73	7.37	7.97	5.21	3.43	2.98	0.88	1.93	0.30			
30							12.36	26.96	7.90	9.06	5.58	3.89	3.19	1.00	2.06	0.35			
32							13.19	30.39	8.42	10.21	5.95	4.39	3.40	1.12	2.20	0.39			
34							14.01	34.00	8.95	11.42	6.32	4.91	3.61	1.26	2.34	0.44			
36							14.84	37.79	9.48	12.70	6.70	5.46	3.83	1.40	2.48	0.49			
38							15.66	41.77	10.00	14.04	7.07	6.03	4.04	1.55	2.61	0.54			
40							16.48	45.94	10.53	15.43	7.44	6.63	4.25	1.70	2.75	0.59			
42							17.31	50.28	11.06	16.89	7.81	7.26	4.47	1.86	2.89	0.65			
44									11.58	18.41	8.18	7.91	4.68	2.03	3.03	0.70			
46									12.11	19.99	8.56	8.59	4.89	2.20	3.17	0.76			
48									12.63	21.63	8.93	9.30	5.10	2.38	3.30	0.83			
50									13.16	23.33	9.30	10.03	5.32	2.57	3.44	0.89			
55									14.48	27.84	10.23	11.96	5.85	3.07	3.78	1.06			
60									15.79	32.70	11.16	14.05	6.38	3.60	4.13	1.25			
65									17.11	37.93	12.09	16.30	6.91	4.18	4.47	1.45			
70									18.43	43.51	13.02	18.70	7.44	4.79	4.82	1.66			
75											13.95	21.24	7.97	5.45	5.16	1.89			
80											14.88	23.94	8.51	6.14	5.50	2.13			
85											15.81	26.79	9.04	6.87	5.85	2.38			
90											16.74	29.78	9.57	7.63	6.19	2.65			
95											17.67	32.91	10.10	8.44	6.54	2.93			
100											18.60	36.19	10.63	9.28	6.88	3.22			
110													11.69	11.07	7.57	3.84			
120													12.76	13.01	8.26	4.51			
130													13.82	15.08	8.95	5.23			
140													14.88	17.30	9.63	6.00			
150													15.95	19.66	10.32	6.82			
160													17.01	22.16	11.01	7.69			
170													18.07	24.79	11.70	8.60			
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.

TECHNICAL INFORMATION

FRICITION LOSS CHARTS - TYPE L COPPER TUBING

ASTM B88 C = 140 • PSI loss per 100 ft. of pipe																			
Nominal Size	½"		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				
Pipe OD	0.625		0.750		0.875		1.125		1.375		1.625		2.125		2.625				
Avg. Wall	0.040		0.042		0.045		0.050		0.055		0.060		0.070		0.080				
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			
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			
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			
26							10.10	17.90	6.63	6.43	4.68	2.76	2.69	0.72	1.75	0.25			
28							10.87	20.54	7.14	7.38	5.04	3.17	2.90	0.82	1.88	0.29			
30							11.65	23.33	7.65	8.38	5.40	3.60	3.11	0.94	2.01	0.33			
32							12.43	26.30	8.16	9.45	5.76	4.06	3.31	1.05	2.15	0.37			
34							13.20	29.42	8.67	10.57	6.12	4.54	3.52	1.18	2.28	0.41			
36							13.98	32.71	9.18	11.75	6.48	5.05	3.73	1.31	2.42	0.46			
38							14.76	36.15	9.69	12.99	6.84	5.58	3.93	1.45	2.55	0.51			
40							15.53	39.75	10.20	14.28	7.21	6.13	4.14	1.59	2.69	0.56			
42							16.31	43.51	10.71	15.63	7.57	6.71	4.35	1.75	2.82	0.61			
44									11.22	17.04	7.93	7.32	4.56	1.90	2.95	0.66			
46									11.73	18.50	8.29	7.94	4.76	2.07	3.09	0.72			
48									12.24	20.02	8.65	8.60	4.97	2.24	3.22	0.78			
50									12.75	21.59	9.01	9.27	5.18	2.41	3.36	0.84			
55									14.02	25.76	9.91	11.06	5.70	2.88	3.69	1.00			
60									15.30	30.26	10.81	13.00	6.21	3.38	4.03	1.18			
65									16.57	35.10	11.71	15.07	6.73	3.92	4.36	1.37			
70									17.85	40.26	12.61	17.29	7.25	4.50	4.70	1.57			
75											13.51	19.65	7.77	5.11	5.04	1.78			
80											14.41	22.14	8.28	5.76	5.37	2.01			
85											15.31	24.77	8.80	6.44	5.71	2.25			
90											16.21	27.54	9.32	7.16	6.04	2.50			
95											17.11	30.44	9.84	7.91	6.38	2.76			
100											18.01	33.47	10.35	8.70	6.71	3.03			
110													11.39	10.38	7.39	3.62			
120													12.43	12.20	8.06	4.25			
130													13.46	14.15	8.73	4.93			
140													14.50	16.23	9.40	5.66			
150													15.53	18.44	10.07	6.43			
160													16.57	20.78	10.74	7.24			
170													17.60	23.25	11.41	8.11			
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.

