

Hunter®

2016 Product Catalogue

RESIDENTIAL, COMMERCIAL, AND GOLF IRRIGATION | *Built on Innovation®*



INNOVATIVE SOLUTIONS FOR PROFESSIONALS THROUGHOUT THE WORLD

Wherever you are, whatever kind of job you're on, Hunter has the professional products to help you be successful. For more than 30 years, we've been dedicated to developing industry innovations and product enhancements for efficient irrigation. The following pages feature our recommended water-saving product combinations to help you and your customers save water in residential, commercial, sports turf, micro irrigation, and golf course applications. From our MP Rotator® to our advanced irrigation controllers, our proven water savers help you create beautiful landscapes while conserving water. Whether you're a fan of one of our best sellers like the PGP® Ultra, or you're a loyal customer of our entire brand, we're proud to be your partner providing the professional solutions you need.

Hunter® | *Built on Innovation®*



Featured Products

Water Saving Systems



Proven Water Savers - a collection of products that work together to irrigate in the most efficient way possible. See our recommended products for a variety of applications.

Page 6

Pressure Regulated Rotors



Our 10 cm PGP® Ultra and 10 and 15 cm I-20 Rotors are now available with built-in pressure regulation to reduce high incoming pressure and prevent misting for optimal efficiency.

Page 28

Eco-Wrap™



Fleece-wrapped professional landscape dripline transports water quickly and delivers it uniformly under turf, in gardens, and around shrubs and trees.

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RESIDENTIAL *Solutions*

Hunter's residential irrigation systems combine efficiency, water savings, and ease of use for jobs of any size. A design featuring the MP Rotator® will achieve distribution uniformity without runoff in a radius range of 1.8 to 10.7 m, so no matter what type of space you're working with, you can help your customers save water while maintaining a beautiful landscape.

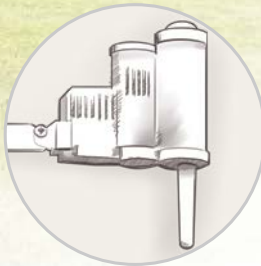
1 Pro-C®



Pro-C – our most robust residential controller easily converts to a smart watering device when paired with Solar Sync.

Page 103

2 Solar Sync®



Solar Sync – uses evapotranspiration (ET) and adjusts the Pro-C's run time daily to apply the right amount of water.

Page 124

3 MP Rotator & PRS 40



MP Rotator – the world's most efficient sprinkler uses multiple streams to deliver water slowly without runoff. PRS40 ensures optimal output pressure for maximum efficiency with the MP Rotator.

Pages 50 and 65

MICRO IRRIGATION Solutions

Hunter's micro irrigation solutions offer efficiency and water savings for the unique needs of challenging spaces. A combination of drip and subsurface products with pressure regulation provide the versatility needed for landscape beds, green walls, green roofs, walkways, and mixed plantings with no overspray or runoff.

1 PCZ-101



PCZ-101 - this kit contains our PGV valve, filter, and 1.7 or 2.8 bar pressure regulator for maximum efficiency and complete zone control.

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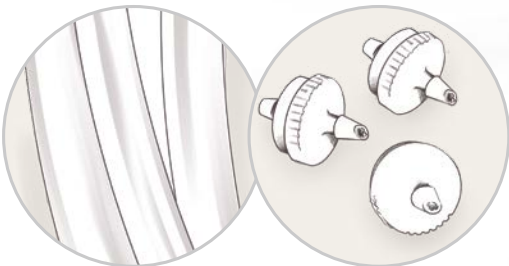
2 Eco Mat®



Eco-Mat - unique subsurface irrigation uses PLD wrapped within a fleece blanket for efficient irrigation with 100% coverage.

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3 PLD & Point Source Emitters



PLD - Professional Landscape Dripline includes a built-in check valve to prevent emitter clogging and water waste. Point Source Drip Emitters deliver the right amount of water slowly, right at the plant.

Pages 136 and 138







COMMERCIAL *Solutions*

For commercial applications and public spaces, Hunter's proven water savers include our most durable commercial rotors with built-in pressure regulation, plus our ACC controller with Solar Sync®. Adding IMMS graphically-based central control simplifies the management of large-scale irrigation systems by monitoring and reporting totals to track water usage and quickly identify plumbing issues.

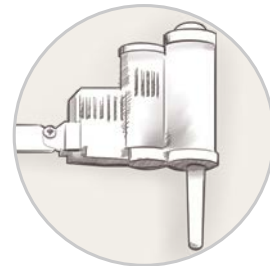
1 I-20 PRB



I-20 PRB – a high-performance rotor with a pressure regulated body for optimal watering efficiency.

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2 Solar Sync



Solar Sync – conserves water by adjusting ACC run times based on ET and local weather conditions.

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3 ACC



ACC – our most advanced large-scale commercial controller works as a stand alone or with IMMS and Solar Sync for the ultimate in smart watering for even the largest properties.

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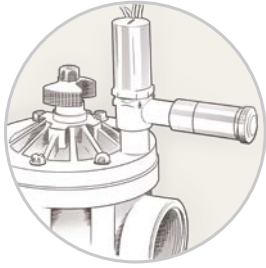
4 IMMS



IMMS – PC-based software for wide area systems management. Optional ET software provides weather-based irrigation when used with Solar Sync.

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1 ICV & Accu-Sync®



2 I-Core®



3 I-40



ICV - our top-of-the-line valve for high-pressure commercial systems with flow control to maximise efficiency. Accu-Sync regulates pressure at the valve to save water and extend the life of the system.

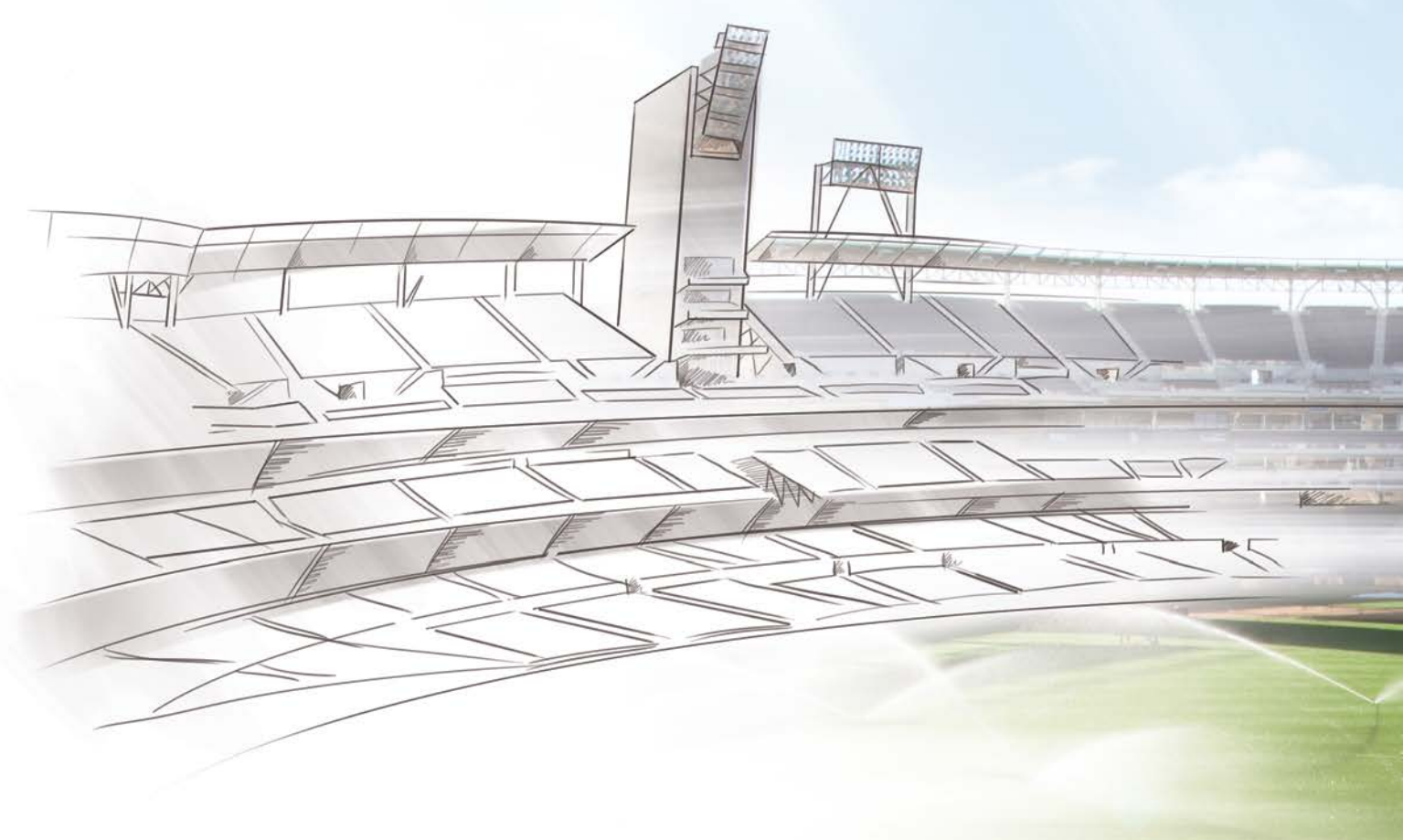
Page 88 and 94

I-Core - our versatile commercial controller saves water with built-in Solar Sync® compatibility, flow monitoring, cycle and soak, programmable rain delay, and more.

Page 104

I-40 - tough stainless steel commercial rotors that deliver water with accuracy for professional results.

Page 35



SPORTS TURF

Solutions

World-class stadiums demand world-class irrigation systems.

Hunter's winning combination includes the most durable and safe sports turf rotors, robust controllers, and trouble-free, reliable valves for the healthiest, most playable turf all season long.



1 Pilot® Controller



Pilot FC - field controller for up to 80 stations allows the flexibility to make adjustments as needed.

Page 182

2 Pilot Software



Pilot Control System - puts you in complete command of your course. Quick and easy to program, Pilot is the only software in the industry with single-screen scheduling. Available in conventional or decoder configurations, Pilot allows you to create and edit schedules out on the course - an industry first.

Page 180

3 G885



G885 - the highest torque output of any golf rotor with full and part circle capabilities, plus Total Top Service (TTS) and Decoder-In-Head (DIH) technology for easy programming.

Page 164

Hunter's Golf irrigation systems provide the unprecedented simplicity of central control with single screen scheduling; the Pilot FC offers a convenient way to make quick and easy adjustments out on the course. Our G880 and G885 rotors are a flexible combination to meet a variety of needs and with total top serviceability (TTS) there's no digging or downtime, so your course is always beautiful and playable.



GOLF COURSE

Solutions







SECTION 01:
ROTORS

ROTORS

ADVANCED FEATURES

RELIABLE STRENGTH & DURABILITY

PRESSURE REGULATED BODY



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

PGP Ultra 10 cm, I-20 10 and 15 cm

STAINLESS STEEL RISER



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

Standard on I-40
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 increases system life.

PGJ, PGP Ultra, I-20, I-25, I-40, 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 mid-range and close-in watering.

I-40, I-90

EASY IN-THE-FIELD IDENTIFICATION

RECLAIMED WATER ID



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

PGJ, PGP® Ultra, I-20, I-25, I-40, I-90

COLOUR-CODED NOZZLES

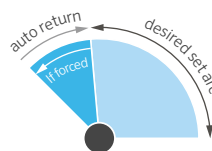


Nozzles are easier to differentiate in the field for simple installation and quick organisation.

I-25, I-40, 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 SET SCREW



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

PGJ, PGP Ultra, I-20

ROTORS COMPARISON CHART

QUICK SPECS		PGJ	SRM	PGP®-ADJ	PGP ULTRA	I-20	I-25	I-40	I-40-ON	I-90
INLET SIZE		½"	½"	¾"	¾"	¾"	1"	1"	1"	1½"
RADIUS	m	4.3-11.6	4.0-9.4	6.4-15.8	4.9-14.0	4.9-14.0	11.9-21.6	13.1-23.3	15.2-23.2	22.3-31.7
FLOW	m³/hr	0.13-1.23	0.08-0.82	0.10-3.22	0.07-3.23	0.07-3.23	0.82-7.24	1.63-6.84	2.75-7.76	6.7-19.04
	l/min	2.2-20.5	1.4-13.7	1.7-53.7	1.2-53.8	1.2-53.8	13.6-120.7	27.2-114.1	45.8-129.4	111.7-317.2
FEATURES										
RECOMMENDED PRESSURE RANGE	bar	1.7-3.8	1.7-3.8	1.7-4.5	1.7-4.5	1.7-4.5	2.5-7.0	2.5-7.0	2.5-7.0	5.5-8.0
	kPa	170-380	170-380	170-450	170-450	170-450	250-700	280-700	280-700	550-800
OPERATING PRESSURE RANGE	bar	1.4-7.0	1.4-7.0	1.4-7.0	1.4-7.0	1.4-7.0	2.8-6.9	2.5-7.0	2.5-7.0	5.0-8.0
	kPa	140-700	140-700	140-700	140-700	140-700	280-690	250-700	250-700	500-800
NOZZLE TRAJECTORY		15°	15°	25°	25°	25°	25°	25°	25°	22.5°
SPECIFIC NOZZLES		---	---	---	Optional	Optional	Pre-Installed	Pre-Installed	Pre-Installed	Pre-Installed
NOZZLE OPTIONS		8	6	27	34	34	12	6	6	16
WARRANTY		2 Years	1 Year	2 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 SET SCREW		●			●	●				
RECLAIMED WATER ID		●			●	●	●	●	●	●
AVAILABLE SHORT RADIUS NOZZLES					●	●				
FLOSTOP® CONTROL						●				
OPPOSING NOZZLE									●	●
STAINLESS STEEL RISER OPTION						●	●	●	●	
OPTIONAL OR FACTORY INSTALLED DRAIN CHECK VALVE		● (2 m)			● (2 m)	● (3 m)	● (3 m)	● (4.5 m)	● (4.5 m)	● (2 m)

PGJ

Radius: **4.3 to 11.6 m**
 Flow: **0.13 to 1.23 m³/hr; 2.2 to 20.5 l/min**
 Inlet: **½"**

FEATURES

- Models: Shrub, 10 cm, 15 cm, 30 cm
- Arc setting: 40° to 360°
- Nozzle choices: 8
- Nozzle range: 0.75 to 5.0
- Standard factory installed nozzle: 2.0 only
- Factory installed rubber cover
- Through-the-top arc adjustment
- QuickCheck™ arc mechanism
- Water lubricated gear-drive
- Warranty period: 2 years
- ▶ Headed and slotted set screw
- ▶ Optional reclaimed water ID
- ▶ Drain check valve (up to 2 m of elevation)

OPERATING SPECIFICATIONS

- Radius: 4.3 to 11.6 m
- Flow: 0.13 to 1.23 m³/hr; 2.2 to 20.5 l/min
- Recommended pressure range: 1.7 to 3.8 bar; 170 to 380 kPa
- Operating pressure range: 1.4 to 7.0 bar; 140 to 700 kPa
- Precipitation rates: 15 mm/hr approximately
- Nozzle trajectory: 15° approximately
- ▶ = *Advanced Feature descriptions on page 18*



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 = 10 cm Pop-up		V = Drain check valve
PGJ-06 = 15 cm Pop-up		R = Drain check valve and reclaimed water ID (pop-up models only)
PGJ-12 = 30 cm Pop-up		

Examples:
 PGJ-04 = 10 cm Pop-up, adjustable arc
 PGJ-06 - V = 15 cm Pop-up, adjustable arc, with drain check valve
 PGJ-12 - R = 30 cm Pop-up, adjustable arc, with drain check valve and reclaimed water ID

ROTORS



PGJ-00
 Overall height: 18 cm
 Exposed diameter: 3 cm
 Inlet size: ½"



PGJ-04
 Overall height: 18 cm
 Pop-up height: 10 cm
 Exposed diameter: 3 cm
 Inlet size: ½"



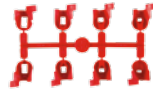
PGJ-06
 Overall height: 23 cm
 Pop-up height: 15 cm
 Exposed diameter: 3 cm
 Inlet size: ½"



PGJ-12
 Overall height: 41 cm
 Pop-up height: 30 cm
 Exposed diameter: 3 cm
 Inlet size: ½"

PGJ RED NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
.75 ● Red	1.7	170	4.3	0.13	2.2	14	17
	2.0	200	4.6	0.14	2.4	14	16
	2.5	250	4.9	0.16	2.7	13	15
	3.0	300	5.2	0.18	3.0	13	15
	3.5	350	5.2	0.19	3.2	14	17
	3.8	380	5.5	0.20	3.4	13	15
1.0 ● Red	1.7	170	5.2	0.18	3.0	13	15
	2.0	200	5.5	0.19	3.2	13	15
	2.5	250	5.5	0.21	3.5	14	16
	3.0	300	5.8	0.23	3.8	14	16
	3.5	350	5.8	0.24	4.1	15	17
	3.8	380	6.1	0.25	4.2	14	16
1.5 ● Red	1.7	170	6.1	0.27	4.5	15	17
	2.0	200	6.4	0.29	4.8	14	16
	2.5	250	6.4	0.32	5.4	16	18
	3.0	300	6.7	0.36	6.0	16	18
	3.5	350	6.7	0.39	6.4	17	20
	3.8	380	7.0	0.40	6.7	16	19
2.0 ● Red	1.7	170	7.0	0.34	5.6	14	16
	2.0	200	7.3	0.37	6.2	14	16
	2.5	250	7.3	0.42	7.1	16	18
	3.0	300	7.6	0.48	8.0	17	19
	3.5	350	7.6	0.53	8.8	18	21
	3.8	380	7.9	0.56	9.3	18	20
2.5 ● Red	1.7	170	7.9	0.46	7.6	15	17
	2.0	200	8.2	0.49	8.1	14	17
	2.5	250	8.2	0.54	9.0	16	18
	3.0	300	8.5	0.59	9.8	16	19
	3.5	350	8.5	0.63	10.5	17	20
	3.8	380	8.8	0.65	10.9	17	19
3.0 ● Red	1.7	170	8.8	0.51	8.5	13	15
	2.0	200	9.1	0.56	9.3	13	15
	2.5	250	9.1	0.64	10.6	15	18
	3.0	300	9.4	0.72	12.0	16	19
	3.5	350	9.4	0.78	13.1	18	20
	3.8	380	9.8	0.82	13.7	17	20
4.0 ● Red	1.7	170	9.8	0.80	13.3	17	19
	2.0	200	10.1	0.83	13.8	16	19
	2.5	250	10.1	0.89	14.8	18	20
	3.0	300	10.4	0.94	15.7	17	20
	3.5	350	10.4	0.98	16.3	18	21
	3.8	380	10.7	1.00	16.7	18	20
5.0 ● Red	1.7	170	10.7	1.02	17.0	18	21
	2.0	200	11.0	1.06	17.6	18	20
	2.5	250	11.0	1.11	18.5	18	21
	3.0	300	11.3	1.17	19.4	18	21
	3.5	350	11.3	1.21	20.1	19	22
	3.8	380	11.6	1.23	20.5	18	21

PGJ NOZZLES



PGJ



Note:

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

SRM


Radius: **4.0 to 9.4 m**
 Flow: **0.08 to 0.82 m³/hr; 1.4 to 13.7 l/min**
 Inlet: **½"**

FEATURES

- Model: 10 cm
- Arc setting: 40° to 360°
- Nozzle choices: 6
- Nozzle range: 0.50 to 3.0
- Standard factory installed nozzle: 3.0 only
- Through-the-top arc adjustment
- QuickCheck™ arc mechanism
- Water lubricated gear-drive
- Warranty period: 1 year

OPERATING SPECIFICATIONS

- Radius: 4.0 to 9.4 m
- Flow: 0.08 to 0.82 m³/hr; 1.4 to 13.7 l/min
- Recommended pressure range: 1.7 to 3.8 bar; 170 to 380 kPa
- Operating pressure range: 1.4 to 7.0 bar; 140 to 700 kPa
- Precipitation rates: 11 mm/hr approximately
- Nozzle trajectory: 15° approximately

SRM		SRM NOZZLES
Model	Description	
SRM-04	10 cm Pop-up, adjustable arc, 6 standard nozzles	

SRM



SRM-04
 Overall height: 18 cm
 Pop-up height: 10 cm
 Exposed diameter: 3 cm
 Inlet size: ½"

SRM GREEN NOZZLE PERFORMANCE DATA

Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
.50 ● Dk. Green	1.7	170	4.0	0.08	1.4	11	12
	2.0	200	4.3	0.09	1.6	10	12
	2.5	250	4.3	0.11	1.8	12	14
	3.0	300	4.6	0.12	2.0	12	13
	3.5	350	4.6	0.13	2.2	13	15
	3.8	380	4.9	0.14	2.3	12	14
.75 ● Dk. Green	1.7	170	4.9	0.13	2.2	11	13
	2.0	200	5.2	0.14	2.4	11	12
	2.5	250	5.2	0.16	2.7	12	14
	3.0	300	5.5	0.18	3.0	12	14
	3.5	350	5.5	0.19	3.2	13	15
	3.8	380	5.8	0.20	3.4	12	14
1.0 ● Dk. Green	1.7	170	5.8	0.18	2.9	11	12
	2.0	200	6.1	0.19	3.2	10	12
	2.5	250	6.1	0.21	3.5	11	13
	3.0	300	6.4	0.24	3.9	12	13
	3.5	350	6.4	0.25	4.2	12	14
	3.8	380	6.7	0.26	4.4	12	14
1.5 ● Dk. Green	1.7	170	6.7	0.27	4.5	12	14
	2.0	200	7.0	0.29	4.8	12	14
	2.5	250	7.0	0.32	5.4	13	15
	3.0	300	7.3	0.36	6.0	13	16
	3.5	350	7.3	0.39	6.5	15	17
	3.8	380	7.6	0.40	6.7	14	16
2.0 ● Dk. Green	1.7	170	7.3	0.35	5.8	13	15
	2.0	200	7.9	0.38	6.3	12	14
	2.5	250	7.9	0.43	7.1	14	16
	3.0	300	8.2	0.48	8.0	14	16
	3.5	350	8.2	0.53	8.8	16	18
	3.8	380	8.5	0.55	9.2	15	17
3.0 ● Dk. Green	1.7	170	8.2	0.51	8.5	15	17
	2.0	200	8.5	0.56	9.3	15	18
	2.5	250	8.5	0.64	10.6	17	20
	3.0	300	9.1	0.72	12.0	17	20
	3.5	350	9.1	0.78	13.1	19	22
	3.8	380	9.4	0.82	13.7	18	21

Note:

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



Radius: **6.4 to 15.8 m**
 Flow: **0.10 to 3.22 m³/hr; 1.7 to 53.7 l/min**
 Inlet: **3/4"**

FEATURES

- Model: 10 cm
- Arc setting: 40° to 360°
- Factory installed rubber cover
- Through-the-top arc adjustment
- QuickCheck™ arc mechanism
- Water lubricated gear-drive
- Nozzle choices: 27 total
- Nozzle racks: Red, Blue, Grey Low Angle
- Warranty period: 2 years



PGP-ADJ
 Overall height: 19 cm
 Pop-up height: 10 cm
 Exposed diameter: 4 cm
 Inlet size: 3/4"

ROTORS

OPERATING SPECIFICATIONS

- Radius: 6.4 to 15.8 m
- Flow: 0.10 to 3.22 m³/hr; 1.7 to 53.7 l/min
- Recommended pressure range: 1.7 to 4.5 bar; 170 to 450 kPa
- Operating pressure range: 1.4 to 7.0 bar; 140 to 700 kPa
- Precipitation rates: 10 mm/hr approximately
- Nozzle trajectory: Standard = 25°, Low Angle = 13°



PGP-ADJ
 Easy arc and radius adjustment

PGP-ADJ – SPECIFICATION BUILDER: ORDER 1 + 2 + 3		
1 Model	2 Standard Features	3 Feature Options
PGP-ADJ-B = 10 cm Pop-up	Adjustable arc with Blue nozzle rack	1.5 to 4.0 = Factory-installed Blue nozzle number
PGP-ADJ = 10 cm Pop-up	Adjustable arc with Red nozzle rack	#5 to #8 = Factory-installed Red nozzle number #7 = Factory-installed Red nozzle number

Examples:
 PGP-ADJ = 10 cm Pop-up, adjustable arc
 PGP-ADJ-B - 3.0 = 10 cm Pop-up, adjustable arc, and #3.0 Blue nozzle
 PGP-ADJ - 07 = 10 cm Pop-up, adjustable arc, and #7 Red nozzle

PGP Red Nozzle



ROTORS

PGP® BLUE NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m³/hr	l/min	■	▲
1.5 ● Blue	1.7	170	8.8	0.27	4.5	7	8
	2.0	200	9.1	0.29	4.8	7	8
	2.5	250	9.4	0.32	5.4	7	8
	3.0	300	9.8	0.35	5.9	7	9
	3.5	350	9.8	0.38	6.4	8	9
	4.0	400	9.8	0.41	6.8	9	10
4.5	450	9.4	0.43	7.2	10	11	
2.0 ● Blue	1.7	170	10.1	0.32	5.4	6	7
	2.0	200	10.1	0.35	5.8	7	8
	2.5	250	10.1	0.39	6.5	8	9
	3.0	300	10.4	0.43	7.2	8	9
	3.5	350	10.4	0.47	7.8	9	10
	4.0	400	10.4	0.50	8.3	9	11
4.5	450	10.4	0.53	8.8	10	11	
2.5 ● Blue	1.7	170	10.1	0.39	6.6	8	9
	2.0	200	10.4	0.43	7.1	8	9
	2.5	250	10.7	0.48	8.0	8	10
	3.0	300	10.7	0.54	8.9	9	11
	3.5	350	10.7	0.58	9.7	10	12
	4.0	400	10.7	0.62	10.4	11	13
4.5	450	10.7	0.66	11.1	12	13	
3.0 ● Blue	1.7	170	10.7	0.50	8.4	9	10
	2.0	200	10.7	0.54	9.1	10	11
	2.5	250	11.0	0.61	10.2	10	12
	3.0	300	11.6	0.68	11.4	10	12
	3.5	350	11.9	0.74	12.3	10	12
	4.0	400	11.9	0.79	13.2	11	13
4.5	450	11.9	0.84	14.0	12	14	
4.0 ● Blue	1.7	170	11.3	0.68	11.3	11	12
	2.0	200	11.6	0.73	12.2	11	13
	2.5	250	11.9	0.81	13.6	12	13
	3.0	300	12.2	0.90	15.0	12	14
	3.5	350	12.2	0.97	16.2	13	15
	4.0	400	12.5	1.04	17.3	13	15
4.5	450	12.5	1.10	18.3	14	16	
5.0 ● Blue	1.7	170	11.3	0.84	14.0	13	15
	2.0	200	11.6	0.91	15.2	14	16
	2.5	250	11.9	1.02	17.1	15	17
	3.0	300	12.8	1.14	19.0	14	16
	3.5	350	12.8	1.24	20.6	15	17
	4.0	400	12.8	1.32	22.1	16	19
4.5	450	12.8	1.41	23.4	17	20	
6.0 ● Blue	1.7	170	11.6	1.01	16.8	15	17
	2.0	200	11.9	1.09	18.2	15	18
	2.5	250	12.2	1.22	20.4	16	19
	3.0	300	13.1	1.36	22.7	16	18
	3.5	350	13.1	1.47	24.5	17	20
	4.0	400	13.4	1.57	26.2	18	20
4.5	450	13.4	1.67	27.9	19	21	
8.0 ● Blue	1.7	170	11.3	1.35	22.5	21	25
	2.0	200	11.9	1.46	24.3	21	24
	2.5	250	12.5	1.63	27.2	21	24
	3.0	300	13.4	1.81	30.2	20	23
	3.5	350	13.7	1.95	32.6	21	24
	4.0	400	14.0	2.09	34.8	21	25
4.5	450	14.0	2.22	36.9	23	26	

PGP GREY LOW ANGLE NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m³/hr	l/min	■	▲
4 ● LA Grey	1.7	170	6.4	0.30	4.9	14	17
	2.0	200	6.7	0.32	5.3	14	16
	2.5	250	7.0	0.35	5.9	14	17
	3.0	300	7.3	0.39	6.5	15	17
	3.5	350	7.9	0.42	7.0	13	15
	4.0	400	8.5	0.45	7.5	12	14
4.5	450	8.5	0.47	7.9	13	15	
5 ● LA Grey	1.7	170	7.3	0.33	5.6	12	14
	2.0	200	7.6	0.36	6.0	12	14
	2.5	250	7.9	0.40	6.7	13	15
	3.0	300	8.2	0.45	7.4	13	15
	3.5	350	8.5	0.48	8.0	13	15
	4.0	400	8.8	0.52	8.6	13	15
4.5	450	9.1	0.55	9.1	13	15	
6 ● LA Grey	1.7	170	8.8	0.44	7.3	11	13
	2.0	200	9.1	0.47	7.9	11	13
	2.5	250	9.4	0.53	8.8	12	14
	3.0	300	9.8	0.59	9.8	12	14
	3.5	350	10.1	0.64	10.6	13	15
	4.0	400	10.7	0.68	11.3	12	14
4.5	450	10.7	0.72	12.0	13	15	
7 ● LA Grey	1.7	170	8.5	0.58	9.7	16	18
	2.0	200	8.8	0.62	10.3	16	18
	2.5	250	9.4	0.68	11.4	15	18
	3.0	300	10.1	0.75	12.5	15	17
	3.5	350	10.7	0.80	13.3	14	16
	4.0	400	11.3	0.85	14.1	13	15
4.5	450	11.3	0.89	14.8	14	16	
8 ● LA Grey	1.7	170	9.1	0.71	11.8	17	20
	2.0	200	9.4	0.76	12.7	17	20
	2.5	250	9.8	0.84	14.1	18	20
	3.0	300	10.4	0.93	15.5	17	20
	3.5	350	11.3	1.00	16.6	16	18
	4.0	400	11.6	1.06	17.6	16	18
4.5	450	11.6	1.12	18.6	17	19	
9 ● LA Grey	1.7	170	9.8	0.89	14.9	19	22
	2.0	200	10.1	0.96	16.0	19	22
	2.5	250	10.7	1.07	17.9	19	22
	3.0	300	11.3	1.19	19.8	19	22
	3.5	350	12.2	1.28	21.3	17	20
	4.0	400	12.8	1.37	22.8	17	19
4.5	450	12.8	1.45	24.1	18	20	
10 ● LA Grey	1.7	170	10.1	1.17	19.5	23	27
	2.0	200	10.7	1.26	21.0	22	26
	2.5	250	11.3	1.40	23.4	22	25
	3.0	300	11.6	1.55	25.9	23	27
	3.5	350	12.2	1.67	27.8	22	26
	4.0	400	12.8	1.78	29.7	22	25
4.5	450	12.8	1.89	31.4	23	27	

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

PGP NOZZLES



Blue
(P/N 665300)



Grey
(P/N 233200)



PGP® RED NOZZLE PERFORMANCE DATA								PGP RED NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr		Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲		bar	kPa		m ³ /hr	l/min	■	▲
1 Red	1.7	170	8.2	0.10	1.7	3	3	8 Red	1.7	170	11.0	0.66	11.0	11	13
	2.0	200	8.5	0.11	1.8	3	3		2.0	200	11.3	0.71	11.8	11	13
	2.5	250	8.5	0.13	2.1	4	4		2.5	250	11.6	0.79	13.2	12	14
	3.0	300	8.8	0.15	2.4	4	4		3.0	300	11.9	0.87	14.5	12	14
	3.5	350	8.8	0.16	2.7	4	5		3.5	350	12.5	0.94	15.6	12	14
	4.0	400	9.1	0.18	2.9	4	5		4.0	400	12.5	1.00	16.6	13	15
	4.5	450	9.1	0.19	3.2	5	5	4.5	450	12.8	1.05	17.6	13	15	
2 Red	1.7	170	8.5	0.14	2.4	4	5	9 Red	1.7	170	11.3	0.73	12.2	11	13
	2.0	200	8.8	0.16	2.6	4	5		2.0	200	11.6	0.80	13.4	12	14
	2.5	250	8.8	0.17	2.9	4	5		2.5	250	11.6	0.92	15.4	14	16
	3.0	300	9.1	0.19	3.2	5	5		3.0	300	12.5	1.05	17.5	13	16
	3.5	350	9.1	0.21	3.5	5	6		3.5	350	13.4	1.15	19.2	13	15
	4.0	400	9.4	0.22	3.7	5	6		4.0	400	13.4	1.25	20.9	14	16
	4.5	450	9.4	0.23	3.9	5	6	4.5	450	13.7	1.35	22.4	14	17	
3 Red	1.7	170	8.8	0.18	3.0	5	5	10 Red	2.0	200	12.2	1.14	19.0	15	18
	2.0	200	9.1	0.20	3.3	5	5		2.5	250	12.8	1.29	21.4	16	18
	2.5	250	9.1	0.22	3.7	5	6		3.0	300	13.4	1.44	24.0	16	18
	3.0	300	9.4	0.25	4.1	6	6		3.5	350	14.0	1.56	26.1	16	18
	3.5	350	9.4	0.27	4.5	6	7		4.0	400	14.3	1.68	28.0	16	19
	4.0	400	9.8	0.29	4.8	6	7		4.5	450	14.3	1.79	29.9	17	20
	4.5	450	9.8	0.31	5.1	6	7	5.0	500	14.6	1.90	31.7	18	21	
4 Red	1.7	170	9.4	0.24	4.1	5	6	11 Red	2.0	200	12.8	1.55	25.9	19	22
	2.0	200	9.8	0.27	4.4	6	6		2.5	250	13.7	1.73	28.7	18	21
	2.5	250	9.8	0.30	5.0	6	7		3.0	300	14.0	1.90	31.7	19	22
	3.0	300	10.1	0.34	5.6	7	8		3.5	350	14.6	2.05	34.1	19	22
	3.5	350	10.1	0.37	6.2	7	8		4.0	400	14.9	2.18	36.3	20	23
	4.0	400	10.4	0.40	6.6	7	9		4.5	450	15.2	2.30	38.4	20	23
	4.5	450	10.4	0.43	7.1	8	9	5.0	500	15.5	2.42	40.4	20	23	
5 Red	1.7	170	10.1	0.33	5.5	7	8	12 Red	2.0	200	12.8	2.03	33.8	25	29
	2.0	200	10.4	0.36	5.9	7	8		2.5	250	13.4	2.26	37.7	25	29
	2.5	250	10.4	0.39	6.5	7	8		3.0	300	14.3	2.51	41.8	24	28
	3.0	300	11.0	0.43	7.2	7	8		3.5	350	14.6	2.70	45.0	25	29
	3.5	350	11.6	0.46	7.7	7	8		4.0	400	14.9	2.88	48.1	26	30
	4.0	400	11.6	0.49	8.1	7	8		4.5	450	15.2	3.06	50.9	26	30
	4.5	450	11.6	0.51	8.6	8	9	5.0	500	15.8	3.22	53.7	26	30	
6 Red	1.7	170	10.1	0.42	6.9	8	10	<p>Note: All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.</p>							
	2.0	200	10.4	0.45	7.5	8	10								
	2.5	250	10.7	0.51	8.5	9	10								
	3.0	300	11.0	0.57	9.4	9	11								
	3.5	350	11.6	0.61	10.2	9	11								
	4.0	400	11.6	0.66	10.9	10	11								
	4.5	450	11.9	0.70	11.6	10	11								
7 Red	1.7	170	10.1	0.54	9.0	11	12								
	2.0	200	10.4	0.58	9.7	11	12								
	2.5	250	11.0	0.65	10.8	11	12								
	3.0	300	11.6	0.72	12.0	11	12								
	3.5	350	12.2	0.78	12.9	10	12								
	4.0	400	12.2	0.83	13.8	11	13								
	4.5	450	12.2	0.88	14.6	12	14								

PGP NOZZLES



Red (P/N 130900)



ROTORS

PGP® ULTRA

Radius: **4.9 to 14.0 m**
 Flow: **0.07 to 3.23 m³/hr; 1.2 to 53.8 l/min**
 Inlet: **¾"**

FEATURES

- Models: Shrub, 10 cm, 30 cm
- Arc setting: 50° to 360°
- Factory installed rubber cover
- Through-the-top arc adjustment
- QuickCheck™ arc mechanism
- Water lubricated gear-drive
- Nozzle choices: 34
- Nozzle racks: 1.5 to 8.0 Blue, 2.0 Low Angle to 4.0 Low Angle Grey, 0.50 Short Radius to 3.0 Short Radius Black, 6.0 to 13.0 Green, MPR-20, MPR-30, MPR-35
- Warranty period: 5 years
- ▶ Automatic arc return
- ▶ Non-strippable drive
- ▶ Part- and full-circle in one model
- ▶ Headed and slotted set screw
- ▶ Optional reclaimed water ID
- ▶ Drain check valve (up to 3 m of elevation)

OPERATING SPECIFICATIONS

- Radius: 4.9 to 14.0 m
- Flow: 0.07 to 3.23 m³/hr; 1.2 to 53.8 l/min
- Recommended pressure range: 1.7 to 4.5 bar; 170 to 450 kPa
- Operating pressure range: 1.4 to 7.0 bar; 140 to 700 kPa
- Precipitation rates: 10 mm/hr approximately
- Nozzle trajectory: Standard = 25°, Low Angle = 13°
- ▶ = *Advanced Feature descriptions on page 18*



PGP-00
 Overall height: 19 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"



PGP-04
 Overall height: 19 cm
 Pop-up height: 10 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"



PGP-12
 Overall height: 43 cm
 Pop-up height: 30 cm
 Exposed diameter: 4.5 cm
 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
<p>PGP-00 = Shrub</p> <p>PGP-04 = 10 cm Pop-up</p> <p>PGP-12 = 30 cm Pop-up</p>	<p>Adjustable arc, plastic riser, 8 standard nozzles, and 4 low angle nozzles</p>	<p>CV = Drain check valve</p> <p>CV-R = Drain check valve and reclaimed water ID</p>	<p>Blue 1.5 - 8.0</p> <p>Grey Low Angle</p> <p>Black Short Radius</p> <p>Green High Flow</p> <p>MPR-25-Q, T, H, F</p> <p>MPR-30-Q, T, H, F</p> <p>MPR-35-Q, T, H, F</p> <p>1.5 to 4.0 = only nozzles 1.5 - 4.0 can be factory-installed</p>

Examples:

- PGP-04 = 10 cm Pop-up, adjustable arc
- PGP-04 - 2.5 = 10 cm Pop-up, adjustable arc and 2.5 nozzle
- PGP-12 - CV-R - 4.0 = 30 cm Pop-up, adjustable arc, with drain check valve and reclaimed water ID with 4.0 nozzle

I-20

Radius: **4.9 to 14.0 m**
 Flow: **0.07 to 3.23 m³/hr; 1.2 to 53.8 l/min**
 Inlet: **¾"**

FEATURES

- Models plastic riser: Shrub, 10 cm, 15 cm, 30 cm
 - Models stainless steel riser: 10 cm, 15 cm
 - Arc setting: 50° to 360°
 - Factory installed rubber cover
 - Through-the-top arc adjustment
 - QuickCheck™ arc mechanism
 - Water lubricated gear-drive
 - Nozzle choices: 34
 - Nozzle racks: 1.5 to 8.0 Blue, 2.0 to 4.0 Low Angle Grey, 0.50 to 3.0 Short Radius Black, 6.0 to 13.0 Green, MPR-20, MPR-30, MPR-35
 - Warranty period: 5 years
- ▶ Automatic arc return
 - ▶ Non-strippable drive
 - ▶ Part- and full-circle in one model
 - ▶ Headed and slotted set screw
 - ▶ FloStop® control
 - ▶ Optional reclaimed water ID
 - ▶ Stainless steel riser
 - ▶ Drain check valve (up to 3 m of elevation)

OPERATING SPECIFICATIONS

- Radius: 4.9 to 14.0 m
- Flow: 0.07 to 3.23 m³/hr; 1.2 to 53.8 l/min
- Recommended pressure range: 1.7 to 4.5 bar; 170 to 450 kPa
- Operating pressure range: 1.4 to 7.0 bar; 140 to 700 kPa
- Precipitation rates: 10 mm/hr approximately
- Nozzle trajectory: Standard = 25°, Low angle = 13°

▶ = *Advanced Feature descriptions on page 18*



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



I-20-00
 Overall height: 20 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"



I-20-04
 Overall height: 19 cm
 Pop-up height: 10 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"



I-20-06
 Overall height: 25 cm
 Pop-up height: 15 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"



I-20-12
 Overall height: 43 cm
 Pop-up height: 30 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"

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 = 10 cm Pop-up I-20-06 = 15 cm Pop-up I-20-12 = 30 cm Pop-up	Adjustable arc, plastic, check valve, 8 standard nozzles, and 4 low-angle nozzles	(blank) = no option NCV = Without check valve (only available on 10 cm model) R = Reclaimed water ID	Blue 1.5 - 8.0 Grey 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 = 10 cm Pop-up I-20-06-SS = 15 cm Pop-up	Adjustable arc, stainless steel, check valve, 8 standard nozzles, and 4 low-angle nozzles	(blank) = no option NCV = Without check valve (only available on 10 cm model) R = Reclaimed water ID	Blue 1.5 - 8.0 Grey 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:

- I-20-04 = 10 cm Pop-up, adjustable arc
- I-20-12 - R - 4.0 = 30 cm Pop-up, adjustable arc, check valve, with reclaimed water ID, and 4.0 nozzle
- I-20-06-SS - R - 3.0 = 15 cm Pop-up, adjustable arc, stainless steel riser, with reclaimed water ID, and 3.0 nozzle

ROTORS

PGP® ULTRA & I-20 PRB

PRESSURE REGULATED BODY

Radius: **4.9 to 14.0 m**
 Flow: **0.07 to 2.22 m³/hr; 1.2 to 36.0 l/min**
 Inlet: **¾"**

FEATURES

- Models:
 - PGP Ultra: 10 cm
 - I-20: 10 cm, 15 cm
- Arc setting: 50° to 360°
- Factory installed rubber cover
- Through-the-top arc adjustment
- QuickCheck™ arc mechanism
- Water lubricated gear-drive
- Nozzle choices: 30
- 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
- ▶ Pressure Regulated Body
- ▶ Automatic arc return
- ▶ Non-strippable drive
- ▶ Part- and full-circle in one model
- ▶ Headed and slotted set screw
- ▶ Reclaimed water ID
- ▶ Drain check valve (up to 3 m of elevation)



PGP-04-PRB

Overall height: 22 cm
 Pop-up height: 10 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"

OPERATING SPECIFICATIONS

- Radius: 4.9 to 14.0 m
- Flow: 0.07 to 2.22 m³/hr; 1.2 to 36.0 l/min
- Nozzle discharge pressure: 3.1 bar; 310 kPa
- Operating pressure range: 1.7 to 4.5 bar; 170 to 450 kPa
- Precipitation rates: 10 mm/hr approximately
- Nozzle trajectory: Std = 25°, Low Angle = 13°

▶ = Advanced Feature descriptions on page 18



I-20-04-PRB

Overall height: 22 cm
 Pop-up height: 10 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"



I-20-06-PRB

Overall height: 27 cm
 Pop-up height: 15 cm
 Exposed diameter: 4.5 cm
 Inlet size: ¾"



Pressure Regulation

Continual operating pressure of 3.1 bar; 310 kPa

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

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
PGP-04-PRB = 10 cm Pop-up	Adjustable arc, plastic riser, Pressure Regulated Body, 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 MPR-25, 30, 35 - Q, T, H, F 1.5 to 4.0 = only nozzles 1.5 - 4.0 can be factory-installed

Examples:

PGP-04-PRB = 10 cm Pop-up, adjustable arc, pressure regulated body
 PGP-04-PRB - 2.5 = 10 cm Pop-up, adjustable arc, Pressure Regulated Body and 2.5 nozzle

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

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-20-04-PRB = 10 cm Pop-up I-20-06-PRB = 15 cm Pop-up	Adjustable arc, plastic riser, check valve, Pressure Regulated Body, 8 standard nozzles, and 4 low-angle nozzles	(blank) = No option R = Drain check valve and reclaimed water ID	Blue 1.5 - 8.0 Gray Low Angle Black Short Radius MPR-25, 30, 35 - Q, T, H, F 1.5 to 4.0 = only nozzles 1.5 - 4.0 can be factory-installed

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

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-20-04-SS-PRB = 10 cm Pop-up I-20-06-SS-PRB = 15 cm Pop-up	Adjustable arc, plastic riser, Pressure Regulated Body, 8 standard nozzles, and 4 low-angle nozzles	(blank) = No option R = Drain check valve and reclaimed water ID	Blue 1.5 - 8.0 Gray Low Angle Black Short Radius MPR-25, 30, 35 - Q, T, H, F 1.5 to 4.0 = only nozzles 1.5 - 4.0 can be factory-installed

Examples:

I-20-04-PRB = 10 cm Pop-up, adjustable arc, pressure regulated body
 I-20-06-SS-PRB - R - 3.0 = 15 cm Pop-up, adjustable arc, stainless steel riser, Pressure Regulated Body, with reclaimed water ID, and 3.0 nozzle

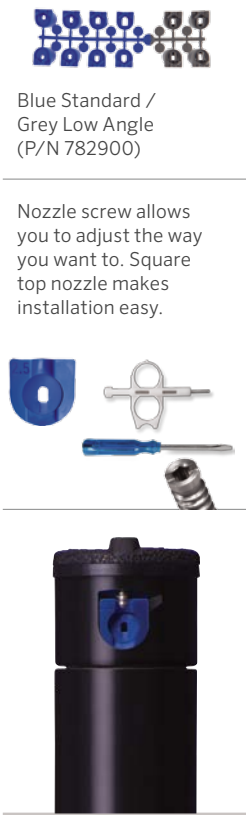
PGP® ULTRA / I-20 / PRB BLUE STANDARD NOZZLE PERFORMANCE DATA

Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ² /hr	l/min	■	▲
1.5 ● Blue	1.7	170	8.8	0.27	4.5	7	8
	2.0	200	9.1	0.29	4.8	7	8
	2.5	250	9.4	0.32	5.4	7	8
	3.0	300	9.8	0.35	5.9	7	9
	3.5	350	9.8	0.38	6.4	8	9
	4.0	400	9.8	0.41	6.8	9	10
	4.5	450	9.4	0.43	7.2	10	11
2.0 ● Blue	1.7	170	10.1	0.32	5.4	6	7
	2.0	200	10.1	0.35	5.8	7	8
	2.5	250	10.1	0.39	6.5	8	9
	3.0	300	10.4	0.43	7.2	8	9
	3.5	350	10.4	0.47	7.8	9	10
	4.0	400	10.4	0.50	8.3	9	11
	4.5	450	10.4	0.53	8.8	10	11
2.5 ● Blue	1.7	170	10.1	0.39	6.6	8	9
	2.0	200	10.4	0.43	7.1	8	9
	2.5	250	10.7	0.48	8.0	8	10
	3.0	300	10.7	0.54	8.9	9	11
	3.5	350	10.7	0.58	9.7	10	12
	4.0	400	10.7	0.62	10.4	11	13
	4.5	450	10.7	0.66	11.1	12	13
3.0 ● Blue	1.7	170	10.7	0.50	8.4	9	10
	2.0	200	10.7	0.54	9.1	10	11
	2.5	250	11.0	0.61	10.2	10	12
	3.0	300	11.6	0.68	11.4	10	12
	3.5	350	11.9	0.74	12.3	10	12
	4.0	400	11.9	0.79	13.2	11	13
	4.5	450	11.9	0.84	14.0	12	14
4.0 ● Blue	1.7	170	11.3	0.68	11.3	11	12
	2.0	200	11.6	0.73	12.2	11	13
	2.5	250	11.9	0.81	13.6	12	13
	3.0	300	12.2	0.90	15.0	12	14
	3.5	350	12.2	0.97	16.2	13	15
	4.0	400	12.5	1.04	17.3	13	15
	4.5	450	12.5	1.10	18.3	14	16
5.0 ● Blue	1.7	170	11.3	0.84	14.0	13	15
	2.0	200	11.6	0.91	15.2	14	16
	2.5	250	11.9	1.02	17.1	15	17
	3.0	300	12.8	1.14	19.0	14	16
	3.5	350	12.8	1.24	20.6	15	17
	4.0	400	12.8	1.32	22.1	16	19
	4.5	450	12.8	1.41	23.4	17	20
6.0 ● Blue	1.7	170	11.6	1.01	16.8	15	17
	2.0	200	11.9	1.09	18.2	15	18
	2.5	250	12.2	1.22	20.4	16	19
	3.0	300	13.1	1.36	22.7	16	18
	3.5	350	13.1	1.47	24.5	17	20
	4.0	400	13.4	1.57	26.2	18	20
	4.5	450	13.4	1.67	27.9	19	21
8.0 ● Blue	1.7	170	11.3	1.35	22.5	21	25
	2.0	200	11.9	1.46	24.3	21	24
	2.5	250	12.5	1.63	27.2	21	24
	3.0	300	13.4	1.81	30.2	20	23
	3.5	350	13.7	1.95	32.6	21	24
	4.0	400	14.0	2.09	34.8	21	25
	4.5	450	14.0	2.22	36.9	23	26

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

Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
2.0 ● LA Grey	1.7	170	7.3	0.33	5.6	12	14
	2.0	200	7.6	0.36	6.0	12	14
	2.5	250	7.9	0.40	6.7	13	15
	3.0	300	8.2	0.45	7.4	13	15
	3.5	350	8.5	0.48	8.0	13	15
	4.0	400	8.8	0.52	8.6	13	15
	4.5	450	9.1	0.55	9.1	13	15
2.5 ● LA Grey	1.7	170	7.9	0.44	7.3	14	16
	2.0	200	8.2	0.47	7.9	14	16
	2.5	250	8.8	0.53	8.8	14	16
	3.0	300	9.4	0.59	9.8	13	15
	3.5	350	10.1	0.64	10.6	13	15
	4.0	400	10.4	0.68	11.3	13	15
	4.5	450	10.7	0.72	12.0	13	15
3.5 ● LA Grey	1.7	170	8.5	0.58	9.7	16	18
	2.0	200	8.8	0.62	10.3	16	18
	2.5	250	9.1	0.68	11.4	16	19
	3.0	300	10.1	0.75	12.5	15	17
	3.5	350	10.7	0.80	13.3	14	16
	4.0	400	11.0	0.85	14.1	14	16
	4.5	450	11.3	0.89	14.8	14	16
4.5 ● LA Grey	1.7	170	8.2	0.71	11.8	21	24
	2.0	200	8.8	0.76	12.7	19	23
	2.5	250	9.1	0.84	14.1	20	23
	3.0	300	10.1	0.93	15.5	18	21
	3.5	350	10.7	1.00	16.6	18	20
	4.0	400	11.0	1.06	17.6	18	20
	4.5	450	11.3	1.12	18.6	18	20

PGP ULTRA / I-20 / PRB NOZZLES



Blue Standard / Grey Low Angle (P/N 782900)

Nozzle screw allows you to adjust the way you want to. Square top nozzle makes installation easy.

PGP Ultra



Note:

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


ROTORS

ROTORS

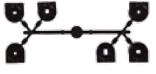
PGP® ULTRA / I-20 GREEN HIGH FLOW NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
10 Dk. Green	1.7	170	10.7	1.48	24.6	26	30
	2.0	200	11.9	1.60	26.7	23	26
	2.5	250	12.5	1.80	30.0	23	27
	3.0	300	12.8	2.01	33.5	25	28
	3.5	350	13.1	2.18	36.3	25	29
	4.0	400	13.7	2.34	39.0	25	29
4.5	450	14.0	2.49	41.5	25	29	
13 Dk. Green	1.7	170	11.0	1.91	31.9	32	37
	2.0	200	12.2	2.08	34.6	28	32
	2.5	250	12.8	2.34	38.9	29	33
	3.0	300	13.1	2.61	43.4	30	35
	3.5	350	13.4	2.83	47.1	31	36
	4.0	400	13.7	3.03	50.5	32	37
4.5	450	14.0	3.23	53.8	33	38	
6.0 LA Dk. Green	1.7	170	9.1	0.86	14.3	21	24
	2.0	200	9.4	0.94	15.6	21	24
	2.5	250	10.1	1.07	17.8	21	24
	3.0	300	10.7	1.20	20.0	21	24
	3.5	350	11.3	1.31	21.9	21	24
	4.0	400	11.6	1.42	23.6	21	24
4.5	450	11.9	1.52	25.3	21	25	
8.0 LA Dk. Green	1.7	170	10.1	1.17	19.5	23	27
	2.0	200	10.7	1.28	21.3	22	26
	2.5	250	11.3	1.44	24.0	23	26
	3.0	300	11.6	1.61	26.9	24	28
	3.5	350	11.9	1.76	29.3	25	29
	4.0	400	12.5	1.89	31.5	24	28
4.5	450	12.5	2.01	33.6	26	30	

PGP ULTRA / I-20 / PRB BLACK SHORT RADIUS NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
.50 SR Black	1.7	170	4.9	0.07	1.2	6	7
	2.0	200	5.2	0.08	1.3	6	7
	2.5	250	5.2	0.09	1.5	7	8
	3.0	300	5.2	0.10	1.7	8	9
	3.5	350	5.5	0.12	1.9	8	9
	4.0	400	5.5	0.13	2.1	8	10
4.5	450	5.5	0.14	2.3	9	10	
1.0 SR Black	1.7	170	4.9	0.16	2.7	14	16
	2.0	200	5.2	0.17	2.9	13	15
	2.5	250	5.2	0.19	3.2	14	17
	3.0	300	5.2	0.21	3.6	16	18
	3.5	350	5.5	0.23	3.8	15	18
	4.0	400	5.5	0.25	4.1	16	19
4.5	450	5.5	0.26	4.3	17	20	
2.0 SR Black	1.7	170	4.9	0.28	4.7	24	27
	2.0	200	5.2	0.31	5.2	23	27
	2.5	250	5.2	0.36	6.0	27	31
	3.0	300	5.2	0.41	6.9	31	35
	3.5	350	5.5	0.45	7.6	30	35
	4.0	400	5.5	0.49	8.2	33	38
4.5	450	5.5	0.53	8.9	35	41	
.75 SR Black	1.7	170	6.7	0.12	2.0	5	6
	2.0	200	7.0	0.13	2.2	5	6
	2.5	250	7.0	0.15	2.4	6	7
	3.0	300	7.3	0.16	2.7	6	7
	3.5	350	7.6	0.17	2.9	6	7
	4.0	400	7.6	0.19	3.1	6	7
4.5	450	7.6	0.20	3.3	7	8	
1.5 SR Black	1.7	170	6.7	0.23	3.8	10	12
	2.0	200	7.0	0.25	4.1	10	12
	2.5	250	7.0	0.28	4.6	11	13
	3.0	300	7.3	0.31	5.2	12	13
	3.5	350	7.6	0.34	5.6	12	13
	4.0	400	7.6	0.36	6.0	12	14
4.5	450	7.6	0.39	6.4	13	15	
3.0 SR Black	1.7	170	6.7	0.53	8.9	24	27
	2.0	200	7.0	0.56	9.3	23	26
	2.5	250	7.0	0.60	10.0	24	28
	3.0	300	7.3	0.64	10.7	24	28
	3.5	350	7.6	0.67	11.2	23	27
	4.0	400	7.6	0.70	11.7	24	28
4.5	450	7.6	0.73	12.1	25	29	


PGP ULTRA / I-20 / PRB NOZZLES



Dk. Green High Flow (P/N 444800)



Black Short Radius (P/N 466100)







I-20 with Blue Standard Nozzle



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 MPR-25 NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
90° 	1.7	170	7.0	0.17	3.0	13.7	15.8
	2.4	240	7.3	0.20	3.6	14.9	17.3
	3.1	310	7.6	0.23	3.6	15.6	18.1
	3.8	380	7.6	0.25	4.2	17.4	20.1
	4.5	450	7.6	0.27	4.8	18.9	21.9
120° 	1.7	170	7.0	0.23	3.6	13.9	16.0
	2.4	240	7.3	0.27	4.8	15.4	17.8
	3.1	310	7.6	0.31	5.4	16.2	18.7
	3.8	380	7.6	0.35	6.0	18.0	20.7
	4.5	450	7.6	0.38	6.6	19.6	22.6
180° 	1.7	170	7.0	0.33	5.4	13.3	15.4
	2.4	240	7.3	0.39	6.6	14.7	17.0
	3.1	310	7.6	0.45	7.2	15.5	17.9
	3.8	380	7.6	0.50	8.4	17.3	20.0
	4.5	450	7.6	0.55	9.0	18.9	21.8
360° 	1.7	170	7.0	0.63	10.8	12.8	14.8
	2.4	240	7.3	0.76	12.6	14.2	16.4
	3.1	310	7.6	0.87	14.4	14.9	17.3
	3.8	380	7.6	0.97	16.2	16.6	19.2
	4.5	450	7.6	1.05	17.4	18.1	20.9





MPR-25 NOZZLE



PGP ULTRA / I-20 / PRB MPR-35 NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
90° 	1.7	170	9.8	0.32	5.4	13.4	15.4
	2.4	240	10.4	0.38	6.6	14.1	16.3
	3.1	310	10.7	0.44	7.2	15.3	17.7
	3.8	380	10.7	0.48	7.8	17.0	19.6
	4.5	450	10.7	0.52	9.0	18.4	21.3
120° 	1.7	170	9.8	0.40	6.6	12.7	14.6
	2.4	240	10.4	0.49	8.4	13.6	15.8
	3.1	310	10.7	0.56	9.6	14.7	17.0
	3.8	380	10.7	0.62	10.2	16.4	18.9
	4.5	450	10.7	0.68	11.4	17.9	20.7
180° 	1.7	170	9.8	0.62	10.2	13.1	15.2
	2.4	240	10.4	0.76	12.6	14.1	16.3
	3.1	310	10.7	0.87	14.4	15.2	17.6
	3.8	380	10.7	0.96	16.2	16.9	19.5
	4.5	450	10.7	1.05	17.4	18.4	21.3
360° 	1.7	170	9.8	1.22	20.4	12.8	14.8
	2.4	240	10.4	1.50	25.2	14.0	16.2
	3.1	310	10.7	1.72	28.8	15.1	17.5
	3.8	380	10.7	1.91	31.8	16.8	19.4
	4.5	450	10.7	2.09	34.8	18.3	21.2

MPR-35 NOZZLE



PGP ULTRA / I-20 / PRB MPR-30 NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
90° 	1.7	170	8.8	0.23	3.6	12.0	13.8
	2.4	240	9.1	0.28	4.8	13.4	15.4
	3.1	310	9.1	0.32	5.4	15.2	17.6
	3.8	380	9.1	0.35	6.0	17.0	19.6
	4.5	450	9.1	0.38	6.6	18.4	21.2
120° 	1.7	170	8.8	0.30	4.8	11.7	13.5
	2.4	240	9.1	0.37	6.0	13.2	15.2
	3.1	310	9.1	0.42	7.2	15.1	17.4
	3.8	380	9.1	0.47	7.8	16.8	19.4
	4.5	450	9.1	0.51	8.4	18.3	21.1
180° 	1.7	170	8.8	0.49	8.4	12.5	14.4
	2.4	240	9.1	0.59	9.6	14.1	16.2
	3.1	310	9.1	0.67	11.4	16.1	18.6
	3.8	380	9.1	0.75	12.6	17.9	20.7
	4.5	450	9.1	0.82	13.8	19.6	22.6
360° 	1.7	170	8.8	0.96	16.2	12.3	14.2
	2.4	240	9.1	1.15	19.2	13.8	15.9
	3.1	310	9.1	1.31	21.6	15.7	18.1
	3.8	380	9.1	1.45	24.0	17.4	20.0
	4.5	450	9.1	1.57	26.4	18.8	21.7

MPR-30 NOZZLE



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

ROTORS

I-25

Radius: **11.9 to 21.6 m**
 Flow: **0.82 to 7.24 m³/hr; 13.6 to 120.2 l/min**
 Inlet: **1" BSP**

FEATURES

- Models plastic riser: 10 cm, 15 cm
 - Models stainless steel riser: 10 cm, 15 cm
 - Arc setting: 50° to 360°
 - Factory installed rubber cover
 - Through-the-top arc adjustment
 - QuickCheck™ arc mechanism
 - Water lubricated gear-drive
 - Nozzle choices: 12
 - Nozzle range: #4 to #28
 - Warranty period: 5 years
- ▶ Automatic arc return
 - ▶ Non-strippable drive
 - ▶ Part- and full-circle in one model
 - ▶ Colour-coded nozzles
 - ▶ Stainless steel riser
 - ▶ Drain check valve (up to 3 m of elevation)



I-25-04
 Overall height: 20 cm
 Pop-up height: 10 cm
 Exposed diameter: 5 cm
 Inlet size: 1" BSP



I-25-06
 Overall height: 26 cm
 Pop-up height: 15 cm
 Exposed diameter: 5 cm
 Inlet size: 1" BSP

OPERATING SPECIFICATIONS

- Radius: 11.9 to 21.6 m
- Flow: 0.82 to 7.24 m³/hr; 13.6 to 120.2 l/min
- Recommended pressure range: 2.5 to 7.0 bar; 250 to 700 kPa
- Operating pressure range: 2.5 to 7.0 bar; 250 to 700 kPa
- Precipitation rates: 15 mm/hr approximately
- Nozzle trajectory: 25°

▶ = *Advanced Feature descriptions on page 18*



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



I-25 High Speed
 Available as a factory installed option on all 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 = 10 cm Pop-up I-25-06 = 15 cm Pop-up	Adjustable arc, plastic riser, check valve, and 5 nozzles	B = BSP inlet threads R = Reclaimed water ID	#4 - #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 = 10 cm Pop-up I-25-06-SS = 15 cm Pop-up	Adjustable arc, stainless steel riser, check valve, and 5 nozzles	B = BSP inlet threads R = Reclaimed water ID HS = High-Speed HS-R = High-speed and reclaimed water ID	#4 - #28 = Factory installed nozzle number

Examples:

- I-25-04 - **B** = 10 cm Pop-up, adjustable arc, BSP inlet threads
- I-25-04-SS - **R - B - 18** = 10 cm Pop-up, adjustable arc, stainless steel riser, reclaimed water ID, and #18 nozzle, BSP inlet threads
- I-25-06-SS - **B** = 15 cm Pop-up, adjustable arc, stainless steel riser, BSP inlet threads

I-25 STANDARD NOZZLE PERFORMANCE DATA								I-25 NOZZLE							
Nozzle	Pressure		Radius	Flow		Precip mm/hr		Nozzle	Pressure		Radius	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲		bar	kPa		m	m ³ /hr	l/min	■
4 ● Yellow	2.5	250	11.9	0.82	13.6	12	13	15 ● Grey*	3.0	300	16.8	2.86	47.7	20	24
	3.0	300	12.2	0.91	15.2	12	14		3.5	350	17.1	3.05	50.8	21	24
	3.5	350	12.5	0.98	16.4	13	15		4.0	400	17.4	3.22	53.7	21	25
	4.0	400	12.5	1.05	17.5	13	16		4.5	450	17.4	3.38	56.3	22	26
	4.5	450	12.8	1.11	18.6	14	16		5.0	500	17.4	3.53	58.8	23	27
	5.0	500	13.1	1.18	19.6	14	16		5.5	550	17.7	3.69	61.5	24	27
5 ○ White	5.5	550	13.4	1.24	20.7	14	16	6.0	600	18.0	3.82	63.7	24	27	
	2.5	250	12.8	0.95	15.9	12	13	6.2	620	18.3	3.88	64.6	23	27	
	3.0	300	13.1	1.04	17.3	12	14	18 ● Red	3.0	300	17.4	30.8	51.4	20	24
	3.5	350	13.4	1.11	18.5	12	14		3.5	350	17.7	3.31	55.2	21	24
	4.0	400	13.4	1.17	19.6	13	15		4.0	400	18.0	3.52	58.7	22	25
	4.5	450	13.7	1.24	20.6	13	15		4.5	450	18.3	3.72	62.0	22	26
5.0	500	14.0	1.29	21.5	13	15	5.0		500	18.9	3.91	65.2	22	25	
5.5	550	14.3	1.35	22.6	13	15	5.5		550	19.2	4.11	68.5	22	26	
7 ● Orange*	2.5	250	13.4	1.44	24.0	16	19	6.0	600	19.5	4.28	71.4	23	26	
	3.0	300	14.0	1.54	25.6	16	18	6.2	620	19.5	4.35	72.5	23	26	
	3.5	350	14.3	1.61	26.9	16	18	20 ● Dk. Brown*	3.5	350	18.0	3.72	62.1	23	27
	4.0	400	14.3	1.68	28.0	16	19		4.0	400	18.6	3.97	66.2	23	27
	4.5	450	14.6	1.75	29.1	16	19		4.5	450	18.9	4.20	70.1	24	27
	5.0	500	14.9	1.81	30.1	16	19		5.0	500	19.2	4.42	73.7	24	28
5.5	550	15.2	1.87	31.1	16	19	5.5		550	19.5	4.66	77.7	25	28	
8 ● Lt. Brown	2.5	250	14.0	1.65	27.5	17	19		6.0	600	19.8	4.86	81.0	25	29
	3.0	300	14.3	1.81	30.1	18	20	6.5	650	20.1	5.05	84.2	25	29	
	3.5	350	14.9	1.94	32.3	17	20	6.9	690	20.4	5.21	86.8	25	29	
	4.0	400	15.2	2.05	34.2	18	20	23 ● Dk. Green	3.5	350	18.6	4.56	76.0	26	30
	4.5	450	15.2	2.16	36.0	19	22		4.0	400	19.2	4.88	81.3	26	31
	5.0	500	15.5	2.27	37.8	19	22		4.5	450	19.5	5.18	86.3	27	31
5.5	550	15.8	2.38	39.6	19	22	5.0		500	19.8	5.47	91.1	28	32	
10 ● Lt. Green*	3.0	300	15.2	2.15	35.8	18	21		5.5	550	20.1	5.78	96.3	29	33
	3.5	350	15.5	2.32	38.6	19	22		6.0	600	20.1	6.04	100.6	30	34
	4.0	400	15.8	2.48	41.3	20	23	6.5	650	20.4	6.29	104.8	30	35	
	4.5	450	16.2	2.63	43.9	20	23	6.9	690	20.7	6.50	108.3	30	35	
	5.0	500	16.2	2.78	46.3	21	25	25 ● Dk. Blue*	3.5	350	19.2	4.86	80.9	26	30
	5.5	550	16.5	2.94	48.9	22	25		4.0	400	19.8	5.23	87.1	27	31
6.0	600	16.8	3.07	51.1	22	25	4.5		450	20.1	5.58	93.1	28	32	
13 ● Lt. Blue	3.0	300	15.8	2.38	39.6	19	22		5.0	500	20.4	5.92	98.7	28	33
	3.5	350	16.2	2.57	42.8	20	23		5.5	550	21.0	6.29	104.9	28	33
	4.0	400	16.5	2.75	45.7	20	23		6.0	600	21.0	6.60	110.0	30	34
	4.5	450	16.5	2.91	48.5	21	25	6.5	650	21.3	6.90	115.1	30	35	
	5.0	500	16.8	3.04	51.2	22	25	6.9	690	21.6	7.15	119.2	31	35	
	5.5	550	16.8	3.24	54.0	23	27	28 ● Black	3.5	350	18.3	5.31	88.5	32	37
6.0	600	17.1	3.39	56.4	23	27	4.0		400	19.2	5.63	93.8	31	35	
15 ● Grey*	3.0	300	16.8	2.86	47.7	20	24		4.5	450	20.1	5.93	98.8	29	34
	3.5	350	17.1	3.05	50.8	21	24		5.0	500	20.7	6.21	103.5	29	33
	4.0	400	17.4	3.22	53.7	21	25		5.5	550	21.3	6.52	108.6	29	33
	4.5	450	17.4	3.38	56.3	22	26		6.0	600	21.3	6.77	112.8	30	34
	5.0	500	17.4	3.53	58.8	23	27	6.5	650	21.6	7.01	116.9	30	35	
	5.5	550	17.7	3.69	61.5	24	27	6.9	690	21.6	7.21	120.2	31	36	



Standard



ROTORS

* 5 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.

ROTORS

I-25 HIGH-SPEED NOZZLE PERFORMANCE DATA

I-25 NOZZLE

Nozzle	Pressure		Radius m	Flow		Precip mm/hr		Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲		bar	kPa		m ³ /hr	l/min	■	▲
4 ● Yellow	2.5	250	11.0	0.81	13.6	14	16	15 ● Grey*	3.0	300	14.6	2.86	47.7	27	31
	3.0	300	11.3	0.91	15.1	14	16		3.5	350	14.9	3.05	50.8	27	32
	3.5	350	11.6	0.99	16.4	15	17		4.0	400	15.2	3.22	53.7	28	32
	4.0	400	11.6	1.06	17.6	16	18		4.5	450	15.5	3.38	56.3	28	32
	4.5	450	11.6	1.13	18.8	17	19		5.0	500	16.2	3.53	58.8	27	31
	5.0	500	11.9	1.19	19.9	17	19		5.5	550	16.5	3.69	61.5	27	31
5 ○ White	5.5	550	11.9	1.26	21.1	18	21	6.0	600	16.5	3.82	63.7	28	33	
	2.5	250	11.3	0.93	15.5	15	17	6.2	620	16.5	3.88	64.6	29	33	
	3.0	300	11.6	1.04	17.3	16	18	18 ● Red	3.0	300	14.9	3.08	51.4	28	32
	3.5	350	11.9	1.13	18.9	16	18		3.5	350	15.2	3.31	55.2	29	33
	4.0	400	12.2	1.22	20.3	16	19		4.0	400	15.5	3.52	58.7	29	34
	4.5	450	12.2	1.30	21.6	17	20		4.5	450	16.2	3.72	62.0	29	33
5.0	500	12.5	1.38	22.9	18	20	5.0		500	16.8	3.91	65.2	28	32	
5.5	550	12.5	1.46	24.4	19	22	5.5		550	17.4	4.11	68.5	27	31	
7 ● Orange*	2.5	250	11.9	1.32	22.0	19	22	6.0	600	17.4	4.28	71.4	28	33	
	3.0	300	12.2	1.46	24.3	20	23	6.2	620	17.4	4.35	72.5	29	33	
	3.5	350	12.5	1.57	26.2	20	23	20 ● Dk. Brown*	3.5	350	15.5	3.72	62.1	31	36
	4.0	400	12.8	1.68	27.9	20	24		4.0	400	16.2	3.97	66.2	30	35
	4.5	450	13.1	1.78	29.6	21	24		4.5	450	16.5	4.20	70.1	31	36
	5.0	500	13.4	1.87	31.1	21	24		5.0	500	17.1	4.42	73.7	30	35
5.5	550	13.4	1.97	32.8	22	25	5.5		550	17.7	4.66	77.7	30	34	
8 ● Lt. Brown	2.5	250	12.5	1.54	25.7	20	23		6.0	600	17.7	4.86	81.0	31	36
	3.0	300	12.8	1.72	28.6	21	24	6.5	650	18.0	5.05	84.2	31	36	
	3.5	350	13.1	1.86	31.0	22	25	6.9	690	18.0	5.21	86.8	32	37	
	4.0	400	13.4	2.00	33.3	22	26	23 ● Dk. Green	3.5	350	16.5	4.56	76.0	34	39
	4.5	450	13.4	2.13	35.4	24	27		4.0	400	17.1	4.88	81.3	33	39
	5.0	500	13.7	2.25	37.5	24	28		4.5	450	17.4	5.18	86.3	34	40
5.5	550	13.7	2.38	39.7	25	29	5.0		500	17.7	5.47	91.1	35	40	
10 ● Lt. Green*	3.0	300	13.7	2.15	35.8	23	26		5.5	550	18.3	5.78	96.3	35	40
	3.5	350	14.0	2.32	38.6	24	27		6.0	600	18.3	6.04	100.6	36	42
	4.0	400	14.3	2.48	41.3	24	28	6.5	650	18.6	6.29	104.8	36	42	
	4.5	450	14.6	2.63	43.9	25	28	6.9	690	18.6	6.50	108.3	38	43	
	5.0	500	14.9	2.78	46.3	25	29	25 ● Dk. Blue*	3.5	350	17.1	4.86	80.9	33	38
	5.5	550	15.2	2.94	48.9	25	29		4.0	400	17.7	5.23	87.1	33	39
6.0	600	15.2	3.07	51.1	26	31	4.5		450	18.3	5.58	93.1	33	39	
13 ● Lt. Blue	3.0	300	14.3	2.38	39.6	23	27		5.0	500	18.9	5.92	98.7	33	38
	3.5	350	14.6	2.57	42.8	24	28		5.5	550	19.5	6.29	104.9	33	38
	4.0	400	14.9	2.75	45.7	25	28		6.0	600	19.8	6.60	110.0	34	39
	4.5	450	15.2	2.91	48.5	25	29	6.5	650	20.1	6.90	115.1	34	39	
	5.0	500	15.5	3.07	51.2	25	29	6.9	690	20.1	7.15	119.2	35	41	
	5.5	550	15.5	3.24	54.0	27	31	28 ● Black	3.5	350	17.4	5.31	88.5	35	41
6.0	600	15.5	3.39	56.4	28	32	4.0		400	17.7	5.63	93.8	36	42	
15 ● Grey*	4.5	450	18.0	5.93	98.8	37	42		5.0	500	18.3	6.21	103.5	37	43
	5.0	500	18.3	6.21	103.5	37	43		5.5	550	18.9	6.52	108.6	36	42
	5.5	550	18.9	6.52	108.6	36	42		6.0	600	19.5	6.77	112.8	36	41
	6.0	600	19.5	6.77	112.8	36	41		6.5	650	19.8	7.01	116.9	36	41
	6.5	650	19.8	7.01	116.9	36	41	6.9	690	20.4	7.21	120.2	35	40	
	6.9	690	20.4	7.21	120.2	35	40								



High-Speed

* 5 standard nozzles included with each sprinkler.

Notes:

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

I-40

Radius: **13.1 to 23.2 m**
 Flow: **1.63 to 6.84 m³/hr; 27.2 to 114.1 l/min**
 Inlet: **1" BSP**

FEATURES

- Models stainless steel riser: 10 cm to 15 cm
 - Arc setting: 50° to 360°
 - Factory installed rubber cover
 - Nozzle choices: 12
 - Nozzle ranges I-40: #8 to #25
 - Nozzle ranges I-40-ON: #15 to #28
 - Through-the-top arc adjustment
 - QuickCheck™ arc mechanism
 - Water lubricated gear-drive
 - Warranty period: 5 years
- ▶ Opposing nozzle 360° model
 - ▶ Automatic arc return
 - ▶ Non-strippable drive
 - ▶ Part- and full-circle in one model
 - ▶ Colour-coded nozzles
 - ▶ Optional reclaimed water ID
 - ▶ Stainless steel riser
 - ▶ Drain check valve (up to 4.5 m of elevation)

OPERATING SPECIFICATIONS

- Radius I-40: 13.1 to 21.3 m
- Radius I-40-ON: 15.2 to 23.2 m
- Flow I-40: 1.63 to 6.84 m³/hr; 27.2 to 114.1 l/min
- Flow I-40-ON: 2.75 to 7.76 m³/hr; 45.8 to 129.4 l/min
- Recommended pressure range: 2.5 to 7.0 bar; 250 to 700 kPa
- Operating pressure range: 2.5 to 7.0 bar; 250 to 700 kPa
- Precipitation rates: 15 mm/hr approximately
- Nozzle trajectory: 25°

▶ = *Advanced Feature descriptions on page 18*



I-40-04
 Overall height: 20 cm
 Pop-up height: 10 cm
 Exposed diameter: 5 cm
 Inlet size: 1" BSP



I-40-06
 Overall height: 26 cm
 Pop-up height: 15 cm
 Exposed diameter: 5 cm
 Inlet size: 1" BSP



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



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

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

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-40-04-SS = 10 cm Pop-up I-40-06-SS = 15 cm Pop-up	Adjustable arc, stainless steel riser, check valve and 6 nozzles	B = BSP inlet threads R = Reclaimed water ID HS = High speed HS-R = High speed and reclaimed water ID	#8 to #25 = Factory installed nozzle number

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

1 Model	2 Standard Features	3 Feature Options	4 Nozzle Options
I-40-04-SS-ON = 10 cm Pop-up I-40-06-SS-ON = 15 cm Pop-up	Full-circle, opposing nozzle, stainless steel riser, check valve and 6 nozzles	B = BSP inlet threads R = Reclaimed water ID ON = Full circle opposing nozzle ON-R = Full circle opposing nozzles, reclaimed water ID	#15 to #28 = Factory installed nozzle number

Examples:

- I-40-04-SS - B = 10 cm Pop-up, BSP inlet threads
- I-40-04-SS - ON-R - B - 23 = 10 cm Pop-up, full-circle opposing nozzles, reclaimed water ID, #23 nozzle, BSP inlet threads
- I-40-06-SS - 15 - B = 15 cm Pop-up, #15 nozzle, BSP inlet threads

ROTORS

ROTORS

I-40 STANDARD NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
8 (40) Lt. Brown	2.5	250	13.1	1.63	27.2	19	22
	3.0	300	13.4	1.80	30.0	20	23
	3.5	350	13.7	1.94	32.3	21	24
	4.0	400	14.0	2.06	34.4	21	24
	4.5	450	14.0	2.18	36.3	22	26
	5.0	500	14.3	2.29	38.2	22	26
10 (41) Lt. Green	3.0	300	14.6	2.20	36.6	21	24
	3.5	350	14.9	2.37	39.4	21	24
	4.0	400	15.2	2.52	42.0	22	25
	4.5	450	15.5	2.67	44.5	22	25
	5.0	500	15.5	2.81	46.8	23	27
	5.5	550	15.8	2.96	49.3	24	27
13 (42) Lt. Blue	3.0	300	14.9	2.36	39.4	21	24
	3.5	350	15.2	2.55	42.6	22	25
	4.0	400	15.5	2.73	45.5	23	26
	4.5	450	15.5	2.90	48.3	24	28
	5.0	500	15.8	3.06	51.0	24	28
	5.5	550	16.2	3.23	53.9	25	29
15 (43) Grey	3.0	300	16.2	2.93	48.8	22	26
	3.5	350	16.5	3.19	53.2	24	27
	4.0	400	16.8	3.44	57.3	24	28
	4.5	450	17.1	3.67	61.2	25	29
	5.0	500	17.4	3.89	64.9	26	30
	5.5	550	18.0	4.14	68.9	26	30
23 (44) Dk. Green	3.5	350	18.6	4.48	74.6	26	30
	4.0	400	18.9	4.76	79.4	27	31
	4.5	450	19.2	5.03	83.9	27	32
	5.0	500	19.5	5.29	88.1	28	32
	5.5	550	19.8	5.56	92.7	28	33
	6.0	600	20.1	5.79	96.5	29	33
25 (45) Dk. Blue	3.5	350	19.8	4.98	83.0	25	29
	4.0	400	20.1	5.33	88.7	26	30
	4.5	450	20.4	5.65	94.2	27	31
	5.0	500	20.7	5.96	99.3	28	32
	5.5	550	21.0	6.29	104.9	28	33
	6.0	600	21.0	6.57	109.6	30	34

I-40 HIGH-SPEED NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
8 (40) Lt. Brown	2.5	250	12.2	1.63	27.2	22	25
	3.0	300	12.5	1.80	30.0	23	27
	3.5	350	12.8	1.94	32.3	24	27
	4.0	400	12.8	2.06	34.4	25	29
	4.5	450	13.1	2.18	36.3	25	29
	5.0	500	13.4	2.29	38.2	25	29
10 (41) Lt. Green	3.0	300	13.4	2.20	36.6	34	28
	3.5	350	13.7	2.37	39.4	25	29
	4.0	400	14.0	2.52	42.0	26	30
	4.5	450	14.0	2.67	44.5	27	31
	5.0	500	14.3	2.81	46.8	27	32
	5.5	550	14.6	2.96	49.3	28	32
13 (42) Lt. Blue	3.0	300	13.7	2.36	39.4	25	29
	3.5	350	14.0	2.55	42.6	26	30
	4.0	400	14.3	2.73	45.5	27	31
	4.5	450	14.3	2.90	48.3	28	33
	5.0	500	14.6	3.06	51.0	29	33
	5.5	550	14.9	3.23	53.9	29	33
15 (43) Grey	3.0	300	15.2	2.93	48.8	25	29
	3.5	350	15.5	3.19	53.2	26	30
	4.0	400	15.8	3.44	57.3	27	32
	4.5	450	15.8	3.67	61.2	29	34
	5.0	500	16.2	3.89	64.9	30	34
	5.5	550	16.5	4.14	68.9	31	35
23 (44) Dk. Green	3.5	350	16.8	4.48	74.6	32	37
	4.0	400	17.4	4.76	79.4	32	36
	4.5	450	17.7	5.03	83.9	32	37
	5.0	500	17.7	5.29	88.1	34	39
	5.5	550	18.0	5.56	92.7	34	40
	6.0	600	18.3	5.79	96.5	35	40
25 (45) Dk. Blue	3.5	350	17.4	4.98	83.0	33	38
	4.0	400	18.0	5.33	88.7	33	38
	4.5	450	18.3	5.65	94.2	34	39
	5.0	500	18.6	5.96	99.3	34	40
	5.5	550	18.9	6.29	104.9	35	41
	6.0	600	19.2	6.57	109.6	36	41

I-40 NOZZLES



Standard/
High-Speed

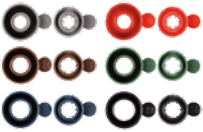


Note:
All precipitation rates calculated for 180° operation. For the precipitation rate for a 360° sprinkler, divide by 2.

I-40 DUAL OPPOSING NOZZLE PERFORMANCE DATA

Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
15 ● Grey	3.0	300	15.2	2.75	45.8	12	14
	3.5	350	15.8	2.91	48.5	12	13
	4.0	400	16.2	3.06	51.0	12	14
	4.5	450	16.8	3.20	53.3	11	13
	5.0	500	17.1	3.32	55.4	11	13
	5.5	550	17.4	3.46	57.7	11	13
	6.0	600	17.7	3.58	59.6	11	13
18 ● Red	3.0	300	17.4	2.90	48.3	10	11
	3.5	350	17.7	3.15	52.5	10	12
	4.0	400	18.0	3.38	56.4	10	12
	4.5	450	18.0	3.61	60.1	11	13
	5.0	500	18.3	3.82	63.7	11	13
	5.5	550	18.9	4.05	67.5	11	13
	6.0	600	19.2	4.25	70.8	12	13
20 ● Dk. Brown	3.5	350	18.3	3.98	66.2	12	14
	4.0	400	18.9	4.26	71.1	12	14
	4.5	450	19.2	4.54	75.6	12	14
	5.0	500	19.5	4.80	80.0	13	15
	5.5	550	20.1	5.08	84.7	13	15
	6.0	600	19.8	5.32	88.7	14	16
	6.2	620	19.8	5.42	90.4	14	16
23 ● Dk. Green	3.5	350	18.9	4.23	70.6	12	14
	4.0	400	19.5	4.55	75.8	12	14
	4.5	450	19.8	4.85	80.8	12	14
	5.0	500	20.1	5.14	85.6	13	15
	5.5	550	20.4	5.45	90.8	13	15
	6.0	600	20.7	5.71	95.1	13	15
	6.2	620	20.7	5.82	97.0	14	16
25 ● Dk. Blue	3.5	350	19.5	4.60	76.7	12	14
	4.0	400	20.1	4.92	82.1	12	14
	4.5	450	20.4	5.23	87.2	13	14
	5.0	500	20.7	5.52	92.0	13	15
	5.5	550	21.0	5.84	97.3	13	15
	6.0	600	21.3	6.10	101.7	13	15
	6.2	620	21.3	6.22	103.6	14	16
28 ● Black	3.5	350	19.8	5.73	95.5	15	17
	4.0	400	20.4	6.07	101.1	15	17
	4.5	450	21.0	6.38	106.4	14	17
	5.0	500	21.3	6.68	111.3	15	17
	5.5	550	21.9	7.00	116.7	15	17
	6.0	600	22.3	7.27	121.1	15	17
	6.2	620	22.3	7.38	122.9	15	17
6.5	650	22.6	7.52	125.3	15	17	
6.9	690	23.2	7.73	128.8	14	17	

I-40 NOZZLES



Opposing
Front Back



I-40 Turf Cup Kit option
Available as a field installed option on all models

I-40 Opposing Nozzle 360° Model



Note:
Precipitation rates for the ON-Opposing Nozzles models are calculated at 360°. For the precipitation rate for a 360° sprinkler, divide by 2.

I-90

Radius: **22.3 to 31.4 m**
 Flow: **6.7 to 19.04 m³/hr; 111.7 to 317.2 l/min**
 Inlet: **1½" BSP**

FEATURES

- Model: 8 cm
- Arc setting: 40° to 360°
- Dual trajectory nozzle choices:
 - 8 standard trajectory (22.5°)
 - 8 low angle trajectory (15°)
- Nozzle range: #25 to #73
- Exclusive Pressure Port™ nozzle technology
- Through-the-top arc adjustment
- QuickCheck™ arc mechanism
- Water lubricated gear-drive
- Standard factory installed nozzle: #53
- Factory installed rubber logo cap
- Warranty period: 5 years
- ▶ Opposing nozzle 360° model
- ▶ Dual trajectory colour-coded nozzles
- ▶ Optional reclaimed water ID
- ▶ Drain check valve (up to 2 m of elevation)



I-90
 Overall height: ADV/36V: 28 cm
 Pop-up height: 8 cm
 Exposed diameter: 9 cm
 Inlet size: 1½" (40 mm) BSP

OPERATING SPECIFICATIONS

- Radius:
 - I90-ADV: 20.1 m to 29.6 m
 - I90-36V: 22.3 m to 31.4 m
- Flow:
 - I90-ADV: 6.70 to 19.04 m³/hr; 111.7 to 317.2 l/min
 - I90-36V: 6.93 to 18.92 m³/hr; 115.5 to 315.3 l/min
- Recommended pressure range: 5.5 to 8.0 bar; 550 to 800 kPa
- Operating pressure range: 5.0 to 8.0 bar; 500 to 800 kPa
- Precipitation rates: 19 mm/hr approximately (360°)

USER-INSTALLED OPTIONS

- Turf Cup Kit
 - I-90 all: P/N 467955
 - Rubber Cover Kit
 - I-90-ADV: P/N 234200 (all)
 - I-90-36V: P/N 234200 (0711 date code and after)
 - I-90-36V: P/N 234201 (0611 date code and prior only)
 - Low-Angle Nozzles: #25 to #73
- ▶ = Advanced Feature descriptions on page 18



Turf cup kit
 P/N 467955



Rubber cover kits
 I90-ADV: P/N 234200
 I90-36V: 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 = 8 cm Pop-up	Plastic riser, check valve, and 8 standard trajectory 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 B = BSP inlet threads	#25 to #73 = Factory installed nozzle number

Examples:

- I-90 - **ADV** - **B** = 8 cm Pop-up, adjustable arc, with BSP inlet threads
- I-90 - **36V** - **B** - **43** = 8 cm Pop-up, full-circle, opposing nozzles, with BSP inlet threads, and #43 nozzle
- I-90 - **3RV** - **B** - **63** = 8 cm Pop-up, full-circle, opposing nozzles, reclaimed water ID, with BSP inlet threads, and #63 nozzle

ROTORS

I-90-ADV NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
25 ● Lt. Blue	5.5	550	20.1	6.70	111.7	33.1	38.2
	6.0	600	20.4	7.16	119.2	34.3	39.6
	7.0	700	20.7	7.54	125.7	35.1	40.5
	7.5	750	21.0	8.09	134.8	36.6	42.2
33 ● Grey	5.5	550	20.7	8.22	137.0	38.3	44.2
	6.0	600	21.0	8.68	144.6	39.2	45.3
	7.0	700	21.3	9.18	152.9	40.3	46.6
38 ● Red	5.5	550	21.9	9.22	153.7	38.3	44.2
	6.0	600	22.3	9.77	162.8	39.5	45.6
	7.0	700	22.9	10.31	171.9	39.5	45.6
43 ● Dk. Brown	5.5	550	22.6	10.47	174.5	41.2	47.5
	6.0	600	22.6	11.02	183.6	43.3	50.0
	7.0	700	22.9	11.52	191.9	44.1	50.9
	7.5	750	23.5	12.13	202.1	44.0	50.9
48 ● Dk. Green	5.5	550	23.5	11.40	190.0	41.4	47.8
	6.0	600	24.1	11.95	199.1	41.2	47.6
	7.0	700	24.7	12.52	208.6	41.1	47.4
53 ● Dk. Blue	5.5	550	24.7	12.47	207.8	40.9	47.2
	6.0	600	25.6	12.99	216.5	39.6	45.8
	7.0	700	26.2	13.52	225.2	39.3	45.4
	7.5	750	26.5	14.11	235.1	40.1	46.3
63 ● Black	5.5	550	26.2	14.15	235.8	41.2	47.6
	6.0	600	26.8	14.88	247.9	41.4	47.8
	7.0	700	27.4	15.67	261.2	41.7	48.1
	7.5	750	27.7	16.33	272.2	42.5	49.0
73 ● Orange	5.5	550	27.1	16.51	275.2	44.9	51.8
	6.0	600	27.7	17.13	285.4	44.5	51.4
	7.0	700	28.3	17.74	295.6	44.2	51.0
	7.5	750	29.0	18.38	306.2	43.8	50.6
	8.0	800	29.6	19.04	317.2	43.5	50.3

I-90-36V NOZZLE PERFORMANCE DATA							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
25 ● Lt. Blue	5.5	550	22.3	6.93	115.5	14.0	16.2
	6.0	600	22.9	7.36	122.6	14.1	16.3
	7.0	700	23.2	7.79	129.8	14.5	16.8
	7.5	750	23.8	8.29	138.2	14.7	16.9
33 ● Grey	5.5	550	23.5	8.25	137.4	15.0	17.3
	6.0	600	23.8	8.72	145.4	15.4	17.8
	7.0	700	24.4	9.22	153.7	15.5	17.9
38 ● Red	5.5	550	24.4	9.22	153.7	15.5	17.9
	6.0	600	25.0	9.75	162.4	15.6	18.0
	7.0	700	25.3	10.29	171.5	16.1	18.6
	7.5	750	25.9	10.84	180.6	16.1	18.6
43 ● Dk. Brown	5.5	550	25.3	10.49	174.9	16.4	18.9
	6.0	600	25.6	11.04	184.0	16.8	19.4
	7.0	700	25.9	11.56	192.7	17.2	19.9
	7.5	750	26.2	12.13	202.1	17.7	20.4
48 ● Dk. Green	5.5	550	26.2	11.27	187.8	16.4	18.9
	6.0	600	27.1	11.93	198.7	16.2	18.7
	7.0	700	27.4	12.45	207.4	16.5	19.1
53 ● Dk. Blue*	5.5	550	27.1	12.31	205.2	16.7	19.3
	6.0	600	27.4	12.88	214.6	17.1	19.8
	7.0	700	28.0	13.45	224.1	17.1	19.7
	7.5	750	28.3	14.02	233.6	17.4	20.1
63 ● Black	5.5	550	28.0	14.36	239.2	18.3	21.1
	6.0	600	28.7	14.97	249.5	18.2	21.1
	7.0	700	29.3	15.76	262.7	18.4	21.3
	7.5	750	29.6	16.36	272.5	18.7	21.6
73 ● Orange	5.5	550	29.3	16.38	272.9	19.1	22.1
	6.0	600	29.9	17.04	283.9	19.1	22.0
	7.0	700	30.2	17.67	294.5	19.4	22.4
	7.5	750	31.1	18.29	304.7	18.9	21.8
	8.0	800	31.4	18.92	315.3	19.2	22.2



** For low angle nozzle performance, reduce radius by 15%.

* 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



ROTORS

STK-1 / STK-2

ST SYSTEM FOR COOLING AND CLEANING SYNTHETIC TURF

Radius: **31.4 to 36.6 m**
 Flow: **16.9 to 20.9 m³/hr; 282.0 to 348 l/min**
 Inlet: **1½" BSP (ST-90), 1½" ACME (STG-900)**

FEATURES

- Standard installed nozzle: #83
- Arc setting: 40° to 360°
- QuickCheck™ arc mechanism
- Through-the-top arc adjustment
- Water lubricated gear-drive
- Factory installed rubber logo cap
- Nozzle trajectory: 22.5°
- Warranty period: 5 year component part

OPERATING SPECIFICATIONS

- Radius: 31.4 m to 36.6 m
- Flow: 16.9 to 20.9 m³/hr; 282 to 348 l/min
- Operating pressure range: 6.9 to 8.3 bar; 690 to 830 kPa
- Precipitation rate: 35 mm/hr approximately

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-B-83	8 cm pop-up, jar top cap, adjustable arc, plastic riser, and BSP inlet threads
STG-900-83	8 cm pop-up, top service, adjustable arc, plastic riser, and ACME inlet threads



ST-90*

Overall height: 29 cm
 Pop-up height: 8 cm
 Diameter: 14 cm
 Inlet size: 1½" (40 mm) BSP
 * not for use with the ST Vault



STG-900*

Overall height: 36 cm
 Pop-up height: 8 cm
 Diameter: 20 cm
 Inlet size: 1½" (40 mm) ACME
 * for use with the ST173026B Vault

KIT CONFIGURATIONS

STK-1 / STK-2 COMPONENTS		
Kit Descriptions For specification ease and to ensure the correct product is installed, the ST System is available in 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-173026B	ST-173026B
ST Swing Joint: "VA" 2" (50mm) PVC swing joint with 7 pivot points	ST-2008VA	ST-2008VA
ST Valve & Fitting Kit: ICV-151 valve, high pressure rated ball valve & fitting kit	—	ST-VBVK
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" (25mm) inlet with 1¼" (32 mm) outlet for key	HQ5RC-BSP	HQ5RC-BSP
BSP Inlet Adapter: Converts swing joint to 2" (50 mm) male BSP threads	241400	241400

Notes:

*ST Adapter Elbow Fitting connects ST-2008VA swing joint to rotor adapter fitting (STK-1B) also connects ST-VBVK to STG-900 rotor (STK-2B)
 **ST Rotor Adapter Fitting connects 239800 adapter elbow fitting to STG-900 rotor's ACME inlet (STK-1B)

ST-90 / STG-900 NOZZLE PERFORMANCE DATA

Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
73 ●	7.0	700	31.4	16.9	282	34.3	39.6
	7.5	750	33.2	17.5	291	31.7	36.6
	8.0	800	35.1	18.1	301	29.4	34.0
83 ●	7.0	700	34.1	19.1	319	32.8	37.9
	7.5	750	35.4	20.0	333	32.0	37.0
	8.0	800	36.6	20.9	348	31.2	36.1

Notes:

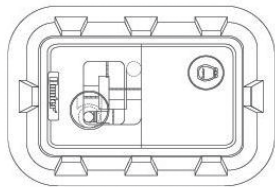
All precipitation rates calculated for 180° operation.
For precipitation rate of a 360° sprinkler, divide by 2.

Requires minimum 7.0 bar; 700 kPa dynamic pressure supplied to swing joint inlet.

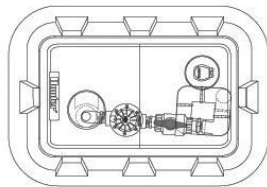
INSTALLATION DETAILS

STK-1

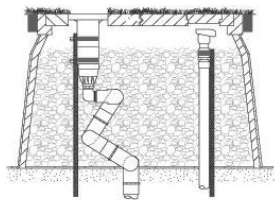
STK-2



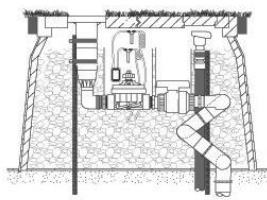
ON FIELD SIDE



ON FIELD SIDE



VIEW FROM ON FIELD SIDE



VIEW FROM ON FIELD SIDE

ST Rotor



ST SWING JOINTS

Multi-axis 22 bar; 2,200 kPa 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" (50 mm) for ST-90, STG-900

Inlet: 2" (50 mm) Slip*
Outlet: 1½" ACME

* Use P/N 241400 adapter to male BSP threads



ROTORS

ST VALVE SETS

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

STVBVFK: for STG-900 in STK-2 Kit

Valve: 1½" (40 mm) NPT ICV
Ball Valve: 22 bar (2,200 kPa) rating
Inlet: 1½" (40 mm) ACME
Outlet: 1½" (40 mm) ACME

Low Pressure Loss Design: 0.7 bar; 70 kPa at 22.7 m³/hr; 378 l/min from swing joint inlet through to rotor
Includes: 1½" (40 mm) 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 51 mm thick 3-piece PC cover set

Main Cover: 43 cm x 76 cm
Overall Height: 66 cm
Body Weight: 47 kg
Total Weight: 73 kg
Base Pad: 68 cm x 104 cm
Quick Access Ports: 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. Integrated in-vault design eliminates the need for additional quick-coupler enclosures.

STK-6V

ST SYSTEM FOR CLEANING, COOLING, FLUSHING AND PREPARING SYNTHETIC SPORTS FIELDS FOR PLAY

Radius: **32.5 to 50.3 m**
 Flow: **21.8 to 74.2 m³/hr; 364 to 1,237 l/min**
 Inlet: **2" (50 mm) BSP**

FEATURES

- Nozzle choices: 6
- Standard nozzle: #20
- Nozzle range: #16 to #26
- Nozzle trajectory: 22.5°
- Gear-drive: Isolated, grease lubricated gear-drive
- Factory installed rubber logo cap (ST-1600-B / ST-1600-HSB)
- Arc Adjustment: Moveable 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 8 bar, 800 kPa)
- Internal construction: Brass, stainless steel and ball-bearings
- Optional Infill Barrier System (ST-1600-B / ST-1600-HSB)
- Warranty period: 5 year component part

OPERATING SPECIFICATIONS

- Radius: 32.5 to 50.3 m
- Flow: 21.8 to 74.2 m³/hr; 364 to 1,237 l/min
- Operating pressure range: 4.0 to 8.0 bar; 400 to 800 kPa
- Precipitation rate: 60 mm/hr approximately

KIT CONFIGURATIONS

STK-6V				
Kit Description (Components are ordered individually)	STK-6V-B-2P Standard Pop-Up 2" (50 mm) Plastic Valve	STK-6V-HSB-2P High Speed Pop-Up 2" (50 mm) Plastic Valve	STK-6V-B-3M Standard Pop-Up 3" (80 mm) Metal Valve	STK-6V-HSB-3M High Speed Pop-Up 3" (80 mm) Metal Valve
ST Rotor: Synthetic turf rotor	ST-1600-B	ST-1600-HS-B	ST-1600-B	ST-1600-HS-B
ST Infill Barrier System: Rubber cover kit	ST-IBS-1600	ST-IBS-1600	ST-IBS-1600	ST-IBS-1600
ST Bracket: Rotor hanger and elevation adjustment	ST-BKT-1600	ST-BKT-1600	ST-BKT-1600	ST-BKT-1600
ST Vault: 4-piece polymer-concrete cover set	ST-243636-B	ST-243636-B	ST-243636-B	ST-243636-B
ST Manifold: 3" (80 mm) fittings, isolation valve and drain valve	ST-BVF30-K	ST-BVF30-K	ST-BVF30-K	ST-BVF30-K
ST Valve: With remote on-off-auto selector	ST-V20-KVP	ST-V20-KVP	ST-V30-KV	ST-V30-KV
ST Variable Speed Valve: Regulates opening speed	ST-NDL-K	ST-NDL-K	ST-NDL-K	ST-NDL-K
ST Support: Adjustable manifold support (2 required)	ST-SPT-K	ST-SPT-K	ST-SPT-K	ST-SPT-K
ST Inlet Hose: Flexible stainless steel alignment hose	ST-H30-K	ST-H30-K	ST-H30-K	ST-H30-K
BSP Inlet Adapter: 3" (80 mm) NPT x BSP	855000	855000	855000	855000
BSP Inlet Adapter: 1" (25 mm) NPT x BSP male (2 required)	855100	855100	855100	855100
Quick Coupler Valve: 1" (25 mm) BSP inlet, 1¼" (32 mm) outlet for key	HQ-5RC-BSP	HQ-5RC-BSP	HQ-5RC-BSP	HQ-5RC-BSP



ST-1600-B
ST-1600-HS-B
 Overall height: 57 cm
 Pop-up height: 13 cm
 Diameter: 36 cm
 Inlet size: 2" (50 mm) BSP*

* Use P/N 241400 adapter to 2" (50 mm) PVC pipe if needed



ST-1600-BR
ST-1600-HS-BR
 (Riser Mounted Model)
 Overall height: 22 cm
 Diameter: 21 cm
 Inlet size: 2" (50 mm) BSP*

* Use P/N 241400 adapter to 2" (50 mm) PVC pipe if needed

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 35 bar; 350 kPa working pressure, this 3" (80 mm) galvanized ductile iron assembly includes Victaulic™ type grooved connections, a butterfly isolation valve, a point of connection for the quick coupler, and a 1" (25 mm) brass drain valve.