FRICITION LOSS CHARTS - SCHEDULE 40 STEEL

ASTM B53 C = 100 • PSI loss per 100 ft. of pipe

Nominal Size Pipe ID Pipe OD Avg. Wall	½"		¾"		1"		1¼"		1½"		2"		2½"		3"		4"	
	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.

TECHNICAL INFORMATION

FRICITION 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 Flow ID Pipe OD Avg. Wall Min. Wall	½"		¾"		1"		1¼"		1½"		2"		2½"		3"		4"	
	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.

FRICITION 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.

TECHNICAL INFORMATION

FRICITION 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	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	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	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	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	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	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	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	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	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	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	3.12	0.39	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	3.40	0.46	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	3.68	0.53	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	3.97	0.61	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	4.25	0.69	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	4.54	0.78	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	2.23	0.13	2.23	0.13	2.23	0.13		
180					12.51	8.62	8.45	3.32	5.10	0.97	2.36	0.15	2.36	0.15	2.36	0.15	2.36	0.15		
190					13.20	9.53	8.92	3.67	5.39	1.08	2.49	0.16	2.49	0.16	2.49	0.16	2.49	0.16		
200					13.90	10.48	9.39	4.03	5.67	1.18	2.62	0.18	2.62	0.18	2.62	0.18	2.62	0.18		
220					15.29	12.50	10.33	4.81	6.24	1.41	2.88	0.22	2.88	0.22	2.88	0.22	2.88	0.22		
240					16.68	14.69	11.27	5.66	6.80	1.66	3.14	0.25	3.14	0.25	3.14	0.25	3.14	0.25		
260					12.21	6.56	7.37	1.92	3.40	0.29	3.40	0.29	3.40	0.29	3.40	0.29	3.40	0.29		
280					13.15	7.52	7.94	2.20	3.67	0.34	3.67	0.34	3.67	0.34	3.67	0.34	3.67	0.34		
300					14.08	8.55	8.50	2.50	3.93	0.38	3.93	0.38	3.93	0.38	3.93	0.38	3.93	0.38		
320					15.02	9.64	9.07	2.82	4.19	0.43	4.19	0.43	4.19	0.43	4.19	0.43	4.19	0.43		
340					15.96	10.78	9.64	3.16	4.45	0.48	4.45	0.48	4.45	0.48	4.45	0.48	4.45	0.48		
360					16.90	11.98	10.20	3.51	4.71	0.54	4.71	0.54	4.71	0.54	4.71	0.54	4.71	0.54		
380					10.77	3.88	4.97	0.59	4.97	0.59	4.97	0.59	4.97	0.59	4.97	0.59	4.97	0.59		
400					11.34	4.27	5.24	0.65	5.24	0.65	5.24	0.65	5.24	0.65	5.24	0.65	5.24	0.65		
420					11.90	4.67	5.50	0.71	5.50	0.71	5.50	0.71	5.50	0.71	5.50	0.71	5.50	0.71		
440					12.47	5.09	5.76	0.78	5.76	0.78	5.76	0.78	5.76	0.78	5.76	0.78	5.76	0.78		
460					13.04	5.53	6.02	0.84	6.02	0.84	6.02	0.84	6.02	0.84	6.02	0.84	6.02	0.84		
480					13.61	5.98	6.28	0.91	6.28	0.91	6.28	0.91	6.28	0.91	6.28	0.91	6.28	0.91		
500					14.17	6.45	6.54	0.98	6.54	0.98	6.54	0.98	6.54	0.98	6.54	0.98	6.54	0.98		

Notes: Shaded areas represent velocities over 5 fps. Use with caution when water hammer is a concern.

TECHNICAL INFORMATION

FRICION LOSS CHARTS - SCHEDULE 40 PVC IPS PLASTIC PIPE

ASTM D1785 (1120, 1220) C = 150 • PSI loss per 100 ft. of pipe

Nominal Size Flow ID Pipe OD Avg. Wall Min. Wall	½"		¾"		1"		1¼"		1½"		2"		2½"		3"		4"		5"	
	0.602 0.840 0.119 0.109	0.804 1.050 0.123 0.113	1.029 1.315 0.143 0.133	1.360 1.660 0.150 0.140	1.590 1.900 0.155 0.145	2.047 2.375 0.164 0.154	2.445 2.875 0.215 0.203	3.042 3.500 0.229 0.216	3.998 4.500 0.251 0.237	5.031 6.031 0.297 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		

TECHNICAL INFORMATION

Notes: Shaded areas represent velocities over 5 fps. Use with caution when water hammer is a concern.

FRICION 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	
	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.

FRICION LOSS CHARTS

TABLE OF APPROXIMATE PRESSURE LOSSES FOR PIPE FITTINGS

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

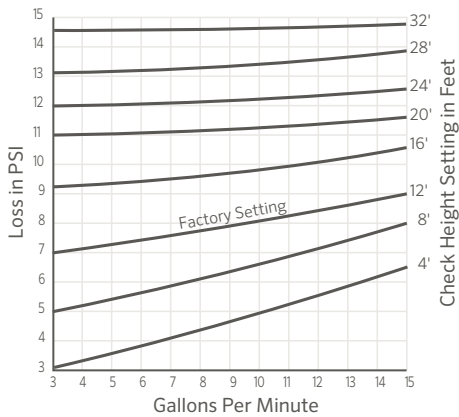
To use this chart, multiply the approximate "equivalent feet of pipe" value by the proper pipe pressure loss per 100 ft. rating, then divide by 100. The result is the fitting loss in PSI.

Note:

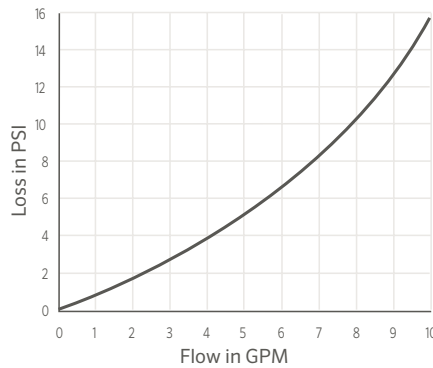
It is recommended that the charts above only be used when the manufacturer's recommended pressure loss values are not available.

ACCESSORY PRESSURE LOSS CHARTS

HCV PRESSURE LOSS CHART



SWING JOINT FRICTION LOSS



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, ONE WAY						
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.

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 V. The valve has a minimum operating voltage of 20 V and an inrush current of 370 mA (0.37 A).

$$R = \frac{1,000 \times 4}{2(1,800) \times 0.37}$$

$$R = \frac{4,000}{1,332}$$

$$R = 3.00 \text{ ohms}/1,000 \text{ ft.}$$

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.

ADDITIONAL DATA

WIRE SIZE REFERENCE CHART

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

Notes:

Approximate number of wires to be installed in conduit or tubing.
Maximum number of wires in conduit or sleeving.

ESTIMATING PIPE SIZE

Nominal Pipe Size	Approximate String Length in Inches		
	Copper Pipe	Galvanized (Sch. 40 Steel)	PVC Pipe
½"	2"	2⅝"	2⅝"
⅝"	2⅜"		
¾"	2¾"	3⅝"	3⅝"
1"	3½"	4⅞"	4⅞"
1¼"	4⅝"	5⅜"	5⅜"
1½"	5⅞"	6"	6"
2"	6¾"	7⅞"	7⅞"

Notes:

To determine the nominal size of a pipe, wrap a string around the pipe and compare its length to the chart above.

CLIMATE ETp TABLE

Climate*	Inches Daily
Cool Humid	0.10 to 0.15
Cool Dry	0.15 to 0.20
Warm Humid	0.15 to 0.20
Warm Dry	0.20 to 0.25
Hot Humid	0.20 to 0.30
Hot Dry	0.30 to 0.45

Notes:

- * Cool = under 70°F as an average midsummer high
- * Warm = between 70° and 90° F as midsummer highs
- * Hot = over 90° F
- * Humid = over 50% as average midsummer relative humidity (dry = under 50%)

STATEMENT OF WARRANTY

Hunter Residential and Commercial Irrigation

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 Relief Valves, RZB
	ROTORS	PGP®-ADJ, PGJ, HCV	CONTROLLERS	BTT, HC, HPC, NODE, NODE-BT, Pro-C Families, Pro-HC, PSR, ROAM, X2, XC Hybrid, X-Core, and WAND
TWO YEARS	SPRAYS	PS Ultra Family, SJ, FLEXsg, HSBE Family	SENSORS	HC Flow Meter
	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
	CONTROLLERS	ROAM XL, EZ Decoder System	MP ROTATOR	All
FIVE YEARS	ROTORS	PGP Ultra, I-20, I-25, I-40, I-50, I-80, and I-90 Families	CENTRAL	IMMS Central Control Products, A2CNWRK, LANKIT, WIFIKIT
	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
	CONTROLLERS	ACC/ACC2 Families, HCC, ICC2, ICD Decoders, ICD-HP, and I-Core/DUAL Families		

Hunter Golf and ST System Irrigation Component* Warranty Products

Hunter will unconditionally 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
	GOLF ROTORS	TTS-800 Series, G-800 Series, G-900 Series, B-Series, RT Series
THREE YEARS	GOLF DECODERS	Pilot 100, Pilot 200, Pilot 400, Pilot 600
	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.
FIVE YEARS	SWING JOINTS	HSJ-0, HSJ-1, HSJ-2, HSJ-3
	ST ROTORS	ST-90, STG-900, ST-1200, ST-1600
	ST ACCESSORIES	All model “numbers” 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 spray, 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.



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 HunterTechnical.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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