ST H-Block Manifold Supports

ST-SPT-K

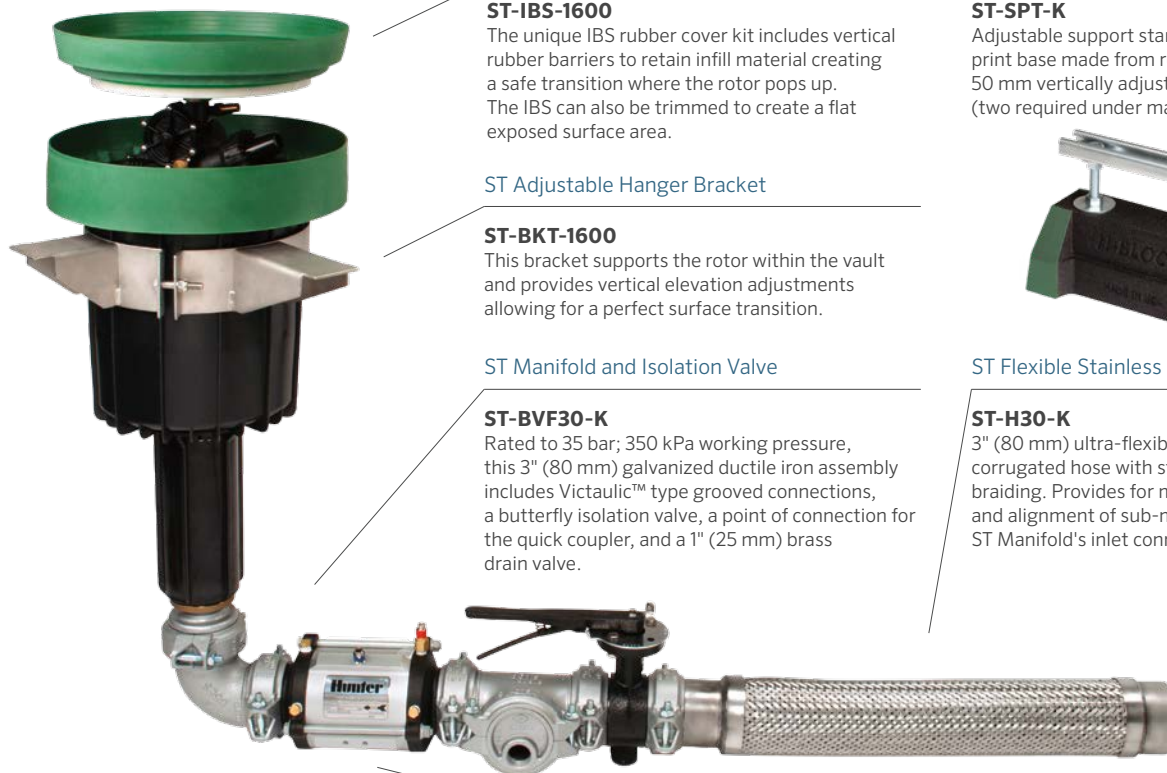
Adjustable support stands include a large footprint base made from recycled tire rubber and a 50 mm vertically adjustable support rail (two required under manifold).



ST Flexible Stainless Inlet Hose

ST-H30-K

3" (80 mm) 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 45.0 m³/hr; 757 l/min



ST-V20-KVP: Heavy-duty plastic control valve
Valve: 2" (50 mm) Grooved Vic Type
Opening Speed: ST-NDL-K regulates/slows speed
Pressure Loss: Ultra Low (0.15 bar; 15 kPa at 45.0 m³/hr; 757 l/min)
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" (80 mm) Grooved Vic Type
Opening Speed: ST-NDL-K regulates/slows speed
Pressure Loss: Ultra Low (0.15 bar; 15 kPa at 65.0 m³/hr; 1,082 l/min)
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



ST VAULTS

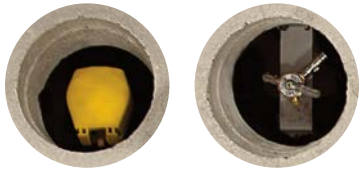
Heavy-duty tapered fiberglass and polymer-concrete construction with pre-cast holes for rotor, quick coupler valve, and remote manifold assembly.

Quick-couplers provide a convenient source of water for washing down spills and water-soluble paint. 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 76 mm thick 4-piece PC cover set

- Main Cover:** 61 cm x 91 cm
- Overall Height:** 91 cm
- Body Weight:** 70 kg
- Total Weight:** 138 kg
- Base Pad:** 106 cm x 122 cm
- Quick Access Ports:** 2



① Quick-Coupler ② On-Off-Auto Selector

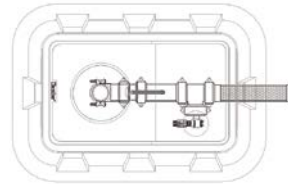


ST-1600 Rotor in Action



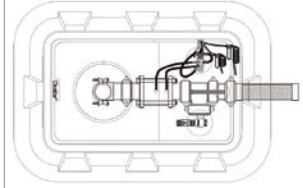
INSTALLATION DETAILS

STK-5V

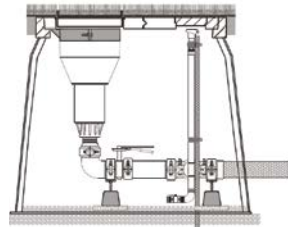


ON FIELD SIDE

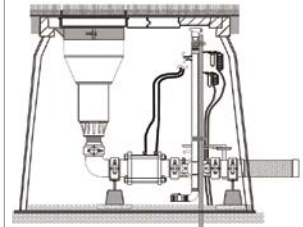
STK-6V



ON FIELD SIDE



VIEW FROM ON FIELD SIDE



VIEW FROM ON FIELD SIDE

ST-1600 NOZZLE PERFORMANCE DATA

Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
16 ●	4.0	400	32.5	21.8	364	41.4	47.8
	5.0	500	35.0	24.4	406	39.8	45.9
	6.0	600	37.0	26.8	446	39.1	45.1
	7.0	700	39.0	28.9	482	38.0	43.9
	8.0	800	41.0	31.2	520	37.1	42.9
18 ●	4.0	400	34.0	24.3	405	42.0	48.6
	5.0	500	37.0	27.1	452	39.6	45.8
	6.0	600	39.0	29.8	496	39.1	45.2
	7.0	700	40.5	32.1	535	39.1	45.2
	8.0	800	43.0	34.8	580	37.6	43.5
20 ●	4.0	400	35.0	32.7	545	53.4	61.7
	5.0	500	39.0	36.5	609	48.1	55.5
	6.0	600	43.0	40.1	668	43.4	50.1
	7.0	700	44.0	43.3	721	44.7	51.6
	8.0	800	45.0	46.4	773	45.8	52.9
22 ●	4.0	400	36.0	38.9	649	60.1	69.4
	5.0	500	39.5	43.6	726	55.8	64.5
	6.0	600	44.0	47.7	795	49.3	56.9
	7.0	700	47.0	51.5	859	46.7	53.9
	8.0	800	48.0	55.2	920	47.9	55.3
24 ●	4.0	400	37.0	45.9	765	67.1	77.4
	5.0	500	40.5	51.3	855	62.6	72.2
	6.0	600	45.0	56.2	937	55.5	64.1
	7.0	700	47.5	60.7	1012	53.8	62.2
	8.0	800	48.7	65.0	1084	54.9	63.3
26 ●	4.0	400	38.4	53.0	883	71.8	82.9
	5.0	500	41.4	59.2	986	68.8	79.5
	6.0	600	46.0	64.6	1077	61.0	70.4
	7.0	700	48.7	69.7	1162	58.6	67.7
	8.0	800	50.3	74.2	1237	58.7	67.8



SIMPLE TO SPECIFY, *Easy to Install & Maintain*

The Hunter ST System is the first and only cost-effective integrated solution designed to exceed the unique and specific needs of the synthetic turf irrigation market. The core of the Hunter ST System features our gear-driven long-range rotors. Coupled with the heavy-duty manifold assembly, low-pressure loss valves and robust, feature-packed enclosures, they provide the ultimate in installation flexibility and long-term total

access to all irrigation components including the manifold's point of connection. Such complete access is an absolute must when the surrounding synthetic surface is not easily excavated and restored to original condition without huge expense, specialised equipment and complicated procedures. For the most complete and highest quality synthetic turf watering solution, the answer is clearly the Hunter ST System.

SECTION 02:
MP ROTATOR[®]

MP ROTATOR





ADVANCED FEATURES

AUTOMATIC MATCHED PRECIPITATION

The MP Rotator® has the unique ability to control the amount of water flowing through the nozzle at various arc and radius settings, resulting in matched precipitation regardless of the nozzle setting.

DOUBLE-POP

The MP Rotator's nozzle pops up from its protected position only after the riser is fully extended, providing superior defence against dirt and debris.

DISTRIBUTION UNIFORMITY

The various streams of the MP Rotator allow it to target all areas of the landscape evenly, yielding superior uniformity over traditional spray nozzles. Each stream targets specific areas to achieve higher efficiency and even coverage.

LOW PRECIPITATION RATE

Since the vast majority of soils have an infiltration rate of less than 25 mm/hr, irrigating at a low precipitation rate is essential to achieve efficiency.

The standard MP Rotator line applies water at 10 mm/hr, while the SR Series has a precipitation rate of 20 mm/hr. Either choice will avoid runoff, saving water and preventing erosion.

SHORT RADIUS (SR) SERIES

Achieve efficient irrigation in narrow spaces with the SR Series. MP800SR allows for radius adjustment down to 1.8 m, providing opportunity for overhead irrigation in smaller spaces than ever before possible.

ECO ROTATOR

Radius: 2.5 to 9.1 m

FEATURES

- Model: 10 cm
- Adjustable arc and radius offer precise settings
- Two-piece ratchet
- Warranty period: 2 years
- Nozzle choices:
 - MP1000-90, MP2000-90
 - MP3000-90, MP1000-360
 - MP2000-360, MP3000-360
- ▶ Automatic matched precipitation
- ▶ Double-pop
- ▶ Distribution uniformity
- ▶ Low precipitation rate

OPERATING SPECIFICATIONS

- Flow rate: 0.04 to 0.96 m³/hr; 0.61 to 16.07 l/min
- Radius: 2.5 to 9.1 m
- Recommended pressure range: 1.7 to 3.8 bar; 170 to 380 kPa
- Precipitation rates: 10 mm/hr approximately

USER INSTALLED OPTIONS

- Drain check valve (up to 2 m of elevation; P/N 462237)
- ▶ = *Advanced Feature descriptions on page 47*



Eco Rotator

Overall height: 19 cm
Exposed diameter: 3 cm
Inlet size: ½"

ECO ROTATOR

Model	Description
ECO-04 - 1090	10 cm pop-up, MP1000 2.5 to 4.5 m radius, adjustable from 90° to 210°
ECO-04 - 10360	10 cm pop-up, MP1000 2.5 to 4.5 m radius, 360°
ECO-04 - 2090	10 cm pop-up, MP2000 4.0 to 6.4 m radius, adjustable from 90° to 210°
ECO-04 - 20360	10 cm pop-up, MP2000 4.0 to 6.4 m radius, 360°
ECO-04 - 3090	10 cm pop-up, MP3000 6.7 to 9.1 m radius, adjustable from 90° to 210°
ECO-04 - 30360	10 cm pop-up, MP3000 6.7 to 9.1 m radius, 360°

ECO ROTATOR PERFORMANCE DATA

ECO-04 MP1000

Radius: 2.5 to 4.5 m
Adjustable Arc and Full-Circle
● Maroon: 90° to 210°
● Olive: 360°

ECO-04 MP2000

Radius: 4.0 to 6.4 m
Adjustable Arc and Full-Circle
● Black: 90° to 210°
● Red: 360°

ECO-04 MP3000

Radius: 6.7 to 9.1 m
Adjustable Arc and Full-Circle
● Blue: 90° to 210°
● Grey: 360°

Arc	Pressure		Radius		Flow	Flow	Precip mm/hr		Radius		Flow	Flow	Precip mm/hr		Radius		Flow	Flow	Precip mm/hr		
	bar	kPa	m	m	m ³ /hr	l/min	■	▲	m	m	m ³ /hr	l/min	■	▲	m	m	m ³ /hr	l/min	■	▲	
90° ■	1.7	170	--	--	--	--	--	--	5.2	0.07	1.18	11	12	7.6	0.16	2.63	11	13	11	12	
	2.0	200	3.7	0.04	0.61	11	12	5.5	0.07	1.23	10	11	8.2	0.17	2.77	10	11	10	11	10	11
	2.5	250	4.0	0.04	0.68	10	12	5.8	0.09	1.43	10	12	8.5	0.19	3.08	10	12	10	12	10	12
	2.8	280	4.1	0.04	0.70	10	11	6.1	0.09	1.52	10	11	9.1	0.20	3.25	9	11	10	11	10	11
	3.0	300	4.3	0.04	0.73	10	11	6.4	0.09	1.57	9	10	9.1	0.20	3.38	10	11	10	11	10	11
	3.5	350	4.4	0.05	0.78	10	11	6.4	0.10	1.68	10	11	9.1	0.22	3.67	11	12	10	11	10	11
	3.8	380	4.5	0.05	0.81	9	11	6.4	0.11	1.77	11	12	9.1	0.23	3.80	11	13	10	11	10	11
180° ■	1.7	170	--	--	--	--	--	--	4.9	0.13	2.22	11	12	7.6	0.32	5.48	11	13	11	12	
	2.0	200	3.7	0.07	1.20	11	12	5.2	0.14	2.35	11	12	8.2	0.35	5.88	10	12	10	11	10	11
	2.5	250	4.0	0.08	1.35	10	12	5.5	0.16	2.67	11	12	8.5	0.40	6.55	11	12	10	11	10	11
	2.8	280	4.1	0.08	1.40	10	11	5.8	0.17	2.80	10	12	9.1	0.41	6.88	10	11	10	11	10	11
	3.0	300	4.3	0.09	1.46	10	11	6.1	0.17	2.90	10	11	9.1	0.43	7.18	10	12	10	11	10	11
	3.5	350	4.4	0.09	1.56	10	11	6.4	0.19	3.15	9	10	9.1	0.47	7.77	11	13	10	11	10	11
	3.8	380	4.5	0.10	1.62	9	11	6.4	0.19	3.22	9	11	9.1	0.45	8.02	12	13	10	11	10	11
210° ■	1.7	170	--	--	--	--	--	--	4.9	0.16	2.58	11	12	7.6	0.38	6.40	11	13	11	12	
	2.0	200	3.7	0.09	1.41	11	13	5.2	0.17	2.75	11	13	8.2	0.41	6.85	10	12	10	11	10	11
	2.5	250	4.0	0.10	1.58	10	12	5.5	0.19	3.08	10	12	8.5	0.46	7.65	11	12	10	11	10	11
	2.8	280	4.1	0.10	1.63	10	11	5.8	0.20	3.25	10	12	9.1	0.48	8.02	10	11	10	11	10	11
	3.0	300	4.3	0.10	1.71	10	11	6.1	0.21	3.42	10	11	9.1	0.50	8.37	10	12	10	11	10	11
	3.5	350	4.4	0.11	1.82	10	11	6.4	0.22	3.70	9	10	9.1	0.54	9.03	11	13	10	11	10	11
	3.8	380	4.5	0.11	1.89	9	11	6.4	0.23	3.80	10	11	9.1	0.56	9.37	12	13	10	11	10	11
360° ●	1.7	170	--	--	--	--	--	--	4.9	0.27	4.42	11	12	7.6	0.66	10.98	11	13	11	12	
	2.0	200	3.7	0.14	2.40	12	14	5.2	0.28	4.72	11	13	8.2	0.70	11.72	10	12	10	11	10	11
	2.5	250	4.0	0.16	2.69	10	12	5.5	0.32	5.28	10	12	8.5	0.79	13.10	11	12	10	11	10	11
	2.8	280	4.1	0.17	2.81	10	12	5.8	0.33	5.55	10	12	9.1	0.83	13.75	10	11	10	11	10	11
	3.0	300	4.3	0.18	2.94	10	11	6.1	0.35	5.80	10	11	9.1	0.87	14.37	10	12	10	11	10	11
	3.5	350	4.4	0.19	3.17	10	11	6.4	0.37	6.25	9	10	9.1	0.93	15.52	11	13	10	11	10	11
	3.8	380	4.5	0.20	3.25	10	11	6.4	0.38	6.40	9	10	9.1	0.96	16.07	12	13	10	11	10	11

Bold = Recommended pressure

MP ROTATOR

MP ROTATOR®

Radius: 2.5 to 10.7 m

FEATURES

- Radius can be reduced up to 25% on all models
- Easy arc adjustment
- Colour-coded for easy identification
- Removable filter screen ensures hassle-free service
- Wind-resistant multi-stream technology
- ▶ Automatic matched precipitation
- ▶ Double-pop
- ▶ Distribution uniformity
- ▶ Low precipitation rate

OPERATING SPECIFICATIONS

- Recommended operating pressure: 2.8 bar; 280 kPa
- Recommended filtering when operating on dirty water

OPTIONS

- Pair with Pro-Spray® PRS40 to achieve pressure regulation at the head of 2.8 bar; 280 kPa
- Adding “HT” will specify male threaded nozzles
- ▶ = *Advanced Feature descriptions on page 47*

MP1000 2.5 to 4.5 m radius



MP1000-90
90° to 210°



MP1000-210
210° to 270°



MP1000-360
360°

MP2000 4.0 to 6.4 m radius



MP2000-90
90° to 210°



MP2000-210
210° to 270°



MP2000-360
360°

MP3000 6.7 to 9.1 m radius



MP3000-90
90° to 210°



MP3000-210
210° to 270°



MP3000-360
360°

MP ROTATOR – SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Options
MP1000-90 = 2.5 to 4.5 m radius, adjustable from 90° to 210°	(blank) = No option HT = Male threaded version <i>(Not available in 3500 and 1000-210)</i>
MP1000-210 = 2.5 to 4.5 m radius, adjustable from 210° to 270°	
MP1000-360 = 2.5 to 4.5 m radius, 360°	
MP2000-90 = 4.0 to 6.4 m radius, adjustable from 90° to 210°	
MP2000-210 = 4.0 to 6.4 m radius, adjustable from 210° to 270°	
MP2000-360 = 4.0 to 6.4 m radius, 360°	
MP3000-90 = 6.7 to 9.1 m radius, adjustable from 90° to 210°	
MP3000-210 = 6.7 to 9.1 m radius, adjustable from 210° to 270°	
MP3000-360 = 6.7 to 9.1 m radius, 360°	
MP3500-90 = 9.4 to 10.7 m radius, adjustable from 90° to 210°	
MPLCS515 = Left corner strip, 1.5 m to 4.6 m	
MPRCS515 = Right corner strip, 1.5 m to 4.6 m	
MPSS530 = Side strip, 1.5 m to 9.1 m	
MPCORNER = 2.5 to 4.5 m radius, adjustable from 45° to 105°	

Examples:

MP1000-210 = 2.5 to 4.5 m radius, adjustable from 210° to 270°
PROS-06-PRS40-CV-MP2000-90 = 15 cm pop-up regulated at 2.8 bar; 280 kPa, drain check valve, with MP2000-90

MP ROTATOR PERFORMANCE DATA

MP1000

Radius: 2.5 to 4.5 m
Adjustable Arc and Full-Circle
● Maroon: 90° to 210°
● Lt. Blue: 210° to 270°
● Olive: 360°

MP2000

Radius: 4.0 to 6.4 m
Adjustable Arc and Full-Circle
● Black: 90° to 210°
● Green: 210° to 270°
● Red: 360°

MP3000

Radius: 6.7 to 9.1 m
Adjustable Arc and Full-Circle
● Blue: 90° to 210°
● Yellow: 210° to 270°
● Grey: 360°

Arc	Pressure		Radius m	Flow m³/hr	Flow l/min	Precip mm/hr		Radius m	Flow m³/hr	Flow l/min	Precip mm/hr		Radius m	Flow m³/hr	Flow l/min	Precip mm/hr	
	bar	kPa				■	▲				■	▲				■	▲
90° ■	1.7	170	--	--	--	--	--	5.2	0.07	1.18	11	12	7.6	0.16	2.63	11	13
	2.0	200	3.7	0.04	0.61	11	12	5.5	0.07	1.23	10	11	8.2	0.17	2.77	10	11
	2.5	250	4.0	0.04	0.68	10	12	5.8	0.09	1.43	10	12	8.5	0.19	3.08	10	12
	2.8	280	4.1	0.04	0.70	10	11	6.1	0.09	1.52	10	11	9.1	0.20	3.25	9	11
	3.0	300	4.3	0.04	0.73	10	11	6.4	0.09	1.57	9	10	9.1	0.20	3.38	10	11
	3.5	350	4.4	0.05	0.78	10	11	6.4	0.10	1.68	10	11	9.1	0.22	3.67	11	12
3.8	380	4.5	0.05	0.81	9	11	6.4	0.11	1.77	11	12	9.1	0.23	3.80	11	13	
180° ■	1.7	170	--	--	--	--	--	4.9	0.13	2.22	11	12	7.6	0.32	5.48	11	13
	2.0	200	3.7	0.07	1.20	11	12	5.2	0.14	2.35	11	12	8.2	0.35	5.88	10	12
	2.5	250	4.0	0.08	1.35	10	12	5.5	0.16	2.67	11	12	8.5	0.4	6.55	11	12
	2.8	280	4.1	0.08	1.40	10	11	5.8	0.17	2.80	10	12	9.1	0.41	6.88	10	11
	3.0	300	4.3	0.09	1.46	10	11	6.1	0.17	2.90	10	11	9.1	0.43	7.18	10	12
	3.5	350	4.4	0.09	1.56	10	11	6.4	0.19	3.15	9	10	9.1	0.47	7.77	11	13
3.8	380	4.5	0.10	1.62	9	11	6.4	0.19	3.22	9	11	9.1	0.45	8.02	12	13	
210° ■	1.7	170	--	--	--	--	--	4.9	0.16	2.58	11	12	7.6	0.38	6.40	11	13
	2.0	200	3.7	0.09	1.41	11	13	5.2	0.17	2.75	11	13	8.2	0.41	6.85	10	12
	2.5	250	4.0	0.10	1.58	10	12	5.5	0.19	3.08	10	12	8.5	0.46	7.65	11	12
	2.8	280	4.1	0.10	1.63	10	11	5.8	0.20	3.25	10	12	9.1	0.48	8.02	10	11
	3.0	300	4.3	0.10	1.71	10	11	6.1	0.21	3.42	10	11	9.1	0.50	8.37	10	12
	3.5	350	4.4	0.11	1.82	10	11	6.4	0.22	3.70	9	10	9.1	0.54	9.03	11	13
3.8	380	4.5	0.11	1.89	9	11	6.4	0.23	3.80	10	11	9.1	0.56	9.37	12	13	
270° ■	1.7	170	--	--	--	--	--	4.9	0.20	3.32	11	12	7.6	0.50	8.35	12	13
	2.0	200	3.7	0.11	1.80	11	13	5.2	0.21	3.53	11	13	8.2	0.53	8.83	10	12
	2.5	250	4.0	0.12	2.05	10	12	5.5	0.24	3.97	10	12	8.5	0.59	9.82	11	12
	2.8	280	4.1	0.13	2.10	10	11	5.8	0.25	4.15	10	12	9.1	0.62	10.32	10	11
	3.0	300	4.3	0.13	2.20	10	11	6.1	0.26	4.35	10	11	9.1	0.65	10.77	10	12
	3.5	350	4.4	0.14	2.35	10	11	6.4	0.28	4.70	9	10	9.1	0.70	11.68	11	13
3.8	380	4.5	0.15	2.45	9	11	6.4	0.29	4.88	9	11	9.1	0.73	12.12	12	13	
360° ■	1.7	170	--	--	--	--	--	4.9	0.27	4.42	11	12	7.6	0.66	10.98	11	13
	2.0	200	3.7	0.14	2.40	12	14	5.2	0.28	4.72	11	13	8.2	0.70	11.72	10	12
	2.5	250	4.0	0.16	2.69	10	12	5.5	0.32	5.28	10	12	8.5	0.76	13.10	11	12
	2.8	280	4.1	0.17	2.81	10	12	5.8	0.33	5.55	10	12	9.1	0.83	13.75	10	11
	3.0	300	4.3	0.18	2.94	10	11	6.1	0.35	5.80	10	11	9.1	0.87	14.37	10	12
	3.5	350	4.4	0.19	3.17	10	11	6.4	0.37	6.25	9	10	9.1	0.93	15.52	11	13
3.8	380	4.5	0.20	3.25	10	11	6.4	0.38	6.40	9	10	9.1	0.96	16.07	12	13	

Bold = Optimal pressure for the MP Rotator is 2.8 bar; 280 kPa. This can easily be achieved by using the MP Rotator with the Hunter PRS40 Spray Body, pressure regulated at 2.8 bar; 280 kPa.




Works best with PRS40



For PRS40 information see page 65

MP ROTATOR PERFORMANCE DATA




MP3500
 Radius: 9.4 to 10.7 m
 Adjustable Arc
 ● Light Brown: 90° to 210°

Arc	Pressure		Radius m	Flow m³/hr	Flow l/min	Precip. mm/hr	
	bar	kPa				■	▲
90° 	1.7	170	10.1	0.24	3.94	9	11
	2.0	200	10.4	0.26	4.28	10	11
	2.5	250	10.4	0.28	4.58	10	12
	2.8	280	10.7	0.29	4.84	10	12
	3.0	300	10.7	0.31	5.22	11	13
	3.5	350	10.7	0.33	5.41	11	13
	3.8	380	10.7	0.34	5.68	12	14
180° 	1.7	170	10.1	0.50	8.36	10	11
	2.0	200	10.4	0.51	8.48	9	11
	2.5	250	10.4	0.60	10.03	11	13
	2.8	280	10.7	0.65	10.83	11	13
	3.0	300	10.7	0.70	11.73	12	14
	3.5	350	10.7	0.73	12.15	13	15
	3.8	380	10.7	0.75	12.41	13	15
210° 	1.7	170	10.1	0.59	9.80	10	12
	2.0	200	10.4	0.65	10.75	10	12
	2.5	250	10.4	0.70	11.66	11	13
	2.8	280	10.7	0.75	12.45	11	13
	3.0	300	10.7	0.80	13.40	12	14
	3.5	350	10.7	0.85	14.23	13	15
	3.8	380	10.7	0.90	14.91	13	16

Bold = Optimal pressure for the MP Rotator is 2.8 bar; 280 kPa. This can easily be achieved by using the MP Rotator with the Hunter PRS40 Spray Body, pressure regulated at 2.8 bar; 280 kPa.

MP ROTATOR PERFORMANCE DATA

● **MPLCS515**: Ivory, MP Left Corner Strip
 ● **MPRCS515**: Copper, MP Right Corner Strip
 ● **MPSS530**: Brown, MP Side Strip

	Pressure		Radius m	Flow m³/hr	Flow l/min
	bar	kPa			
MP Left Corner Strip 	1.7	170	1.1 x 4.2	0.04	0.67
	2.0	200	1.2 x 4.3	0.04	0.72
	2.5	250	1.4 x 4.5	0.05	0.79
	2.8	280	1.5 x 4.6	0.05	0.84
	3.0	300	1.6 x 4.7	0.06	0.87
	3.5	350	1.7 x 4.8	0.06	0.94
	3.8	380	1.8 x 4.9	0.06	0.99
MP Right Corner Strip 	1.7	170	1.1 x 4.2	0.04	0.67
	2.0	200	1.2 x 4.3	0.04	0.72
	2.5	250	1.4 x 4.5	0.05	0.79
	2.8	280	1.5 x 4.6	0.05	0.84
	3.0	300	1.6 x 4.7	0.05	0.87
	3.5	350	1.7 x 4.8	0.06	0.94
	3.8	380	1.8 x 4.9	0.06	0.99
MP Side Strip 	1.7	170	1.1 x 8.3	0.08	1.34
	2.0	200	1.2 x 8.6	0.09	1.43
	2.5	250	1.4 x 8.9	0.09	1.57
	2.8	280	1.5 x 9.1	0.10	1.66
	3.0	300	1.6 x 9.3	0.10	1.72
	3.5	350	1.7 x 9.6	0.11	1.87
	3.8	380	1.8 x 9.9	0.12	1.96

Notes:

Strip pattern radius can be adjusted by 25%. MP Rotator is designed to maintain matched precipitation after radius adjustment. Optimal pressure for the MP Rotator is 2.8 bar; 280 kPa. This can easily be achieved by using the MP Rotator with the Hunter PRS40 Spray Body, pressure regulated at 2.8 bar; 280 kPa.

MP3500 9.4 to 10.7 radius



MP3500-90
90° to 210°

MP Strips



MPLCS515
Left Corner Strip
1.5 x 4.6 m



MPRCS515
Right Corner Strip
1.5 x 4.6 m



MPSS530
Side Strip
1.5 x 9.1 m

MP ROTATOR PERFORMANCE DATA

MP Corner
 Radius: 2.5 to 4.5 m
 Adjustable Arc
 ● Turquoise: 45° to 105°

Arc	Pressure		Radius m	Flow m ³ /hr	Flow l/min
	bar	kPa			
45°	1.7	170	--	--	--
	2.0	200	3.5	0.04	0.61
	2.5	250	4.0	0.04	0.68
	2.8	280	4.1	0.04	0.70
	3.0	300	4.3	0.04	0.73
	3.5	350	4.4	0.05	0.78
90°	1.7	170	3.2	0.07	1.15
	2.0	200	3.5	0.08	1.27
	2.5	250	4.0	0.08	1.40
	2.8	280	4.1	0.09	1.44
	3.0	300	4.3	0.09	1.57
	3.5	350	4.4	0.10	1.67
105°	1.7	170	3.2	0.08	1.34
	2.0	200	3.5	0.09	1.48
	2.5	250	4.0	0.10	1.63
	2.8	280	4.1	0.10	1.70
	3.0	300	4.3	0.11	1.83
	3.5	350	4.4	0.12	1.94
3.8	380	4.5	0.12	2.00	

Bold = Recommended pressure

MP Corner



MPCORNER
 Corner
 2.5 to 4.5 m

Male Threaded



MP-HT
 Male Threaded

MP Accessories

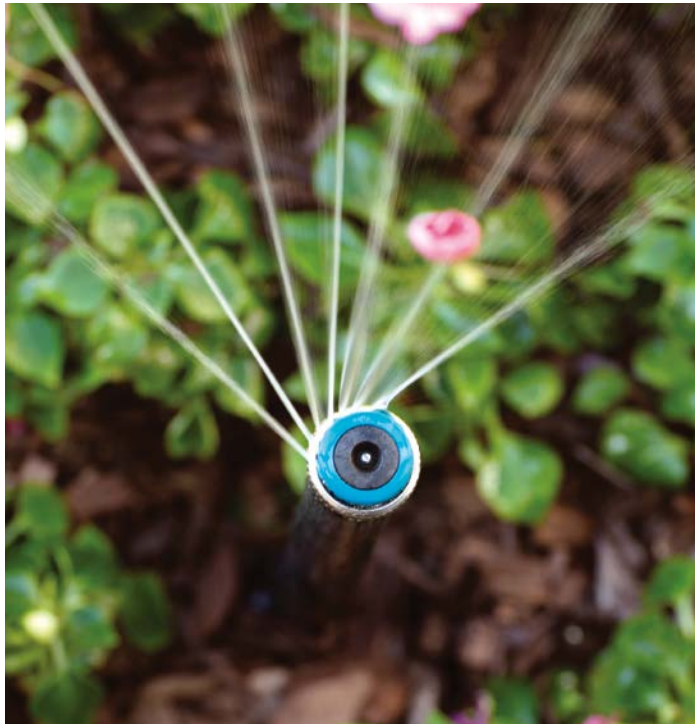


MPTOOL
 Adjusts all MP Rotators



MPSTICK
 Snaps onto any length of 1" (25 mm) PVC to allow standing adjustment.
PVC pipe not included.

MP Rotator



MP Tool for easy adjustments



MP ROTATOR® SR

Radius: 1.8 to 3.5 m

FEATURES

- Provides coverage from 1.8 to 3.5 m
- Colour-coded for easy identification
- Removable filter screen prevents large objects from clogging nozzle
- Wind-resistant multi-stream technology
- Adjustable arc and radius
- ▶ Automatic matched precipitation
- ▶ Double-pop
- ▶ Distribution uniformity
- ▶ Low precipitation rate

MP800SR 1.8 to 3.5 m radius



MP800SR-90
1.8 to 3.5 m radius adjustable
from 90°-210°



MP800SR-360
1.8 to 3.5 m radius
360°

OPERATING SPECIFICATIONS

- Recommended operating pressure: 2.8 bar, 280 kPa
- 2.1 bar; 210 kPa for min radius settings
- MP800SR-90 uses a 60 mesh; 250 microns built-in nozzle filter
- MP800SR-360 uses a 40 mesh; 420 microns built-in nozzle filter
- Recommended: use 150 mesh; 100 microns pre-filter arrangement with dirty water
- Hunter's HY filters are a great solution for zone-specific MP800SR arrangements

OPTIONS

- Specify Pro-Spray® PRS40 pop-up for accurate pressure regulation to achieve typical radius settings
- Specify Pro-Spray PRS30 for accurate pressure regulation to achieve minimum radius settings
- ▶ = *Advanced Feature descriptions on page 47*

MP ROTATOR PERFORMANCE DATA - MP800SR

MP800SR Radius: 1.8 to 3.5 m
Adjustable Arc
● Orange and Grey: 90° to 210°
● Lime Green and Grey: 360°

MAX RADIUS								MIN RADIUS		
Arc	Pressure		Radius	Flow		Precip. mm/hr		Radius		
	bar	kPa	m	m ³ /hr	l/min	■	▲	m	m ³ /hr	l/min
90° 	2.1	200	2.6	0.04	0.61	22	25	1.8	0.03	0.49
	2.5	250	2.9	0.04	0.72	21	24	2.1	0.03	0.55
	2.8	280	3.1	0.05	0.87	21	24	2.4	0.04	0.61
	3.0	300	3.4	0.06	0.95	20	23	2.4	0.04	0.68
	3.5	350	3.5	0.06	1.02	20	23	2.7	0.04	0.72
	3.8	380	3.5	0.06	1.06	20	23	3.0	0.05	0.76
180° 	2.1	200	2.6	0.07	1.21	22	25	1.8	0.06	0.98
	2.5	250	2.8	0.08	1.40	21	24	2.1	0.07	1.10
	2.8	280	3.0	0.10	1.59	21	24	2.4	0.07	1.21
	3.0	300	3.3	0.10	1.74	19	22	2.4	0.08	1.36
	3.5	350	3.4	0.11	1.82	19	22	2.7	0.09	1.44
	3.8	380	3.5	0.11	1.89	18	21	3.0	0.09	1.51
210° 	2.1	200	2.6	0.08	1.40	22	25	1.8	0.07	1.15
	2.5	250	2.8	0.10	1.67	22	25	2.1	0.08	1.28
	2.8	280	3.0	0.11	1.85	21	24	2.4	0.08	1.41
	3.0	300	3.2	0.12	2.01	20	23	2.4	0.10	1.59
	3.5	350	3.4	0.13	2.12	19	22	2.7	0.10	1.68
	3.8	380	3.5	0.13	2.20	18	21	3.0	0.11	1.77
360° 	2.1	200	2.6	0.14	2.38	22	25	1.8	0.11	1.78
	2.5	250	2.8	0.16	2.65	20	23	2.1	0.12	1.97
	2.8	280	3.0	0.18	2.95	20	23	2.4	0.13	2.12
	3.0	300	3.1	0.19	3.22	20	23	2.4	0.13	2.23
	3.5	350	3.3	0.20	3.33	19	21	2.7	0.14	2.38
	3.8	380	3.5	0.22	3.71	18	21	3.0	0.16	2.65

Bold = Optimal pressure for the MP Rotator is 2.8 bar; 280 kPa. This can easily be achieved by using the MP Rotator with the Hunter PRS40 Spray Body, pressure regulated at 2.8 bar; 280 kPa.



MP800SR


Efficient Watering For Spaces Under 2.4 Metres

Efficiently simulating natural rainfall has always been a challenge in small spaces. Most spray nozzles with short radius capability apply water much faster than the soil can absorb (50 mm/hr or more), and typically have poor uniformity. Therefore, many users resort to drip irrigation which does not simulate rainfall, and cannot be used in turf applications. Up to now, high-volume, inefficient overhead sprays have been the only solution.

Now, Hunter introduces the MP800SR, a high-efficiency overhead irrigation solution for small spaces. The MP800SR will adjust down to 1.8 m, and uses a low precipitation rate of 20 mm/hr to help avoid runoff. Its superior distribution uniformity ensures that the least amount of water is used to get the job done.

To achieve its lowest radius setting of 1.8 m, an inlet pressure of 2.1 bar; 210 kPa is required. The MP800SR should be paired with the PRS30 in this application.





SECTION 03:
SPRAYS

SPRAYS

ADVANCED FEATURES

STRENGTH & DURABILITY



CO-MOLDED WIPER SEAL

The pressure-activated, multi-function wiper seal regulates flow-by during start up, keeping debris out of the seal to reduce riser stick-ups. Once the head is fully popped up, the wiper seal completely seals off the riser gap allowing for the maximum number of heads per zone.

INNOVATIVE SEAL DESIGN

Pedestrian traffic, landscaping equipment, temperature changes, and cycling pressures can often cause body caps to loosen. Most spray bodies utilize an O-Ring, which breaks seal immediately after loosening. The Pro-Spray can withstand more than one full 360° turn and remain sealed at any pressure.



HEAVY-DUTY SPRING

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



PRO-SPRAY® CHECK VALVE

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



PRESSURE REGULATED TO 2.1 & 2.8 BAR

Hunter's pressure regulated pop-up sprays are calibrated for the needs of any installation. The PRS30 with the brown cap optimises performance of traditional sprays at 2.1 bar; 210 kPa. The grey-capped 2.8 bar; 280 kPa PRS40 is designed for the efficient MP Rotator and is the only 2.8 bar; 280 kPa regulated pop-up on the market today.

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.

COMPETITOR



PRO-SPRAY



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

SPRAY BODY COMPARISON CHART

QUICK SPECS		PS ULTRA	PRO-SPRAY®	PRS30	PRS40
		Good	Better	Best for Sprays	Best for MP Rotator®
POP-UP HEIGHT	cm	5, 10, 15	Shrub, 5, 7.5, 10, 15, 30	Shrub, 10, 15, 30	Shrub, 10, 15, 30
PRESSURE REGULATED	bar	N/A	N/A	2.1	2.8
	kPa	N/A	N/A	210	280
FEATURES					
PRE-INSTALLED NOZZLE		5SS, 10A, 12A, 15A, 17A	N/A	N/A	N/A
CAP COLOUR		Black	Black	Brown	Grey
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				●	●
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

Models: 5 cm, 10 cm, 15 cm
Inlet: 1/2"

FEATURES

- Models: 5 cm, 10 cm, 15 cm
- Durable cap
- Two-piece ratcheting riser
- Male threaded riser to accept all female nozzles
- Available with flush plug (large filter screen not included)
- Extra large filter screen
- Warranty period: 2 years
- ▶ Optional check valve
- ▶ Heavy-duty spring

OPERATING SPECIFICATIONS

- Operational pressure range: 1.0 to 4.8 bar; 100 to 480 kPa

FACTORY INSTALLED OPTIONS

- Nozzles: 3.0 m, 3.7 m, 4.6 m, 5.2 m, 1.5 x 9.1 m side strip (side strip pattern available on 5 cm and 10 cm models only)
- Flush plug (large filter screen not included)
- Optional extra large filter screen

USER INSTALLED OPTIONS

- Drain check valve: 10 cm and 15 cm models (up to 2 m of elevation; P/N 462237)
- Large inlet filter screen (replacement; P/N 162900)
- ▶ = *Advanced Feature descriptions on page 58*



PSU-02

Retracted height: 13 cm
Pop-up height: 5 cm
Exposed diameter: 3 cm
Inlet size: 1/2"



PSU-04

Retracted height: 18 cm
Pop-up height: 10 cm
Exposed diameter: 3 cm
Inlet size: 1/2"



PSU-06

Retracted height: 24 cm
Pop-up height: 15 cm
Exposed diameter: 3 cm
Inlet size: 1/2"

PS ULTRA - SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Nozzles	3 Optional
PSU-02 = 5 cm Pop-up	(blank) = Flush plug, no large filter screen	NFO = Nozzle filter only (Available for 10 cm model only)
PSU-04 = 10 cm Pop-up	10A = 3.0 m adjustable nozzle	Substitute standard installation of large inlet filter screen and receive unit with the nozzle filter only
PSU-06 = 15 cm Pop-up	12A = 3.7 m adjustable nozzle	
	15A = 4.6 m adjustable nozzle	
	17A = 5.2 m adjustable nozzle	
	5SS = 1.5 m x 9.1 m side strip (02 and 04 only)	

Examples:

- PSU-02 - 5SS = 5 cm Pop-up, with a 1.5 m x 9.1 m side strip
- PSU-06 - 10A = 15 cm Pop-up, with a 3.0 m adjustable nozzle
- PSU-04 = 10 cm Pop-up, with flush plug
- PSU-04 - 12A - NFO = 10 cm Pop-up, with a 3.7 m adjustable nozzle, large inlet filter screen not included

PS ULTRA STANDARD NOZZLES PERFORMANCE DATA

10A 3.0 m radius
Adjustable from 0° to 360°
● Red Trajectory: 15°

12A 3.7 m radius
Adjustable from 0° to 360°
● Green Trajectory: 28°








Arc	Pressure		Radius m	Flow		Precip mm/hr		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲		m ³ /hr	l/min	■	▲
45° ▶	1.0	100	2.6	0.04	0.68	49	56	3.2	0.04	0.73	34	40
	1.5	150	2.8	0.05	0.80	49	57	3.4	0.06	0.97	40	46
	2.1	210	3.0	0.06	0.94	49	56	3.7	0.07	1.23	44	51
	2.5	250	3.2	0.06	1.06	48	56	3.9	0.09	1.44	46	54
	3.0	300	3.5	0.07	1.18	47	54	4.1	0.10	1.68	48	56
90° ◑	1.0	100	2.6	0.08	1.35	49	56	3.2	0.09	1.46	34	40
	1.5	150	2.8	0.10	1.61	49	57	3.4	0.12	1.93	40	46
	2.1	210	3.0	0.11	1.89	49	56	3.7	0.15	2.46	44	51
	2.5	250	3.2	0.13	2.11	48	56	3.9	0.17	2.88	46	54
	3.0	300	3.5	0.14	2.37	47	54	4.1	0.20	3.36	48	56
120° ◐	1.0	100	2.6	0.11	1.80	49	56	3.2	0.12	1.94	34	40
	1.5	150	2.8	0.13	2.14	49	57	3.4	0.15	2.58	40	46
	2.1	210	3.0	0.15	2.52	49	56	3.7	0.20	3.28	44	51
	2.5	250	3.2	0.17	2.82	48	56	3.9	0.23	3.84	46	54
	3.0	300	3.5	0.19	3.16	47	54	4.1	0.27	4.48	48	56
180° ◐	1.0	100	2.6	0.16	2.71	49	56	3.2	0.17	2.91	34	40
	1.5	150	2.8	0.19	3.21	49	57	3.4	0.23	3.86	40	46
	2.1	210	3.0	0.23	3.78	49	56	3.7	0.30	4.92	44	51
	2.5	250	3.2	0.25	4.23	48	56	3.9	0.35	5.76	46	54
	3.0	300	3.5	0.28	4.73	47	54	4.1	0.40	6.71	48	56
240° ◑	1.0	100	2.6	0.22	3.61	49	56	3.2	0.23	3.88	34	40
	1.5	150	2.8	0.26	4.28	49	57	3.4	0.31	5.15	40	46
	2.1	210	3.0	0.30	5.03	49	56	3.7	0.39	6.56	44	51
	2.5	250	3.2	0.34	5.64	48	56	3.9	0.46	7.68	46	54
	3.0	300	3.5	0.38	6.31	47	54	4.1	0.54	8.95	48	56
270° ◑	1.0	100	2.6	0.24	4.06	49	56	3.2	0.26	4.37	34	40
	1.5	150	2.8	0.29	4.82	49	57	3.4	0.35	5.80	40	46
	2.1	210	3.0	0.34	5.66	49	56	3.7	0.44	7.38	44	51
	2.5	250	3.2	0.38	6.34	48	56	3.9	0.52	8.65	46	54
	3.0	300	3.5	0.43	7.10	47	54	4.1	0.60	9.60	48	56
360° ●	1.0	100	2.6	0.32	5.41	49	56	3.2	0.35	5.83	34	40
	1.5	150	2.8	0.39	6.43	49	57	3.4	0.46	7.73	40	46
	2.1	210	3.0	0.45	7.55	49	56	3.7	0.59	9.84	44	51
	2.5	250	3.2	0.51	8.45	48	56	3.9	0.69	11.53	46	54
	3.0	300	3.5	0.57	9.47	47	54	4.1	0.81	13.43	48	56

Bold = Recommended pressure

PS ULTRA STANDARD NOZZLES PERFORMANCE DATA


15A 4.6 m radius
Adjustable from 0° to 360°
● Black Trajectory: 28°

17A 5.2 m radius
Adjustable from 0° to 360°
● Grey Trajectory: 28°

Arc	Pressure		Radius m	Flow		Precip mm/hr		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲		m ³ /hr	l/min	■	▲
45° 	1.0	100	4.0	0.08	1.27	38	43	4.6	0.10	1.68	38	43
	1.5	150	4.3	0.09	1.51	39	45	4.9	0.12	1.94	38	44
	2.1	210	4.6	0.11	1.79	40	46	5.2	0.13	2.23	39	45
	2.5	250	4.9	0.12	2.00	40	46	5.5	0.15	2.46	39	45
	3.0	300	5.2	0.14	2.25	40	46	5.8	0.16	2.72	39	45
90° 	1.0	100	4.0	0.15	2.53	38	43	4.6	0.20	3.36	38	43
	1.5	150	4.3	0.18	3.03	39	45	4.9	0.23	3.88	38	44
	2.1	210	4.6	0.21	3.57	40	46	5.2	0.27	4.45	39	45
	2.5	250	4.9	0.24	4.01	40	46	5.5	0.30	4.92	39	45
	3.0	300	5.2	0.27	4.50	40	46	5.8	0.33	5.44	39	45
120° 	1.0	100	4.0	0.20	3.38	38	43	4.6	0.27	4.48	38	43
	1.5	150	4.3	0.24	4.03	39	45	4.9	0.31	5.17	38	44
	2.1	210	4.6	0.29	4.76	40	46	5.2	0.36	5.94	39	45
	2.5	250	4.9	0.32	5.34	40	46	5.5	0.39	6.56	39	45
	3.0	300	5.2	0.36	6.00	40	46	5.8	0.43	7.25	39	45
180° 	1.0	100	4.0	0.30	5.07	38	43	4.6	0.40	6.71	38	43
	1.5	150	4.3	0.36	6.05	39	45	4.9	0.47	7.75	38	44
	2.1	210	4.6	0.43	7.14	40	46	5.2	0.53	8.91	39	45
	2.5	250	4.9	0.48	8.02	40	46	5.5	0.59	9.83	39	45
	3.0	300	5.2	0.54	9.00	40	46	5.8	0.65	10.87	39	45
240° 	1.0	100	4.0	0.41	6.76	38	43	4.6	0.54	8.95	38	43
	1.5	150	4.3	0.48	8.07	39	45	4.9	0.62	10.34	38	44
	2.1	210	4.6	0.57	9.52	40	46	5.2	0.71	11.88	39	45
	2.5	250	4.9	0.64	10.69	40	46	5.5	0.79	13.11	39	45
	3.0	300	5.2	0.72	12.00	40	46	5.8	0.87	14.50	39	45
270° 	1.0	100	4.0	0.46	7.60	38	43	4.6	0.60	10.07	38	43
	1.5	150	4.3	0.54	9.08	39	45	4.9	0.70	11.63	38	44
	2.1	210	4.6	0.64	10.71	40	46	5.2	0.80	13.36	39	45
	2.5	250	4.9	0.72	12.03	40	46	5.5	0.89	14.75	39	45
	3.0	300	5.2	0.81	13.50	40	46	5.8	0.98	16.31	39	45
360° 	1.0	100	4.0	0.61	10.13	38	43	4.6	0.81	13.43	38	43
	1.5	150	4.3	0.73	12.10	39	45	4.9	0.93	15.51	38	44
	2.1	210	4.6	0.86	14.28	40	46	5.2	1.07	17.82	39	45
	2.5	250	4.9	0.96	16.03	40	46	5.5	1.18	19.67	39	45
	3.0	300	5.2	1.08	18.00	40	46	5.8	1.30	21.75	39	45

Bold = Recommended pressure

STRIP PATTERN NOZZLE PERFORMANCE DATA

Model	Pressure		Width x Length m	Flow	
	bar	kPa		m ³ /hr	l/min
SS-530 	1.0	100	1.2 x 8.5	0.21	3.5
	1.5	150	1.5 x 9.0	0.25	4.2
	2.0	200	1.5 x 9.0	0.29	4.9
	2.1	210	1.5 x 9.1	0.30	5.0
	2.5	250	1.5 x 9.1	0.33	5.5

Bold = Recommended pressure

PRO-SPRAY®

Models: **Shrub, 5 cm, 7.5 cm, 10 cm, 15 cm, 30 cm**
 Inlet: 1/2"

FEATURES

- Models: Shrub, 5 cm, 7.5 cm, 10 cm, 15 cm, 30 cm
- Compatible with all female threaded nozzles
- No side inlet (NSI) version available in 15 cm and 30 cm
- Innovative directional flush plug design
- Warranty period: 5 years
- ▶ Co-molded wiper seal
- ▶ Heavy-duty spring
- ▶ Industry's strongest spray body
- ▶ Innovative seal design
- ▶ Pro-Spray check valve

OPERATING SPECIFICATIONS

- Operational pressure range: 1.0 to 7.0 bar; 100 to 700 kPa

FACTORY INSTALLED OPTIONS

- Drain check valve (up to 3 m of elevation)
- Check valve available on 10 cm, 15 cm, 30 cm
- Reclaimed water ID cap

USER INSTALLED OPTIONS

- Drain check valve (up to 3 m of elevation; P/N 437400)
- Reclaimed water ID cap (P/N 458520)
- Snap-on reclaimed cover (P/N PROSRCCAP)
- ▶ = *Advanced Feature descriptions on page 58*



Pro-Spray Reclaimed

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

PRO-SPRAY – SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Options
PROS-00 = Shrub Adapter	(blank) = No option
PROS-02 = 5 cm Pop-up	CV = Factory-installed drain check valve (Pop-up models only, 15 cm and 30 cm models ordered as CV will come as no side inlet)
PROS-03 = 7.5 cm Pop-up	R = Factory-installed reclaimed body cap (shrub molded in purple)
PROS-04 = 10 cm Pop-up	
PROS-06 = 15 cm Pop-up	
PROS-06-NSI = 15 cm Pop-up (no side inlet)	
PROS-12 = 30 cm Pop-up	
PROS-12-NSI = 30 cm Pop-up (no side inlet)	

Examples:

- PROS-04** = 10 cm Pop-up
- PROS-06 - CV** = 15 cm Pop-up, drain check valve
- PROS-12 - CV - R** = 30 cm Pop-up, drain check valve, reclaimed body cap



PROS-00
 Retracted height: 4 cm
 Inlet size: 1/2"



PROS-02
 Retracted height: 10 cm
 Pop-up height: 5 cm
 Exposed diameter: 5.7 cm
 Inlet size: 1/2"



PROS-03
 Retracted height: 12.5 cm
 Pop-up height: 7.5 cm
 Exposed diameter: 5.7 cm
 Inlet size: 1/2"



PROS-04
 Retracted height: 15.5 cm
 Pop-up height: 10 cm
 Exposed diameter: 5.7 cm
 Inlet size: 1/2"



[A] PROS-06
[B] PROS-06-NSI
 Retracted height: 22.5 cm
 Pop-up height: 15 cm
 Exposed diameter: 5.7 cm
 Inlet size: 1/2"



[A] PROS-12
[B] PROS-12-NSI
 Retracted height: 41 cm
 Pop-up height: 30 cm
 Exposed diameter: 5.7 cm
 Inlet size: 1/2"



PRS30

PRESSURE REGULATED

Models: **Shrub, 10 cm, 15 cm, 30 cm**
 Pressure Regulation: **2.1 bar; 210 kPa**

FEATURES

- Models: Shrub, 10 cm, 15 cm, 30 cm
- No side inlet (NSI) version available in 15 cm and 30 cm
- Identification cap is brown for easy field ID
- Innovative directional flush plug design
- Warranty period: 5 years
- ▶ Co-molded wiper seal
- ▶ Heavy-duty spring
- ▶ Industry's strongest spray body
- ▶ Innovative seal design
- ▶ Pro-Spray® check valve
- ▶ Pressure regulated to 2.1 bar

OPERATING SPECIFICATIONS

- Operational pressure range: 1.0 to 7.0 bar; 100 to 700 kPa

FACTORY INSTALLED OPTIONS

- Drain check valve (up to 4.3 m of elevation)
- Check valve available on 10 cm, 15 cm, 30 cm
- Reclaimed water ID cap

USER INSTALLED OPTIONS

- Vandal-proof cap (P/N PROS-PRS30-VPC)
 - Drain check valve (up to 4.3 m of elevation; P/N 457400)
 - Reclaimed water ID cap (P/N 458560)
 - Snap-on reclaimed cover (P/N PROSRCCAP)
- ▶ = *Advanced Feature descriptions on page 58*



PRS30 Reclaimed

PRS30 models include optional factory-installed purple reclaimed caps.



Related Solutions: Works Best With

Pro-Spray Fixed Arc Nozzles and Precision Distribution Control™ Adjustable Nozzles work best with the PRS30.



PRS00-PRS30

Retracted height: 11 cm
 Inlet size: ½"



PRS04-PRS30

Retracted height: 15.5 cm
 Pop-up height: 10 cm
 Exposed diameter: 5.7 cm
 Inlet size: ½"



[A]



[B]

[A] PRS06-PRS30

[B] **PRS06-NSI-PRS30**
 Retracted height: 22.5 cm
 Pop-up height: 15 cm
 Exposed diameter: 5.7 cm
 Inlet size: ½"



[A]



[B]

[A] PRS12-PRS30

[B] **PRS12-NSI-PRS30**
 Retracted height: 41 cm
 Pop-up height: 30 cm
 Exposed diameter: 5.7 cm
 Inlet size: ½"

PRS30 - SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Options
PRS00-PRS30 = 2.1 bar regulated shrub adapter	(blank) = No option
PRS04-PRS30 = 2.1 bar regulated 10 cm Pop-up	CV = Factory-installed drain check valve (pop-up models only 15 cm and 30 cm models ordered as CV will come as no side inlet)
PRS06-PRS30 = 2.1 bar regulated 15 cm Pop-up	R = Factory-installed reclaimed body cap (shrub molded in purple)
PRS06-NSI-PRS30 = 2.1 bar regulated 15 cm Pop-up (no side inlet)	
PRS12-PRS30 = 2.1 bar regulated 30 cm Pop-up	
PRS12-NSI-PRS30 = 2.1 bar regulated 30 cm Pop-up (no side inlet)	

Examples:

- PRS04-PRS30 = 10 cm Pop-up regulated at 2.1 bar; 210 kPa
- PRS06-PRS30 - CV = 15 cm Pop-up regulated at 2.1 bar; 210 kPa, drain check valve
- PRS12-PRS30 - CV - R = 30 cm Pop-up regulated at 2.1 bar; 210 kPa, drain check valve, and reclaimed body cap

PRS40

PRESSURE REGULATED

Models: **Shrub, 10 cm, 15 cm, 30 cm**
 Pressure Regulation: **2.8 bar; 280 kPa**

FEATURES

- Models: Shrub, 10 cm, 15 cm, 30 cm
- Grey identification cap for easy field ID
- Innovative directional flush plug design
- Drain check valve installed with up to 4.3 m of elevation comes standard
- 15 cm and 30 cm models come standard as no side inlet (NSI), ensuring proper installation with check valve
- Warranty period: 5 years
- ▶ Co-molded wiper seal
- ▶ Heavy-duty spring
- ▶ Industry's strongest spray body
- ▶ Innovative seal design
- ▶ Pro-Spray® check valve
- ▶ Pressure regulated to 2.8 bar

OPERATING SPECIFICATIONS

- Operational pressure range: 1.0 to 7.0 bar; 100 to 700 kPa

FACTORY INSTALLED OPTIONS

- Reclaimed water ID cap

USER INSTALLED OPTIONS

- Reclaimed water ID cap (P/N 458562)
- Snap-on reclaimed cover (P/N PROSRCCAP)
- ▶ = *Advanced Feature descriptions on page 58*



PRS40 Reclaimed

PRS40 models include optional factory-installed purple reclaimed caps.

Related Solutions: MP Rotator

PRS40 is designed specifically for the MP Rotator.



PROS-00-PRS40
 Retracted height: 11 cm
 Inlet size: ½"



PROS-04-PRS40-CV
 Retracted height: 15.5 cm
 Pop-up height: 10 cm
 Exposed diameter: 5.7 cm
 Inlet size: ½"



PROS-06-PRS40-CV
 Retracted height: 22.5 cm
 Pop-up height: 15 cm
 Exposed diameter: 5.7 cm
 Inlet size: ½"



PROS-12-PRS40-CV
 Retracted height: 41 cm
 Pop-up height: 30 cm
 Exposed diameter: 5.7 cm
 Inlet size: ½"

SPRAYS

PRS40 – SPECIFICATION BUILDER: ORDER 1 + 2	
1 Model	2 Options
PROS-00-PRS40 = 2.8 bar regulated shrub adapter	(blank) = No option CV = Factory-installed drain check valve (pop-up models only) R = Factory-installed reclaimed body cap (shrub molded in purple)
PROS-04-PRS40 = 2.8 bar regulated 10 cm Pop-up	
PROS-06-PRS40 = 2.8 bar regulated 15 cm Pop-up	
PROS-12-PRS40 = 2.8 bar regulated 30 cm Pop-up	

Examples:

- PROS-04-PRS40** = 10 cm Pop-up regulated at 2.8 bar
- PROS-06-PRS40 - CV** = 15 cm Pop-up regulated at 2.8 bar and drain check valve
- PROS-12-PRS40 - CV - R** = 30 cm Pop-up regulated at 2.8 bar, drain check valve and reclaimed body cap

NOZZLES

NOZZLES



PRECISION DISTRIBUTION CONTROL™ ADJUSTABLE NOZZLES

FEATURES

- Crisp, well-defined edges
- Matched precipitation rate on each nozzle from 8A to 17A
- Easy grip top for simple adjustment
- Large water droplets cut through wind
- Even distribution results in better coverage
- 1.2 m and 1.8 m models provide additional flexibility
- Colour-coded for easy field identification
- Adjustable from 0° to 360°

OPERATING SPECIFICATIONS

- Recommended operating pressure: 2.1 bar and 210 kPa
- Specify the Pro-Spray® PRS30 pop-up for accurate pressure regulation of 2.1 bar; 210 kPa



4A Nozzle
Radius: 1.2 m



6A Nozzle
Radius: 1.8 m



8A Nozzle
Radius: 2.4 m



10A Nozzle
Radius: 3.0 m



12A Nozzle
Radius: 3.7 m



15A Nozzle
Radius: 4.6 m



17A Nozzle
Radius: 5.2 m

PRECISION DISTRIBUTION CONTROL™ ADJUSTABLE NOZZLES PERFORMANCE DATA

4A 1.2 m radius
Adjustable from 0° to 360°
● Lt. Green Trajectory: 0°

6A 1.8 m radius
Adjustable from 0° to 360°
● Lt. Blue Trajectory: 0°

8A 2.4 m radius
Adjustable from 0° to 360°
● Brown Trajectory: 0°

Arc	Pressure		Radius m	Flow		Precip mm/hr		Radius m	Flow		Precip mm/hr		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲		m ³ /hr	l/min	■	▲		m ³ /hr	l/min	■	▲
45° ▶	1.0	100	0.9	0.02	0.31	187	216	1.5	0.03	0.54	117	136	2.0	0.04	0.62	77	89
	1.5	150	1.0	0.02	0.39	178	206	1.6	0.04	0.60	108	124	2.2	0.04	0.72	72	83
	2.1	210	1.2	0.03	0.48	167	193	1.8	0.04	0.65	98	114	2.4	0.05	0.83	67	77
	2.5	250	1.3	0.03	0.56	158	183	1.9	0.04	0.70	92	106	2.6	0.05	0.91	63	73
	3.0	300	1.4	0.04	0.64	149	172	2.1	0.05	0.75	86	99	2.9	0.06	1.01	59	68
90° ◑	1.0	100	0.9	0.02	0.31	93	108	1.5	0.06	1.08	116	134	2.0	0.07	1.24	77	89
	1.5	150	1.0	0.02	0.39	89	103	1.6	0.07	1.21	109	126	2.2	0.09	1.44	72	83
	2.1	210	1.2	0.03	0.48	84	97	1.8	0.08	1.35	102	118	2.4	0.10	1.65	67	77
	2.5	250	1.3	0.03	0.56	79	91	1.9	0.09	1.47	97	112	2.6	0.11	1.82	63	73
	3.0	300	1.4	0.04	0.64	75	86	2.1	0.10	1.61	92	106	2.9	0.12	2.02	59	68
120° ◐	1.0	100	0.9	0.06	0.97	221	255	1.5	0.08	1.26	102	118	2.0	0.10	1.66	77	89
	1.5	150	1.0	0.07	1.10	188	217	1.6	0.09	1.43	97	112	2.2	0.11	1.92	72	83
	2.1	210	1.2	0.07	1.25	162	187	1.8	0.10	1.61	91	105	2.4	0.13	2.20	67	77
	2.5	250	1.3	0.08	1.36	146	168	1.9	0.11	1.76	87	100	2.6	0.15	2.43	63	73
	3.0	300	1.4	0.09	1.49	131	151	2.1	0.12	1.93	82	95	2.9	0.16	2.69	59	68
180° ◓	1.0	100	0.9	0.07	1.18	178	206	1.5	0.10	1.70	92	106	2.0	0.15	2.49	77	89
	1.5	150	1.0	0.08	1.38	157	181	1.6	0.12	1.96	88	102	2.2	0.17	2.87	72	83
	2.1	210	1.2	0.10	1.60	139	160	1.8	0.13	2.24	84	97	2.4	0.20	3.30	67	77
	2.5	250	1.3	0.11	1.78	127	146	1.9	0.15	2.47	81	94	2.6	0.22	3.65	63	73
	3.0	300	1.4	0.12	1.98	115	133	2.1	0.16	2.72	78	90	2.9	0.24	4.03	59	68
240° ◒	1.0	100	0.9	0.12	1.94	220	254	1.5	0.15	2.44	99	114	2.0	0.20	3.32	77	89
	1.5	150	1.0	0.13	2.24	192	221	1.6	0.17	2.83	96	111	2.2	0.23	3.83	72	83
	2.1	210	1.2	0.16	2.59	168	194	1.8	0.20	3.28	92	107	2.4	0.26	4.40	67	77
	2.5	250	1.3	0.17	2.86	153	177	1.9	0.22	3.63	89	103	2.6	0.29	4.86	63	73
	3.0	300	1.4	0.19	3.17	139	160	2.1	0.24	4.03	86	99	2.9	0.32	5.38	59	68
270° ◑	1.0	100	0.9	0.13	2.09	211	244	1.5	0.18	3.08	111	128	2.0	0.22	3.73	77	89
	1.5	150	1.0	0.14	2.40	183	211	1.6	0.21	3.52	106	122	2.2	0.26	4.31	72	83
	2.1	210	1.2	0.16	2.75	159	183	1.8	0.24	4.02	101	116	2.4	0.30	4.95	67	77
	2.5	250	1.3	0.18	3.02	144	166	1.9	0.27	4.42	97	112	2.6	0.33	5.47	63	73
	3.0	300	1.4	0.20	3.33	130	150	2.1	0.29	4.87	92	107	2.9	0.36	6.05	59	68
360° ●	1.0	100	0.9	0.14	2.26	171	197	1.5	0.21	3.57	96	111	2.0	0.30	4.97	77	89
	1.5	150	1.0	0.16	2.60	148	171	1.6	0.24	4.07	92	106	2.2	0.34	5.75	72	83
	2.1	210	1.2	0.18	2.98	129	149	1.8	0.28	4.62	87	100	2.4	0.40	6.61	67	77
	2.5	250	1.3	0.20	3.29	117	135	1.9	0.30	5.06	83	96	2.6	0.44	7.29	63	73
	3.0	300	1.4	0.22	3.63	106	122	2.1	0.33	5.56	79	92	2.9	0.48	8.07	59	68

Bold = Recommended pressure

Note: The Pro-Spray PRS30's built-in pressure regulator controls output to a maximum of 2.1 bar; 210 kPa. Adjusting the radius reduction screw may be required to achieve catalogue radius and flow.

PRECISION DISTRIBUTION CONTROL™ ADJUSTABLE NOZZLES PERFORMANCE DATA

10A 3.0 m radius
Adjustable from 0° to 360°
Trajectory: 15°
● Red

12A 3.7 m radius
Adjustable from 0° to 360°
Trajectory: 28°
● Green

15A 4.6 m radius
Adjustable from 0° to 360°
Trajectory: 28°
● Black

Arc	Pressure		Radius m	Flow		Precip mm/hr		Radius m	Flow		Precip mm/hr		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲		m ³ /hr	l/min	■	▲		m ³ /hr	l/min	■	▲
45° ▶	1.0	100	2.6	0.04	0.68	49	56	3.2	0.04	0.73	34	40	4.0	0.08	1.27	38	43
	1.5	150	2.8	0.05	0.80	49	57	3.4	0.06	0.97	40	46	4.3	0.09	1.51	39	45
	2.1	210	3.0	0.06	0.94	49	56	3.7	0.07	1.23	44	51	4.6	0.11	1.79	40	46
	2.5	250	3.2	0.06	1.06	48	56	3.9	0.09	1.44	46	54	4.9	0.12	2.00	40	46
	3.0	300	3.5	0.07	1.18	47	54	4.1	0.10	1.68	48	56	5.2	0.14	2.25	40	46
90° ◑	1.0	100	2.6	0.08	1.35	49	56	3.2	0.09	1.46	34	40	4.0	0.15	2.53	38	43
	1.5	150	2.8	0.10	1.61	49	57	3.4	0.12	1.93	40	46	4.3	0.18	3.03	39	45
	2.1	210	3.0	0.11	1.89	49	56	3.7	0.15	2.46	44	51	4.6	0.21	3.57	40	46
	2.5	250	3.2	0.13	2.11	48	56	3.9	0.17	2.88	46	54	4.9	0.24	4.01	40	46
	3.0	300	3.5	0.14	2.37	47	54	4.1	0.20	3.36	48	56	5.2	0.27	4.50	40	46
120° ◐	1.0	100	2.6	0.11	1.80	49	56	3.2	0.12	1.94	34	40	4.0	0.20	3.38	38	43
	1.5	150	2.8	0.13	2.14	49	57	3.4	0.15	2.58	40	46	4.3	0.24	4.03	39	45
	2.1	210	3.0	0.15	2.52	49	56	3.7	0.20	3.28	44	51	4.6	0.29	4.76	40	46
	2.5	250	3.2	0.17	2.82	48	56	3.9	0.23	3.84	46	54	4.9	0.32	5.34	40	46
	3.0	300	3.5	0.19	3.16	47	54	4.1	0.27	4.48	48	56	5.2	0.36	6.00	40	46
180° ◓	1.0	100	2.6	0.16	2.71	49	56	3.2	0.17	2.91	34	40	4.0	0.30	5.07	38	43
	1.5	150	2.8	0.19	3.21	49	57	3.4	0.23	3.86	40	46	4.3	0.36	6.05	39	45
	2.1	210	3.0	0.23	3.78	49	56	3.7	0.30	4.92	44	51	4.6	0.43	7.14	40	46
	2.5	250	3.2	0.25	4.23	48	56	3.9	0.35	5.76	46	54	4.9	0.48	8.02	40	46
	3.0	300	3.5	0.28	4.73	47	54	4.1	0.40	6.71	48	56	5.2	0.54	9.00	40	46
240° ◒	1.0	100	2.6	0.22	3.61	49	56	3.2	0.23	3.88	34	40	4.0	0.41	6.76	38	43
	1.5	150	2.8	0.26	4.28	49	57	3.4	0.31	5.15	40	46	4.3	0.48	8.07	39	45
	2.1	210	3.0	0.30	5.03	49	56	3.7	0.39	6.56	44	51	4.6	0.57	9.52	40	46
	2.5	250	3.2	0.34	5.64	48	56	3.9	0.46	7.68	46	54	4.9	0.64	10.69	40	46
	3.0	300	3.5	0.38	6.31	47	54	4.1	0.54	8.95	48	56	5.2	0.72	12.00	40	46
270° ◑	1.0	100	2.6	0.24	4.06	49	56	3.2	0.26	4.37	34	40	4.0	0.46	7.60	38	43
	1.5	150	2.8	0.29	4.82	49	57	3.4	0.35	5.80	40	46	4.3	0.54	9.08	39	45
	2.1	210	3.0	0.34	5.66	49	56	3.7	0.44	7.38	44	51	4.6	0.64	10.71	40	46
	2.5	250	3.2	0.38	6.34	48	56	3.9	0.52	8.65	46	54	4.9	0.72	12.03	40	46
	3.0	300	3.5	0.43	7.10	47	54	4.1	0.60	10.07	48	56	5.2	0.81	13.50	40	46
360° ●	1.0	100	2.6	0.32	5.41	49	56	3.2	0.35	5.83	34	40	4.0	0.61	10.13	38	43
	1.5	150	2.8	0.39	6.43	49	57	3.4	0.46	7.73	40	46	4.3	0.73	12.10	39	45
	2.1	210	3.0	0.45	7.55	49	56	3.7	0.59	9.84	44	51	4.6	0.86	14.28	40	46
	2.5	250	3.2	0.51	8.45	48	56	3.9	0.69	11.53	46	54	4.9	0.96	16.03	40	46
	3.0	300	3.5	0.57	9.47	47	54	4.1	0.81	13.43	48	56	5.2	1.08	18.00	40	46

Bold = Recommended pressure

Note: The Pro-Spray PRS30's built-in pressure regulator controls output to a maximum of 2.1 bar; 210 kPa. Adjusting the radius reduction screw may be required to achieve catalogue radius and flow.

**PRECISION DISTRIBUTION CONTROL™
ADJUSTABLE NOZZLES PERFORMANCE DATA**

17A 5.2 m radius
Adjustable from 0° to 360°
● Grey Trajectory: 28°

Precision Distribution Control™ Adjustable Nozzle



Arc	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
45° ▶	1.0	100	4.6	0.10	1.68	38	43
	1.5	150	4.9	0.12	1.94	38	44
	2.1	210	5.2	0.13	2.23	39	45
	2.5	250	5.5	0.15	2.46	39	45
	3.0	300	5.8	0.16	2.72	39	45
90° ◐	1.0	100	4.6	0.20	3.36	38	43
	1.5	150	4.9	0.23	3.88	38	44
	2.1	210	5.2	0.27	4.45	39	45
	2.5	250	5.5	0.30	4.92	39	45
	3.0	300	5.8	0.33	5.44	39	45
120° ◑	1.0	100	4.6	0.27	4.48	38	43
	1.5	150	4.9	0.31	5.17	38	44
	2.1	210	5.2	0.36	5.94	39	45
	2.5	250	5.5	0.39	6.56	39	45
	3.0	300	5.8	0.43	7.25	39	45
180° ◒	1.0	100	4.6	0.40	6.71	38	43
	1.5	150	4.9	0.47	7.75	38	44
	2.1	210	5.2	0.53	8.91	39	45
	2.5	250	5.5	0.59	9.83	39	45
	3.0	300	5.8	0.65	10.87	39	45
240° ◓	1.0	100	4.6	0.54	8.95	38	43
	1.5	150	4.9	0.62	10.34	38	44
	2.1	210	5.2	0.71	11.88	39	45
	2.5	250	5.5	0.79	13.11	39	45
	3.0	300	5.8	0.87	14.50	39	45
270° ◔	1.0	100	4.6	0.60	10.07	38	43
	1.5	150	4.9	0.70	11.63	38	44
	2.1	210	5.2	0.80	13.36	39	45
	2.5	250	5.5	0.89	14.75	39	45
	3.0	300	5.8	0.98	16.31	39	45
360° ●	1.0	100	4.6	0.81	13.43	38	43
	1.5	150	4.9	0.93	15.51	38	44
	2.1	210	5.2	1.07	17.82	39	45
	2.5	250	5.5	1.18	19.67	39	45
	3.0	300	5.8	1.30	21.75	39	45

Bold = Recommended pressure

Note: The Pro-Spray PRS30's built-in pressure regulator controls output to a maximum of 2.1 bar; 210 kPa. Adjusting the radius reduction screw may be required to achieve catalogue radius and flow.

NOZZLES

PRO-SPRAY® FIXED ARC NOZZLES

FEATURES

- Colour-coded for easy field identification
- Optimum droplet size minimises misting while maximising uniformity

OPERATING SPECIFICATIONS

- Recommended operating pressure: 2.1 bar; 210 kPa
- Specify the Pro-Spray® PRS30 pop-up for accurate pressure regulation of 2.1 bar; 210 kPa







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
	(1.5 m)	(2.4 m)	(3.0 m)	(3.7 m)	(4.6 m)	(5.2 m)

PRO-SPRAY® FIXED ARC NOZZLES PERFORMANCE DATA

5 1.5 m radius
Fixed: ¼, ½, Full
● Blue Trajectory: 0°

8 2.4 m radius
Fixed: ¼, ½, Full
● Brown Trajectory: 0°

10 3.0 m radius
Fixed: ¼, ½, Full
● Red Trajectory: 15°

Arc	Position	Pressure		Radius	Flow		Precip mm/hr		Radius	Flow		Precip mm/hr		Radius	Flow		Precip mm/hr				
		bar	kPa		m ³ /hr	l/min	■	▲		m	m ³ /hr	l/min	■		▲	m	m ³ /hr	l/min	■	▲	
90° 	Q	1.0	100	1.1	0.02	0.30	60	69	1.7	0.04	0.62	51	59	2.4	0.07	1.08	45	52			
		1.5	150		0.02	0.38	54	62		2.1	0.05	0.84	46		53	2.7	0.08	1.33	44	50	
		2.0	200		0.03	0.45	48	55		2.4	0.06	1.00	42		48	3.0	0.09	1.53	41	47	
		2.1	210		0.03	0.46	49	57		2.4	0.06	1.03	43		49	3.0	0.09	1.57	42	48	
		2.5	250		0.03	0.51	42	49		2.7	0.07	1.13	37		43	3.3	0.10	1.71	38	44	
120° 	T	1.0	100	1.1	0.04	0.60	60	69	1.7	0.05	0.83	51	59	2.4	0.09	1.44	45	52			
		1.5	150							Use 4A or 6A Nozzle	0.07	1.12	46		53	2.7	0.11	1.77	44	50	
		2.0	200								0.08	1.33	42		48	3.0	0.12	2.04	41	47	
		2.1	210								0.08	1.37	43		49	3.0	0.13	2.09	42	48	
		2.5	250								0.09	1.51	37		43	3.3	0.14	2.28	38	44	
180° 	H	1.0	100	1.1	0.04	0.60	60	69	1.7	0.08	1.33	55	64	2.4	0.13	2.17	45	52			
		1.5	150	1.3	0.05	0.76	54	62	2.1	0.10	1.69	46	53	2.7	0.16	2.65	44	50			
		2.0	200	1.5	0.05	0.90	48	55	2.4	0.12	1.99	42	48	3.0	0.18	3.06	41	47			
		2.1	210	0.06	0.92	49	57	2.4	0.12	2.05	43	49	3.0	0.19	3.14	42	48				
		2.5	250	1.7	0.06	1.02	42	49	2.7	0.14	2.27	37	43	3.3	0.21	3.43	38	44			
240° 	TT	1.0	100	1.1	0.04	0.60	60	69	1.7	0.16	2.67	55	64	2.4	0.26	4.33	45	52			
		1.5	150																Use 4A or 6A Nozzle	Use 8A Nozzle	Use 10A Nozzle
		2.0	200																		
		2.1	210																		
		2.5	250																		
270° 	TQ	1.0	100	1.1	0.04	0.60	60	69	1.7	0.16	2.67	55	64	2.4	0.26	4.33	45	52			
		1.5	150																Use 4A or 6A Nozzle	Use 8A Nozzle	Use 10A Nozzle
		2.0	200																		
		2.1	210																		
		2.5	250																		
360° 	F	1.0	100	1.1	0.07	1.20	60	69	1.7	0.16	2.67	55	64	2.4	0.26	4.33	45	52			
		1.5	150	1.3	0.09	1.52	54	62	2.1	0.20	3.37	46	53	2.7	0.32	5.31	44	50			
		2.0	200	1.5	0.11	1.79	48	55	2.4	0.24	3.99	42	48	3.0	0.37	6.13	41	47			
		2.1	210	0.11	1.85	49	57	2.4	0.25	4.10	43	49	3.0	0.38	6.28	42	48				
		2.5	250	1.7	0.12	2.04	42	49	2.7	0.27	4.54	37	43	3.3	0.41	6.85	38	44			

Bold = Recommended pressure







NOZZLES

PRO-SPRAY® FIXED ARC NOZZLES PERFORMANCE DATA

12 3.7 m radius
Fixed: ¼, ⅓, ½, ⅔, ¾, Full
● Green Trajectory: 28°

15 4.6 m radius
Fixed: ¼, ⅓, ½, ⅔, ¾, Full
● Black Trajectory: 28°

17 5.2 m radius
Fixed: ¼, ½
● Grey Trajectory: 28°

Arc	Position	Pressure		Radius		Flow		Precip mm/hr		Radius		Flow		Precip mm/hr		Radius		Flow		Precip mm/hr		
		bar	kPa	m	m	m ³ /hr	l/min	■	▲	m	m ³ /hr	l/min	■	▲	m	m ³ /hr	l/min	■	▲			
90° 	Q	1.0	100	3.0	0.10	1.58	42	49	3.9	0.15	2.50	39	46	4.7	0.19	3.17	34	40				
		1.5	150	3.4	0.12	2.00	42	48	4.2	0.18	3.06	42	48	4.9	0.23	3.88	39	45				
		2.0	200	3.7	0.14	2.37	41	48	4.6	0.21	3.54	40	46	5.2	0.27	4.48	40	46				
		2.1	210	3.7	0.15	2.43	43	49	4.6	0.22	3.62	41	47	5.2	0.28	4.59	41	47				
		2.5	250	4.0	0.16	2.69	40	47	4.9	0.24	3.95	40	46	5.5	0.30	5.01	40	46				
120° 	T	1.0	100	3.0	0.13	2.11	42	49	3.9	0.20	3.33	39	46	Use 17A Nozzle								
		1.5	150	3.4	0.16	2.67	42	48	4.2	0.24	4.08	42	48									
		2.0	200	3.7	0.19	3.16	41	48	4.6	0.28	4.71	40	46									
		2.1	210	3.7	0.19	3.25	43	49	4.6	0.29	4.83	41	47									
		2.5	250	4.0	0.22	3.59	40	47	4.9	0.32	5.27	40	46									
180° 	H	1.0	100	3.0	0.19	3.17	42	49	3.9	0.30	5.00	39	46	4.7	0.38	6.33	34	40				
		1.5	150	3.4	0.24	4.01	42	48	4.2	0.37	6.12	42	48	4.9	0.47	7.76	39	45				
		2.0	200	3.7	0.28	4.73	41	48	4.6	0.42	7.07	40	46	5.2	0.54	8.96	40	46				
		2.1	210	3.7	0.29	4.87	43	49	4.6	0.43	7.25	41	47	5.2	0.55	9.18	41	47				
		2.5	250	4.0	0.32	5.39	40	47	4.9	0.47	7.91	40	46	5.5	0.60	10.01	40	46				
240° 	TT	1.0	100	3.0	0.25	4.22	42	49	3.9	0.40	6.67	39	46	Use 17A Nozzle								
		1.5	150	3.4	0.32	5.34	42	48	4.2	0.49	8.16	42	48									
		2.0	200	3.7	0.38	6.31	41	48	4.6	0.57	9.43	40	46									
		2.1	210	3.7	0.39	6.49	43	49	4.6	0.58	9.66	41	47									
		2.5	250	4.0	0.43	7.18	40	47	4.9	0.63	10.54	40	46									
270° 	TQ	1.0	100	3.0	0.29	4.75	42	49	3.9	0.45	7.50	39	46	Use 17A Nozzle								
		1.5	150	3.4	0.36	6.01	42	48	4.2	0.55	9.19	42	48									
		2.0	200	3.7	0.43	7.10	41	48	4.6	0.64	10.61	40	46									
		2.1	210	3.7	0.44	7.30	43	49	4.6	0.65	10.87	41	47									
		2.5	250	4.0	0.48	8.08	40	47	4.9	0.71	11.86	40	46									
360° 	F	1.0	100	3.0	0.38	6.33	42	49	3.9	0.60	10.00	39	46	Use 17A Nozzle								
		1.5	150	3.4	0.48	8.01	42	48	4.2	0.73	12.25	42	48									
		2.0	200	3.7	0.57	9.47	41	48	4.6	0.85	14.14	40	46									
		2.1	210	3.7	0.58	9.74	43	49	4.6	0.87	14.49	41	47									
		2.5	250	4.0	0.65	10.78	40	47	4.9	0.95	15.81	40	46									

Bold = Recommended pressure

NOZZLES

SHORT RADIUS NOZZLES

FEATURES

- Specifically designed for controlled irrigation of close-in spaces
- Built to last in harsh conditions
- Available in 0.6 m, 1.2 m and 1.8 m radius versions

SHORT RADIUS NOZZLES PERFORMANCE DATA

● Nozzle Lt. Brown

Arc	Pressure		Position	Radius	Flow		Precip mm/hr	
	bar	kPa			m ³ /hr	l/min	■	▲
90°	1.0	100	2Q	0.6	0.01	0.23	153	177
	1.5	150		0.6	0.02	0.28	188	217
	2.0	200		0.6	0.02	0.33	217	250
	2.1	210		0.6	0.02	0.33	222	257
	2.5	250		0.6	0.02	0.36	242	280
180°	1.0	100	2H	0.6	0.03	0.46	153	177
	1.5	150		0.6	0.03	0.56	188	217
	2.0	200		0.6	0.04	0.65	217	250
	2.1	210		0.6	0.04	0.67	222	257
	2.5	250		0.6	0.04	0.73	242	280

● Nozzle Lt. Green

Arc	Pressure		Position	Radius	Flow		Precip mm/hr	
	bar	kPa			m ³ /hr	l/min	■	▲
90°	1.0	100	4Q	1.2	0.04	0.69	115	133
	1.5	150		1.2	0.05	0.77	128	147
	2.0	200		1.2	0.05	0.82	137	158
	2.1	210		1.2	0.05	0.84	139	160
	2.5	250		1.2	0.05	0.87	145	168
180°	1.0	100	4H	1.2	0.08	1.39	115	133
	1.5	150		1.2	0.09	1.54	128	147
	2.0	200		1.2	0.10	1.65	137	158
	2.1	210		1.2	0.10	1.67	139	160
	2.5	250		1.2	0.10	1.74	145	168

● Nozzle Lt. Blue

Arc	Pressure		Position	Radius	Flow		Precip mm/hr	
	bar	kPa			m ³ /hr	l/min	■	▲
90°	1.0	100	6Q	1.8	0.11	1.84	136	157
	1.5	150		1.8	0.11	1.93	143	165
	2.0	200		1.8	0.12	2.00	148	171
	2.1	210		1.8	0.12	2.01	149	172
	2.5	250		1.8	0.22	2.06	152	176
180°	1.0	100	6H	1.8	0.22	3.67	136	157
	1.5	150		1.8	0.22	3.86	143	165
	2.0	200		1.8	0.22	4.00	148	171
	2.1	210		1.8	0.22	4.03	149	172
	2.5	250		1.8	0.23	4.12	152	176

Bold = Recommended pressure



2Q Nozzle
Radius: 0.6 m



2H Nozzle
Radius: 0.6 m



4Q Nozzle
Radius: 1.2 m



4H Nozzle
Radius: 1.2 m



6Q Nozzle
Radius: 1.8 m









6H Nozzle
Radius: 1.8 m

STRIP PATTERN NOZZLES

FEATURES

- Specifically designed for accurate coverage of strip areas
- Available in an array of models built to water unique spaces
- Built to last in harsh conditions

STRIP PATTERN NOZZLE PERFORMANCE DATA					
Arc	Pressure		Width x Length m	Flow	
	bar	kPa		m ³ /hr	l/min
LCS-515 	1.0	100	1.2 x 4.2	0.10	1.7
	1.5	150	1.2 x 4.3	0.13	2.1
	2.0	200	1.5 x 4.5	0.15	2.4
	2.1	210	1.5 x 4.5	0.15	2.5
	2.5	250	1.5 x 4.5	0.16	2.7
RCS-515 	1.0	100	1.2 x 4.2	0.10	1.7
	1.5	150	1.2 x 4.3	0.13	2.1
	2.0	200	1.5 x 4.5	0.15	2.4
	2.1	210	1.5 x 4.5	0.15	2.5
SS-530 	1.0	100	1.2 x 8.5	0.21	3.5
	1.5	150	1.5 x 9.0	0.25	4.2
	2.0	200	1.5 x 9.0	0.29	4.9
	2.1	210	1.5 x 9.1	0.30	5.0
	2.5	250	1.5 x 9.1	0.33	5.5
ES-515 	1.0	100	1.1 x 4.2	0.10	1.7
	1.5	150	1.2 x 4.3	0.13	2.1
	2.0	200	1.5 x 4.5	0.15	2.4
	2.1	210	1.5 x 4.5	0.15	2.5
	2.5	250	1.5 x 4.5	0.16	2.7
CS-530 	1.0	100	1.2 x 8.5	0.21	3.5
	1.5	150	1.5 x 9.0	0.25	4.2
	2.0	200	1.5 x 9.0	0.29	4.9
	2.1	210	1.5 x 9.1	0.30	5.0
	2.5	250	1.5 x 9.1	0.33	5.5
SS-918 	1.0	100	2.4 x 5.2	0.27	4.5
	1.5	150	2.7 x 5.5	0.33	5.5
	2.0	200	2.7 x 5.5	0.38	6.4
	2.1	210	2.7 x 5.5	0.39	6.5
	2.5	250	2.7 x 5.5	0.43	7.1

Bold = Recommended pressure



Left Corner Strip
Rectangle: 1.5 m x 4.5 m



Right Corner Strip
Rectangle: 1.5 m x 4.5 m



Side Strip
Rectangle: 1.5 m x 9.1 m



Side Strip
Rectangle: 2.7 m x 5.5 m



Center Strip
Rectangle: 1.5 m x 9.1 m






End Strip
Rectangle: 1.5 m x 4.5 m

STREAM NOZZLES

FEATURES




- Adjustable Arc from 25°-360°
- Offered in 2 adjustable radius options
- Lower application rate to avoid runoff
- Multiple streams provide even coverage

MODEL S-8A STREAM SPRAY NOZZLE PERFORMANCE DATA

Arc	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
90° 	1.0	100	2.1	0.05	0.9	52	60
	1.5	150	2.2	0.07	1.1	55	64
	2.0	200	2.4	0.08	1.4	57	66
	2.1	210	2.4	0.09	1.4	57	66
	2.5	250	2.6	0.10	1.6	58	67
180° 	1.0	100	2.1	0.12	1.9	55	63
	1.5	150	2.2	0.13	2.1	51	58
	2.0	200	2.4	0.14	2.3	47	54
	2.1	210	2.4	0.14	2.3	46	53
	2.5	250	2.6	0.15	2.4	44	50
360° 	1.0	100	2.1	0.24	4.0	56	65
	1.5	150	2.2	0.25	4.2	50	58
	2.0	200	2.4	0.26	4.4	45	52
	2.1	210	2.4	0.26	4.4	44	51
	2.5	250	2.6	0.27	4.6	41	47

Bold = Recommended pressure

MODEL S-16A STREAM SPRAY NOZZLE PERFORMANCE DATA

Arc	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
90° 	1.0	100	4.3	0.08	1.4	18	21
	1.5	150	4.6	0.10	1.6	18	21
	2.0	200	5.0	0.11	1.9	18	21
	2.1	210	5.0	0.11	1.9	18	21
	2.5	250	5.3	0.13	2.1	18	21
180° 	1.0	100	4.3	0.14	2.3	14	17
	1.5	150	4.6	0.17	2.8	15	18
	2.0	200	5.0	0.20	3.3	16	18
	2.1	210	5.0	0.20	3.4	16	19
	2.5	250	5.3	0.23	3.8	16	19
360° 	1.0	100	4.3	0.23	3.9	12	14
	1.5	150	4.6	0.30	5.0	14	16
	2.0	200	5.0	0.36	6.1	15	17
	2.1	210	5.0	0.38	6.3	15	17
	2.5	250	5.3	0.43	7.2	16	18

Bold = Recommended pressure

STREAM NOZZLES



S-8A

Radius: 2.1 m to 2.6 m



S-16A

Radius: 4.3 m to 5.3 m




S-8A



BUBBLER NOZZLES

FEATURES

- Pressure compensation ensures uniform output across various pressures
- Provides the correct amount of water, reducing runoff or waste
- Nozzle threaded for use with Pro-Spray®

MULTI-STREAM BUBBLER PERFORMANCE DATA				
Arc	Model	Flow		Radius m
		m ³ /hr	l/min	
	MSBN-25Q	0.06	0.9	0.30
	MSBN-50Q	0.11	1.9	0.46
	MSBN-50H	0.11	1.9	0.30
	MSBN-10H	0.23	3.8	0.46
	MSBN-10F	0.23	3.8	0.30
	MSBN-20F	0.45	7.6	0.46

Notes:

Typical spacing 0.6 to 1.2 m. Flows shown for pressures between 1.0 and 4.8 bar; 100 and 480 kPa.

Multi-Stream Bubbler



MULTI-STREAM BUBBLER NOZZLES



MSBN-25Q
Flow: 0.06 m³/hr;
0.9 l/min




MSBN-50Q/50H
Flow: 0.11 m³/hr;
1.9 l/min



MSBN-10H/10F
Flow: 0.23 m³/hr;
3.8 l/min



MSBN-20F
Flow: 0.45 m³/hr;
7.6 l/min

PCN PERFORMANCE DATA				
	Model	Flow		Pattern Type
		m ³ /hr	l/min	
	25	0.06	0.9	Trickle
	50	0.11	1.9	Trickle
	10	0.23	3.8	Umbrella
	20	0.46	7.6	Umbrella

Notes:

Typical spacing 0.3 to 0.9 m. Flows shown for pressures between 1.0 and 4.8 bar; 100 and 480 kPa.

PCN



PRESSURE COMPENSATING BUBBLER NOZZLES



PCN-25
Flow: 0.06 m³/hr;
0.9 l/min



PCN-50
Flow: 0.11 m³/hr;
1.9 l/min



PCN-10
Flow: 0.23 m³/hr;
3.8 l/min




PCN-20
Flow: 0.46 m³/hr;
7.6 l/min

BUBBLERS

FEATURES

- Pressure compensation ensures uniform output across various pressures
- ½" inlet
- Flow marked top for easy identification

PCB PERFORMANCE DATA

	Model	Flow		Pattern Type
		m ³ /hr	l/min	
	25	0.06	0.9	Trickle
	50	0.11	1.9	Trickle
	10	0.23	3.8	Umbrella
	20	0.45	7.6	Umbrella

Notes:

Typical spacing 0.6 to 1.2 m. Flows shown for pressures between 1.0 and 4.8 bar; 100 and 480 kPa.

PCB



PRESSURE COMPENSATING BUBBLERS




PCB



PCB-R

AFB PERFORMANCE DATA

	Model	Flow		Pattern Type
		m ³ /hr	l/min	
	AFB	< 0.45	< 7.6	Trickle/ Umbrella

AFB




ADJUSTABLE FLOOD BUBBLER



AFB

5-CST-B BUBBLER NOZZLE PERFORMANCE DATA

	Pressure		Radius	Flow	
	bar	kPa		m	m ³ /hr
	1.0	100	1.5	0.07	1.1
	1.5	150	1.5	0.07	1.2
	2.0	200	1.5	0.09	1.4
	2.1	210	1.5	0.09	1.5
	2.5	250	1.5	0.10	1.6

5-CST-B



DUAL-STREAM BUBBLER NOZZLE



5-CST-B

NOZZLES



HUNTER SPRAY NOZZLES

Built to Last

SPRAY BODIES:

Always Perform Under Pressure

With an industry-leading 34.5 bar; 3,450 kPa burst pressure, the Pro-Spray® is built to perform in the most demanding irrigation systems in the world.

Innovative Seal Design Prevents Leaks

Most spray bodies leak when the cap is loosened only a quarter turn. The Pro-Spray can handle over one full turn of the cap with no leak or loss of performance.

SPRAY NOZZLES:

Designed for Complete Coverage

The industry's strongest edges and uniform coverage at full radius means no section of landscape is missed.

Thick Droplets Get the Job Done Right

Pro-Sprays disperse the largest water droplets of any spray nozzle on the market, so water is not deflected by wind or held back by thick turf.





SECTION 04:
VALVES

VALVES

ADVANCED FEATURES

PRESSURE REGULATION



FLOW CONTROL

Available on:
PGV, ICV, IBV

Maximise efficiency and prolong the life of a system by fine tuning flow and pressure for each zone.



RECLAIMED WATER IDENTIFICATION

Available on:
PGV, ICV, IBV

Purple tags and handles are an option for a clear, quick, and simple method of identifying the use of non-potable water.



ACCU-SYNC® PRESSURE REGULATION

Available on:
PGV, ICV, IBV

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



FILTER SENTRY™

Available on:
ICV, IBV

Filter Sentry disk 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.

VALVES COMPARISON CHART

QUICK SPECS		1" PGV & JAR TOP	PGV	ICV	ICV FILTER SENTRY™	IBV FILTER SENTRY™
SIZE		1" BSP	1½", 2" BSP	1", 1½", 2", 3" BSP	1", 1½", 2", 3" BSP	1", 1½", 2", 3" BSP
FLOW	(m³/hr)	0.05-9.00	0.05-34.00	0.05-68.00	0.05-68.00	0.05-68.00
	(l/min)	0.7-150	0.7-570	0.4-1135	0.4-1135	0.4-1135
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	Factory Installed	
RECLAIMED WATER ID TAG				User Installed	Factory Installed	Factory Installed
APPLICATIONS						
RESIDENTIAL		●	●	●		
COMMERCIAL			●	●	●	●
POTABLE WATER		●	●	●	●	●
RECLAIMED WATER				●	●	●
SECONDARY WATER					●	●
PRESSURE REGULATION		●	●	●	●	●
HIGH PRESSURE SYSTEMS				●	●	●
LOW PRESSURE SYSTEMS		●	●	●	●	●
HIGH TEMPERATURE LOCATIONS				●	●	●

1" PGV & PGV JAR TOP

Inlet: 1" (25 mm)
Flow: 0.05 to 9 m³/hr; 0.7 to 150 l/min

FEATURES

- Size: 1" (25 mm)
- External and internal manual bleed allows quick and easy "at the valve" activation
- Double-beaded diaphragm seal design for superior leak-free performance
- Durable glass-filled nylon threaded bonnet ring allows easy access without tools (Jar Top)
- Optional: DC latching solenoids enable Hunter's battery-powered controllers
- Captive bonnet bolts provide hassle-free valve maintenance
- Low flow capability allows use of Hunter's micro-irrigation products
- Encapsulated 24 VAC solenoid with captive plunger for hassle-free service
- Temperature rating: 66° C
- Warranty period: 2 years
- ▶ Flow control
- ▶ Accu-Sync® pressure regulation
- ▶ Optional reclaimed water ID

OPERATING SPECIFICATIONS

- Flow: 0.05 to 9 m³/hr; 0.7 to 150 l/min
- Recommended pressure range: 1.5 to 10 bar; 150 to 1,000 kPa

SOLENOID SPECIFICATIONS

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

FACTORY INSTALLED OPTIONS

- Valve without solenoid
- DC latching solenoid

USER INSTALLED OPTIONS

- Solenoid conduit cover (P/N 464322)
- DC latching solenoid (P/N 458200)
- Accu-Sync pressure regulator*
- Reclaimed water ID handle for PGV-101 models (P/N 269205)

▶ = *Advanced Feature descriptions on page 82*

* Accu-Sync product information on page 94



PGV-100G
Inlet Diameter: 1" (25 mm)
Height: 13 cm
Length: 11 cm
Width: 6 cm



PGV-101G
Inlet Diameter: 1" (25 mm)
Height: 13 cm
Length: 11 cm
Width: 6 cm



PGV-100JT - G
Inlet Diameter: 1" (25 mm)
Height: 14 cm
Length: 11 cm
Width: 8 cm



PGV-101JT - G
Inlet Diameter: 1" (25 mm)
Height: 14 cm
Length: 11 cm
Width: 8 cm

PGV Jar Top



PGV 1" - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Inlet/Outlet	3 Options (Factory Installed)	4 Options (User Installed)
PGV-100G = 1" (25 mm) Globe valve, without flow control PGV-101G = 1" (25 mm) Globe valve, with flow control PGV-100A = 1" (25 mm) Angle valve, without flow control PGV-101A = 1" (25 mm) Angle valve, with flow control	(blank) = NPT threads B = BSP threads	(blank) = No Option DC = DC latching solenoid LS = Valve without solenoid	(blank) = No option R = Reclaimed water ID handle (Except for PGV-100) CC = Solenoid conduit cover DC = DC latching solenoid AS-ADJ = Accu-Sync® adjustable pressure regulator AS-xx* = Accu-Sync pressure regulator 20 * = 1.4 bar, 30 * = 2.1 bar, 40 * = 2.8 bar 50 * = 3.5 bar, 70 * = 4.8 bar
PGV-100 = 1" (25 mm) Globe valve, without flow control PGV-101 = 1" (25 mm) Globe valve, with flow control	MM = Male x male (NPT) MMB = Male x male (BSP)		

Example:

PGV-101G - B - DC = 1" (25 mm) Globe valve, with flow control, BSP threads, and DC latching solenoid

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

1 Model	2 Inlet/Outlet	3 Options (Factory Installed)	4 Options (User Installed)
PGV-100JT = 1" (25 mm) Globe jar top valve, without flow control PGV-101JT = 1" (25 mm) Globe jar top valve, with flow control	GB = BSP threads MM = Male x male (NPT) MMB = Male x male (BSP)	(blank) = No option LS = Less solenoid DC = DC latching solenoid	(blank) = No option R = Reclaimed water ID handle (Except for PGV-100JT) CC = Solenoid conduit cover DC = DC latching solenoid AS-ADJ = Accu-Sync adjustable pressure regulator AS-xx* = Accu-Sync pressure regulator 20 * = 1.4 bar, 30 * = 2.1 bar, 40 * = 2.8 bar 50 * = 3.5 bar, 70 * = 4.8 bar

Examples:

PGV-100JT - GB = 1" (25 mm) Globe jar top valve, without flow control, and BSP threads

PGV-100JT - MMB = 1" (25 mm) Globe jar top valve, without flow control, and male BSP threads

PGV PRESSURE LOSS IN BAR	
Flow m ³ /hr	1"
0.3	0.1
1.0	0.1
2.5	0.1
3.5	0.1
4.5	0.2
5.5	0.3
6.5	0.4
8.0	0.8
9.0	1.0

PGV PRESSURE LOSS IN kPa	
Flow l/min	1"
4	8.2
20	9.7
40	13
55	11
75	22
95	31
115	62
135	112
150	139

PGV-100-G Installed



PGV

Inlet: 1½" (40 mm), 2" (50 mm)
Flow: 5 to 34 m³/hr; 75 to 570 l/min

FEATURES

- Sizes: 1½" (40 mm), 2" (50 mm)
- External and internal manual bleed allows quick and easy "at the valve" activation
- Double-beaded diaphragm seal design assures leak-free performance
- Optional: DC latching solenoids enable Hunter's battery-powered controllers
- Captive bonnet bolts provide hassle-free valve maintenance
- Encapsulated 24 VAC solenoid with captive plunger for hassle-free service
- Temperature rating: 66° C
- Warranty period: 2 years
- ▶ Flow control
- ▶ Accu-Sync® pressure regulation
- ▶ Optional reclaimed water ID handle



PGV-151

Inlet Diameter: 1½" (40 mm)
Height: 19 cm
Length: 15 cm
Width: 11 cm

PGV-201

Inlet Diameter: 2" (50 mm)
Height: 20 cm
Length: 17 cm
Width: 13 cm

OPERATING SPECIFICATIONS

- Flow:
 - PGV-151: 5 to 27 m³/hr; 75 to 450 l/min
 - PGV-201: 5 to 34 m³/hr; 75 to 570 l/min
- Recommended pressure range: 1.5 to 10 bar; 150 to 1000 kPa

SOLENOID SPECIFICATIONS

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

FACTORY INSTALLED OPTIONS

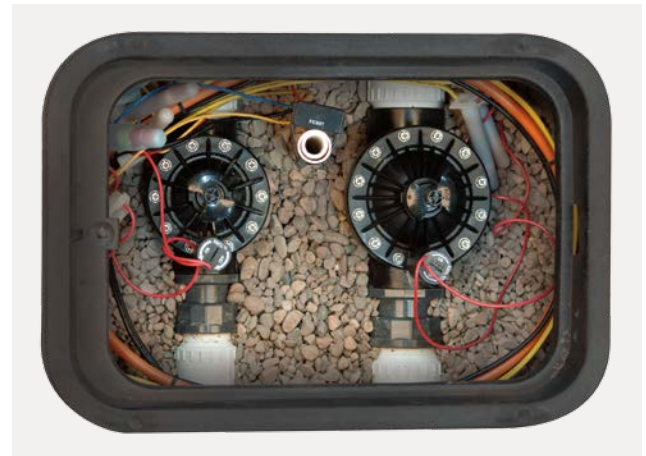
- Valve without solenoid
- DC latching solenoid

USER INSTALLED OPTIONS

- Solenoid conduit cover (P/N 464322)
- DC latching solenoid (P/N 458200)
- Accu-Sync pressure regulator
- Reclaimed water ID (P/N 607105)

▶ = *Advanced Feature descriptions on page 82*

PGV Installed



PGV 1.5" & 2" - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Inlet/Outlet	3 Options (Factory Installed)	4 Options (User Installed)
<p>PGV-151 = 1½" (40 mm) Globe/angle valve, with flow control</p> <p>PGV-201 = 2" (50 mm) Globe/angle valve, with flow control</p>	<p>(blank) = NPT threads</p> <p>B = BSP threads</p>	<p>(blank) = No Option</p> <p>DC = DC latching solenoid</p> <p>LS = Valve w/o solenoid</p>	<p>(blank) = No option</p> <p>R = Reclaimed water ID handle</p> <p>CC = Solenoid conduit cover</p> <p>DC = DC latching solenoid</p> <p>AS-ADJ = Accu-Sync® adjustable pressure regulator</p> <p>AS-xx* = Accu-Sync pressure regulator</p> <p>20* = 1.4 bar, 30* = 2.1 bar</p> <p>40* = 2.8 bar, 50* = 3.5 bar</p> <p>70* = 4.8 bar</p>

Examples:

PGV-151 - B - AS-ADJ = 1½" (40 mm) Globe valve, with flow control, BSP threads, and Accu-Sync adjustable pressure regulator

Flow m³/hr	1" Globe	1" Angle	1½" Globe	1½" Angle	2" Globe	2" Angle
0.3	0.1	0.1				
1.0	0.1	0.1				
2.5	0.1	0.1				
3.5	0.2	0.1				
4.5	0.2	0.1	0.2	0.2	0.1	0.1
7.0	0.4	0.2	0.2	0.2	0.1	0.1
8.0			0.2	0.2	0.1	0.1
9.0			0.2	0.2	0.1	0.1
11.0			0.3	0.2	0.1	0.1
13.5			0.3	0.3	0.1	0.1
18.0			0.4	0.4	0.2	0.1
22.5			0.6	0.5	0.3	0.2
27.0			0.8	0.8	0.4	0.3
30.5					0.6	0.5
34.0					0.7	0.6

Flow l/min	1" Globe	1" Angle	1½" Globe	1½" Angle	2" Globe	2" Angle
4	8	7				
20	9.5	7				
40	13	7				
55	11	7				
75	22	14	20	22	4	9
95	31	16	20	21	5.5	9
115	43	21	21	21	7.5	9.5
135			22	21	9	10
150			25	23	12	11
200			27	24	14	12
325			47	41	26	19
400			65	59	33	24
500			96	92	43	32
625					56	45
775					74	64

ICV

Inlet: **1" (25 mm), 1½" (40 mm)**
2" (50 mm), 3" (80 mm)
 Flow: **0.06 to 68 m³/hr; 0.4 to 1,135 l/min**

FEATURES

- Inlet: 1" (25 mm), 1½" (40 mm), 2" (50 mm), 3" (80 mm)
- External and internal manual bleed allows quick and easy "at the valve" activation
- Glass-filled nylon construction resulting in the highest pressure rating
- Double-beaded diaphragm seal design assures leak-free performance
- Fabric-reinforced EPDM diaphragm and EPDM seat ensure greater performance in all conditions
- Optional: DC latching solenoids enable Hunter's battery-powered controllers
- Captive bonnet bolts provide hassle-free valve maintenance
- Low flow capability allows use of Hunter's micro-irrigation products
- Encapsulated 24 VAC solenoid with captive plunger for hassle-free service
- Temperature rating: 66° C
- Warranty period: 5 years
- ▶ Flow control
- ▶ Filter Sentry™
- ▶ Accu-Sync® pressure regulation
- ▶ Optional reclaimed water ID

OPERATING SPECIFICATIONS

- Flow:
 - ICV-101G: 0.06 to 9 m³/hr; 0.4 to 150 l/min
 - ICV-151G: 4 to 34 m³/hr; 75 to 568 l/min
 - ICV-201G: 9 to 45 m³/hr; 150 to 757 l/min
 - ICV-301: 34 to 68 m³/hr; 570 to 1,135 l/min
- Recommended pressure range: 1.5 to 15.0 bar; 150 to 1500 kPa

SOLENOID SPECIFICATIONS

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

FACTORY INSTALLED OPTIONS

- DC latching solenoid
- Filter Sentry

USER INSTALLED OPTIONS

- Solenoid conduit cover (P/N 464322)
- DC latching solenoid (P/N 458200)
- Accu-Sync pressure regulator
- Reclaimed water ID handle for ICV101, 151, 201 (P/N 561205) and 301 (P/N 515005)
- Reclaimed water ID Tag for all ICV valves (P/N 700392) (Included on Filter Sentry Models)

▶ = *Advanced Feature descriptions on page 82*



ICV-101G
 Inlet Diameter: 1" (25 mm)
 Height: 14 cm
 Length: 12 cm
 Width: 10 cm



ICV-151G
 Inlet Diameter: 1½" (40 mm)
 Height: 18 cm
 Length: 17 cm
 Width: 14 cm



ICV-201G
 Inlet Diameter: 2" (50 mm)
 Height: 18 cm
 Length: 17 cm
 Width: 14 cm



ICV-301
 Inlet Diameter: 3" (80 mm)
 Height: 27 cm
 Length: 22 cm
 Width: 19 cm

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

1 Model	2 Inlet/Outlet	3 Options (Factory Installed)	4 Options (User Installed)
ICV-101G = 1" (25 mm) Globe valve	(blank) = NPT threads	(blank) = No option FS = Filter Sentry™	(blank) = No option R = Reclaimed water ID handle
ICV-151G = 1½" (40 mm) Globe valve	B = BSP threads	DC = DC latching solenoid	CC = Solenoid conduit cover DC = DC latching solenoid
ICV-201G = 2" (50 mm) Globe valve			AS-ADJ = Accu-Sync® adjustable pressure regulator
ICV-301 = 3" (80 mm) Globe/Angle valve			AS-xx* = Accu-Sync pressure regulator 20* = 1.4 bar, 30* = 2.1 bar 40* = 2.8 bar, 50* = 3.5 bar 70* = 4.8 bar

Examples:

ICV-101G = 1" (25 mm) Globe valve, NPT threads

ICV-151G - FS - R = 1½" (40 mm) Globe valve, NPT threads, Filter Sentry, and reclaimed water ID handle

ICV-301B = 3" (80 mm) Globe/Angle valve, BSP threads

ICV PRESSURE LOSS IN BAR					
Flow m³/hr	1" Globe	1½" Globe	2" Globe	3" Globe	3" Angle
0.05	0.1				
0.1	0.1				
0.3	0.1				
1.0	0.2				
2.5	0.2				
3.5	0.2				
4.5	0.2	0.1			
7.0	0.4	0.1			
9.0	1.0	0.1	0.1		
11.0		0.2	0.1		
13.5		0.2	0.1		
17.0		0.3	0.1		
20.5		0.4	0.2		
23.0		0.5	0.3		
27.0		0.7	0.4		
30.5		0.9	0.5		
34.0		1.2	0.6	0.2	0.1
40.0			0.9	0.2	0.2
45.5			1.2	0.3	0.2
51.0				0.3	0.3
57.0				0.4	0.4
62.5				0.5	0.5
68.0				0.6	0.6

ICV PRESSURE LOSS IN kPa					
Flow l/min	1" Globe	1½" Globe	2" Globe	3" Globe	3" Angle
1	14				
2	14				
4	14				
20	17				
40	20				
60	20				
75	20	9.6			
115	62	10			
150	139	12	5.0		
190		15	7.0		
225		18	9.3		
280		26	14		
340		37	20		
380		46	26		
450		65	36		
510		84	47		
565		104	57	16	12
660			79	22	17
750			103	29	23
850				38	30
950				47	38
1,050				58	47
1,135				69	56

IBV

Inlet: **1" (25 mm), 1½" (40 mm)**
2" (50 mm), 3" (80 mm)
 Flow: **0.06 to 68 m³/hr; 0.4 to 1,135 l/min**

FEATURES

- Factory-installed Filter Sentry™ diaphragm
- External and internal manual bleed allows quick and easy “at the valve” activation
- Double-beaded diaphragm seal design assures leak-free performance
- Fabric-reinforced EPDM diaphragm and EPDM seat ensure superior performance in all conditions
- Optional DC latching solenoids enable Hunter’s battery-powered controllers
- Low flow capability allows use of Hunter’s micro irrigation products
- Encapsulated 24 VAC solenoid with captive plunger for hassle-free service
- Temperature rating: 66° C
- Warranty period: 5 years
- ▶ **Heavy-duty flow control**
- ▶ **Accu-Sync® pressure regulation**

OPERATING SPECIFICATIONS

- Flow rate:
 - IBV-101G-FS: 0.06 to 9 m³/hr; 0.4 to 150 l/min
 - IBV-151G-FS: 4 to 34 m³/hr; 75 to 568 l/min
 - IBV-201G-FS: 9 to 45 m³/hr; 150 to 757 l/min
 - IBV-301G-FS: 34 to 68 m³/hr; 570 to 1,135 l/min
- Recommended pressure range: 1.5 to 15 bar; 150 to 1500 kPa

SOLENOID SPECIFICATIONS

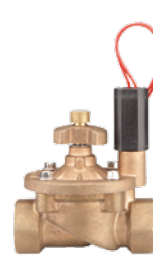
- 24 VAC solenoid
 - 350 mA inrush, 190 mA holding, 60 Hz
 - 370 mA inrush, 210 mA holding, 50 Hz

FACTORY INSTALLED OPTIONS

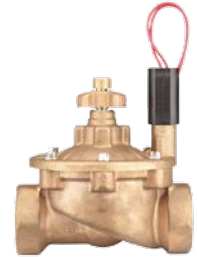
- DC latching solenoid

USER INSTALLED OPTIONS

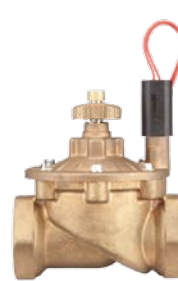
- Solenoid conduit cover (P/N 464322)
- DC latching solenoid (P/N 458200)
- Accu-Sync pressure regulator
- Reclaimed water ID tag (P/N 700392)
- ▶ = *Advanced Feature descriptions on page 82*



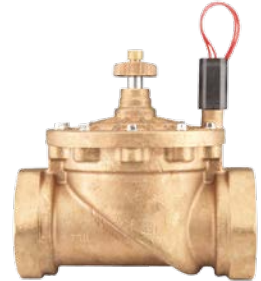
IBV-101G-FS
 Inlet Diameter: 1" (25 mm)
 Height: 11.5 cm
 Length: 9 cm
 Width: 13 cm



IBV-151G-FS
 Inlet Diameter: 1½" (40 mm)
 Height: 16 cm
 Length: 13 cm
 Width: 16 cm



IBV-201G-FS
 Inlet Diameter: 2" (50 mm)
 Height: 15 cm
 Length: 13 cm
 Width: 17 cm



IBV-301G-FS
 Inlet Diameter: 3" (80 mm)
 Height: 24 cm
 Length: 23 cm
 Width: 18 cm

Filter Sentry



IBV – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Inlet/Outlet	3 Options (Factory Installed)	4 Options (User Installed)
IBV-101G-FS = 1" (25 mm) Globe valve IBV-151G-FS = 1½" (40 mm) Globe valve IBV-201G-FS = 2" (50 mm) Globe valve IBV-301G-FS = 3" (80 mm) Globe/Angle valve	B = BSP threads	(blank) = No option DC = DC latching solenoid	(blank) = No option R = Reclaimed water ID tag CC = Solenoid conduit cover DC = DC latching solenoid AS-ADJ = Accu-Sync® adjustable pressure regulator AS-xx* = Accu-Sync pressure regulator 20 * = 1.4 bar, 30 * = 2.1 bar 40 * = 2.8 bar, 50 * = 3.5 bar 70 * = 4.8 bar

Examples:

IBV-151G - B - FS - R = 1½" (40 mm) Globe valve, BSP threads, Filter Sentry, and reclaimed water ID tag
IBV-201G - B - FS = 2" (50 mm) Globe valve, BSP threads, Filter Sentry

IBV PRESSURE LOSS IN BAR				
Flow m³/hr	1" Globe	1½" Globe	2" Globe	3" Globe
0.05	0.1			
0.1	0.1			
0.3	0.1			
1.0	0.2			
2.5	0.2			
3.5	0.2			
4.5	0.2	0.1		
7.0	0.4	0.1		
9.0	1.0	0.1	0.1	
11.0		0.2	0.1	
13.5		0.2	0.1	
17.0		0.3	0.2	
20.5		0.4	0.2	
23.0		0.5	0.3	
27.0		0.7	0.4	
30.5		0.9	0.5	
34.0			0.6	0.2
40.0				0.2
45.5				0.3
51.0				0.3
57.0				0.4
62.5				0.5
68.0				0.6

IBV PRESSURE LOSS IN kPa				
Flow l/min	1" Globe	1½" Globe	2" Globe	3" Globe
0.1	14			
0.5	14			
4	14			
20	17			
40	20			
60	20			
75	20	9.6		
115	62	10		
150	139	12	5	
190		15	7	
225		18	9.3	
280		26	14	
340		37	20	
380		46	26	
450		65	36	
510		84	47	
565			57	16
660				22
750				29
850				38
950				47
1,050				58
1,135				69

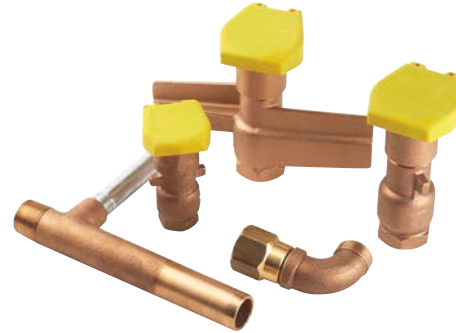
QUICK COUPLERS

Size: ¾" (20 mm), 1" (25 mm)
Pressure Rating: 10 bar; 1,000 kPa

FEATURES

- 100% interchangeable with major brands*
- Red brass and stainless steel construction
- TuffTop™ thermoplastic locking and non-locking covers
- Optional WingThing™ stabilisation and ACME key connection
- Stainless steel lug on 1" (25 mm) and 1¼" (32 mm) keys
- Spring-loaded covers with stainless steel springs for positive closing and protection of valve's sealing components
- Warranty period: 5 years

* HQ compatibility information on page 195



Quick Couplers



Reclaimed Water Option

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

HQ PRESSURE LOSS IN BAR					HQ PRESSURE LOSS IN kPa				
Flow m ³ /hr	HQ-3	HQ-33	HQ-44	HQ-5	Flow l/min	HQ-3	HQ-33	HQ-44	HQ-5
1	0.06	0.07			18.9	5.5	6.9		
2.3	1.12	0.14			37.9	12.4	13.8		
3.4	0.28	0.30	0.15		56.8	28.3	29.6	15.2	
4.5	0.50	0.52	0.30	0.07	75.7	49.6	52.4	30.3	6.9
6.8			0.79	0.21	113.6			79.3	20.7
9.1				0.43	151.4				43.4
11.4				0.63	189.3				63.4
13.6				0.90	227.1				89.6
15.9				1.37	265.0				136.5

QUICK COUPLER, KEY AND HOSE SWIVEL CHARTS							
Model	Inlet Threads	Slots	Body	Colour*	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" (25 mm) NPT	1	2 - Piece	Yellow	No	HK-44	HS-1 or HS-2
HQ-44LRC	1" (25 mm) NPT	1	2 - Piece	Yellow	Yes	HK-44	HS-1 or HS-2
HQ-44RC-AW	1" (25 mm) NPT	ACME	2 - Piece Wing**	Yellow	No	HK-44A	HS-1 or HS-2
HQ-44LRC-AW	1" (25 mm) NPT	ACME	2 - Piece Wing**	Yellow	Yes	HK-44A	HS-1 or HS-2
HQ-5RC	1" (25 mm) NPT	2	1 - Piece	Yellow	No	HK-55	HS-1 or HS-2
HQ-5LRC	1" (25 mm) NPT	2	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 stabilisation wings

HQ 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" (25 mm) Inlet, 1-piece body, 2 slots</p> <p>HQ33D = ¾" Inlet, 2-piece body, 2 slots</p> <p>HQ44 = 1" (25 mm) Inlet, 2-piece body, 1 slot or ACME</p>	<p>RC = Yellow rubber cover</p> <p>LRC = Yellow locking rubber cover (Not available for HQ3 body)</p>	<p>(blank) = No option</p> <p>AW = ACME key with anti-rotation wings (Only available for HQ44 body)</p> <p>BSP = BSP threads (Only available for HQ5 body)</p> <p>R = Purple locking cover (reclaimed water ID; only available for LRC models)</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 purple locking cover
- HQ44 - LRC - AW - R = HQ valve, with locking rubber cover, ACME key socket, anti-rotation wings and purple locking cover
- HQ5 - LRC - BSP = HQ5 valve with locking rubber cover and BSP threads

HK KEYS

Key Model	Compatible Valve	Compatible Swivel
HK33 = ¾" valve, ¾" key inlet	HQ3, HQ33	HS0
HK44 = 1" (25 mm) valve, 1" (25 mm) key inlet	HQ44	HS1, HS2, HS1B, HS2B
HK44A = 1" (25 mm) valve, ACME key inlet	HQ44AW	HS1, HS2, HS1B, HS2B
HK55 = 1" (25 mm) valve, 1¼" (32 mm) key inlet	HQ5	HS1, HS2, HS1B, HS2B

HS HOSE SWIVELS

Hose Swivel	Compatible Key
HS0 = ¾" inlet, ¾" hose outlet	HK33
HS1 = 1" (25 mm) inlet, ¾" hose outlet	HK44, HK44A, HK55
HS2 = 1" (25 mm) inlet, 1" (25 mm) hose outlet	HK44, HK44A, HK55
HS1B = 1" (25 mm) inlet, ¾" BSP outlet	HK44, HK44A, HK55
HS2B = 1" (25 mm) inlet, 1" (25 mm) BSP outlet	HK44, HK44A, HK55



① HQ5LRC Quick Coupler with HSJ-1 SnapLok™ equipped swing joint

Introducing Hunter's new full line of HSJ heavy-duty swing joints with configurations for every need and every project. There is even a version specifically designed for quick coupler applications. The SnapLok outlet on HSJ-1 models is equipped with accommodations for both rebar and pipe stabilisation, as well as heavy-duty brass outlet threads with a unique anti-rotation locking feature.

See the HSJ swing joints on page 177

ACCU-SYNC®

Type: **Pressure Regulator**

OPERATING SPECIFICATIONS

- Regulation from 1.4 to 7.0 bar; 140 to 700 kPa
- Static pressure: 10 bar; 1,000 kPa
- Required dynamic pressure differential: 1.0 bar; 100 kPa
- Works with AC and DC latching solenoids
- Works with any Hunter valve

ACCU-SYNC VALVE RECOMMENDED FLOW RANGE

Valve	Flow	
	m ³ /hr	l/min
PGV-100/101	1.2 - 6.8	19 - 114
PGV-151	4.5 - 28	75 - 454
PGV-201	9.0 - 34	150 - 750
ICV-101	1.2 - 9.0	19 - 150
ICV-151	4.5 - 31	75 - 510
ICV-201	9.0 - 34	150 - 560
ICV-301	34 - 68	565 - 1135
IBV-101	1.2 - 9.0	19 - 150
IBV-151	4.5 - 31	75 - 510
IBV-201	9.0 - 46	150 - 560
IBV-301	34 - 68	565 - 1135

ACCU-SYNC APPLICATIONS

● Adjustable 1.4 to 7.0 bar	For full customisation, the adjustable Accu-Sync can regulate pressure from 1.4 to 7.0 bar; 140 to 700 kPa
● Fixed 1.4 bar	Ideal for point source micro irrigation systems, pressure regulated to 1.4 bar; 140 kPa
● Fixed 2.1 bar	Ideal for spray systems, pressure regulated to 2.1 bar; 210 kPa
● Fixed 2.8 bar	Ideal for Hunter's MP Rotator and large in-line drip systems, pressure regulated to 2.8 bar; 280 kPa
● Fixed 3.5 bar	Ideal for mid-range rotors, pressure regulated to 3.5 bar; 350 kPa
● Fixed 4.8 bar	Ideal for larger rotors, pressure regulated to 4.8 bar; 480 kPa

ADJUSTABLE



AS-ADJ

Height with solenoid: 8 cm

FIXED



AS-20

Height with solenoid: 8 cm



AS-30

Height with solenoid: 8 cm



AS-40

Height with solenoid: 8 cm



AS-50

Height with solenoid: 8 cm



AS-70

Height with solenoid: 8 cm



Installation

Accu-Sync shown installed on ICV and PGV valves.



HUNTER VALVES

Built to Thrive Under Pressure

From residential to commercial, high pressure to low pressure, clean water to dirty water, Hunter valves keep your system running flawlessly day in and day out.

RELIABLE:

- Fewer parts means greater longevity and simple operation
- AC and DC models for flexibility
- Residential models handle up to 10 bar; 1,000 kPa
- Commercial models handle up to 15 bar; 1,500 kPa

SIMPLE PRESSURE REGULATION:

- Regulating at the valve greatly enhances efficiency
- Accu-Sync® provides simple regulation from 1.4 to 7.0 bar; 140 to 700 kPa

SECTION 05:

CONTROLLERS

CONTROLLERS





CONTROLLERS

ADVANCED FEATURES

BATTERY OPERATED CONTROLLERS



RESIDENTIAL CONTROLLERS



COMMERCIAL CONTROLLERS



REMOTE CONTROL



CONTROLLERS

Water-Saving Features

CYCLE AND SOAK

This water-saving feature allows the operator to specify a maximum cycle time for each single station in hours, minutes, or seconds, followed by a minimum soak time, to prevent runoff from slopes or saturated soil. The operator can enter any run time, and the controller will automatically divide it into cycles to allow the water to be absorbed during the soak periods. The feature is adjustable by individual station for unique soil and site conditions.

TOTAL RUN TIME CALCULATOR

This feature adds up all run times, calculates the total duration of a program, and instantly displays the full length of an irrigation cycle. This information can be used to determine the time when watering will end.

REAL TIME FLOW MONITORING

This feature permits connection of a flow meter to recognise high or low flow conditions and react automatically to alarms. The controller learns typical flows for each zone of irrigation and then monitors performance during automatic irrigation. When incorrect flows are detected, the controller can identify the faulty station and shut it down. Flow Monitoring requires the installation of a Normally-Closed Master Valve for full functionality. Flow totals are also recorded in controller memory to report system water usage.

BUILT IN SOLAR SYNC®

The Pro-C facepack has Solar Sync control built-in, making it even easier to upgrade any Pro-C to weather-based smart control. Solar Sync is an EPA WaterSense® labeled smart device which calculates evapotranspiration (ET) and adjusts Hunter controllers daily based on local weather conditions, resulting in water savings. It has also received international certifications for water conservation.

SOLAR SYNC DELAY

Solar Sync Delay allows the installer to specify a number of days before automatic weather adjustment begins. This allows a period of non-adjusted irrigation for grow-in or plant establishment purposes, without requiring a return visit to the site to enable the Solar Sync water-saving feature.

SEASONAL ADJUSTMENT: GLOBAL, MONTHLY, AND SOLAR SYNC

This feature allows for quick adjustments to irrigation run times through a percentage scale. During peak season, set the seasonal adjust to 100%. If weather conditions require less water, enter the appropriate percentage value (i.e. 50%) to cut down irrigation run times without the need to adjust each station in the program.

Global: Provides a seasonal adjustment value to all programs.

Monthly: Allows users to program a seasonal adjustment value for each month of the year. This works by automatically changing the programmed seasonal adjustment value on the first day of every month.

Solar Sync: The Solar Sync ET sensor implements an automatic daily adjustment based on measured local weather.

Convenient Maintenance & Site Management

PROGRAMMABLE DECODERS

Field programmability means no lengthy serial numbers to enter in the controller, and no time lost re-programming decoder assignments after a controller change. Each decoder is programmed with its actual station (valve) numbers for simplicity and reliability. Decoders may be re-programmed at any time if desired.

AUTOMATIC SHORT CIRCUIT PROTECTION

Automatic short circuit protection is a feature found in all Hunter AC powered controllers. This feature automatically detects electrical faults, which are typically caused by wiring issues. Only affected stations are skipped, allowing all other stations to water normally as programmed. There are no fuses to blow or internal circuit breakers to trip, so complete irrigation system shutdown is avoided.

QUICKCHECK™

The QuickCheck feature makes field wiring issues easy to assess with the push of a button. QuickCheck displays an ERR message when a field wiring short is detected on a particular station number.

SIMULTANEOUS STATION GROUPS

Simultaneous Station Groups allow for groups of stations to run together within a program. This permits consolidation of large systems into fewer items to program and can be used to control system flow in high capacity installations.

SENSOR PROGRAMMABILITY

This feature allows the user to specify which program or stations will be shut down in response to a specific sensor alarm. Stations or programs not affected by the sensor continue to run automatically.

DELAY BETWEEN STATIONS

Users can program a delay between stations as the controller advances from one station to the next. This delay can range from a few seconds (to permit slow-closing valves additional time to close) to a much longer period of time (to allow pressure tanks time to recharge), based on user requirements.

NON-WATER DAYS

Day(s) of the week can be programmed OFF in advance, so that irrigation does not occur regardless of program interval schedules. For example, if the gardener mows the lawn on Saturday, the Non-Water Days feature allows Saturday to be programmed OFF, so that watering will not occur.

MULTI-LANGUAGE PROGRAMMING

Users can choose to program Hunter controllers in six different languages including English, Spanish, French, Italian, German and Portuguese.

CONTROLLERS COMPARISON CHART

QUICK SPECS	ECO LOGIC	X-CORE®	PRO-C®	PCC	I-CORE®	ACC	XC-HYBRID	NODE	WVS
NUMBER OF STATIONS	4, 6	2, 4, 6, 8	4 to 16	6, 12	6 to 42 Up to 48 with Decoders	6 to 42 Up to 99 with Decoders	6, 12	1, 2, 4, 6	1, 2, 4
TYPE*	Fixed	Fixed	Modular	Fixed	Modular	Modular	Fixed	Fixed	Fixed
NUMBER OF PROGRAMS	2	3	3	3	4	6	3	3	---
START TIMES PER PROGRAM	4	4	4	4	8 (16 for program D)	10	4	4	---
MAX. NUMBER OF SIMULTANEOUS PROGRAMS	---	---	---	---	2	6	---	---	---
WARRANTY	2 Years	2 Years	2 Years	2 Years	5 Years	5 Years	2 Years	2 Years	2 Years

FEATURES

ENCLOSURE TYPE	Plastic Indoor	Plastic Indoor Plastic Outdoor	Plastic Indoor Plastic Outdoor	Plastic Indoor Plastic Outdoor	Plastic/Metal Stainless Outdoor Plastic Pedestal Stainless Pedestal	Metal Outdoor Stainless Outdoor Plastic Pedestal Stainless Pedestal	Plastic Indoor/ Outdoor Stainless Indoor/ Outdoor	Waterproof	Waterproof
SOLAR SYNC® COMPATIBLE		●	●	●	●	●			
CENTRAL CONTROL COMPATIBLE			●	●	●	●			
REMOTE CONTROL COMPATIBLE		●	●	●	●	●			
FLOW METER COMPATIBLE			●	●	●	●			
RAIN-CLIK® FREEZE-CLIK® SENSOR COMPATIBLE	●	●	●	●	●	●	●	●	●
BATTERY OPERATED							●	●	●
NUMBER OF SENSOR INPUTS	1	1	1	1	2 (Plastic Models) 3 (Metal & Ped Models)	4 + Dedicated Flow Input	1	1	1
MAX. STATION RUN TIMES (hours)	4	4	6	6	12	6	4	6	4

* Fixed or modular indicates the controllers ability to expand the number of stations from a base count.

ECO LOGIC

Number of Stations: **4, 6**
 Type: **Fixed**

FEATURES

- Number of stations: 4, 6
- Type: Fixed
- Enclosure: Indoor
- Independent programs: 2
- Start times per program: 4
- Max station run time: 4 hours
- Compatible with Hunter Clik sensors and other micro-switch type weather sensors
- Rain sensor bypass
- Programmable rain delay: 1 to 7 days
- Manual cycle
- Test program allows for quick system checks
- Warranty period: 2 years
- ▶ Easy Retrieve™ memory
- ▶ Quick Check™
- ▶ Solar Sync® Delay
- ▶ Automatic short circuit protection
- ▶ Seasonal Adjustment: Global or automatic updates with Solar Sync
- ▶ Delay between stations
- ▶ Sensor programmability



Plastic Indoor

Height: 12.6 cm
 Width: 12.6 cm
 Length: 3.2 cm

ELECTRICAL SPECIFICATIONS

- Transformer input: 230 VAC 50/60 Hz
- Transformer output (24 VAC): 0.625 A
- Station output (24 VAC): 0.28 A
- P/MV output (24 VAC): 0.28 A
- Sensor input: 1

APPROVALS

- CE, cUL

ECO LOGIC	
Model	Description
ELC-401i - E	4-Station indoor controller, 230 VAC, with European connections
ELC-601i - E	6-Station indoor controller, 230 VAC, with European connections

X-CORE®

Number of Stations: **2, 4, 6, 8**
Type: **Fixed**

FEATURES

- Number of stations: 2, 4, 6, 8
- Type: Fixed
- Enclosures: Indoor and outdoor plastic
- Independent programs: 3
- Start times per program: 4
- Max. station run time: 4 hours
- Built in Solar Sync®
- Programmable rain delay
- Non-volatile memory
- Warranty period: 2 years
- ▶ Easy Retrieve™ memory
- ▶ QuickCheck™
- ▶ Solar Sync Delay
- ▶ Automatic short circuit protection
- ▶ Seasonal Adjustment: Global or automatic updates with Solar Sync
- ▶ Delay between stations
- ▶ Sensor programmability

ELECTRICAL SPECIFICATIONS

- Transformer input: 120 VAC or 230 VAC (international model)
- Transformer output (24 VAC): 1 A
- Station output (24 VAC): 0.56 A
- P/MV: (24 VAC): 0.28 A
- Sensor inputs: 1
- Operating temperature: -18° C to 60° C

APPROVALS

- CE, UL, cUL, C-tick, FCC
- ▶ = *Advanced Feature descriptions on pages 99*



Plastic Indoor
Height: 16.5 cm
Width: 14.6 cm
Depth: 5 cm



Plastic Outdoor
Height: 22 cm
Width: 17.8 cm
Depth: 9.5 cm

X-CORE - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Models	2 Transformer	3 Indoor/Outdoor	4 Options
XC-2 = 2-Station <i>(indoor model only)</i> XC-4 = 4-Station XC-6 = 6-Station XC-8 = 8-Station	00 = 120 VAC 01 = 230 VAC	(blank) = Outdoor model i = Indoor model	(blank) = No option E = 230 VAC with European connections A = 230 VAC with Australian connections <i>(Australian outdoor models have internal transformer with cord)</i>

Examples:

- XC-201i - E = 2-Station 230 VAC indoor controller, with plastic cabinet
- XC-401 - E = 4-Station 230 VAC outdoor controller, with plastic cabinet
- XC-601i - E = 6-Station 230 VAC indoor controller, with plastic cabinet
- XC-801 - E = 8-Station 230 VAC outdoor controller, with plastic cabinet

CONTROLLERS

PRO-C® & PCC

Number of Stations: **4 - 16, 6 & 12**
Type: **Modular & Fixed**

FEATURES

- Number of stations:
 - Pro-C: 4-16
 - PCC: 6 & 12
- Type:
 - Pro-C: Modular
 - PCC: Fixed
- Enclosures: Indoor and outdoor plastic
- Independent irrigation programs: 3
- Independent lighting programs: 3
- Start times per program: 4
- ▶ Built in Solar Sync
- ▶ Easy Retrieve™ memory
- ▶ QuickCheck™
- ▶ Automatic short circuit protection
- ▶ Seasonal Adjustment: Global or automatic updates with Solar Sync
- ▶ Delay between stations
- ▶ Sensor programmability
- ▶ Non-Water Days
- Max. station run time: 6 hours
- Solar Sync® Delay feature allows adjustments to be postponed for up to 99 days
- Cycle and Soak feature built in: reduces runoff
- Added knockouts for additional flexibility
- Non-volatile memory
- Rain sensor bypass
- One touch manual start and advance
- Warranty period: 2 years

ELECTRICAL SPECIFICATIONS

- Transformer input: 120 VAC or 230 VAC (international model)
- Transformer output (24 VAC): 1 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Sensor inputs: 1
- Operating temperature: -18° C to 60° C

APPROVALS

- CE, UL, cUL, C-tick, FCC
- ▶ = *Advanced Feature descriptions on pages 99*



Plastic Indoor
Height: 20.9 cm
Width: 24.3 cm
Depth: 9.7 cm



Plastic Outdoor
Height: 22.5 cm
Width: 25 cm
Depth: 11 cm



PCM-300 and PCM-900 Expansion Modules
These modules are compatible with the new Pro-C 400 series.

CONTROLLERS

PRO-C SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4				PC-SERIES STATION EXPANSION	
1 Models	2 Transformer	3 Indoor/Outdoor	4 Options	Modules	Description
PC-4 = 4-station base module controller PCC-6 = 6-Station PCC-12 = 12-Station	00 = 120 VAC 01 = 230 VAC	(blank) = Outdoor Model (<i>internal transformer</i>) i = Indoor Model (<i>plug-in transformer</i>)	(blank) = No option E = 230 VAC with European Connections A = 230 VAC with Australian Connections (<i>outdoor models have internal transformer with cord</i>)	PCM-300	3-Station plug-in module: Use to increase station count from 4 to 7, 7 to 10, and 10 to 13
				PCM-900	9-Station plug-in module: Use to increase station count from 7 to 16 only

Examples:

- PC-400 = 4-Station outdoor base unit, internal 120 VAC transformer, and plastic cabinet
- PCC-601iE = 6-Station indoor controller, plug-in 230 VAC transformer with European connections, and plastic cabinet
- PCC-1200 = 12-Station outdoor controller, Internal 120 VAC transformer, and plastic cabinet

I-CORE®

Number of Stations: **6 to 42**
Type: **Modular**

FEATURES

- Number of stations: 6 to 42
- Type: Modular
- Enclosure: Outdoor plastic or metal
- Independent programs: 4
- Built in Solar Sync®
- Start times per program: 8 (A, B, C); 16 (D)
- Max. station run time: 12 hours
- One touch manual start and advance
- Programmable rain delay
- Non-volatile memory
- Warranty period: 5 years
- ▶ Real time flow monitoring
- ▶ Easy Retrieve™ memory
- ▶ QuickCheck™
- ▶ Automatic short circuit protection
- ▶ Total run time calculator
- ▶ Seasonal Adjustment: Global, Monthly, by program and Solar Sync
- ▶ Delay between stations
- ▶ Sensor programmability
- ▶ Cycle and Soak
- ▶ No Water Window
- ▶ Non-Water Days
- ▶ Solar Sync Delay
- ▶ Multi-language programming



Plastic Outdoor

Height: 28 cm
Width: 34 cm
Depth: 16 cm



Metal Wall Mount

(grey or stainless steel)
Height: 31 cm
Width: 39 cm
Depth: 15 cm

ELECTRICAL SPECIFICATIONS

- Transformer input: 120/230 VAC, 50/60 Hz
- Transformer output (24 VAC): 1.4 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.28 A
- Simultaneous program operation: 2
- Sensor inputs: Plastic: 2; Metal: 3
- Operating temperature: -18° C to 60° C

APPROVALS

- CE, UL, cUL, C-tick, FCC
- Steel wall mounts: IP-56
- Plastic pedestal: IP-24
- Plastic wall mount: IP-44

▶ = *Advanced Feature descriptions on pages 99*



Plastic Pedestal

Height: 97 cm
Width: 55 cm
Depth: 40 cm



Metal Pedestal

(grey or stainless steel)
Height: 92 cm
Width: 39 cm
Depth: 13 cm



ICM-600 Expansion Module

I-Core's unique "bridge" modules activate the existing terminal strips

I-CORE	
Model	Description
IC-600-PL	6-Station controller, indoor/outdoor, plastic cabinet
IC-601-PL	International version, 6-Station controller, indoor/outdoor, plastic cabinet
IC-600-M	6-Station controller, indoor/outdoor, metal cabinet
IC-600-PP	6-Station controller, indoor/outdoor, plastic pedestal
IC-600-SS	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

ENCLOSURE TYPES & EXPANSION

Enclosure Type	Expands To
Plastic cabinet	30-Stations
Metal/stainless steel cabinet	42-Stations
Plastic pedestal	42-Stations
Metal/stainless steel pedestal	42-Stations

DUAL® FOR I-CORE®

Number of Stations: **Up to 48**
Type: **Decoder**

FEATURES

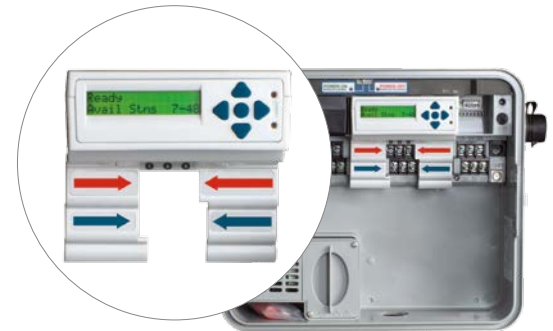
- Two-wire decoder system for I-Core controllers
- Decoder station sizes available: 1, 2
- Field programmable decoders (no serial numbers to enter)
- DUAL-S external surge protection module
- DUAL decoder module display and push button programming make it easy to program decoders at the controller itself
- Decoder module displays decoder operation and diagnostic information
- Can operate up to 48 stations of combined decoder and conventional control making system retrofit easy
- Waterproof connectors for connection to two-wire path included with all DUAL decoders and DUAL-S surge protection
- Number of two-wire paths: 3
- Solenoid finder feature assists in locating valves in the field
- Wireless programming with ICD-HP
- ▶ **Programmable decoders**

DUAL SPECIFICATIONS

- Max. recommended distance, decoder to solenoid: 30 m
- Max. distance to decoder
- 2 mm² wire path: 1,500 m
- 3.3 mm² wire path: 2,300 m

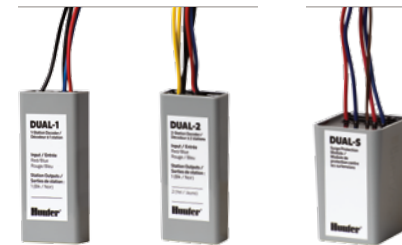
APPROVALS

- CE, UL, cUL, C-tick, FCC
- ▶ = *Advanced Feature descriptions on pages 99*



DUAL48M Decoder Output Module

Height: 3.5 cm
Width: 11 cm
Depth: 10 cm



DUAL Decoders

Height: 7.6 cm
Width: 4.4 cm
Depth: 5 cm

Surge Arrestor

Height: 7 cm
Width: 4.4 cm
Depth: 5 cm

DUAL		
Base Model	Plus	Description
IC-600-PL	DUAL48M	48-Station controller, indoor/outdoor, plastic cabinet (USA)
IC-601-PL	DUAL48M	48-Station controller, indoor/outdoor, plastic cabinet (international)
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. Plug-in module converts any I-Core controller to two-wire decoder system (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 arrestor (includes 4 DBRY-6 connectors)

ID WIRE MODEL GUIDE			
2 mm ² Decoder Cable		3.3 mm ² Long Range, Heavy-duty Decoder Cable	
ID1GRY	Grey jacket	ID2GRY	Grey 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

MAXIMUM WIRE RUNS	
ID 1 Wire	ID 2 Wire
1500 m with I-Core/DUAL systems	2300 m with I-Core/DUAL systems
3 km with ACC/ICD systems	4.5 km with ACC/ICD systems

ACC

Number of Stations: **12 to 42**
Type: **Modular**

FEATURES

- Number of stations: 12 to 42
 - Type: Modular
 - Enclosure: Outdoor plastic and stainless steel
 - Independent programs: 6
 - Start times per program: 10
 - Max. station run time: 6 hours
 - Built in Solar Sync®
 - One touch manual start and advance
 - Non-volatile memory
 - Programmable rain delay
 - Warranty period: 5 years
- ▶ Real time flow monitoring
 - ▶ Solar Sync Delay
 - ▶ Easy Retrieve™ memory
 - ▶ Automatic short circuit protection
 - ▶ Total run time calculator
 - ▶ Seasonal Adjustment: Global, by Program, and/or by Solar Sync
 - ▶ Delay between stations
 - ▶ Sensor programmability
 - ▶ Cycle and Soak
 - ▶ No Water Window
 - ▶ Simultaneous station groups

ELECTRICAL SPECIFICATIONS

- Transformer input: 120/230 VAC, 50/60 Hz
- Max. AC Current Draw: 120 VAC, 2 Amps; 230 VAC, 1 Amp (max. computed with all programs running and optional accessories installed)
- Transformer output (24 VAC): 4.0 A
- Station output (24 VAC): 0.56 A
- P/MV output (24 VAC): 0.32 A
- P/MV: 2, normally-closed
- Sensor inputs: 4 + Flow
- Operating temperature: -18° C to 60° C

APPROVALS

- CE, UL, cUL, C-tick, FCC
- Metal wall mounts: IP-56
- Plastic pedestal: IP-24

ALL STAINLESS STEEL (SS) MODELS

- American-made Type 304 Stainless Steel 1.45 mm gauge steel
- Passivated for corrosion resistance

▶ = *Advanced Feature descriptions on pages 99*



Metal Enclosures

(grey or stainless steel)
Height: 31 cm
Width: 39 cm
Depth: 16 cm



Metal Pedestals

(grey or stainless steel)
Height: 92 cm
Width: 38 cm
Depth: 13 cm

Plastic Pedestal

Height: 97 cm
Width: 55 cm
Depth: 40 cm



ACM-600

Standard 6-Station output module with heavy-duty surge protection

AGM-600

Optional Extreme Service high-lightning 6-Station output module

ACC	
Model	Description
ACC-1200	12-Station base unit controller, expands to 42-Station, metal cabinet
ACC-1200-SS	12-Station base unit controller, expands to 42-Station, stainless steel wall mount cabinet
ACC-1200-PP	12-Station base unit controller, expands to 42-Station, plastic pedestal
ACC-PED	Metal pedestal, grey 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

STATION EXPANSION MODULES

Modules	Description
ACM-600	6-Station plug-in module for use with the ACC-1200 series controllers
AGM-600	6-Station plug-in module for use with the ACC-1200 series controllers (extreme service lightning protection version)

ACC-99D

Number of Stations: **1 to 99**
Type: **Decoder**

FEATURES

- Includes all features of the ACC controller, plus decoder operations
- Built in Solar Sync®
- Decoder station sizes available: 1, 2, 4, 6
- Sensor decoder available with Flow and Klik inputs
- Max. recommended distance, decoder to solenoid: 45 m
- ICD-HP wireless handheld programmer compatible
- Two-way communications
- Surge suppression: Internal (ground wire included)
- Dual P/MV outputs may be assigned to decoders
- Wire path connectors included with each decoder
- Number of wire paths: 2
- Automatic daily weather-based scheduling with optional Hunter Solar Sync sensor
- ▶ Seasonal Adjustment: Global, by Program, or Solar Sync
- ▶ Programmable decoders
- ▶ Solar Sync Delay

ELECTRICAL SPECIFICATIONS

- Transformer input: 120/230 VAC, 50/60 Hz
- Max. AC Current Draw: 120 VAC, 2 Amps; 230 VAC, 1 Amp (max. computed with all programs running and optional accessories installed)
- Transformer output: 24 VAC, 4 A, at 120 VAC
 - Decoder Line (path) output: 34 V peak-to-peak
 - Decoder Power draw: 40 mA per active output
 - Solenoid capacity: 2 standard 24 VAC Hunter solenoids per output within 45 m runs, up to 14 solenoids max. simultaneous
- Wiring, Decoder to solenoid: 45 m max.
- 6 two-wire output paths to field decoders
- Diagnostic LEDs with line status, signal activity, decoder and status
- ▶ = *Advanced Feature descriptions on pages 99*



ICD-100, 200, ICD-SEN

Height: 92 mm
Width: 38 mm
Depth: 12.7 mm

ICD-400, 600

Height: 92 mm
Width: 46 mm
Depth: 38 mm

ID WIRE MODEL GUIDE

2 mm ² Decoder Cable		3,3 mm ² Long Range, Heavy-duty Decoder Cable	
ID1GRY	Grey jacket	ID2GRY	Grey 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
1500 m with I-Core®/DUAL® systems	2300 m with I-Core/DUAL systems
3 km with ICD systems	4.5 km with ICD systems

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 wall mount
ACC-99D-PP	2-Wire decoder controller with 99-Station capacity, plastic pedestal
ACC-PED	Metal pedestal, grey powder-coated, for use with I-Core and ACC metal controllers
PED-SS	Stainless steel pedestal for use with I-Core and ACC stainless controllers

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

ROAM

Range: **Up to 300 m**
Type: **Remote**

FEATURES

- Works with Hunter X-Core®, Pro-C®, PCC, I-Core® and ACC controllers through a SmartPort® connection
- 128 programmable addresses for use of multiple Roam remotes in the same neighborhood
- Run manual watering cycles without modifying regular program
- Programmable run times: 1 to 90 minutes
- Range: 300 m (line of sight)
- Warranty period: 2 years

REMOTE SPECIFICATION

- Transmitter power source: 4 AAA batteries included
- Receiver power source: 24 VAC, from controller through a SmartPort connector
- System operating frequency: 433 MHz band
- SmartPort connector can be mounted up to 15 m (max.) from controller (use ROAM-SCWH shielded cable wiring harness)
- FCC approved: No FCC licence required



Transmitter and Receiver

Height: 18 cm
Width: 6 cm
Depth: 3 cm



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 remote.

Wall Mount Bracket for SmartPort

P/N 258200

ROAM	
Model	Description
ROAM-KIT	Transmitter, receiver, SmartPort wiring harness, and 4 AAA batteries included
ROAM-R	Receiver unit
ROAM-TR	Transmitter unit, and 4 AAA batteries included

OPTIONS	
Model	Description
ROAM-WH	SmartPort wiring harness (length: 1.8 m)
ROAM-SCWH	Shielded SmartPort wiring harness (length: 7.6 m)
258200	Wall mount bracket for SmartPort

CONTROLLERS

ROAM XL

Range: **Up to 3 km**
Type: **Remote**

FEATURES

- Works with Hunter X-Core®, Pro-C®, PCC, I-Core® and ACC controllers through a SmartPort® connection
- Up to 3 km (line of sight) range for remote manual operation of Hunter irrigation systems
- 128 different programmable addresses
- Display shows remaining battery life
- Programmable run times: 1 to 90 minutes
- Large LCD display, push-button operation
- Run manual watering cycles without modifying regular program
- Rugged plastic carrying case included
- Warranty period: 3 years

REMOTE SPECIFICATION

- Transmitter power source: 4 AAA batteries included
- Receiver power source: 24 VAC, from controller through a SmartPort connector
- System operating frequency: 27 MHz band
- SmartPort connector can be mounted up to 15 m (max.) from controller (use ROAM-SCWH shielded cable wiring harness)
- FCC approved: No FCC licence required

* Not available in all countries.



Roam XL
(w/o antenna)
Height: 16 cm
Width: 8 cm
Depth: 3 cm

CONTROLLERS

ROAM XL	
Model	Description
ROAMXL-KIT	Transmitter, receiver, SmartPort wiring harness, 4 AAA batteries and plastic carrying case included
ROAMXL-R	Receiver unit (SmartPort wiring harness included)
ROAMXL-TR	Handheld transmitter, and 4 AAA batteries included

OPTIONS	
Model	Description
258200	Wall Mount Bracket for SmartPort
ROAMXL-CASE	Plastic carrying case
ROAM-WH	SmartPort wiring harness (length: 1.8 m)
ROAM-SCWH	Shielded SmartPort wiring harness (length: 7.6 m)



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 remote.



Wall Mount Bracket for SmartPort
P/N 258200

ICD-HP

Type: **Decoder Programmer**

FEATURES

- 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 electro-magnetic induction saves waterproof connectors
- Compatible with Hunter ICD-HP, 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



ICD-HP

Height: 21 cm
Width: 9 cm
Depth: 5 cm

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 field work.

ELECTRICAL SPECIFICATIONS

- Power input: 4 AA batteries, or standard USB connector (included)
- Communications: Wireless induction, range 25 mm
- Fused test leads for unpowered decoder functions

APPROVALS

- FCC, CE, C-tick (no licence required)

ICD-HP



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

PSR

PUMP START RELAY

Type: **Accessory**

FEATURES

- Choice of three models sized accordingly to fit your particular application
- NEMA 3R rated locking plastic enclosure rated for outdoor use, weather resistance and security
- 24 VAC flying leads make it quick and easy to wire to controller
- The PSR-22 meets demanding electrical requirements for UL approval, and the PSR-52/-53 contains UL-approved relays
- Warranty period: 2 Years



Pump Start Relay

Height: 17 cm
Width: 19 cm
Depth: 12 cm

PUMP START RELAY

Model	Description
PSR-22	Double pole/single throw pump start relay for 120 VAC pumps up to 1.5 kW or 230 VAC pumps up to 2.2 kW
PSR-52	Double pole/single throw pump start relay for 120 VAC pumps up to 2.2 kW or 230 VAC pumps up to 5.6 kW
PSR-53	Triple pole/single throw pump start relay for 120 VAC pumps up to 2.2 kW, 230 VAC pumps up to 5.6 kW, or 230 VAC pumps up to 7.5 kW (3 phase)

PUMP START RELAY ELECTRICAL SPECIFICATIONS

Model	Single Phase		3 Phase	Max. Full Load AMPS	Max. Resistive AMPS	Coil VA							
	kW AT 120 VAC	kW AT 230 VAC	kW AT 230 VAC			INRUSH		HOLDING					
						50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
PSR-22	1.5*	2.2*	N/A	30	40	33	30	1.38	1.25	8	6.5	0.33	0.27
PSR-52	2.2	5.6	N/A	40	50	65	60	2.71	2.50	7.5	5	0.31	0.21
PSR-53	2.2	5.6	7.5	40	50	65	60	2.71	2.50	7.5	5	0.31	0.21

Note:

* Approximate power

PSRB

PUMP START RELAY BOOSTER

FEATURES

- Solves long distance pump start relay power challenges
- Suitable for conventional or ICD decoder connections
- Includes easily activated solid state relay, and local 24V transformer for PSR activation
- Easy wiring with labeled wire connections
- NEMA 3R enclosure with standard key lock

ELECTRICAL SPECIFICATIONS

- Primary AC Power: 120/230 VAC, 50/60 Hz, 50W
- Output (to PSR): 25V, 1600 mA
- MV Input: Dual pole, double throw solid state relay (10 A)



PSRB Pump Start Relay Booster

Height: 22 cm
Width: 18 cm
Depth: 9.5 cm

CONTROLLERS

XC HYBRID

Number of Stations: **6, 12**
 Type: **Battery Operated, Fixed**

FEATURES

- Battery or AC powered
- Type: Fixed
- Number of stations: 6, 12
- Operates DC latching solenoids only
- Enclosures: Indoor and outdoor plastic; outdoor stainless steel
- Independent programs: 3
- Start times per program: 4
- Max. station run time: 4 hours
- Optional Solar Panel SPXCH provides maintenance-free operation
- Compatible with Solar Panel Kit
- One touch manual start and advance
- Warranty period: 2 years
- ▶ Easy Retrieve™ memory
- ▶ Rain sensor bypass
- ▶ Programmable rain delay
- ▶ Non-volatile memory
- ▶ Seasonal Adjustment: Global
- ▶ Delay between stations
- ▶ Sensor programmability

ELECTRICAL SPECIFICATIONS

- Operates DC latching solenoids (only) 9-11 VDC
- P/MV
- Sensor inputs: 1
- Operating temperature: -18° C to 60° C

POWER SOURCE

- Operates on battery power or 24 VAC plug in transformer or optional Solar Panel
- Plastic model uses 6 AA batteries
- Stainless steel model uses 6 C batteries

APPROVALS

- CE, UL, cUL, C-tick
- Plastic model: IP-24
- ▶ = *Advanced Feature descriptions on pages 99*

XC HYBRID	
Model	Description
XCH-600	6-Station indoor/outdoor controller
XCH-600-SS	6-Station outdoor controller, stainless steel
XCH-1200	12-Station indoor/outdoor controller
XCH-1200-SS	12-Station outdoor controller, stainless steel



Plastic Indoor/Outdoor

Height: 22 cm
 Width: 18 cm
 Depth: 10 cm

Stainless Steel Outdoor

Height: 25 cm
 Width: 19 cm
 Depth: 11 cm



XCHSPOLE

with XCHSPB installed pole
 for stainless steel model
 Height: 1 m



SPXCH

Optional solar panel
 Height: 8 cm
 Width: 8 cm
 Depth: 2 cm

MAXIMUM WIRE RUNS

Wire Size	Max. Distance (m)
1 mm ²	152
1.5 mm ²	244
2 mm ²	396
2.5 mm ²	610

OPTIONS (SPECIFY SEPERATELY)

Options	Description
XCHSPOLE	Steel mounting pole (1.2 m)
XCHSPB	Stainless steel mounting bracket (required for pole)
458200*	DC latching solenoid
SPXCH	Solar Panel Kit for XC Hybrid

Notes:
 * Use DC latching Solenoids only

CONTROLLERS

NODE

Number of Stations: **1, 2, 4, 6**
 Type: **Battery Operated, Fixed**

FEATURES

- Type: Fixed
- Battery Operated
- Number of stations: 1, 2, 4, 6
- Enclosure: Outdoor plastic
- Independent programs: 3
- Start times per program: 4
- Max. station run time: 6 hours
- One touch manual start and advance
- Master Valve operation (available in 2, 4, 6 station models)
- Solar Panel Kit (SPNODE) provides maintenance-free operation
- Accepts single or double 9 V batteries for extended battery life
- Solenoid wire length up to 30 m (use 1 mm² wire)
- Programmable off mode
- Submersible to 4 m (IP68 rated)
- Battery life indicator
- Protective rubber cover
- Warranty period: 2 years
- ▶ **Easy Retrieve™** memory
- ▶ **Seasonal Adjustment: Global**

ELECTRICAL SPECIFICATIONS

- Sensor inputs: 1
- Operates DC latching solenoids only (P/N 458200)
- Operating temperature: -18° C to 60° C
- Power source: 9 V battery (up to two) or Solar Panel
- Solar Panel Kit SPNODE eliminates the need for batteries and provides maintenance-free operation

APPROVALS

- CE
- ▶ = *Advanced Feature descriptions on pages 99*



NODE-100
NODE-100-LS
 (less solenoid)
 Diameter: 9 cm
 Height: 6 cm



NODE-200
NODE-400
NODE-600
 Diameter: 9 cm
 Height: 6 cm



NODE-100-Valve
 Diameter: 9 cm
 Height: 6 cm



SPNODE
 Height: 8 cm
 Width: 8 cm
 Depth: 2 cm

CONTROLLERS

NODE		MAXIMUM WIRE RUNS	
Model	Description	Wire Size	Max. Distance (m)
NODE-100	Single station controller (DC latching solenoid included)	1 mm ²	30
NODE-100-LS	Single station controller (DC latching solenoid not included)		
NODE-200	2-Station controller (DC latching solenoid ordered separately)		
NODE-400	4-Station controller (DC latching solenoid ordered separately)		
NODE-600	6-Station controller (DC latching solenoid ordered separately)		
NODE-100-VALVE	Single station controller with PGV-101-G valve and DC latching solenoid (NPT threads)		
NODE-100-VALVE-B	Single station controller with PGV-101-GB valve and DC latching solenoid (BSP threads)		
OPTIONS (SPECIFY SEPARATELY)			
Model*	Description		
458200	DC latching solenoid		
SPNODE	Solar Panel Kit for Node		

WVP & WVC

Number of Stations: **1, 2, 4**
 Type: **Battery Operated, Fixed**

FEATURES

- Type: Fixed
- Battery Operated
- Number of stations: 1, 2, 4
- Enclosure: Outdoor plastic
- Independent station programming
- Start times per program: 9
- Max. station run time: 4 hours
- WVC submersible to 3 m (IP68 rated)
- Battery life indicator
- Wireless remote programming
- Max. solenoid wire run 30 m (use 1 mm² wire)
- Warranty period: 2 years



WVP
 Height: 29 cm
 Width: 8 cm
 Length: 5 cm

ELECTRICAL SPECIFICATIONS

- Simultaneous station operation
- Sensor inputs: 1
- Power source: 9 V battery
- Operates DC latching solenoids only (P/N 458200)
- Operating temperature: -18° C to 60° C
- Frequency: 869 MHz ISM band
- No FCC licence required



WVC
 Diameter: 8 cm
 Height: 13 cm

APPROVALS

- CE

WVP / WVC	
Model	Description
WVC-100	Single station wireless controller (DC latching solenoid ordered separately) 900 MHz ISM band (US/Australia)
WVC-200	2-Station wireless controller (DC latching solenoid ordered separately) 900 MHz ISM band (US/Australia)
WVC-400	4-Station wireless controller (DC latching solenoid ordered separately) 900 MHz ISM band (US/Australia)
WVC-100-E	Single station wireless controller (DC latching solenoid ordered separately) 869 MHz (Europe)
WVC-200-E	2-Station wireless controller (DC latching solenoid ordered separately) 869 MHz (Europe)
WVC-400-E	4-Station wireless controller (DC latching solenoid ordered separately) 869 MHz (Europe)
WVP	Wireless valve programmer to be used with wireless valve controllers
WVPE	Wireless valve programmer to be used with wireless valve controllers (Europe)

CONTROLLERS



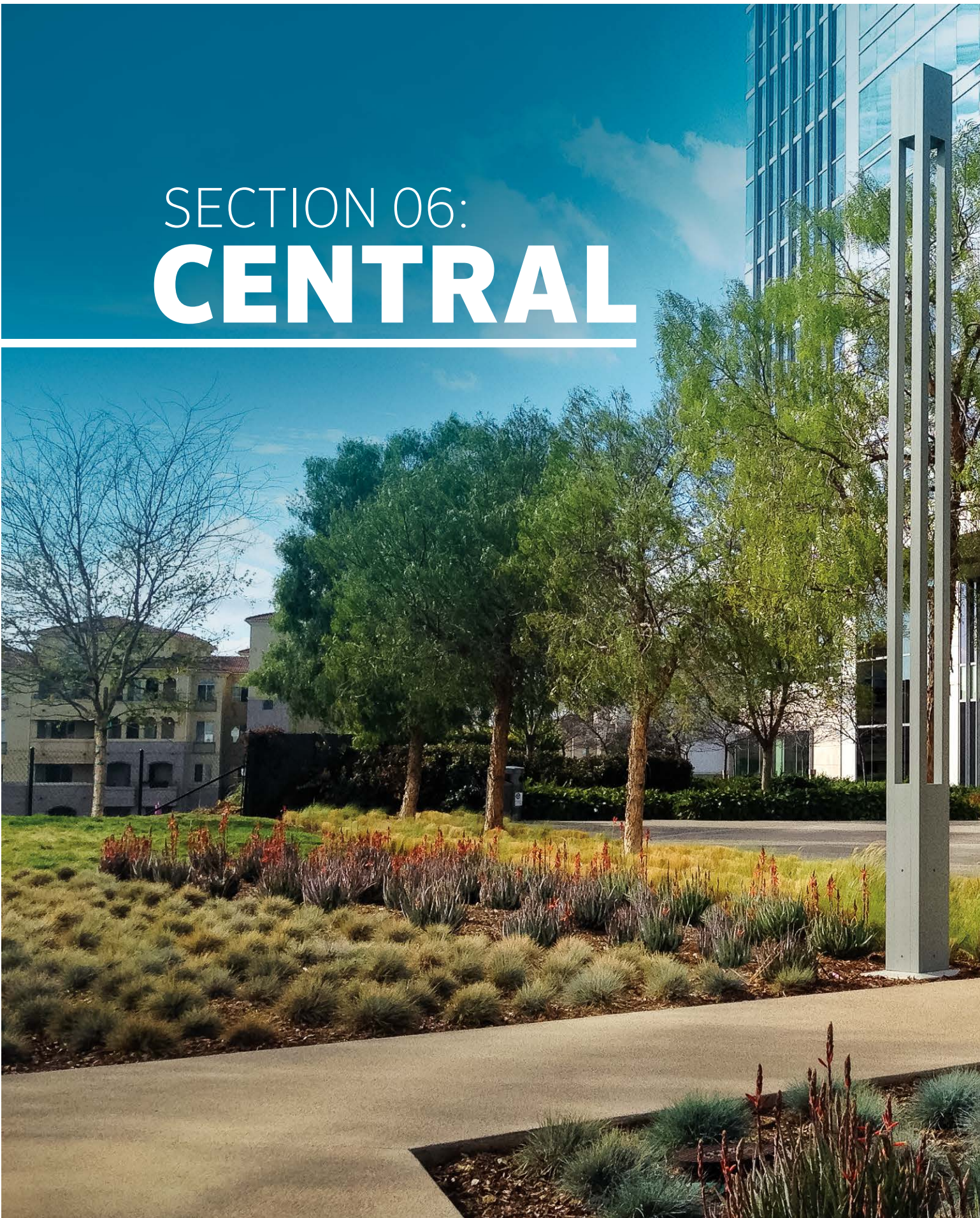
PRO-C® + SOLAR SYNC®

Smart Control Made Easy

With Pro-C's built-in Solar Sync dial position, upgrading to smart control has never been easier. There's no additional wiring to run – the Solar Sync sensor will use evapotranspiration (ET) to adjust the Pro-C run times daily based on local weather conditions, resulting in water savings and conservation. When paired with Solar Sync, the Pro-C is an EPA WaterSense® labeled smart device and has received international certifications for water conservation.

SECTION 06: **CENTRAL**

CENTRAL





Sites: **Up to 100**
 Controllers: **Up to 10,000**
 Number of Stations: **Up to 990,000**

Hunter's Irrigation Management & Monitoring Software (IMMS) is a PC-based software package that makes central control of large-scale irrigation systems affordable, usable, and comprehensible.

IMMS software and hardware have been intensively developed and refined into a graphically based irrigation command and control program. With IMMS, interactive map graphics (to station level) put the irrigation system manager in complete visual control of wide-area watering operations.



Add a visual dimension to central control with background map graphics

FEATURES INCLUDE:

MAPS

The IMMS Graphics feature creates map views so you can see all of your irrigated locations and get a more detailed view.

IMMS Graphics simplifies life for busy irrigators with large numbers of assets to control. Use any background image to show the system, site, or controller area, and create control zones and station symbols that link to command functions. You supply the pictures, and IMMS includes all the tools you need to create an interactive map-based system.

PROGRAMMING

Each controller has its own complete setup and operations screens with tools to quickly get the results you want. Easily access every function from simple spreadsheets or by choosing from a menu of common functions and commands. In the case of emergencies, irrigation can be shut off with the click of a mouse.

ALARM MANAGEMENT

With individual date- and time-stamped messages, IMMS Graphics reports all alarms, including over-currents, flow violations, communication issues, and water window violations. No more driving to each individual site; the IMMS Graphics operator understands the condition of all irrigation controllers and valves at a glance. Reports can be exported to additional formats or printed and provided to work crews for investigation.

IMMS-ET (Evapotranspiration)

Take the guesswork out of irrigation amounts and daily adjustments for weather conditions. The optional IMMS-ET software add-on uses cost-effective local sensors, combined with your station database (for plant types, soil, precipitation rate, and more) to create water-saving irrigation programs for your whole system, every day.

IMMS-ET models the moisture level in soil reservoirs (including compensation for natural rainfall) and schedules just enough irrigation to replace what your plants need. IMMS-ET can track climate history according to your own sensors and document how it has responded with irrigation adjustments.

FLOW MONITORING

Track your water usage, and spot plumbing problems a mile away (or several hundred miles away). IMMS is built around the powerful ACC controller platform, which includes real-time flow monitoring. With a flow meter and normally-closed master valves, the ACC detects incorrect flow conditions and moves swiftly to isolate the offending valves. Each flow violation is reported to the central software, after the controller has finished its own diagnostics. Leaks, breaks, and flooding are minimized, and the irrigation manager is the first to know of any issues.

IMMS also tracks total water usage by site, controller, program, and station. Keep detailed historical records, and go home each day with the peace of mind provided by automatic flow monitoring.

IMMS®

FEATURES

- Windows®-based programming and communications software
- Total control of each controller's functions
- Graphical user interface with customisable map-based navigation
- Map utility allows direct import of linework and layers
- Flow monitoring and reporting with Hunter ACC controllers
- Alarm reporting and detailed irrigation history reports
- Wireless and hardwired communication options, including Ethernet and GPRS
- Controller sharing of communications channels to reduce communications costs
- Compatible with water-saving Hunter Solar Sync® sensors, or optional ET Sensors

KEY SPECIFICATIONS

- Operating system: Microsoft® Windows XP, Vista, Windows 7, Windows 8*
- Minimum RAM: 512 MB
- Minimum screen resolution: 1,024 x 768
- Storage: At least 100 MB disk space

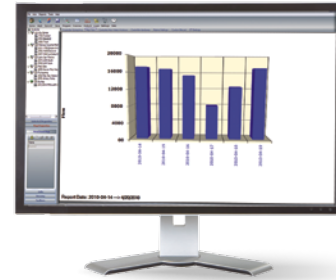
* Windows is a registered trademark of the Microsoft Corporation

COMPATIBLE CONTROLLERS

- IMMS is optimised for the Hunter ACC controller and accessories (including decoder controllers)

COMPATIBLE SENSORS

- **Flow-Sync®:** Hunter Flow-Sync sensor for ACC controllers (one per controller). Provides flow total reporting and flow alarm monitoring with diagnostic shutdowns in real time.
- **Clik Sensor:** Each controller requires its own rain sensor for fast rain shutdowns. All Hunter Clik sensors are compatible with ACC and other Hunter controllers.
- **ET Sensor:** ET Sensor platform is for use with IMMS-ET software. ET Sensor is added to selected ACC controllers, to report local conditions. This local ET data has no additional monthly charges and can be shared through the software to create schedules for other controllers in the same micro-climate. Add as many ET Sensors as needed to sample all micro-climates.
- **Solar Sync Sensor** (wired or wireless): Each controller can use its own SOLARSYNCSEN or WSS-SEN for smart, water-saving self-adjustment. Solar Sync sensors also provide rain and freeze shutoff functions. Solar Sync compatibility is included with the basic IMMS4CD software.



Track flow and other vital statistics in both charts and spreadsheets



Station level symbols can be positioned over background images from any source



Flow-Sync
Impeller-type flow meter, requires FCT for pipe installation



ET Sensor
Height: 27 cm
Width: 18 cm
Depth: 31 cm



Wireless Solar Sync Sensor
(w/mounting arm)
Height: 11 cm
Width: 22 cm
Depth: 2.5 cm

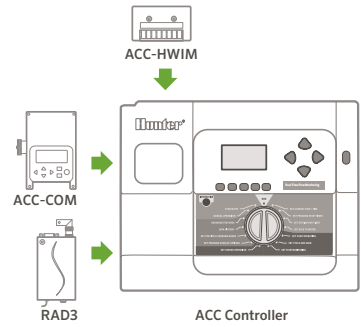
IMMS SOFTWARE	
Model	Description
IMMS4CD	IMMS Graphics central control software
IMMS-ET-CD	Optional ET automatic weather adjustment software (requires IMMS4CD base model)

CENTRAL

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-COM-GPRS-E = GPRS cellular data module*	Supports mobile data connection via GPRS phone in addition to hardwire and radio sharing with local controllers

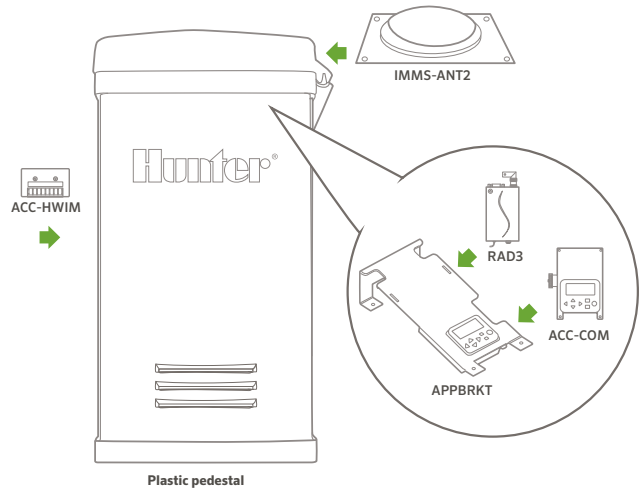
Note:
* Also supports radio and hardwire



ACC wall mount communication components

RADIO ANTENNA OPTIONS (SPECIFY SEPARATELY)

Model	Description
IMMS-ANT2	Omni-directional antenna fits ACC plastic pedestal lid
IMMS-ANT3	Omni-directional antenna for wall- or pole-mount
IMMS-ANTYAGI3	High efficiency directional antenna for pole-mount
RA5M	High gain omni-directional mast antenna for roof- or pole-mount



ACC plastic pedestal 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 (licence and antenna required and not included)	
RAD460INT	UHF radio module (International), 440-480 MHz "Consult factory for other international frequency ranges"	UHF radio module for wireless connections, international only (licence and antenna required and not included)	
APPBRKT	Communication bracket for plastic pedestals	Holds com modules and accessories in plastic pedestal (not required in wall mounts)	
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 = 30 m 300 = 90 m 500 = 150 m		Cable for all IMMS hardwired communications

Note:
* GCBL available in 300 m increments (up to 1,200 m)

SPECIFICATIONS

- ACC-COM-HWR, LAN, GPRS-E
- 8 cm x 11 cm x 4.5 cm
- Powered internally by controller
- Mounted internally to ACC controller
- RAD3, RAD460INT: 450-470 MHz, UHF Radios, Power Output: 1 Watt, Bandwidth: 12.5 kHz narrowband
- ACC-HWIM: Hardwire interface module for 4-20 mA loop communications, includes 8 colour-coded terminals for GCBL connection, installs inside ACC controller cabinets or pedestals
- ACC-COM-LAN requires fixed IP address from system administrators
- ACC-COM-GPRS-E requires a monthly service plan

HARDWARE COMMUNICATIONS CABLE

- GCBL shielded, two twisted-pair 1 mm² wire with ground wire, up to 3,000 m between each device

SYSTEM CONFIGURATIONS (ACC CONTROLLERS)

1. Determine how you will reach the first controller on each site

- Hardwire cable: Add one IMMS-CCC at the computer, and ACC-COM-HWR plus one ACC-HWIM at the controller
- Ethernet local area network: Add ACC-COM-LAN at the controller, and connect to the network (RJ-45 jack)
- GPRS cell phone: Add ACC-COM-GPRS-E to controller (requires GPRS coverage and service contract)

2. Determine how that first controller will reach the other controllers on the site

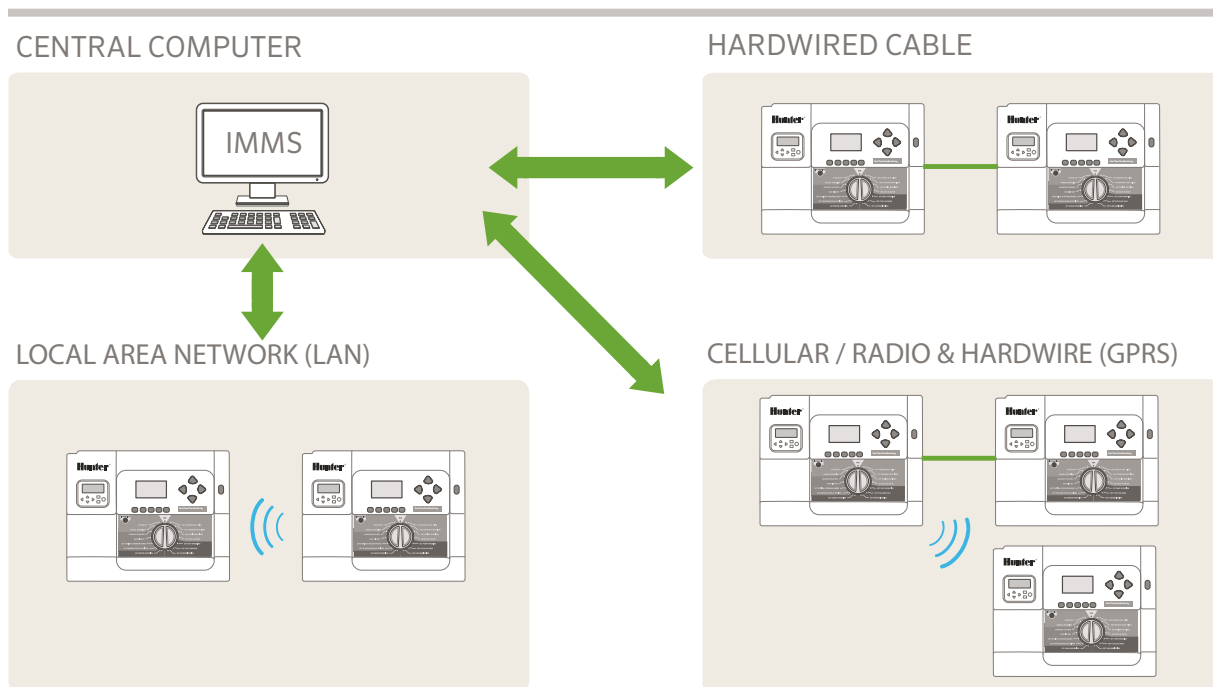
- If by radio, add one RAD3 (US) or RAD460INT (international) plus antenna to the controller
- If by hardwire cable, add one ACC-HWIM (if it is not already present as in 1)

3. Equip the other controllers. Add one ACC-COM-HWR to each controller, plus:

- One ACC-HWIM when hardwire connection will be necessary
- One RAD3 plus antenna when radio connections are necessary

SAMPLE CONFIGURATIONS

- Many other configurations possible; consult Hunter Technical Support or System Design Guide for details.







SECTION 07:
SENSORS

SOLAR SYNC®

Sensor: **ET/Rain/Freeze**

FEATURES

- Provides automated daily weather adjustment to program run times
- Wired and wireless models available
- Solar Sync may be used in IMMS central installations
- Rain and Freeze shutoff
- Gutter mount bracket included
- Compatible with all Hunter AC powered controllers
- Warranty period: 5 years (10 year battery warranty for wireless model)

SPECIFICATIONS

- Maximum distance sensor to module: 60 m (wired model) or 240 m (wireless model)
- 12 m of wire included in kit (wired model)
- Rain and Freeze sensor shutdown capability included

APPROVALS

- FCC, CE



Solar Sync Sensor
(w/mounting arm)
Height: 8 cm
Width: 22 cm
Depth: 2 cm



Solar Sync Module
Height: 4 cm
Width: 13 cm
Depth: 2 cm



Wireless Solar Sync Sensor
(w/mounting arm)
Height: 11 cm
Width: 22 cm
Depth: 2.5 cm



Wireless Solar Sync Receiver
Height: 14 cm
Width: 4 cm
Depth: 4 cm

SOLAR SYNC

Model	Description
SOLAR-SYNC	Solar Sync kit for use with PCC and Pro-C 300 controllers. <i>Includes Solar Sync Sensor and module.</i>
SOLAR-SYNC-SEN	Wired Solar Sync for use with ACC, I-Core®, new Pro-C® 400/PCC Series, and X-Core® controllers. <i>Includes Solar Sync Sensor only.</i>
WSS	Wireless Solar Sync for use with PCC and Pro-C 300 controllers. <i>Includes Wireless Solar Sync Sensor, Wireless receiver, and module.</i>
WSS-SEN	Wireless Solar Sync for use with ACC, I-Core, new Pro-C 400/PCC Series, and X-Core controllers. <i>Includes wireless Solar Sync Sensor and wireless receiver.</i>



SOIL-CLIK®

Sensor: **Soil Moisture**

FEATURES

- Soil moisture level and status at a glance
- Shuts down irrigation when desired moisture level has been reached
- One-touch override allows soil moisture bypass for special conditions
- Low voltage outdoor enclosure powered by host controller
- Simple installation allows probe to be up to 300 m from controller
- Connect to Hunter sensor inputs, or use to interrupt common wires in virtually any 24 VAC irrigation system
- Use with X-Core®, Pro-C® and I-Core®, and ACC Clik sensor inputs
- Ideal companion sensor to Solar Sync®
- Warranty period: 5 years

SPECIFICATIONS

- Max distance, control module to controller: 2 m
- Max distance, control module to sensor probe: 300 m
- Input power: 24 VAC, 100mA max.
- Output: Normally-closed dry contact closure
- Enclosure: NEMA 3R, indoor/outdoor

SOIL-CLIK Module

Height: 11.4 cm
 Width: 8.9 cm
 Depth: 3.2 cm
 Power: 24 VAC, 100mA max.
 Wire Leads: 80 cm



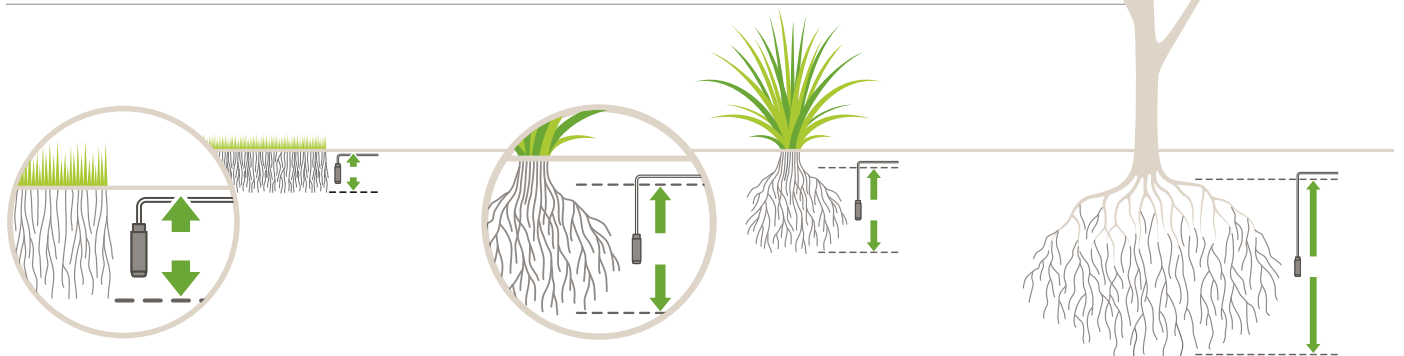
SOIL-CLIK Probe

Diameter: 2 cm
 Height: 8.3 cm
 Wire to Probe: 300 m max.
 1 mm² Direct Burial Wire
 Wire Leads: 80 cm



SOIL-CLIK	
Model	Description
SOILCLIK	Soil-Clik moisture sensor module and probe

Probe installed in root zone to monitor soil moisture



In turf applications, the probe should be placed in the root zone, approximately 15 cm 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.

RAIN-CLIK®

Sensor: **Rain**

FEATURES

- Quick Response™ feature shuts the system off as soon as it starts raining
- Maintenance-free design with 10-year battery life for Wireless Rain-Clik
- Adjustable vent ring allows for setting of reset delay
- Rugged polycarbonate housing and metal extension arm
- Rain-Clik includes 7.6 m of 0.5 mm² sheathed, two-conductor, UL-approved wire
- Wireless unit available with 244 m range from wireless sensor to receiver
- Compatible with most controllers
- Warranty period: 5 years (10 year battery warranty for wireless model)

SPECIFICATIONS

- Wiring: “normally-open” or “normally-closed”
- Time to turn off irrigation system: 2 to 5 minutes approx. for Quick Response
- Time to reset Quick Response: 4 hours approx. under dry, sunny conditions
- Time to reset when fully wet: 3 days approx. under dry, sunny conditions
- Switch rating: 24 VAC, 3 A
- Freeze sensor shuts system off when temperatures fall below 3° C (Rain/Freeze-Clik model)
- System operating frequency: 433 MHz (wireless model)
- Communication range up to 240 m line of sight (wireless model)
- Receiver input power: 24 VAC (from controller)

APPROVALS

- UL listed, FCC approved, cUL, CSA, CE, suitable for use in Australia



RAIN-CLIK
Height: 6 cm
Length: 18 cm



WR-CLIK-TR
Height: 7.6 cm
Length: 20 cm



WR-CLIK-R
(Receiver)
Height: 8.3 cm
Length: 10 cm



SGM
Optional gutter mount

RAIN-CLIK

Model	Description
RAIN-CLIK	Rain-Clik sensor
RFC	Rain/Freeze-Clik sensor
WR-CLIK	Wireless Rain-Clik system
WR-CLIK-TR	Wireless Rain-Clik Transmitter (only)
WRF-CLIK	Wireless Rain/Freeze-Clik system
WR-CLIK-R	Wireless Rain Receiver (only)

USER INSTALLED OPTION (SPECIFY SEPARATELY FROM CONTROLLER)

Model	Description
SGM	Optional gutter mount (included in the WRF-CLIK)

SENSORS

MINI-CLIK®

Sensor: **Rain**

FEATURES

- Easily installs on any automatic irrigation system
- Debris tolerant for reliable operation and no unnecessary shutdowns
- Can be set to shut system off from 3 mm to 25 mm of rainfall
- Includes 7.6 m of 0.5 mm² sheathed, two-conductor, UL-approved wire
- Optional user-installed metal gutter mount for Mini-Clik (order SGM, Includes Mini-Clik)
- Warranty period: 5 years

SPECIFICATIONS

- Switch rating: 24 VAC, 5 A
- Wiring: 0.5 mm², typically interrupts the common ground wire between the solenoid valves and controller



MINI-CLIK
Height: 5 cm
Length: 15 cm



SG-MC
Stainless steel sensor guard enclosure for Mini-Clik. Includes Mini-Clik.



SGM
Optional gutter mount

MINI-CLIK®	
Model	Description
MINI-CLIK	Rain Sensor
MINI-CLIK-NO	Rain Sensor with “normally-open” switch
MINI-CLIK-C	Rain Sensor with conduit mount
MINI-CLIK-HV	Rain Sensor for high voltage application (120/230 VAC)

FREEZE-CLIK®

Sensor: **Freeze**

FEATURES

- Installs easily with no adjustment needed
- Accurate temperature sensing shuts system off when air temperature reaches 3° C
- Used with other sensors to enhance overall efficiency of irrigation systems
- Warranty period: 5 years

SPECIFICATIONS

- Switch rating: 24 VAC, 5 A
- Wiring: Typically interrupts the common ground wire between the solenoid valves and the controller
- UL listed

* Not intended for agricultural applications



FREEZE-CLIK
Height: 5 cm
Length: 11 cm

FREEZE-CLIK®	
Model	Description
FREEZE-CLIK	Freeze sensor interrupts irrigation when temperatures drop below 3° C
FREEZE-CLIK REV	Freeze sensor allows irrigation when temperatures drop below 3° C

MINI WEATHER STATION

Sensor: **Wind, Rain, Freeze**

FEATURES

- Compact sensor that monitors wind, rain, freezing temperatures, and shuts the irrigation system off as weather conditions require
- Installs easily on any automatic irrigation system
- Set wind speed shutdown from 19 to 56 km/hr
- Set rain shutdown from 3 mm to 25 mm of rainfall
- Automatically shuts off system when temperatures fall below 3° C
- Warranty period: 5 years

SPECIFICATIONS

- Electrical rating: 24 VAC, 5 A maximum
- Wind vane diameter: 13 cm
- Wind speed adjustments: Actuation speed: 19 to 56 km/hr
- Reset speed: 13 to 39 km/hr
- Mounts: Slip fits over 55 mm PVC pipe or attaches to 1 cm conduit with adapter (supplied with unit)



MWS-FR
Height: 20 cm
Wind Vane Diameter: 13 cm

MINI WEATHER STATION

Model	Description
MWS	Weather station combines wind and rain
MWS-FR	Weather station combines wind and rain sensors with a freeze sensor

WIND-CLIK®

Sensor: **Wind**

FEATURES

- Adjusts to activate and reset at various wind speeds
- Wiring: normally-closed or normally-open
- Works with fountain systems to eliminate overspray in windy conditions
- Wind sensor interrupts/returns irrigation when programmed wind speed is measured
- Warranty period: 5 years

SPECIFICATIONS

- Switch rating: 24 VAC, 5 A maximum
- Wind speed adjustment
- Actuation speed: 19 to 56 km/hr
- Reset speed: 13 to 39 km/hr
- Mounts: Slip fits over 50 mm PVC pipe or attaches to 1 cm conduit with adapter (supplied with unit)



WIND-CLIK
Height: 10 cm
Wind Vane Diameter: 13 cm

FLOW-CLIK®

Sensor: **Flow**

FEATURES

- Automatically shuts down system if an overflow condition occurs
- Helps protect from flooding damage and erosion
- Calibration for precise system control: Single button allows each system to be programmed at a specified flow level
- Works with most Hunter and most non-Hunter controllers
- Multi-colour LED provides system status to display when power is applied and indicates if flow is within limits
- Compatible with most commercial and residential piping systems: Large flow range provides complete flexibility
- One button system calibration to set highest flow zone
- Warranty period: 5 years

SPECIFICATIONS

- Flow-Clik Interface Panel: 90 cm leads provided for easy wiring to controller (2 wires to controller, 24 VAC terminals and 2 wires to sensor and terminals)
- Current draw: 24 VAC, 0.025 A
- Switching current: 2 A maximum
- Max. distance between interface panel and sensor: 300 m
- Sensor Wiring: 2 x direct burial, 0.82 mm² or greater, colour-coded or marked for polarity, up to 300 m from controller
- Programmable start up delay: 0 to 300 seconds
- Programmable interrupt period: 2 to 60 minutes



Flow-Clik sensor and module shown with receptacle tees

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" (25 mm) Schedule 40 sensor receptacle tee
FCT-150	1½" (40 mm) Schedule 40 sensor receptacle tee
FCT-158	1½" (40 mm) Schedule 80 sensor receptacle tee
FCT-200	2" (50 mm) Schedule 40 sensor receptacle tee
FCT-208	2" (50 mm) Schedule 80 sensor receptacle tee
FCT-300	3" (80 mm) Schedule 40 sensor receptacle tee
FCT-308	3" (80 mm) Schedule 80 sensor receptacle tee
FCT-400	4" (100 mm) Schedule 40 sensor receptacle tee

Notes:

* FCT for pipe installation sold separately

BSP ADAPTERS FOR FCT FITTINGS	
Diameter	Model
1" (25 mm)	795700
1½" (40 mm)	795800
2" (50 mm)	241400
3" (80 mm)	477800

Pipe Diameter	FLOW RANGE			
	Operating Range			
	Minimum		Suggested Maximum*	
	l/min	m ³ /hr	l/min	m ³ /hr
1" (25 mm)	7.6	0.45	64	3.84
1½" (40 mm)	19	1.14	132	8.0
2" (50 mm)	37.8	2.26	208	12.5
3" (80 mm)	106	6.36	450	27.0
4" (100 mm)	129	7.74	750	45.0

Notes:

* Good design practice dictates the maximum flow not to exceed 1.5 m/sec. Suggested maximum flow is based upon Class 200 IPS plastic pipe.

SENSORS

FLOW-SYNC®

Sensor: **Flow**

FEATURES

- Simple two-wire connection to ACC and I-Core® controllers (up to 300 m)
- Feeds flow data (gallons or liters) to controller, for flow recording and monitoring purposes
- Robust waterproof construction
- Provides station level flow monitoring for reaction to high or low flow conditions
- Helps prevent damage and waste from leaks and breaks in piping system

SPECIFICATIONS

- Recommended pressure range: 1.5 to 15.0 bar; 150 to 1500 kPa
- Pressure Loss: < 0.009 bar; 0.9 kPa
- Wiring: 2 x direct burial, 0.82 mm² or greater, colour-coded or marked for polarity, up to 300 m from controller.



Impeller-type flow meter, requires FCT for pipe installation (sold separately)

FLOW-SYNC

Model	Description
HFS*	Hunter Flow-Sync sensor, use with ACC and I-Core controllers, sensor requires FCT for pipe installation

REQUIRED USER INSTALLED OPTION (SPECIFY SEPARATELY)

Model	Description
FCT-100	1" (25 mm) Schedule 40 sensor receptacle tee
FCT-150	1½" (40 mm) Schedule 40 sensor receptacle tee
FCT-158	1½" (40 mm) Schedule 80 sensor receptacle tee
FCT-200	2" (50 mm) Schedule 40 sensor receptacle tee
FCT-208	2" (50 mm) Schedule 80 sensor receptacle tee
FCT-300	3" (80 mm) Schedule 40 sensor receptacle tee
FCT-308	3" (80 mm) Schedule 80 sensor receptacle tee
FCT-400	4" (100 mm) Schedule 40 sensor receptacle tee

Note:
* Flow-Sync (sensor only) for use with ACC and I-Core controllers. Requires FCT for pipe installation (sold separately).

BSP ADAPTERS FOR FCT FITTINGS

Diameter	Model
1" (25 mm)	795700
1½" (40 mm)	795800
2" (50 mm)	241400
3" (80 mm)	477800

FLOW RANGE

Pipe Diameter	Operating Range			
	Minimum		Suggested Maximum*	
	l/min	m ³ /hr	l/min	m ³ /hr
1" (25 mm)	7.6	0.45	64	3.84
1½" (40 mm)	19	1.14	132	8.0
2" (50 mm)	37.8	2.26	208	12.5
3" (80 mm)	106	6.36	450	27.0
4" (100 mm)	129	7.74	750	45.0

Notes:
* Good design practice dictates the maximum flow not to exceed 1.5 m/sec. Suggested maximum flow is based upon Class 200 IPS plastic pipe.



Solar Sync[®]
Above



Soil-Clik[®]
Below

BUILT TO RESPOND

The Ultimate Environmental Solution

ABOVE & BELOW

Get the whole picture with the latest advances in water-saving technology. Pair our new Soil-Clik moisture sensor with Solar Sync to measure both soil and climate conditions. Soil-Clik won't allow watering on days that don't need it, or on wet turf; Solar Sync will use ET to adjust application amounts when irrigation is needed. Together they're the ultimate environmentally responsive solution.



SECTION 07:
MICRO

MICRO





SUBSURFACE APPLICATION

SUBSURFACE SUSTAINABILITY

Advanced technology outperforms plain dripline with unbeatable distribution uniformity and efficient water use.

SMALL SPACES

Eco-Mat® fits in tight areas that are too small for most overhead irrigation products.

ROOFTOP

Eco-Mat is particularly suited to work well with lightweight planting media. It's the perfect choice for green roofs.

EFFECTIVE YET OUT OF SIGHT

The space can be used even while the system is running. Eco-Mat will never produce overspray onto hardscape, furniture or other structures.

COMPLEMENTARY PRODUCTS

Our Professional Landscape Dripline and full range of micro irrigation products offer water-saving options for many applications.

PLANT TYPE	PLD	ECO-WRAP®	ECO-MAT
TEMPORARY IRRIGATION	●		
GROUNDCOVER, SHRUBS, TREES AT GRADE (LESS THAN 15 CM DEEP)	●		
SUBSURFACE: TURF		○	●
SUBSURFACE: SMALL SHRUBS, PLANTS AND GROUNDCOVER		●	●
SUBSURFACE: TREES AND LARGE SHRUBS		●	
SPREADING SUCCULENTS, MOSS, AND MAT PLANTS		○	●
LANDSCAPE TYPE			
LOW TRAFFIC AREAS	○	○	○
HIGH TRAFFIC AREAS		○	○
SPORT, AND LARGE TURF AREAS		○	●
SMALL, NARROW, IRREGULAR AREAS	○	○	○
ROOFTOP LANDSCAPES		○	●
LIVING WALLS	○	○	○
CURVED AREAS AND BORDERS	○	○	○
PARKING LOT ISLANDS	○	○	○

○ = Good choice for application

● = Best choice for application

ECO-MAT®

UNMATCHED UNIFORMITY AND WATER SAVINGS

Subsurface Irrigation: **Under Turf, Gardens, Small Shrubs**

FEATURES

- Unique combination of dripline and fleece to achieve outstanding water distribution
- The polypropylene wrap protects against root intrusion without using toxic chemicals or metal byproducts
- Water holding capacity of 1.89 l/m²
- Pressure compensating
- Check valves keep the line charged up to 1.5 m and prevent low point drainage
- Recommended for use with all Hunter Drip Control Zone Kits
- For maximum water savings, use with Hunter Soil-Clik®
- Warranty period: 5 years (2 additional years for environmental stress cracking)

OPERATING SPECIFICATIONS

- Minimum filtration 120 mesh; 125 microns
- Operating pressure range: 1.0 to 3.5 bar; 100 to 350 kPa
- Compatible with 16 mm and 17 mm insert barb fittings
- Recommended installation depth range 10 cm to 30 cm

ECO-MAT TECHNICAL SPECIFICATIONS

	16 MM	17 MM
Flow	2.2 l/hr; 0.13 m ³ /hr	2.2 l/hr; 0.13 m ³ /hr
Roll Length	100 m	90 m
Width	0.80 m	0.80 m
m²	80	60
Operating Pressure	1.0 to 3.5 bar; 100 to 350 kPa	1.0 to 3.5 bar; 100 to 350 kPa
Minimum Filtration	120 mesh; 125 microns	120 mesh; 125 microns
Emitter Spacing	30 cm	30 cm
Lateral Row Spacing	35 cm	35 cm

PREPARE THE SITE

Excavate the area to the proper depth based on plant type, install the necessary plumbing, and make the Eco-Mat connections.



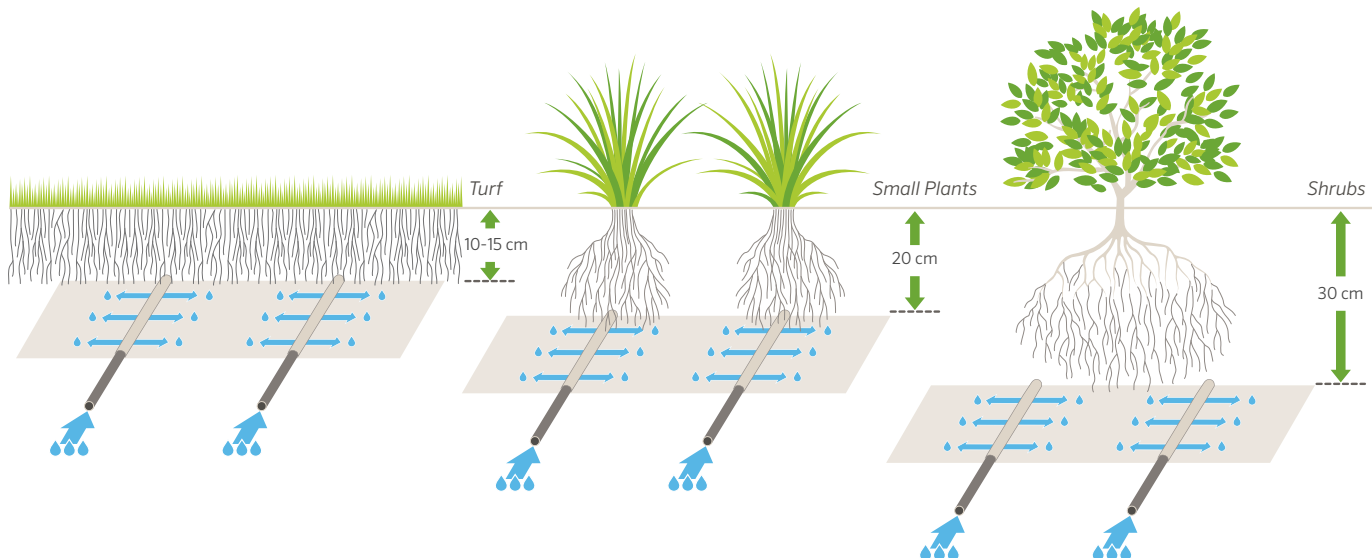
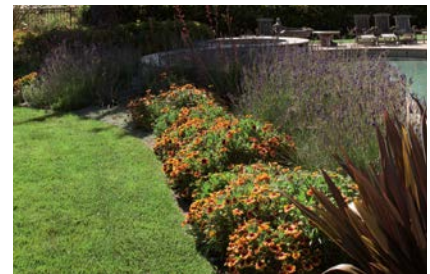
ADD THE SOIL

Cover the Eco-Mat with clean soil, arrange the plants, and apply mulch.



ENJOY THE BEAUTY & WATER SAVINGS

Begin watering the new installation using the Eco-Mat and watch the plant life thrive with this unique subsurface water-conserving solution.



ECO-WRAP™

Subsurface Irrigation: **Under Turf, Gardens, Shrubs, Trees**

FEATURES

- Fleece-wrapped professional landscape dripline
- Transports water faster and more efficiently than bare dripline
- Pressure compensating
- Check valves keep the line charged up to 1.5 m and prevent low point drainage
- Fleece fully moistens in less than 3 minutes allowing far better uniformity than bare dripline
- Recommended for use with all Hunter Drip Control Zone Kits
- Warranty period: 5 years (2 additional years for environmental stress cracking)

OPERATING SPECIFICATIONS

- Minimum filtration 120 mesh; 125 microns
- Operating pressure range: 1.0 to 3.5 bar; 100 to 350 kPa
- Compatible with 16 mm and 17 mm insert barb fittings

ECO-WRAP TECHNICAL SPECIFICATIONS

	16 MM	17 MM
Flow	2.2 l/hr; 0.13 m ³ /hr	2.2 l/hr; 0.13 m ³ /hr
Roll Length	100 m	76 m
Operating Pressure	1.0 to 3.5 bar; 100 to 350 kPa	1.0 to 3.5 bar; 100 to 350 kPa
Minimum Filtration	120 mesh; 125 microns	120 mesh; 125 microns
Emitter Spacing	30 cm	30 cm



Eco-Wrap

PRESSURE REGULATION

All Hunter dripline products feature built-in pressure compensation, allowing an inlet pressure of 1 to 3.5 bar; 100 to 3,500 kPa. For mainline pressures exceeding 3.5 bar; 3,500 kPa, use a pressure regulator downstream of the valve and filter.

LATERALS

Laterals moving water from the valve to the header(s) must be sized to accommodate the full flow of each area they serve. Industry standards are not to exceed a velocity of 1.5 m/s. Laterals are typically PE or PVC pipe. They may also be constructed of blank dripline tubing for smaller areas.

SIZING LATERALS AND HEADERS

Sizing supply headers and laterals is crucial to the proper operation of all dripline systems. Perform a pressure loss calculation from the point of connection to the farthest end of each supply header. Size the header to provide the flow needed for the entire zone. Improperly-sized headers and laterals may not allow proper emitter function.

SUPPLY HEADER

Each supply header must be sized to accommodate the full flow of the entire area it serves. Headers may be either end-feed or center-feed configurations.

BARBED FITTINGS

Barbed insert fittings provide a positive connection to dripline tubing. Hunter 17 mm insert fittings are colour-matched with PLD, are UV resistant, handle pressures up to 14 bar; 1,400 kPa, and provide a positive, easy-to-install, watertight connection without using tools, clamps, or glue.

AIR/VACUUM RELIEF (AVR) VALVE

While Hunter dripline emitters are designed to release air from the system and block back siphonage, AVR valves speed the process and provide an immediate path for large volumes of air to escape. They should be installed at the highest position of each contiguous area of dripline tubing. AVR valves must be used when automatic flush valves are specified to prevent back-siphonage through emitters during the initial flush cycle.

EXHAUST HEADER

The exhaust header serves to equalize pressure and flow between runs of dripline tubing and provide an outlet path for flushing. The exhaust header does not need to be sized to equal the supply header, but must be able to accommodate the flow rate of the flush valve, without exceeding 1.5 m/s.

PLD

PROFESSIONAL LANDSCAPE DRIPLINE

Flow: **1.4, 2.3, 3.8 l/hr**
 Surface Irrigation: **Shrub Rows, Gardens, Tree Rings**

FEATURES

- Check valves keep the line charged up to 1.5 m and prevent low point drainage
- Pressure compensating emitters
- Flow rates of 1.4, 2.3, 3.8 l/hr
- Emitter spacing at 30 cm, 45 cm, 60 cm
- Anti-siphon prevents debris from entering emitters when used subsurface
- Available without emitters (blank)
- Strong UV resistance
- Warranty period: 5 years (2 additional years for environmental stress cracking)

OPERATING SPECIFICATIONS

- Pressure compensating, non-draining emitters
- Operating pressure range: 1.0 to 3.5 bar; 100 to 350 kPa
- Recommended filtration 120 mesh; 125 microns

Precipitation Rate and Maximum Line Length charts on page 200



PLD



PLD Reclaimed

Optional colour for reclaimed water sources, available for 17 mm only

PLD 16 MM - SPECIFICATION BUILDER: ORDER 1 + 2 + 3

1 Model	2 Spacing	3 Length
PLD-22 = 2.2 l/hr Flow	30 cm	100 m
PLD-38 = 3.8 l/hr Flow	50 cm	200 m
		400 m

Examples:

- PLD-22 - 30 - 100 = 2.2 l/hr landscape dripline with 30 cm spacing in a 100 m roll
- PLD-22 - 50 - 200 = 2.2 l/hr landscape dripline with 50 cm spacing in a 200 m roll
- PLD-38 - 50 - 400 = 3.8 l/hr landscape dripline with 50 cm spacing in a 400 m roll

PLD 17 MM - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Spacing	3 Length	4 Options
PLD-04 = 1.4 l/hr Flow	12 = 30 cm	100 = 30 m*	(blank) = Female NPT
PLD-06 = 2.3 l/hr Flow	18 = 45 cm	250 = 75 m	R = Reclaimed
PLD-10 = 3.8 l/hr Flow	24 = 60 cm	1K = 300 m	(available in 2.3 and 3.8 l/hr models only)
PLD-BLNK = Blank			

Example:

PLD-04 - 12 - 250 = 1.4 l/hr landscape dripline with 30 cm spacing in a 75 m roll

* = 30 m rolls available only in models PLD-BLNK-100, PLD-06-12-100, PLD-10-12-100, and PLD-10-18-100

MICRO

PLD FITTINGS

Fittings: All 16 and 17 mm Dripline

FEATURES

- Polypropylene material
- Dual barb provides stronger hold than single barb
- Ideal for use with Eco-Mat®, Eco-Wrap™, PLD
- Brown colour to match PLD dripline
- No clamps necessary

OPERATING SPECIFICATIONS

- Maximum pressure: 3.5 bar; 350 kPa

Easy-to-install fittings for quick connections and tight curves



16 MM FITTINGS



PLD-CPL-16
16 mm Barb x Barb



PLD-050-16
1/2" MPT x 16 mm Barb



PLD-ELB-16
16 mm Barb x Barb Elbow



PLD-TEE-16
16 mm Barb x Barb Tee



PLD-BV-16
16 mm Barb x Barb Ball Valve

17 MM FITTINGS



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



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



PLD-ELB
17 mm Barb Elbow



PLD-CPL
17 mm Barb Coupling



PLD-CAP
17 mm Barb x 1/2" MPT with Cap



PLD-TEE
17 mm Barb Tee



PLD-075-TBTEE
17 mm Barb Tee x 3/4" Thread



PLD-BV
17 mm Barb Shut-off Valve



PLD-AVR
1/2" Air/Vacuum Relief Valve

POINT SOURCE EMITTERS

Pressure Compensating Flow: **2, 4, 8, 15, 23 l/hr**

FEATURES

- Pressure compensating
- Colour-coded by flow
- Three inlet variations: ¼" barb, 10/32" thread, ½" FPT
- Coined edges for easy grip
- Flow rates of 2, 4, 8, 15, 23 l/hr
- Self-piercing barb
- Assembled in the USA
- Optional diffuser cap
- Self-flushing diaphragm
- Warranty period: 2 years

OPERATING SPECIFICATIONS

- Recommended pressure range: 1.0 to 3.5 bar; 100 to 350 kPa
- Minimum filtration 150 mesh; 100 microns

POINT SOURCE EMITTERS - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4							
1	Model	2	Flow Rate	3	Inlet	4	Qty./Bag
HE		050	= 2 l/hr	B	= Self-piercing Barb*	25	
HEB		10	= 4 l/hr	T	= 10/32" Threaded*	100	
		20	= 8 l/hr	(blank)	= ½" Female Thread		
		40	= 15 l/hr				
		60	= 23 l/hr				

* For HE only (not HEB)

Example:
HE-20 - T - 100 = 8 l/hr Point Source Emitter with 10/32" thread in a bag of 100
HEB-050 - 100 = 2 l/hr Point Source Emitter with ½" female thread in a bag of 25

EMITTER MODEL CHART

	Model	Inlet Type	Flow (l/hr)
● Blue	HE-050-B	Self-piercing Barb	2.0
● Black	HE-10-B	Self-piercing Barb	4.0
● Red	HE-20-B	Self-piercing Barb	8.0
● Tan	HE-40-B	Self-piercing Barb	15.0
● Orange	HE-60-B	Self-piercing Barb	23.0
● Blue	HE-050-T	10/32" Thread	2.0
● Black	HE-10-T	10/32" Thread	4.0
● Red	HE-20-T	10/32" Thread	8.0
● Tan	HE-40-T	10/32" Thread	15.0
● Orange	HE-60-T	10/32" Thread	23.0
● Blue	HEB-05	½" Female Thread	2.0
● Black	HEB-10	½" Female Thread	4.0
● Red	HEB-20	½" Female Thread	8.0
● Tan	HEB-40	½" Female Thread	15.0
● Orange	HEB-60	½" Female Thread	23.0

Inlet Options



DIFFUSER CAP

Gently diffuses water on higher flow emitters to prevent erosion.



MICRO

MICRO SPRAYS

Uses: **Trees, Shrubs, Containers, and Flower Beds**

SOLO-DRIP

- Eight streams of water for accurate watering
- Fingertip cap control for flow and radius adjustment
- Operating specifications: 1.0 to 2.5 bar; 100 to 250 kPa
- Warranty period: 1 year


HALO-SPRAY

- Large diameter, umbrella of water
- Adjust radius as needed
- Combine several for a “blanket” of water
- Operating specifications: 1.0 to 2.5 bar; 100 to 250 kPa
- Warranty period: 1 year

TRIO-SPRAY


- Full-, half-, and quarter-circle configurations
- Functions like big sprays on a micro level
- Control knob for specific adjustment
- Operating specifications: 0.5 to 2.5 bar; 50 to 250 kPa
- Warranty period: 1 year

SOLO-DRIP PERFORMANCE DATA

	Pressure	Flow	Throw
	bar	l/hr	Diameter (m)
	1.0	0 - 40	0 - 0.5
	1.5	0 - 50	0 - 0.6
	2.0	0 - 60	0 - 0.8

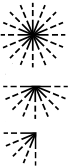
Note: Adjustable to Maximum (approx. 20 clicks)

HALO-SPRAY PERFORMANCE DATA

	Pressure	Flow	Throw
	bar	l/hr	Diameter (m)
	1.0	0 - 52	0 - 1.7
	1.5	0 - 65	0 - 2.8
	2.0	0 - 74	0 - 3.4

Note: Adjustable to Maximum (approx. 14 clicks)

TRIO-SPRAY PERFORMANCE DATA

	Pressure	Flow	Spray Pattern (m)		
			Diameter in Throw		Radius of Throw
	bar	l/hr	360° x 18 Hole	180°	90°
	0.5	0 - 54	0 - 5.0	0 - 2.0	0 - 1.5
	1.0	0 - 77	0 - 5.8	0 - 2.5	0 - 2.1
	1.5	0 - 94	0 - 6.4	0 - 2.9	0 - 2.6
	2.0	0 - 105	0 - 7.0	0 - 3.2	0 - 3.0
	2.5	0 - 119	0 - 7.5	0 - 3.5	0 - 3.3

SOLO-DRIP



[A] SD-T: 2.4 cm H x 2.0 cm W x 1.6 cm D
 [B] SD-B: 2.4 cm H x 2.0 cm W x 1.6 cm D
 [C] SD-B-STK: 15.2 cm H x 4.3 cm W x 1.6 cm D

HALO-SPRAY



[A] HS-T: 2.4 cm H x 2.0 cm W x 1.6 cm D
 [B] HS-B: 2.4 cm H x 2.0 cm W x 1.6 cm D
 [C] HS-B-STK: 15.2 cm H x 4.3 cm W x 1.6 cm D

TRIO-SPRAY



[A] TS-F: 3.8 cm H x 2.3 cm W x 1.5 cm D
 [B] TS-H: 3.8 cm H x 2.3 cm W x 1.5 cm D
 [C] TS-Q: 3.8 cm H x 2.3 cm W x 1.5 cm D

MICRO SPRAY MODELS

Model	Description
SD-T	Solo-Drip with 10-32 Threads, 360°
SD-B	Solo-Drip with Barb, 360°
SD-B-STK	Solo-Drip with Barb with stake, 360°
HS-T	Halo-Spray with 10-32 Threads, 360°
HS-B	Halo-Spray with Barb, 360°
HS-B-STK	Halo-Spray with Barb with stake, 360°
TS-T-F	Trio-Spray with 10-32 Threads, 360°
TS-T-H	Trio-Spray with 10-32 Threads, 180°
TS-T-Q	Trio-Spray with 10-32 Threads, 90°

MICRO

DRIP CONTROL ZONE KITS

Kits: **Residential and Light Commercial**
 Flow: **2 to 55 l/min**

FEATURES

- Convenient kit with all necessary parts
- Highest quality components
- Saves on installation time
- Comes factory assembled
- Warranty period: 2 years

FACTORY INSTALLED OPTIONS

- 1.7 or 2.8 bar; 170 or 280 kPa regulator

USER INSTALLED OPTIONS

- Reclaimed water ID handle for PCZ-101 (P/N 269205)

PCZ-101

- Pressure regulation: 1.7 or 2.8 bar; 170 or 280 kPa
- Flow: 2 to 55 l/min
- Operating pressure: 1.4 to 8.0 bar; 140 to 800 kPa
- Operating temperature: up to 66° C
- 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

* PCZ performance chart on page 201



PCZ-101

Height: 18 cm
 Width: 7 cm
 Length: 26 cm
 1" (25 mm) inlet x 3/4" outlet

MICRO

DRIP ZONE CONTROL KITS – SPECIFICATION BUILDER: ORDER 1 + 2

1 Model	2 Options
PCZ-101 = 1" (25 mm) PGV globe valve with 1" (25 mm) HY100 filter system	25 = 1.7 bar regulator 40 = 2.8 bar regulator

Examples:

PCZ-101 - 25 = 1" (25 mm) PGV globe valve with 25 mm HY100 filter system, and 1.7 bar regulator
 ICZ-101 - 40 = 1" (25 mm) ICV globe valve with 25 mm HY100 filter system, and 2.8 bar regulator

PCZ-101 Installed



FILTER REGULATOR

System: **Regulation and Filtration, All in One Component**

FEATURES

- Factory-assembled and water-tested
- Highest quality components (stainless steel filter screen, standard flush cap, top-of-the-line regulator)
- Wide flow range to cover most micro irrigation applications
- Warranty period: 2 years

HFR-075

- Pressure regulation: 1.7 or 2.8 bar; 170 or 280 kPa
- Flow: 2 to 55 l/min
- Operating pressure: 1.4 to 8.0 bar; 140 to 800 kPa
- Operating temperature: up to 66° C
- 150 mesh; 100 microns stainless steel screen

HUNTER Y-FILTER

- Filter HY-075 3/4" Male



HFR-075-25

HFR-075-40

Height: 18 cm
Width: 7 cm
Length: 16 cm
3/4" inlet x 3/4" outlet



HY-075

Height: 15 cm
Width: 7 cm
Length: 13 cm

HUNTER FILTER REGULATOR KIT MODELS

Model	Description
HFR-075-25	3/4" filter system, and 1.7 bar; 170 kPa regulator, 3/4" outlet
HFR-075-40	3/4" filter system, and 2.8 bar; 280 kPa regulator, 3/4" outlet

RZWS

Size: **25, 45, 90 cm**
Flow: **0.9 l/min or 1.9 l/min**

FEATURES

- Built-in Hunter Swing Joint for direct installation to ½" PVC fitting
- Patented StrataRoot™ baffles divert water to root zone while adding strength to the unit
- Locking cap
- Warranty period: 2 years

DIMENSIONS

- 25 cm: 5.1 cm diameter x 25 cm length
- 45 cm: 7.6 cm diameter x 45 cm length
- 90 cm: 7.6 cm diameter x 90 cm length

OPERATING SPECIFICATIONS

- Bubbler flow rates: 0.9 l/min or 1.9 l/min
- Recommended pressure range: 1.0 to 4.8 bar; 100 to 480 kPa

FACTORY INSTALLED OPTIONS

- Check valve
- Locking reclaimed purple cap

USER INSTALLED OPTIONS

- Sleeve: Fabric sleeve that helps prevent soil intrusion in sandy areas. For 45 cm and 90 cm models (P/N RZWS-SLEEVE)
- Replacement cap 45 cm and 90 cm only (P/N RZWS-CAP)
- Locking reclaimed purple cap 45 cm and 90 cm only (P/N RZWS-RCCAP)
- Reclaimed purple cap for 25 cm (P/N RZWS10-RCC)



Standard and reclaimed models available

Reclaimed models available

Purple reclaimed cap spare part (P/N RZWS-RCCAP for 45 cm and 90 cm models, P/N RZWS-10RCC for 25 cm models)

ROOT ZONE WATERING SYSTEM – SPECIFICATION BUILDER: Order 1+ 2 + 3

1 Model	2 Bubbler Flow Rate	3 Options
RZWS-10 = 25 cm Root zone watering system	25 = 0.9 l/min	(blank) = No option
RZWS-18 = 45 cm Root zone watering system	50 = 1.9 l/min	CV = Check valve
RZWS-36 = 90 cm Root zone watering system	(blank) = no bubbler or swing joint	R = Reclaimed cap (excluding RZWS-10 models)
		CV-R = Check valve with reclaimed cap

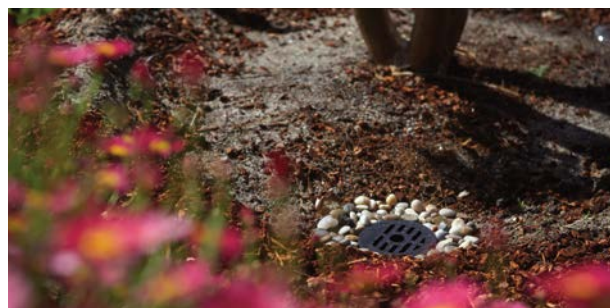
Examples:

- RZWS-18 - 25 - CV = 45 cm Root zone watering system at 0.9 l/min, with check valve
- RZWS-10 - 50 - R = 25 cm Root zone watering system at 1.9 l/min, with reclaimed cap
- RZWS-36 - 25 - CV-R = 90 cm Root zone watering system at 0.9 l/min, with check valve and reclaimed cap

ADDITIONAL OPTIONS (SPECIFY SEPARATELY)

- RZWS-SLEEVE** = Field installed sleeve made from filter fabric
- RZWS-CAP** = Replacement cap for 45 cm and 90 cm models
- RZWS-10RCC** = Reclaimed water replacement cap for 25 cm models
- RZWS-RC-CAP** = Reclaimed water replacement cap for 45 cm and 90 cm models

Root Zone Watering System





EFFICIENT WATERING SOLUTIONS

For the Most Challenging Spaces

Narrow landscaping beds, green roofs, grass pavers, and more can present irrigation design challenges. Our latest micro irrigation products are a flexible solution for difficult areas. From professional landscape dripline and emitters to subsurface solutions, our products give you the flexibility to design around obstacles and hardscape limitations without sacrificing any beauty.



SECTION 09:

ACCESSORIES

ACCESSORIES





ACCESSORIES

DBRY-6

MODELS

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

Features

- UL Listed for 600 Volts 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

HCV

Models

- HC-50F-50F: ½" Female inlet x ½" Female outlet
- HC-50F-50M: ½" Female inlet x ½" Male outlet
- HC-75F-75M: ¾" Female inlet x ¾" Male outlet

Features

- Adjustment access from top of valve
- Adjusts to compensate for elevational changes up to 11 m: Maximum flexibility
- Variety of inlet and outlet options: Reduces need for additional fittings
- Meets schedule 80 specifications: Durable under high pressure

Pressure loss charts for HCV products on page 210

HUNTER SPIRAL BARB ELBOWS

Models

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

Features

- For use with FLEX_{SG} Tubing
- Acetal material for sharp barbs
- Operating pressure up to 5.5 bar; 550 kPa
- Compatible with FLEX_{SG} and other brands

FLEX_{SG} TUBING

Models

- FLEX_{SG}: 30 m roll
- FLEX_{SG}-18: 45 cm pre-cut lengths

Features

- Engineered to resist kinking
- Inside diameter: 1.2 cm
- Operating pressure: up to 5.5 bar; 550 kPa
- Linear low-density polyethylene material



Waterproof Wire Connectors

DBRY100, DBRY2X25



HCV

Overall height: 7.5 cm



Spiral Barb Elbows

HSBE-TOOL, HSBE-050, HSBE-075



FLEX_{SG} Tubing

30 m and 45 cm pre-cut lengths

ACCESSORIES

SJ SWING JOINT

Models

- SJ-506: ½" threaded x 15 cm length
- SJ-512: ½" threaded x 30 cm length
- SJ-7506: ½" x ¾" threaded x 15 cm length
- SJ-7512: ½" x ¾" threaded x 30 cm length
- SJ-706: ¾" threaded x 15 cm length
- SJ-712: ¾" threaded x 30 cm length

Features

- Unique leak-free swivel ells on both ends can be installed in any position for maximum versatility
- Pressure rated to 10 bar; 1000 kPa

Pressure loss charts for SJ products on page 210



SJ Swing Joint
15 cm or 30 cm links

SPOTSHOT HOSE-END NOZZLE

Models

- ¾" Hose thread inlet - P/N 160700
- 1" (25 mm) Hose thread inlet - P/N 160705

Features

- 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 160700
1" P/N 160705

OPERATING SPECIFICATIONS

- Flow - 132 l/min; 8 m³/hr at 5.5 bar; 551 kPa*

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

Jet Stream Nozzle



Soak Stream Nozzle



Fan Stream Nozzle



TOOLS



Hunter Wrench
P/N 172000



"T" Handle Tool
P/N 053191



Pitot Gauge
P/N 280100



MP Gauge Assembly
P/N MPGAUGE
(For use with MP Rotators or standard nozzles)



Hand Pump
P/N 460302



MP Tool
P/N MPTOOL



Nozzle Insertion Collar
P/N 123200



ST1600 Tool
P/N 517600



Pocket Punch
P/N POCKETPUNCH
(Punches, inserts, and removes emitters)



Hunter Emitter Multi-Tool
P/N HEMT
(Punches pilot holes and pellets, inserts and removes emitters, cuts tubing)

GOLF TOOLS



**Arc Adjustment/
Riser Hold-up Tool**
P/N 382800
G85B/G885



Valve Insertion/Removal Tool
P/N 604000
G800 Series



Valve Insertion/Removal Tool
P/N 052805
G900/G90 Series



**Valve & Snap Ring
Insertion/Removal Pliers**
P/N 475600
G800 Series



Snap Ring Removal Tool
P/N 052510
All Golf Models



**Nozzle Removal/
Installation Tool**
P/N 803700
G85B, G885 Short and
Mid-Range Nozzles



SECTION 10: **GOLF IRRIGATION**



GOLF ROTORS



GOLF ROTORS

GOLF ROTORS

ADVANCED FEATURES

GOLF IRRIGATION

THE G885 HAS POWER TO SPARE



Boasting the highest torque output of any golf rotor on the market, the G885's patented gear drive will push through anything that gets in its way. Try it yourself and see. With just one rotation of the turret by hand, you can clearly feel this rotor's formidable durability. With such a powerful core, an array of efficient nozzles, and true full circle and part circle capabilities, the G885 is the golf rotor you can always count on.

EASY ARC ADJUSTMENT WITH OR WITHOUT A TOOL



With the G885, the arc is adjustable anytime; uninstalled, installed or while in operation. The convenient adjustment ring can be rotated by hand, or with the easy-to-use arc adjustment tool. This combination tool can also be used as a means to hold the riser in the popped-up position for nozzle changes.

DUAL TRAJECTORY FLEXIBILITY

Choose from the wide assortment of efficient wind-fighting 22.5° standard trajectory nozzles, or the 15° low-angle trajectory nozzles. Either way, there is a perfect match for your unique course conditions and problem-solving needs. Regardless of the version you choose, changing nozzles is fast and easy with Hunter's exclusive QuickChange technology.



CONTOUR "BACK-NOZZLE" CAPABILITY



Whether you want a little extra green behind your adjustable arc G885 rotors or a more "modeled" look to your fairway's hard edges, contour "Back-Nozzles" are here to make your

vision a reality. They are also great for reducing water use along perimeter housing areas and other unique situations around the course. Choose from six short-range or seven mid-range nozzles to suit your needs.

RATCHETING RISER WITH QUICKSET-360 ADJUSTABILITY



Setting up your adjustable arc G885 is fast and simple. The integrated ratcheting mechanism allows a simple twist of the riser to align the right-side reversing point. Then, the adjustment ring is used to quickly set the arc and left-side reversing point. The G885 is also easily convertible to a true non-reversing full circle rotor with our exclusive QuickSet-360 feature.

PRIMARY NOZZLE ADAPTER



Unique irrigation problems exist on nearly every golf course. This is especially true in tight, hard-to-irrigate areas. The G885 primary nozzle adapter can solve many of these problems quickly and easily by allowing you to mix and match nozzles to get the coverage needed, or to plug the primary flow completely.

ALSO AVAILABLE, THE NEW G85B BLOCK ROTOR



If you're looking for a cost-effective golf rotor with a wide-range of radius and feature capabilities, including a recessed area for a yardage marker, the G85B block rotor is here. It includes all the great features of the G885 rotor at a fraction of the cost.

TTS GOLF ROTORS

ADVANCED FEATURES

Total-Top-Service (TTS)



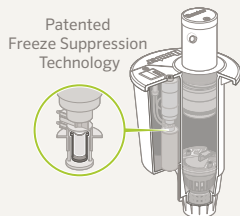
Access Everything Through the Top

The no-dig solution is appreciated by golfers, management, and especially the superintendent



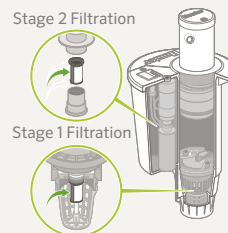
Large and Flexible Yardage Marker Capabilities

Recessed area for placard markers; optional raised marker for popular engraved and paint-filled markers



Pilot Valve Freeze Suppression Unit

Patented FST technology prevents freeze damage—another TTS exclusive



Two-Stage Filtration in Valve Circuitry

Anti-contamination filters in pilot valve and inlet valve protect critical valve-in-head passages



Unitised Inlet Valve Assembly

Easy one-step removal of rock screen, valve seat and valve assembly



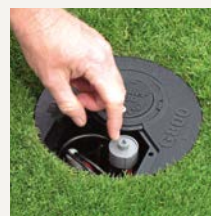
Convenient Circular Flange Design

Offset riser and compartment allows quick and easy trimming around the rotor with motorised equipment



Upper Snap Rings with Integrated Wiper Seal

Protects rotor's riser seal from external contamination such as sand top-dressing



Through-the-Top Servicing of On-Off-Auto Selector

Simple and inexpensive to replace, should damage occur



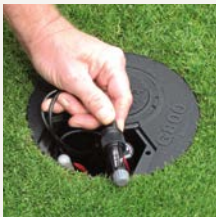
Through-the-Top Solenoid Connections

Keeps wire splices protected in valve-box conditions with easy solenoid servicing



Stainless Steel Seat in Pilot Valve

Durable and corrosion-free, helps prevent slow leaks and weeping in the rotor



Concealed Adjustable Pressure Regulation

Stored within the flange compartment, prevents accidental adjustments



Proudly Manufactured in the USA

Hunter is the only leading irrigation manufacturer making golf rotors in the United States of America



Made in the USA

DIH GOLF ROTORS

ADVANCED FEATURES

Decoder-In-Head (DIH)



Decoders Are Built Into Rotors

Perfect package to complement decoder control systems. All DIH rotors include two DBR/Y-6 splice connectors



State-of-the-Art Surge Suppression

Earth grounding is easily added with the Pilot SG surge protector



Individual Decoder and Solenoid Components Within Flange Compartment

Isolated configuration minimises maintenance costs year after year and into the future



Seamless No-Splice Connection Between Decoder and Solenoid

With no connectors, maintains ongoing electrical continuity and peace of mind

Made in the USA



New Two-Station DIH Rotor Option

Perfect cost-effective solution for back-to-back heads around greens



Decoders Are Housed in the DIH Rotor's Unique Flange Compartment

Improves playability and eliminates hundreds of unsightly decoder enclosures course-wide



Program Decoders from the Surface with No Disassembly

Simple, fast, and easy to program before or after installation with the wireless ICD-HP



DIH Rotors Include All the Unique Features and Benefits of TTS Rotors

When you can access everything through the top, you never have to touch the turf



Access Decoders Through the Top with No Digging Required

Servicing is easy - there's no mess with TTS DIH rotors



Built Strong in the United States of America

Among the top three irrigation manufacturers, Hunter is the only one making golf rotors in the USA



Durability, Efficiency, and Reliability Housed in the Industry's First TTS DIH Rotor

Peace of mind from the #1 producer of gear-driven rotors in the world

G900 SERIES

Models: **G990 & G995**
 Radius: **22.3 to 31.4 m**
 Flow: **6.7 to 19.04 m³/hr; 111.7 to 317.2 l/min**

FEATURES

- Models:
 - G990 - Full circle
 - G995 - Adjustable arc (40°-360°)
- QuickCheck™ arc mechanism
- Dual trajectory nozzle choices:
 - 8 standard trajectory (22.5°)
 - 8 low angle trajectory (15°)
- Nozzle range: #25 to #73
- Exclusive PressurePort™ nozzle technology
- Contour “Back-Nozzle” capabilities
- Water lubricated gear-drive
- ▶ All TTS advanced features
- ▶ Decoder-In-Head (DIH) capable

OPERATING SPECIFICATIONS

- G990
 - Radius: 22.3 to 31.4 m
 - Flow: 6.93 to 18.92 m³/hr; 115.5 to 315.3 l/min
 - Pressure range: 5.5 to 8.3 bar; 550 to 830 kPa
- G995
 - Radius: 20.1 to 29.6 m
 - Flow: 6.7 to 19.04 m³/hr; 111.7 to 317.2 l/min
 - Pressure range: 5.5 to 8.3 bar; 550 to 830 kPa
- All TTS rotors are pressure rated at 10 bar; 1,000 kPa

OPTIONS

- C - Check-O-Matic checks up to 8 m in elevation change and readily converts to Normally-Open Hydraulic with through the top connections
- D - Decoder Valve-In-Head with all “E” specifications below*
- DD - Two-station Decoder Valve-In-Head with all “E” specifications below*
- E - Electric Valve-In-Head with adjustable pressure regulation, on-off-auto selector, 210 mA (370 mA inrush) 50Hz; 190 mA (350 mA inrush) 60Hz solenoid with captive plunger and internal downstream bleed

* All DIH rotors include two IBM DBRY-6 splices for connection to the 2-wire path. See page 184 for critical recommendations on grounding DIH rotors.

▶ = TTS and DIH Advanced Features detailed on pages 154 and 156



G990C
 Pop-up height: 8 cm
 Overall height: 34 cm
 Flange diameter: 19 cm
 Female Inlet: 1½" ACME



G995E
 Pop-up height: 8 cm
 Overall height: 34 cm
 Flange diameter: 19 cm
 Female Inlet: 1½" ACME

G990 & G995 - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4 + 5

1 Model	2 Valve Options	3 Nozzle	4 Regulation*	5 Options
G990 = Full Circle	C = Check-O-Matic* D = Decoder Valve-In-Head DD = Two-station Decoder Valve-In-Head E = Electric Valve-In-Head	25 to 73 = Installed G990 Nozzle*	P8 = 80 PSI (nozzles 25 to 53) P1 = 100 PSI (nozzles 53 to 73) P2 = 120 PSI (nozzle 73)	S = SSU*
G995 = Adjustable Arc 40° - 360°	C = Check-O-Matic* D = Decoder Valve-In-Head DD = Two-station Decoder Valve-In-Head E = Electric Valve-In-Head * Converts to N.O. Hydraulic Valve-In-Head	25 to 73 = Installed G995 Nozzle* * SSU = #25 or #53	P8 = 80 PSI (nozzles 25 to 53) P1 = 100 PSI (nozzles 53 to 73) P2 = 120 PSI (nozzle 73) * SSU = P8/#25 P8/#53	S = SSU* * Standard Stocking Unit

Example:
G990 - E - 53 - P8 - S = G990 full circle electric valve-in-head, installed #53 nozzle, 80 PSI regulation, standard stocking unit model

G990 NOZZLE PERFORMANCE DATA*							
Nozzle	Pressure		Radius** m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
25 ● Lt. Blue	5.5	550	22.3	6.93	115.2	14.0	16.2
	6.2	620	22.9	7.36	122.6	14.1	16.3
	6.9	690	23.2	7.79	129.8	14.5	16.8
	7.6	760	23.8	8.29	138.2	14.7	16.9
	8.3	830	24.1	8.72	145.4	15.0	17.4
33 ● Grey	5.5	550	23.5	8.25	137.4	15.0	17.3
	6.2	620	23.8	8.72	145.4	15.4	17.8
	6.9	690	24.4	9.22	153.7	15.5	17.9
	7.6	760	24.7	9.70	161.6	15.9	18.4
38 ● Red	5.5	550	24.4	9.22	153.7	15.5	17.9
	6.2	620	25.0	9.75	162.4	15.6	18.0
	6.9	690	25.3	10.29	171.4	16.1	18.6
	7.6	760	25.9	10.84	180.6	16.1	18.6
43 ● Dk. Brown	5.5	550	25.3	10.49	174.9	16.4	18.9
	6.2	620	25.6	11.04	184.0	16.8	19.4
	6.9	690	25.9	11.56	192.7	17.2	19.9
	7.6	760	26.2	12.13	202.1	17.7	20.4
48 ● Dk. Green	5.5	550	26.2	11.27	187.8	16.4	18.9
	6.2	620	27.1	11.93	198.7	16.2	18.7
	6.9	690	27.4	12.45	207.4	16.5	19.1
	7.6	760	27.7	13.02	216.9	16.9	19.5
53 ● Dk. Blue	5.5	550	27.1	12.31	205.2	16.7	19.3
	6.2	620	27.4	12.88	214.6	17.1	19.8
	6.9	690	28.0	13.45	224.1	17.1	19.7
	7.6	760	28.3	14.02	233.6	17.4	20.1
63 ● Black	5.5	550	28.0	14.36	239.2	18.3	21.1
	6.2	620	28.7	14.97	249.5	18.2	21.1
	6.9	690	29.3	15.76	265.7	18.4	21.3
	7.6	760	29.6	16.36	272.5	18.7	21.6
73 ● Orange	5.5	550	29.3	16.38	272.9	19.1	22.1
	6.2	620	29.9	17.04	283.9	19.1	22.0
	6.9	690	30.2	17.67	297.5	19.4	22.4
	7.6	760	31.1	18.29	304.7	18.9	21.8
	8.3	830	31.4	18.92	315.3	19.2	22.2

G995 NOZZLE PERFORMANCE DATA*							
Nozzle	Pressure		Radius** m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
25 ● Lt. Blue	5.5	550	20.1	6.70	111.7	16.6	19.1
	6.2	620	20.4	7.16	119.2	17.2	19.8
	6.9	690	20.7	7.54	125.7	17.6	20.3
	7.6	760	21.0	8.09	134.8	18.3	21.1
	8.3	830	21.0	8.52	142.0	19.3	22.2
33 ● Grey	5.5	550	20.7	8.22	137.0	19.1	22.1
	6.2	620	21.0	8.68	144.6	19.6	22.7
	6.9	690	21.3	9.18	152.9	20.2	23.3
	7.6	760	21.6	9.68	161.3	20.7	23.9
38 ● Red	5.5	550	21.9	9.22	153.7	19.1	22.1
	6.2	620	22.3	9.77	162.8	19.7	22.8
	6.9	690	22.9	10.31	171.9	19.7	22.8
	7.6	760	23.2	10.81	180.2	20.1	23.3
43 ● Dk. Brown	5.5	550	22.6	10.47	174.5	20.6	23.8
	6.2	620	22.6	11.02	183.6	21.7	25.0
	6.9	690	22.9	11.52	191.9	22.0	25.4
	7.6	760	23.5	12.13	202.1	22.0	25.4
48 ● Dk. Green	5.5	550	23.5	11.40	190.0	20.7	23.9
	6.2	620	24.1	11.95	199.1	20.6	23.8
	6.9	690	24.7	12.52	208.6	20.5	23.7
	7.6	760	25.0	13.06	217.7	20.9	24.1
53 ● Dk. Blue	5.5	550	24.7	12.47	207.8	20.5	23.6
	6.2	620	25.6	12.99	216.5	19.8	22.9
	6.9	690	26.2	13.52	225.2	19.7	22.7
	7.6	760	26.5	14.11	235.1	20.1	23.2
63 ● Black	5.5	550	26.2	14.15	235.8	20.6	23.8
	6.2	620	26.8	14.88	247.9	20.7	23.9
	6.9	690	27.4	15.67	261.2	20.8	24.0
	7.6	760	27.7	16.33	272.2	21.2	24.5
73 ● Orange	5.5	550	27.1	16.51	275.2	22.4	25.9
	6.2	620	27.7	17.13	285.4	22.3	25.7
	6.9	690	28.3	17.74	295.6	22.1	25.5
	7.6	760	29.0	18.38	306.2	21.9	25.3
	8.3	830	29.6	19.04	317.2	21.8	25.1

G900 NOZZLES



G990 & G995

G900 LOW-ANGLE NOZZLES



G990 & G995**

** Low-angle nozzles reduce radius by 15%

* Complies to ASAE standard. All precipitation rates calculated for 360° operation. All triangular rates are equilateral. To calculate precipitation rates for 180° operation, multiply by 2.



Contour “Back-Nozzle” Capabilities

Choose any nozzle from the PGP, I-40, and G70 nozzle racks, or from the short and mid-range G900 nozzles.

G800 SERIES

Model: **G880**
 Radius: **20.4 to 26.8 m**
 Flow: **5.11 to 13.15 m³/hr; 85.2 to 219.2 l/min**

FEATURES

- Model: G880 – Full circle
- Nozzle choices: 7 standard trajectory (25°)
- Nozzle range: #23 to #53
- Exclusive PressurePort™ nozzle technology
- Water lubricated gear-drive
- ▶ All TTS advanced features
- ▶ Decoder-In-Head (DIH) capable

OPERATING SPECIFICATIONS

- Radius: 20.4 to 26.8 m
- Flow: 5.11 to 13.15 m³/hr; 85.2 to 219.2 l/min
- Pressure range: 4.5 to 6.9 bar; 450 to 690 kPa
- All TTS rotors are pressure rated at 10 bar; 1,000 kPa

OPTIONS

- C – Check-O-Matic checks up to 8 m in elevation change and readily converts to Normally-Open Hydraulic with through the top connections
- D – Decoder Valve-In-Head with all “E” specifications below*
- DD – Two-station Decoder Valve-In-Head with all “E” specifications below*
- E – Electric Valve-In-Head with adjustable pressure regulation, on-off-auto selector, 210 mA (370 mA inrush) 50Hz; 190 mA (350 mA inrush) 60Hz solenoid with captive plunger and internal downstream bleed

* All DIH rotors include two IBM DBRY-6 splices for connection to the 2-wire path. See page 184 for critical recommendations on grounding DIH rotors.

▶ = TTS and DIH Advanced Features detailed on pages 154 and 156



G880C
 Pop-up height: 8 cm
 Overall height: 30 cm
 Flange diameter: 18 cm
 Female Inlet: 1½" ACME



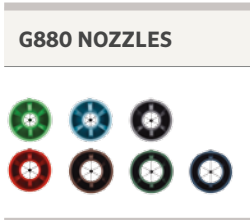
G880E
 Pop-up height: 8 cm
 Overall height: 30 cm
 Flange diameter: 18 cm
 Female Inlet: 1½" ACME

G880 – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4 + 5

1	Model	2	Valve Options	3	Nozzle	4	Regulation*	5	Options
G880	= Full Circle	C = Check-O-Matic* D = Decoder Valve-In-Head DD = Two-station Decoder Valve-In-Head E = Electric Valve-In-Head * Converts to N.O. Hydraulic Valve-In-Head	23 to 53 = Installed G880 Nozzle* * SSU = #23, #25 or #48	P6 = 65 PSI (nozzles 23 and 25) P8 = 80 PSI (nozzles 23 to 53) * SSU = P6/#23, P6/#25 P8/#25, P8/#48	S = SSU* * Standard Stocking Unit				

Example:
 G880 - E - 48 - P8 - S = G880 full circle electric valve-in-head, installed #48 nozzle, 80 PSI regulation, standard stocking unit model

G880 NOZZLE PERFORMANCE DATA*							
Nozzle	Pressure		Radius	Flow		Precip mm/hr	
	Bar	kPa		m ³ /hr	l/min	■	▲
23 ● Green	4.5	450	20.4	5.11	85.2	12.3	14.1
	4.8	480	21.0	5.43	90.5	12.3	14.2
	5.5	550	21.6	5.91	98.4	12.6	14.6
	6.2	620	21.9	6.34	105.6	13.2	15.2
	6.9	690	22.3	6.77	112.8	13.7	15.8
25 ● Blue	4.5	450	21.6	6.54	109.0	14.0	16.1
	4.8	480	22.3	6.79	113.2	13.7	15.8
	5.5	550	22.6	7.29	121.5	14.3	16.5
	6.2	620	22.9	7.79	129.8	14.9	17.2
	6.9	690	23.2	8.18	136.3	15.2	17.6
33 ● Grey	4.5	450	22.3	7.04	117.3	14.2	16.4
	4.8	480	22.6	7.31	121.9	14.4	16.6
	5.5	550	23.2	7.88	131.4	14.7	17.0
	6.2	620	23.5	8.40	140.1	15.3	17.6
	6.9	690	23.8	8.81	146.9	15.6	18.0
38 ● Red	4.5	450	23.2	7.97	132.9	14.9	17.2
	4.8	480	23.5	8.25	137.4	15.0	17.3
	5.5	550	24.1	8.75	145.7	15.1	17.4
	6.2	620	24.4	9.20	153.3	15.5	17.9
	6.9	690	24.7	9.75	162.4	16.0	18.5
43 ● Dk. Brown	4.5	450	23.8	8.90	148.4	15.8	18.2
	4.8	480	24.1	9.27	154.4	16.0	18.5
	5.5	550	25.0	9.93	165.4	15.9	18.3
	6.2	620	25.3	10.56	176.0	16.5	19.1
	6.9	690	25.6	11.09	184.7	16.9	19.5
48 ● Dk. Green	4.5	450	25.0	9.95	165.8	15.9	18.4
	4.8	480	25.3	10.52	175.3	16.4	19.0
	5.5	550	25.9	11.13	185.5	16.6	19.1
	6.2	620	26.2	11.79	196.5	17.2	19.8
	6.9	690	26.5	12.36	205.9	17.6	20.3
53 ● Dk. Blue	4.5	450	25.3	10.65	177.5	16.6	19.2
	4.8	480	25.6	11.15	185.9	17.0	19.6
	5.5	550	26.5	11.95	199.1	17.0	19.6
	6.2	620	26.8	12.45	207.4	17.3	20.0
	6.9	690	26.8	13.15	219.2	18.3	21.1



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



TTS EQUALS CONVENIENCE AND VERSATILITY

With TTS, every serviceable component of the rotor can be easily accessed anytime with no servicing mess.

G800 SERIES

Model: **G884**
 Radius: **14.9 to 28.3 m**
 Flow: **3.28 to 13.24 m³/hr; 54.6 to 220.6 l/min**

FEATURES

- Model: G884 - Full circle
- Dual trajectory colour-coded nozzles:
 - 10 standard trajectory (22.5°)
 - 9 low-angle trajectory (15°)
- Nozzle range: #15 to #53
- Exclusive PressurePort™ nozzle technology
- Stainless steel riser
- Water lubricated gear-drive
- ▶ All TTS advanced features
- ▶ Decoder-In-Head (DIH) capable

OPERATING SPECIFICATIONS

- Radius: 14.9 to 28.3 m
- Flow: 3.28 to 13.24 m³/hr; 54.6 to 220.6 l/min
- Pressure range: 3.4 to 6.9 bar; 340 to 690 kPa
- All TTS rotors are pressure rated at 10 bar; 1000 kPa

OPTIONS

- C - Check-O-Matic checks up to 8 m in elevation change and readily converts to Normally-Open Hydraulic with through the top connections
- D - Decoder Valve-In-Head with all “E” specifications below*
- DD - Two-station Decoder Valve-In-Head with all “E” specifications below*
- E - Electric Valve-In-Head with adjustable pressure regulation, on-off-auto selector, 210 mA (370 mA inrush) 50Hz; 190 mA (350 mA inrush) 60Hz solenoid with captive plunger and internal downstream bleed

* All DIH rotors include two IBM DBRY-6 splices for connection to the 2-wire path. See page 184 for critical recommendations on grounding DIH rotors.

▶ = TTS and DIH Advanced Features detailed on pages 154 and 156



G884C
 Pop-up height: 9.5 cm
 Overall height: 30 cm
 Flange diameter: 18 cm
 Female Inlet: 1½" ACME



G884E
 Pop-up height: 9.5 cm
 Overall height: 30 cm
 Flange diameter: 18 cm
 Female Inlet: 1½" ACME

G884 - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4 + 5

1 Model	2 Valve Options	3 Nozzle	4 Regulation*	5 Options
G884 = Full Circle (convertible to forward-facing adjustable arc rotor)	C = Check-O-Matic* D = Decoder Valve-In-Head DD = Two-station Decoder Valve-In-Head E = Electric Valve-In-Head * Converts to N.O. Hydraulic Valve-In-Head	15 to 53 = Installed G880 Nozzle* * SSU = #18, #23, #25 or #48	P5 = 50 PSI (nozzles 15 to 18) P6 = 65 PSI (nozzles 18 to 25) P8 = 80 PSI (nozzles 25 to 35) * SSU = P5/#18, P6/#23 P8/#25, P8/#48	S = SSU* * Standard Stocking Unit

Example:
G884 - E - 48 - P8 - S = G884 full circle electric valve-in-head, installed #48 nozzle, 80 PSI regulation, standard stocking unit model

G884 NOZZLE PERFORMANCE DATA*										
Nozzle Set			Pressure		Radius		Flow		Precip mm/hr	
			bar	kPa	m	m ³ /hr	l/min	■	▲	
●	○	●	3.4	340	14.9	3.28	54.6	14.7	17.0	
Tan	15	Grey	4.1	410	15.5	3.65	60.8	15.1	17.4	
803611		White	4.5	450	15.9	3.81	63.5	15.2	17.5	
803611		White	4.8	480	16.2	3.90	65.1	15.0	17.3	
803611		White	5.5	550	16.8	4.13	68.9	14.7	17.0	
●	○	●	3.4	340	16.8	3.97	66.1	14.1	16.3	
Tan	18	Grey	4.1	410	17.1	4.28	71.3	14.7	17.0	
803611		Orange	4.5	450	17.4	4.45	74.1	14.7	17.0	
803611		Orange	4.8	480	18.0	4.66	77.6	14.4	16.6	
803611		Orange	5.5	550	18.6	4.94	82.4	14.3	16.5	
●	○	●	3.4	340	17.4	3.91	65.2	13.0	15.0	
Tan	20	Grey	4.1	410	18.6	4.28	71.3	12.4	14.3	
803611		Brown	4.5	450	18.9	4.47	74.4	12.5	14.4	
803611		Brown	4.8	480	19.2	4.67	77.9	12.7	14.6	
803611		Brown	5.5	550	19.5	5.02	83.6	13.2	15.2	
●	○	●	3.4	340	19.2	4.49	74.8	12.2	14.1	
Tan	23	Lt. Blue	4.1	410	19.8	4.99	83.2	12.7	14.7	
803611		Green	4.5	450	20.1	5.19	86.5	12.8	14.8	
803611		Green	4.8	480	20.4	5.41	90.1	13.0	15.0	
803611		Green	5.5	550	20.4	5.81	96.9	13.9	16.1	
●	○	●	4.5	450	21.6	6.50	108.3	13.9	16.0	
Tan	25	Lt. Blue	4.8	480	22.3	6.75	112.5	13.6	15.7	
803611		Blue	5.5	550	22.6	7.19	119.8	14.1	16.3	
803611		Blue	6.2	620	22.9	7.65	127.5	14.6	16.9	
803611		Blue	6.9	690	22.9	8.12	135.3	15.5	17.9	
●	○	●	4.5	450	22.3	7.02	117.0	14.2	16.4	
Tan	33	Lt. Blue	4.8	480	22.9	7.30	121.7	14.0	16.1	
803611		Grey	5.5	550	23.2	7.81	130.1	14.6	16.8	
803611		Grey	6.2	620	23.5	8.24	137.3	15.0	17.3	
803611		Grey	6.9	690	24.1	8.65	144.1	14.9	17.2	
●	○	●	4.5	450	22.9	7.96	132.6	15.2	17.6	
Tan	38	Lt. Blue	4.8	480	23.2	8.29	138.1	15.4	17.8	
803611		Red	5.5	550	23.8	8.85	147.5	15.7	18.1	
803611		Red	6.2	620	24.1	9.38	156.3	16.2	18.7	
803611		Red	6.9	690	25.0	9.87	164.4	15.8	18.2	
●	○	●	-	-	-	-	-	-	-	
Tan	43	Blue	-	-	-	-	-	-	-	
803611		Dk. Brown	5.5	550	25.3	9.85	164.1	15.4	17.8	
803611		Dk. Brown	6.2	620	25.9	10.52	175.3	15.7	18.1	
803611		Dk. Brown	6.9	690	26.5	11.04	183.9	15.7	18.1	
●	○	●	-	-	-	-	-	-	-	
Dk. Brown	48	Dk. Blue	-	-	-	-	-	-	-	
803610		Dk. Green	5.5	550	25.9	10.88	181.2	16.2	18.7	
803610		Dk. Green	6.2	620	27.1	11.46	191.0	15.6	18.0	
803610		Dk. Green	6.9	690	27.7	12.08	201.4	15.7	18.1	
●	○	●	-	-	-	-	-	-	-	
Dk. Brown	53	Dk. Blue	-	-	-	-	-	-	-	
803610		Dk. Blue	5.5	550	27.1	11.86	197.7	16.1	18.6	
803610		Dk. Blue	6.2	620	27.7	12.58	209.6	16.3	18.9	
803610		Dk. Blue	6.9	690	28.3	13.24	220.6	16.5	19.0	

* Preliminary Performance Data. Complies to ASAE standard. All precipitation rates calculated for 360° operation. All triangular rates are equilateral. To calculate precipitation rates for 180° operation, multiply by 2.

G884 STANDARD NOZZLES

G884 LOW-ANGLE NOZZLES**



** Low-angle nozzles reduce radius by 15%



G885 Decoder-In-Head TTS Rotor

G885 TTS Rotor Spacious TTS Flange Compartment

All TTS rotors include ample room for solenoid splice connections and a decoder module when needed.

G800 SERIES

Model: **G885**
 Radius: **13.1 to 27.7 m**
 Flow: **1.86 to 13.06 m³/hr; 31.0 to 217.7 l/min**

FEATURES

- Model: G885 – True full circle/adjustable part circle (60° to 360°)
- QuickCheck™ arc mechanism
- QuickSet-360 arc mechanism
- Dual trajectory colour-coded nozzles:
 - 12 standard trajectory (22.5°)
 - 9 low-angle trajectory (15°)
- Nozzle range: #10 to #53
- Exclusive PressurePort™ nozzle technology
- Contour “Back-Nozzle” capabilities
- Ratcheting stainless steel riser
- Water lubricated gear-drive
- ▶ All TTS advanced features
- ▶ Decoder-In-Head (DIH) capable

OPERATING SPECIFICATIONS

- Radius: 13.1 to 27.7 m
- Flow: 1.86 to 13.06 m³/hr; 31.0 to 217.7 l/min
- Pressure range: 3.4 to 6.9 bar; 340 to 690 kPa
- All TTS rotors are pressure rated at 10 bar; 1,000 kPa

OPTIONS

- C – Check-O-Matic checks up to 8 m in elevation change and readily converts to Normally-Open Hydraulic with through the top connections
- D – Decoder Valve-In-Head with all “E” specifications below*
- DD – Two-station Decoder Valve-In-Head with all “E” specifications below*
- E – Electric Valve-In-Head with adjustable pressure regulation, on-off-auto selector, 210 mA (370 mA inrush) 50Hz; 190 mA (350 mA inrush) 60Hz solenoid with captive plunger and internal downstream bleed

* All DIH rotors include two IBM DBRY-6 splices for connection to the 2-wire path. See page 184 for critical recommendations on grounding DIH rotors.

▶ = TTS and DIH Advanced Features detailed on pages 154 and 156



G885C

Pop-up height: 9.5 cm
 Overall height: 30 cm
 Flange diameter: 18 cm
 Female Inlet: 1½" ACME



G885E

Pop-up height: 9.5 cm
 Overall height: 30 cm
 Flange diameter: 18 cm
 Female Inlet: 1½" ACME

G885 – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4 + 5

1 Model	2 Valve Options	3 Nozzle	4 Regulation*	5 Options
G885 = Full/Part Circle 60°-360° Arc Range	C = Check-O-Matic* D = Decoder Valve-In-Head DD = Two-station Decoder Valve-In-Head E = Electric Valve-In-Head * Converts to N.O. Hydraulic Valve-In-Head	10 to 53 = Installed G885 Nozzle* * SSU = #18, #23, #25 or #48	P5 = 50 PSI (nozzles 10 to 18) P6 = 65 PSI (nozzles 18 to 25) P8 = 80 PSI (nozzles 25 to 53) * SSU = P5/#18, P6/#23 P8/#25, P8/#48	S = SSU* * Standard Stocking Unit

Example:

G885 - E - 48 - P8 - S = G885 full/part circle electric valve-in-head, installed #48 nozzle, 80 PSI regulation, standard stocking unit model

G885 NOZZLE PERFORMANCE DATA*									
Nozzle Set			Pressure		Radius	Flow		Precip mm/hr	
			bar	kPa	m	m ³ /hr	l/min	■	▲
Orange	10	Dk. Green	3.4	340	13.1	1.86	31.0	10.8	12.5
●		●	4.1	410	13.4	2.23	37.1	12.4	14.3
803603		315312	4.5	450	13.7	2.29	38.2	12.2	14.1
		Lt. Green	-	-	-	-	-	-	-
Orange	13	White	3.4	340	14.6	2.66	44.3	12.4	14.3
●		●	4.1	410	15.2	2.91	48.5	12.5	14.5
803603		315314	4.5	450	15.5	3.04	50.7	12.6	14.5
		Lt. Blue	-	-	-	-	-	-	-
Orange	15	White	3.4	340	15.9	3.02	50.3	12.0	13.9
●		●	4.1	410	16.2	3.34	55.6	12.8	14.8
803603		315314	4.5	450	16.5	3.45	57.5	12.7	14.7
		White	-	-	-	-	-	-	-
Orange	18	Lt. Green	3.4	340	16.8	3.79	63.2	13.5	15.6
●		●	4.1	410	17.4	4.04	67.4	13.4	15.5
803603		315313	4.5	450	17.7	4.13	68.9	13.2	15.3
		Orange	-	-	-	-	-	-	-
Orange	20	Lt. Green	3.4	340	17.7	4.18	69.7	13.4	15.4
●		●	4.1	410	18.3	4.45	74.2	13.3	15.4
803603		315313	4.5	450	18.6	4.66	77.6	13.5	15.6
		Tan	4.8	480	18.6	4.88	81.4	14.1	16.3
		●	5.5	550	18.9	5.13	85.6	14.4	16.6
Orange	23	Lt. Green	3.4	340	18.6	4.78	79.6	13.8	16.0
●		●	4.1	410	19.2	5.18	86.3	14.0	16.2
803603		315313	4.5	450	19.8	5.43	90.5	13.8	16.0
		Green	4.8	480	20.1	5.86	97.7	14.5	16.7
		●	5.5	550	20.4	6.34	105.6	15.2	17.5
Red	25	Green	4.5	450	21.0	6.68	111.3	15.1	17.4
●		●	4.8	480	21.3	6.92	115.3	15.2	17.6
803602		315310	5.5	550	21.6	7.37	122.8	15.7	18.2
		Blue	6.2	620	21.9	7.77	129.5	16.1	18.6
		●	6.9	690	22.3	8.25	137.4	16.7	19.2
Red	33	Green	-	-	-	-	-	-	-
●		●	-	-	-	-	-	-	-
803602		315310	5.5	550	22.3	7.83	130.4	15.8	18.3
		Grey	6.2	620	22.6	8.34	138.9	16.4	18.9
		●	6.9	690	23.2	8.75	145.7	16.3	18.8
Red	38	Green	-	-	-	-	-	-	-
●		●	-	-	-	-	-	-	-
803602		315310	5.5	550	24.1	8.94	149.0	15.4	17.8
		Red	6.2	620	24.1	9.36	156.0	16.1	18.6
		●	6.9	690	24.4	9.75	162.4	16.4	18.9
Red	43	Green	-	-	-	-	-	-	-
●		●	-	-	-	-	-	-	-
803602		315310	5.5	550	24.4	9.88	164.7	16.6	19.2
		Dk. Brown	6.2	620	24.7	10.54	175.6	17.3	20.0
		●	6.9	690	25.3	11.06	184.3	17.3	20.0
Dk. Red	48	Dk. Green	-	-	-	-	-	-	-
●		●	-	-	-	-	-	-	-
803601		315312	5.5	550	25.9	11.20	186.6	16.7	19.3
		Dk. Green	6.2	620	26.2	11.86	197.6	17.3	19.9
		●	6.9	690	26.8	12.43	207.1	17.3	19.9
Dk. Red	53	Dk. Green	-	-	-	-	-	-	-
●		●	-	-	-	-	-	-	-
803601		315312	5.5	550	27.1	11.98	199.7	16.3	18.8
		Dk. Blue	6.2	620	27.4	12.54	209.0	16.7	19.2
		●	6.9	690	27.7	13.06	217.7	17.0	19.6

● = 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. To calculate precipitation rates for 180° operation, multiply by 2.

G885 STANDARD NOZZLES

G885 LOW-ANGLE NOZZLES**



** Low-angle nozzles reduce radius by 15%



Contour "Back-Nozzle" Capabilities

Whether you want a little extra green behind your adjustable-arc G885 rotors or a more "modeled" look to your fairway's hard edges, Contour "Back-Nozzles" are here to make your vision a reality. Choose from four short-range or four mid-range nozzles to suit your needs.

CONTOUR BACK-NOZZLE PERFORMANCE DATA

P/N	Colour	Profile	4.5 Bar		5.5 Bar	
			Metres	L/M	Metres	L/M
803604	Peach		7.6	12.9	8.2	14.8
803603	Orange		8.5	14.4	8.8	15.9
803602	Red		9.4	15.9	10.1	17.0
803601	Dk. Red		10.4	17.4	11.0	18.5
315314	White		11.3	10.6	11.6	11.0
315313	Lt. Green		12.8	16.3	13.4	17.8
315310	Green		14.0	19.7	14.6	21.6
315312	Dk. Green		14.9	29.9	15.5	33.3

G885 CONTOUR BACK-NOZZLES



QuickSet-360 with Ratcheting Riser

Setting up your adjustable arc G885 is fast and simple. The integrated ratcheting mechanism allows a simple twist of the riser to align the right-side reversing point. The G885 is also easily convertible to a true non-reversing full circle rotor with our exclusive QuickSet-360 feature.

G800 SERIES

Model: **G835**
 Radius: **5.5 to 15.2 m**
 Flow: **0.43 to 2.91 m³/hr; 7.2 to 48.5 l/min**

FEATURES

- Model: G835: Full/Part circle (50° to 360°)
- QuickCheck™ arc mechanism
- QuickSet-360 arc mechanism
- Nozzle choices: 8 multi-trajectory (15° to 25°)
- Nozzle range: #2 to #12
- Water lubricated gear-drive
- ▶ All TTS advanced features
- ▶ Decoder-In-Head (DIH) capable

OPERATING SPECIFICATIONS

- Radius: 5.5 to 15.2 m
- Flow: 0.43 to 2.91 m³/hr; 7.2 to 48.5 l/min
- Pressure range: 2.8 to 4.5 bar; 280 to 450 kPa
- All TTS rotors are pressure rated at 10 bar; 1,000 kPa

OPTIONS

- C - Check-O-Matic checks up to 8 m in elevation change and readily converts to Normally-Open Hydraulic with through the top connections
- D - Decoder Valve-In-Head with all “E” specifications below*
- DD - Two-station Decoder Valve-In-Head with all “E” specifications below*
- E - Electric Valve-In-Head with adjustable pressure regulation, on-off-auto selector, 210 mA (370 mA inrush) 50Hz; 190 mA (350 mA inrush) 60Hz solenoid with captive plunger and internal downstream bleed

* All DIH rotors include two IBM DBRY-6 splices for connection to the 2-wire path. See page 184 for critical recommendations on grounding DIH rotors.

▶ = TTS and DIH Advanced Features on pages 154 and 156



G835C

Pop-up height: 8 cm
 Overall height: 30 cm
 Flange diameter: 18 cm
 Female Inlet: 1½" ACME



G835E

Pop-up height: 8 cm
 Overall height: 30 cm
 Flange diameter: 18 cm
 Female Inlet: 1½" ACME

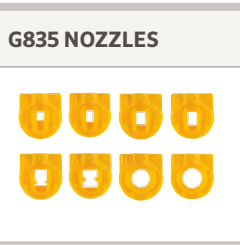
G835 - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4 + 5

1 Model	2 Valve Options	3 Nozzle	4 Regulation*	5 Options
G835 = Full/Part Circle 50 to 360°	C = Check-O-Matic * D = Decoder Valve-in-Head E = Electric Valve-in-Head * Converts to N.O. Hydraulic Valve-in-Head	6 = Installed G835 Nozzle * includes 8-nozzle rack * SSU = #6	P5 = 50 PSI P6 = 65 PSI * SSU = P5	S = SSU * * Standard Stocking Unit

Examples:

G835E - 6 - P5 - S = G835 full/part-circle electric valve-in-head, installed #6 nozzle, 50 PSI regulation, standard stocking unit model

G835 NOZZLE PERFORMANCE DATA*							
Nozzle	Pressure		Radius	Flow		Precip mm/hr	
	bar	kPa	m	m ³ /hr	l/min	■	▲
2 ● Yellow	2.8	280	5.5	0.43	7.2	14.3	16.6
	3.4	340	6.1	0.48	7.9	12.8	14.8
	4.1	410	6.7	0.55	9.1	12.1	14.0
	4.5	450	7.0	0.59	9.8	12.0	13.9
3 ● Yellow	2.8	280	7.0	0.68	11.4	13.9	16.0
	3.4	340	7.6	0.73	21.1	12.5	14.5
	4.1	410	8.2	0.80	13.2	11.7	13.6
	4.5	450	8.5	0.82	13.6	11.2	13.0
4 ● Yellow	2.8	280	7.6	0.89	14.8	15.3	17.6
	3.4	340	8.5	0.93	15.5	12.8	14.8
	4.1	410	9.1	1.00	16.7	12.0	13.8
	4.5	450	9.4	1.04	17.4	11.7	13.5
5 ● Yellow	2.8	280	8.8	1.07	17.8	13.7	15.8
	3.4	340	9.8	1.14	18.9	11.9	13.8
	4.1	410	10.1	1.20	20.1	11.9	13.7
	4.5	450	10.7	1.23	20.4	10.8	12.4
6 ● Yellow	2.8	280	9.8	1.36	22.7	14.3	16.5
	3.4	340	10.7	1.43	23.8	12.6	14.5
	4.1	410	11.3	1.50	25.0	11.8	13.6
	4.5	450	11.9	1.54	25.7	10.9	12.6
8 ● Yellow	2.8	280	11.0	1.77	29.5	14.7	17.0
	3.4	340	11.9	1.82	30.3	12.9	14.8
	4.1	410	12.8	1.89	31.4	11.5	13.3
	4.5	450	13.1	1.93	32.2	11.2	13.0
10 ● Yellow	2.8	280	11.9	2.20	36.7	15.6	18.0
	3.4	340	13.1	2.29	38.2	13.4	15.4
	4.1	410	13.7	2.34	39.0	12.4	14.4
	4.5	450	14.3	2.39	39.7	11.6	13.4
12 ● Yellow	2.8	280	13.4	2.73	45.4	15.2	17.5
	3.4	340	14.3	2.77	46.2	13.5	15.6
	4.1	410	14.6	2.84	47.3	13.3	15.3
	4.5	450	15.2	2.91	48.5	12.5	14.5



* Complies to ASAE standard. All precipitation rates calculated for 360° operation. All triangular rates are equilateral. To calculate precipitation rates for 180° operation, multiply by 2.



QuickSet-360

With Hunter's QuickCheck arc mechanism and patented QuickSet-360 non-reversing full-circle feature in a variable arc rotor, adjustments are fast, easy and more flexible than ever before. Now available on all B Series and G800 Series adjustable arc rotors.

B SERIES

Models: **G80B**
 Radius: **20.4 to 26.8 m**
 Flow: **5.11 to 13.15 m³/hr; 85.2 to 219.2 l/min**

FEATURES

- Full circle opposing nozzles
- Colour-coded nozzles: 7 standard trajectory (25°)
- Nozzle range: #23 to #53
- Exclusive PressurePort™ nozzle technology
- Water lubricated gear-drives
- Check height up to 3 m in elevation change

OPERATING SPECIFICATIONS

- Radius: 20.4 to 26.8 m
- Flow: 5.11 to 13.15 m³/hr; 85.2 to 219.2 l/min
- Pressure range: 4.5 to 6.9 bar; 450 to 690 kPa
- All B Series rotors are pressure rated at 10 bar; 1,000 kPa



G80B
 Pop-up height: 8 cm
 Overall height: 24.5 cm
 Flange diameter: 13.7 cm
 Female Inlet: 1¼" ACME

GOLF ROTORS

G80B – SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Valve Options	3 Nozzle	4 Options*
G80 = Full Circle	B = Block rotor with check valve	23 to 53 = Installed G80 Nozzle* * SSU = #23, #25 or #48	S = SSU* * Standard Stocking Unit

Example:
 G80 - B - 25 - S = G80 full circle block rotor, installed #25 nozzle, standard stocking unit model

G80B NOZZLE PERFORMANCE DATA*							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
23 ● Green	4.5	450	20.4	5.11	85.2	12.3	14.1
	4.8	480	21.0	5.43	90.5	12.3	14.2
	5.5	550	21.6	5.91	98.4	12.6	14.6
	6.2	620	21.9	6.34	105.6	13.2	15.2
	6.9	690	22.3	6.77	112.8	13.7	15.8
25 ● Blue	4.5	450	21.6	6.54	109.0	14.0	16.1
	4.8	480	22.3	6.79	113.2	13.7	15.8
	5.5	550	22.6	7.29	121.5	14.3	16.5
	6.2	620	22.9	7.79	129.8	14.9	17.2
	6.9	690	23.2	8.18	136.3	15.2	17.6
33 ● Grey	4.5	450	22.3	7.04	117.3	14.2	16.4
	4.8	480	22.6	7.31	121.9	14.4	16.6
	5.5	550	23.2	7.88	131.4	14.7	17.0
	6.2	620	23.5	8.40	140.1	15.3	17.6
	6.9	690	23.8	8.81	146.9	15.6	18.0
38 ● Red	4.5	450	23.2	7.97	132.9	14.9	17.2
	4.8	480	23.5	8.25	137.4	15.0	17.3
	5.5	550	24.1	8.75	145.7	15.1	17.4
	6.2	620	24.4	9.20	153.3	15.5	17.9
	6.9	690	24.7	9.75	162.4	16.0	18.5
43 ● Dk. Brown	4.5	450	23.8	8.90	148.4	15.8	18.2
	4.8	480	24.1	9.27	154.4	16.0	18.5
	5.5	550	25.0	9.93	165.4	15.9	18.3
	6.2	620	25.3	10.56	176.0	16.5	19.1
	6.9	690	25.6	11.09	184.7	16.9	19.5
48 ● Dk. Green	4.5	450	25.0	9.95	165.8	15.9	18.4
	4.8	480	25.3	10.52	175.3	16.4	19.0
	5.5	550	25.9	11.13	185.5	16.6	19.1
	6.2	620	26.2	11.79	196.5	17.2	19.8
	6.9	690	26.5	12.36	205.9	17.6	20.3
53 ● Dk. Blue	4.5	450	25.3	10.65	177.5	16.6	19.2
	4.8	480	25.6	11.15	185.9	17.0	19.6
	5.5	550	26.5	11.95	199.1	17.0	19.6
	6.2	620	26.8	12.45	207.4	17.3	20.0
	6.9	690	26.8	13.15	219.2	18.3	21.1

G80B NOZZLES



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

G80B



B SERIES

Models: **G84B & G85B**
 Radius: **13.1 to 28.3 m**
 Flow: **1.86 to 13.24 m³/hr; 31.0 to 220.6 l/min**

FEATURES

- Models:
 - G84B: Full circle opposing nozzles
 - G85B: True full circle/adjustable part circle (60° to 360°)
- QuickCheck™ arc mechanism (G85B)
- QuickSet-360 arc mechanism (G85B)
- Dual trajectory colour-coded nozzles:
 - G84B: 10 standard trajectory (22.5°)
 - G85B: 12 standard trajectory (22.5°)
- G84B & G85B: 9 low-angle trajectory (15°)
- Nozzle range:
 - G84B: #15 to #53
 - G85B: #10 to #53
- Exclusive PressurePort™ nozzle technology
- Contour “Back-Nozzle” capabilities (G85B)
- Ratcheting stainless steel riser
- Water lubricated gear-drives
- Check height up to 3 m in elevation change

OPERATING SPECIFICATIONS

- G84B
 - Radius: 14.9 to 28.3 m
 - Flow: 3.28 to 13.24 m³/hr; 54.6 to 220.6 l/min
 - Pressure range: 3.4 to 6.9 bar; 340 to 690 kPa
- G85B
 - Radius: 13.1 to 27.7 m
 - Flow: 1.86 to 13.06 m³/hr; 31,0 to 217.7 l/min
 - Pressure range: 3.4 to 6.9 bar; 340 to 690 kPa
- All B Series rotors are pressure rated at 10 bar; 1,000 kPa



G84B
 Pop-up height: 9.5 cm
 Overall height: 24.5 cm
 Flange diameter: 13.7 cm
 Female Inlet: 1/4" ACME



G85B
 Pop-up height: 9.5 cm
 Overall height: 24.5 cm
 Flange diameter: 13.7 cm
 Female Inlet: 1/4" ACME

G84B & G85B - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Valve Options	3 Nozzle	4 Options*
G84 = Full Circle	B = Block rotor with check valve	15 to 53 = Installed G84 Nozzle* * SSU = #18, #25 & #48	S = SSU* * Standard Stocking Unit
G85 = Full/Part Circle 60° - 360°	B = Block rotor with check valve	10 to 53 = Installed G85 Nozzle** ** SSU = #18, #25 & #48	S = SSU* * Standard Stocking Unit

Example:
G84 - B - 25 - S = G80 full circle block rotor, installed #25 nozzle, standard stocking unit model

B SERIES

Models: **G70B & G75B**
 Radius: **14.3 to 22.9 m**
 Flow: **1.75 to 7.66 m³/hr; 29.1 to 127.6 l/min**

FEATURES

- Models:
 - G70B: Full circle
 - G75B: Full/Part circle (50° to 360°)
- QuickCheck™ arc mechanism (G75B)
- QuickSet-360 arc mechanism (G75B)
- Nozzle choices:
 - G70B: 6 standard trajectory (25°)
 - G75B: 9 standard trajectory (25°)
- Nozzle range:
 - G70B: #15 to #28
 - G75B: #8 to #28
- Exclusive PressurePort™ nozzle technology
- Water lubricated gear-drive
- Check height up to 3 m in elevation change

OPERATING SPECIFICATIONS

- G70B
 - Radius: 16.2 to 22.9 m
 - Discharge rate: 2.95 to 7.66 m³/hr; 49.2 to 127.6 l/min
 - Pressure range: 3.4 to 6.9 bar; 340 to 690 kPa
- G75B
 - Radius: 14.3 to 21.6 m
 - Discharge rate: 1.75 to 7.34 m³/hr; 29.1 to 122.3 l/min
 - Pressure range: 2.8 to 6.9 bar; 280 to 690 kPa
- All B Series rotors are pressure rated at 10 bars; 1,000 kPa



G70B
 Pop-up height: 8 cm
 Overall height: 23 cm
 Flange diameter: 12 cm
 Female Inlet: 1/4" ACME



G75B
 Pop-up height: 8 cm
 Overall height: 23 cm
 Flange diameter: 12cm
 Female Inlet: 1/4" ACME

G70B & G75B - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Valve Options	3 Nozzle	4 Options
G70 = Full Circle	B = Block Rotor with Check Valve	25 = Installed G70 Nozzle * * Available in SSU model only SSU = #25 Includes nozzle pack	S = SSU * * Standard Stocking Unit
G75 = Full/Part Circle, 50° - 360° Arc Range	B = Block Rotor with Check Valve	25 = Installed G75 Nozzle ** ** Available in SSU model only SSU = #25 Includes nozzle pack	S = SSU * * Standard Stocking Unit

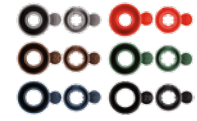
Example:
G70 - B - 25 - S = G70 full circle block rotor, installed #25 nozzle with nozzle pack, standard stocking unit model

G70B NOZZLE PERFORMANCE DATA*							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
15 ● Grey	3.4	340	16.2	2.95	49.2	11.3	13.1
	4.1	410	16.5	3.20	53.4	11.8	13.7
	4.5	450	16.8	3.36	56.0	12.0	13.8
	4.8	480	17.1	3.52	58.7	12.1	14.0
	5.5	550	17.7	3.70	61.7	11.8	13.7
18 ● Red	3.4	340	17.7	3.23	53.8	10.3	11.9
	4.1	410	18.0	3.61	60.2	11.2	12.9
	4.5	450	18.3	3.70	61.7	11.1	12.8
	4.8	480	18.3	3.84	64.0	11.5	13.3
	5.5	550	18.6	4.04	67.4	11.7	13.5
20 ● Dk. Brown	3.4	340	18.6	4.27	71.2	12.4	14.3
	4.1	410	18.9	4.45	74.2	12.5	14.4
	4.5	450	19.2	4.66	77.6	12.6	14.6
	4.8	480	19.5	5.00	83.3	13.1	15.2
	5.5	550	19.5	5.32	88.6	14.0	16.1
23 ● Dk. Green	3.4	340	19.2	4.57	76.1	12.4	14.3
	4.1	410	19.8	4.77	79.5	12.2	14.0
	4.5	450	19.8	4.97	82.9	12.7	14.6
	4.8	480	20.1	5.32	88.6	13.1	15.2
	5.5	550	20.4	5.66	94.3	13.6	15.7
25 ● Dk. Blue	3.4	340	19.8	4.95	82.5	12.6	14.6
	4.1	410	20.4	5.11	85.2	12.3	14.1
	4.5	450	20.4	5.36	89.3	12.9	14.8
	4.8	480	21.0	5.75	95.8	13.0	15.0
	5.5	550	21.6	6.11	101.8	13.0	15.1
28 ● Black	4.8	480	21.6	6.38	106.4	13.6	15.7
	5.5	550	21.6	6.79	113.2	14.5	16.7
	6.2	620	22.3	7.22	120.4	14.6	16.8
	6.9	690	22.9	7.66	127.6	14.6	16.9

* Complies to ASAE standard. All precipitation rates calculated for 360° operation. All triangular rates are equilateral. To calculate precipitation rates for 180° operation, multiply by 2.

G75B NOZZLE PERFORMANCE DATA*							
Nozzle	Pressure		Radius m	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
8 ● Lt. Brown	2.8	280	14.3	1.75	29.1	8.5	9.8
	3.4	340	14.9	1.89	31.4	8.5	9.8
	4.1	410	15.2	2.09	34.8	9.0	10.4
	4.5	450	15.2	2.16	36.0	9.3	10.7
	4.8	480	15.5	2.25	37.5	9.3	10.7
10 ● Lt. Green	3.4	340	16.2	2.48	41.3	9.5	11.0
	4.1	410	16.5	2.73	45.4	10.1	11.6
	4.5	450	16.5	2.84	47.3	10.5	12.1
	4.8	480	16.8	2.98	49.6	10.6	12.2
	5.5	550	17.1	3.25	54.1	11.1	12.9
13 ● Lt. Blue	3.4	340	16.8	2.54	42.4	9.1	10.5
	4.1	410	17.1	2.79	46.6	9.6	11.1
	4.5	450	17.1	2.91	48.5	10.0	11.5
	4.8	480	17.4	3.02	50.3	10.0	11.6
	5.5	550	17.4	3.25	54.1	10.8	12.4
15 ● Grey	3.4	340	17.4	3.04	50.7	10.1	11.6
	4.1	410	17.7	3.25	54.1	10.4	12.0
	4.5	450	18.0	3.36	56.0	10.4	12.0
	4.8	480	18.0	3.48	57.9	10.7	12.4
	5.5	550	18.3	3.73	62.1	11.2	12.9
18 ● Red	3.4	340	18.3	3.29	54.9	9.8	11.4
	4.1	410	18.6	3.57	59.4	10.3	11.9
	4.5	450	18.6	3.70	61.7	10.7	12.4
	4.8	480	18.9	3.84	64.0	10.7	12.4
	5.5	550	19.2	4.13	68.9	11.2	12.9
20 ● Dk. Brown	4.1	410	18.9	4.04	67.4	11.3	13.1
	4.5	450	18.9	4.13	68.9	11.6	13.4
	4.8	480	19.2	4.36	72.7	11.8	13.7
	5.5	550	19.5	4.66	77.6	12.2	14.1
	6.2	620	19.8	4.95	82.5	12.6	14.6
23 ● Dk. Green	4.1	410	19.5	4.97	82.9	13.1	15.1
	4.5	450	19.8	4.86	81.0	12.4	14.3
	4.8	480	19.8	5.36	89.3	13.7	15.8
	5.5	550	20.1	5.82	96.9	14.4	16.6
	6.2	620	20.4	6.13	102.2	14.7	17.0
25 ● Dk. Blue	4.1	410	19.8	5.34	89.0	13.6	15.7
	4.5	450	19.8	5.63	93.9	14.4	16.6
	4.8	480	20.4	5.82	96.9	13.9	16.1
	5.5	550	21.0	6.20	103.3	14.0	16.2
	6.2	620	21.6	6.59	109.8	14.1	16.2
28 ● Black	4.8	480	20.1	6.11	101.8	15.1	17.4
	5.5	550	20.7	6.56	109.4	15.3	17.6
	6.2	620	21.3	6.95	115.8	15.3	17.6
	6.9	690	21.6	7.34	122.3	15.7	18.1

G70B & G75B NOZZLES



G70B



G75B

B SERIES

Model: **G35B**
 Radius: **5.5 to 15.2 m**
 Flow: **0.43 to 2.91 m³/hr; 7.2 to 48.5 l/min**

FEATURES

- Model: G35B: Full/Part Circle (50° - 360°)
- QuickCheck™ arc mechanism
- QuickSet-360 arc mechanism
- Nozzle choices:
 - 8 multi-trajectory 15°-25°
- Nozzle range:
 - #2 to #12
- Water lubricated gear-drive
- Check height up to 3 m in elevation change

OPERATING SPECIFICATIONS

- Radius: 5.5 to 15.2 m
- Flow: 0.43 to 2.91m³/hr; 7.2 to 48.5 l/min
- Pressure range: 2.8 to 4.5 bar; 280 to 450 kPa
- All B Series rotors are pressure rated at 10 bar; 1,000 kPa



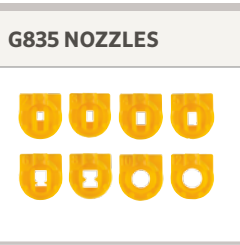
G35B
 Pop-up height: 8 cm
 Overall height: 23 cm
 Flange diameter: 12 cm
 Female Inlet: 1/4" ACME

G35B - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4

1 Model	2 Valve Options	3 Nozzle	4 Options*
G35 = Full/Part Circle 50° to 360°	B = Block rotor with check valve	6 = Installed G35 Nozzle* * Available in SSU model only SSU = #6 Includes nozzle rack	S = SSU* * Standard Stocking Unit

Example:
 G35 - B - 6 - S = G35 full/part circle block rotor, installed #6 nozzle with nozzle rack, standard stocking unit model

G835 NOZZLE PERFORMANCE DATA*							
Nozzle	Pressure		Radius	Flow		Precip mm/hr	
	bar	kPa		m ³ /hr	l/min	■	▲
2 ● Yellow	2.8	280	5.5	0.43	7.2	14.3	16.6
	3.4	340	6.1	0.48	7.9	12.8	14.8
	4.1	410	6.7	0.55	9.1	12.1	14.0
	4.5	450	7.0	0.59	9.8	12.0	13.9
3 ● Yellow	2.8	280	7.0	0.68	11.4	13.9	16.0
	3.4	340	7.6	0.73	21.1	12.5	14.5
	4.1	410	8.2	0.80	13.2	11.7	13.6
	4.5	450	8.5	0.82	13.6	11.2	13.0
4 ● Yellow	2.8	280	7.6	0.89	14.8	15.3	17.6
	3.4	340	8.5	0.93	15.5	12.8	14.8
	4.1	410	9.1	1.00	16.7	12.0	13.8
	4.5	450	9.4	1.04	17.4	11.7	13.5
5 ● Yellow	2.8	280	8.8	1.07	17.8	13.7	15.8
	3.4	340	9.8	1.14	18.9	11.9	13.8
	4.1	410	10.1	1.20	20.1	11.9	13.7
	4.5	450	10.7	1.23	20.4	10.8	12.4
6 ● Yellow	2.8	280	9.8	1.36	22.7	14.3	16.5
	3.4	340	10.7	1.43	23.8	12.6	14.5
	4.1	410	11.3	1.50	25.0	11.8	13.6
	4.5	450	11.9	1.54	25.7	10.9	12.6
8 ● Yellow	2.8	280	11.0	1.77	29.5	14.7	17.0
	3.4	340	11.9	1.82	30.3	12.9	14.8
	4.1	410	12.8	1.89	31.4	11.5	13.3
	4.5	450	13.1	1.93	32.2	11.2	13.0
10 ● Yellow	2.8	280	11.9	2.20	36.7	15.6	18.0
	3.4	340	13.1	2.29	38.2	13.4	15.4
	4.1	410	13.7	2.34	39.0	12.4	14.4
	4.5	450	14.3	2.39	39.7	11.6	13.4
12 ● Yellow	2.8	280	13.4	2.73	45.4	15.2	17.5
	3.4	340	14.3	2.77	46.2	13.5	15.6
	4.1	410	14.6	2.84	47.3	13.3	15.3
	4.5	450	15.2	2.91	48.5	12.5	14.5



HQSLRC Quick Coupler
with HSJ-1 SnapLok™ equipped swing joint

Introducing Hunter's new full line of HSJ heavy-duty swing joints with configurations for every need and every project. There is even a version specifically designed for quick coupler applications. The SnapLok outlet on HSJ-1 models come equipped with accommodations for both rebar and pipe stabilisation, as well as heavy-duty brass outlet threads with a unique anti-rotation locking feature.

See the HSJ swing joints on page 177



* Complies to ASAE standard. All precipitation rates calculated for 360° operation. All triangular rates are equilateral. To calculate precipitation rates for 180° operation, multiply by 2.

ROTOR ACCESSORIES

HOSE-SWIVEL ADAPTERS

Models

- Hose swivel adapter for G90 and G900 Series (fits ¾" & 1" hose) P/N G90HS100
- Hose swivel adapter for G800 Series (fits ¾" & 1" hose) P/N G800HS100



Hose Swivel Adapters

RUBBER COVER KITS

Models

- G990 rubber cover kit (date codes 06/11 & prior only) P/N 473800
- G995 rubber cover kit (also G990 date codes 07/11 & after) P/N 473900



Rubber Cover Kit

RT SERIES

Models: **G70RT, G75RT & G80RT**
 Radius: **14.3 to 26.8 m**
 Flow: **1.75 to 13.15 m³/hr; 29.1 to 219.2 l/min**

FEATURES

- Models:
 - G70RT: Full circle riser with nozzle set
 - G75RT: Full/Part circle riser with nozzle set
 - G80RT: Full circle riser with nozzle set
- Works with all 1" and 1½" inlet Toro® 600 and 700 Series golf rotors
- Converts current sprinklers into closed-case rotors
- The RT upgrade extends the life of existing irrigation systems
- Performance, reliability and long life
- Upgrade takes less than 5 minutes



G70RT / G75RT
Pop-up height: 8 cm



G80RT
Pop-up height: 8 cm



Quick and Easy Upgrade!

The RT retro upgrade takes just minutes and extends the life and reliability of aging irrigation systems.

G70RT/G75RT RETRO RISERS

To Replace TORO®	Use Hunter Model/Nozzle		
	Nozzle	G70RT Full Circle	G75RT Full/Part Circle
630	31	15	15
	32	18	18
	33	20	20
	34	28	-
660	62	15	15
	63	18	18
	64	25	25
	65	28	-
730	31	15	15
	32	18	18
	33	20	20
	34	23	23
	35	28	-
760	62	15	15
	63	18	18
	64	20	23
	65	25	25
	66	28	-

G80RT RETRO RISERS

To Replace TORO®	Use Hunter Model/Nozzle	
	Nozzle	G80RT Full Circle
650	56	23
	57	33
	58	33
	59	38
670	70	43
	71	48
	72	48
680	84	25
	85	33
	86	33
	87	43
	88	48
750	54	25
	55	33
	56	38
	57	43
	58	48
780	84	25
	85	25
	86	33
	87	38
	88	43
	89	48

GOLF ROTORS

HSJ SWING JOINTS

BY LASCO FITTINGS, INC.

FEATURES

- Heavy-duty prefabricated PVC swing joints with O-Ring seals
- Available in all popular inlet and outlet configurations
- Choose from 20, 30 or 46 cm lay arm lengths and Single Top-Out or Triple Top-Out designs
- Unique SnapLok™ outlet with brass threads offers excellent support and durability for quick coupler installations
- Match HSJ swing joint and Hunter golf rotor purchases to qualify for an upgraded 5-year component exchange golf rotor warranty*



Swing Joints

- HSJ-0 = Model ¾"
- HSJ-1 = Model 1"
- HSJ-2 = Model 1½"
- HSJ-3 = Model 1½"

* Must be purchased from authorised Hunter Golf distributor to qualify for extended warranty program.

SWING JOINT - SPECIFICATION BUILDER: ORDER 1 + 2 + 3 + 4 + 5

1 Model	2 Inlet Type	3 Outlet Type	4 Outlet Style	5 Lay Length
HSJ-0 = ¾" Commercial Swing Joint	3 = Male - NPT 4 = Male - ACME*	2 = Male - NPT 3 = Enlarging - to 1½" (40 mm) Male NPT*	2 = Single Top-Out	8 = 20 cm Lay Arm*
HSJ-1 = 1" Heavy-Duty Swing Joint	5 = Spigot - Metric Short** 6 = Male - BSP**	5 = Male - BSP (not available in HSJ-0) 6 = Enlarging - to 1½" (40 mm) Male BSP*	4 = Triple Top-Out*	12 = 30 cm Lay Arm
HSJ-2 = 1½" Heavy-Duty Swing Joint	7 = Spigot - 10 cm Long** M = Main ACME H-Connection ***	8 = Enlarging - to 1½" Male ACME* 0 = Male ACME		18 = 46 cm Lay Arm**
HSJ-3 = 1½" Heavy-Duty Swing Joint	P = Main ACME V-Connection **** * Not available in HSJ-0 or HSJ-3. Use "M" inlet for HSJ-3. ** Not available in HSJ-0. *** Horizontal connection reduces from 1½" ACME to swing joint size **** Vertical connection reduces from 1½" ACME to swing joint size	A = Enlarging/Reducing - to 1¼" Male ACME** S = Male - Brass NPT SnapLok™ *** U = Male - Brass BSP SnapLok™ *** * Not available in HSJ-0 or HSJ-3 ** Not available in HSJ-0 and HSJ-2 *** HSJ-1 model only - for quick coupler	* Not available in S Outlet Type	* HSJ-0 only ** Not available in HSJ-0

Example:

HSJ - 3 - M - 0 - 2 - 12 = HSJ 1½" heavy-duty swing joint, 1½" Male ACME horizontal connection to mainline tee, 1½" Male ACME single top outlet, 12" lay arm length.

ACME ADAPTER FITTINGS



1¼" Models

- 1¼" male ACME x 1" female NPT P/N 109325
- 1¼" male ACME x 1" female BSP P/N 105329
- 1¼" male ACME x 1¼" female NPT P/N 474800
- 1¼" male ACME x 1¼" female BSP P/N 474900
- 1¼" male ACME x 1½" female NPT P/N 104153
- 1¼" male ACME x 1½" female BSP P/N 107262



1½" Models

- 1½" male ACME x 1" female NPT P/N 475400
- 1½" male ACME x 1" female BSP P/N 475500
- 1½" male ACME x 1¼" female NPT P/N 475200
- 1½" male ACME x 1¼" female BSP P/N 475300
- 1½" male ACME x 1½" female NPT P/N 475000
- 1½" male ACME x 1½" female BSP P/N 475100



Acme x Acme Models

- 1½" male ACME x 1" ACME female P/N 225300
- 1½" male ACME x 1¼" ACME female P/N 225400
- 1¼" male ACME x 1" ACME female P/N 225500



B2B Tee Assembly

1½" ACME threaded tee and 1½" adapter for connecting two swing joints to a single mainline connection in back-to-back installations around greens.

- P/N = HSJ-305-015-3 = NPT Inlet
- P/N = HSJ-305-015-6 = BSP Inlet
- P/N = HSJ-305-015-M = ACME Inlet (shown)

CENTRAL CONTROL



CENTRAL CONTROL

PILOT® CENTRAL CONTROL

ADVANCED FEATURES

COMPLETE CONTROL

PILOT-CC SOFTWARE CENTRAL CONTROL



Safely balance sprinkler demand with water and electrical supply for the most efficient irrigation cycles possible.

PILOT-DH DECODER HUB

Pilot includes a two-wire decoder option. Pilot-DH decoder hubs have a 999-station capacity and can run up to 120 stations simultaneously.

The hub has a plastic pedestal enclosure with a full-featured control panel. It can be used as in-field control, a stand-alone decoder controller, or linked to a Pilot-CC central control for fully flow-optimised irrigation management.

Communication options include hardwire, UHF radio, and two spread-spectrum bands. Power options include both 120 and 230 VAC.

PILOT-FC FIELD CONTROLLER

The Pilot field controller manages up to 80 stations in 10 station increments. The full-featured controller has everything you need in a stand-alone field controller. For a fully automated, flow-optimised system, network all your controllers together with Pilot-CC central control software.

Communication options include hardwire, UHF radio, and two spread-spectrum bands. Power options include both 120 VAC and 230 VAC.

EASY TO PROGRAM AND MAINTAIN

Ease-of-Use: The control panel features a large, multi-language display and an array of function buttons providing quick access to the most commonly used features. The display clearly shows what the controller is doing and has a unique feature which shows the user what time the next scheduled watering will occur.

Ease-of-Maintenance: The system was designed with you in mind. Circuit boards are encapsulated in polyurethane to reduce damage from moisture and pests. All hardware is captured, so you won't lose screws in the grass. The clean, modular design of Pilot units allow them to be serviced with a Phillips screwdriver, which we provide with every controller.



PILOT® SOFTWARE

Pilot is easy to use and has all the features you need to reliably and automatically water your course. Runtimes can be adjusted manually or determined automatically using application depth. Irrigation is scheduled through a powerful programming matrix which lets you see every sprinkler on the course while you make your adjustments. Pilot offers two types of water management, flow optimised and FCP or field controller program. When flow-optimised, electrical and hydraulic demand are efficiently managed to ensure your watering window is as short as possible. When you use an FCP you have total control over when, where and how long sprinklers run—perfect for overseeding, seed germination, grow-in and other cultural practices where optimal use of the pump station is a secondary concern. FCPs can be retrieved into the central control software, edited, then sent back to the field unit – so you can manage all your controller schedules from the computer in your office.

PILOT SOFTWARE SPECIFICATIONS

- Operating system: 64-bit Windows® 8
- Maximum field controllers: 999
- Maximum stations: 79,920
- ET-based scheduling: weather station or manually entered
- Hydraulic management: automated and graphed to individual stations
- Mapping: online maps converted from AutoCAD and other applications

* Note: Windows is a registered trademark of The Microsoft® Corporation



[Overview - Pilot](#)

MANAGE THE FLOW

Pilot® uses your electrical and hydraulic data to efficiently balance sprinkler demand while maintaining flow at safe velocities. To protect your pump station and maintain optimal sprinkler uniformity, irrigation can be gradually stepped up in safe increments.



Flow Optimisation

CREATE AND EDIT SCHEDULES OUT ON THE COURSE

With Pilot, critical irrigation is not dependent upon the whims and availability of a computer or communications link where it is subject to a single point of failure. Pilot software creates schedules then sends them to the field where controllers do the actual irrigating. Because Pilot field controllers are packed with intelligence, you can even create and edit schedules out on the course and transfer them back to Pilot for review and editing.



Schedule Creation

MAPPING YOUR COURSE

Although it is not required to have a map, adding one allows you to run water by clicking the station symbols on the map, monitor stations as they are running, and adjust certain settings.



Maps

CENTRAL CONTROL

PILOT® CONTROLLER

Application: **Golf**
 Number of Stations: **80**
 Type: **Field Controller**

FEATURES

- 5 languages
- Up to 80 station outputs in 10-station increments
- Up to 3 Hunter golf valve-in-head rotors per station output
- Up to 20 simultaneous Hunter golf valve-in-head rotors active per controller
- 32 automatic schedules with 8 start times per schedule
- Exclusive Safe-Toggle™ mechanical on-off-auto station switches
- 1-31 day skip-day scheduling
- One-touch rain shutdown up to 30 days or indefinitely
- One-touch Safe-Pause™ with 30 minute safety timer
- 1-300% runtime seasonal adjustment
- Seasonal start time adjustment is used to quickly change all start times plus or minus 30 minutes



Pilot-FC Plastic Pedestal

Height: 100 cm
 Width: 60 cm
 Depth: 44 cm
 Weight: 32 kg

POWER SUPPLY INPUT

- 120/230 VAC at 60/50 Hz
- 1.2 Amps maximum at 120 VAC
- 0.73 Amps maximum at 230 VAC

POWER SUPPLY OUTPUT

- Station output: 1 Amp at 24 VAC
- 24 VAC Hot Post output: 420 mA at 24 VAC
- Solenoid Capacity: 3 standard 24 VAC Hunter golf valve-in-head rotors per output, 20 maximum simultaneous stations



Pilot-FI Field Interface

One is required with any central control system. It is used to link the central computer to the field equipment. For indoor locations only.

Height: 30 cm
 Width: 30 cm
 Depth: 11 cm
 Weight: 2 kg

RADIO SYSTEMS

- UHF Radio: 450-470 MHz; other frequency ranges available for selected markets
- Spread Spectrum Radio: 915 MHz (US) and 2.4 GHz (international)

WIRED SYSTEMS

- GCBL: Shielded two twisted pairs, 0.82 mm²
- GCBLA: Armored, shielded two twisted pairs, 0.82 mm²

PILOT-FI – SPECIFICATION BUILDER ORDER 1 + 2 + 3

1 Model	2 Standard Features	3 Options
Pilot-FI	Plastic pedestal (grey)	HWR Hardwire communications UHF UHF radio communications (US only) LF Licence-free radio communications ILF Licence-free radio communications

Examples:

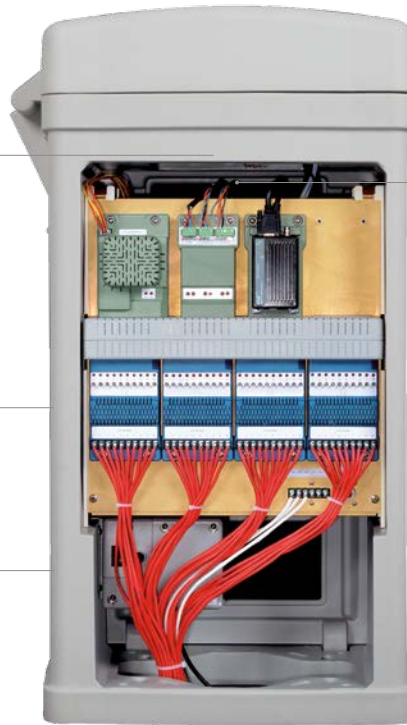
- Pilot-FI-HWR** = Field interface with hardwire communications
- Pilot-FI-UHF** = Field interface with UHF radio communications (US only)
- Pilot-FI-ILF** = Field interface with international licence-free radio communications

THE PILOT® FIELD CONTROLLER WAS BUILT SPECIFICALLY FOR GOLF COURSE IRRIGATION CONTROL.

Water-Resistant Keypad
Large backlit display with convenient function buttons for the most commonly used features. Built-in system diagnostics make troubleshooting your system a breeze.

Auto/On/Off Switches and Diagnostic LED Indicators
Standard for all station outputs, provide quick troubleshooting and watering tools.

Conveniently Located Dual-Voltage (120/230 VAC) Junction Box
Features heavy duty surge protection and even includes a spare fuse.



Easy to Service
The only tool required is a Phillips screwdriver included with every controller.

Modular 10-Station Expansion Boards
Colour-coded modular components with captured screws so they won't get lost, making it easy to assemble and troubleshoot.

Spacious Wiring Area
No exposed circuitry or loose wires. All circuit boards are encapsulated in polyurethane to protect them from moisture, insects and temperature extremes.

PILOT-FC - SPECIFICATION BUILDER ORDER 1 + 2 + 3

1 Model	2 Standard Features	3 Options
Pilot-FC30 (30-station)	Plastic pedestal (grey) 120/230 VAC 60/50 Hz dual-voltage transformer	S Stand-alone field controller with no central communications
Pilot-FC40 (40-station)		HWR Hardwire communications
Pilot-FC50 (50-station)		UHF UHF radio communications (US only)
Pilot-FC60 (60-station)		LF Licence-free spread spectrum radio communications (900 MHz for North America and where permitted)
Pilot-FC70 (70-station)		ILF Licence-free spread spectrum radio communications (2.4 GHz for international, where permitted)
Pilot-FC80 (80-station)		

Examples:
Pilot-FC40-S = 40-station, stand-alone field controller with no central communications
Pilot-FC70-HWR = 70-station field controller with hardwire communications
Pilot-FC80-ILF = 80-station field controller with international licence-free radio communications

CENTRAL CONTROL

PILOT® DECODERS

Application: **Golf**
 Number of Stations: **999**
 Type: **Decoder System**

Decoder installations continue to be one of the fastest growing forms of technology in irrigation control. A key advantage over conventional systems is that decoders use less wire for an overall irrigation system. That means lower cost, quicker installation time, and easier system diagnosis and repair if needed. Systems can be easily expanded—with minimal digging and disruption of landscaping—by adding in more decoders rather than running additional wires.

Pilot enables you to take advantage of this cost-efficient approach. Pilot decoders are available with 1, 2, 4 and 6-station outputs, making it possible to run each head on an entire green with a single decoder. In all, decoders let you operate up to 999 stations out to 4.5 km from a single hub.

Pilot decoder systems include built-in surge suppression, colour-coded wire connections, true independent station control, programmable station addresses, and two-way feedback to the controller with confirmation and status indication.

Pilot-SG surge protectors are required when a system is designed and installed with Decoder-In-Head (DIH) rotors.



Pilot Decoder Hub

Water-Resistant Keypad
 Backlit display and secondary LED facepack means it can be used day or night

Diagnostic LED Indicators
 For all functions on decoder output module

250-Station Output Modules
 Enable your decoder hub to grow with your course. Start with 250 - grow to 999

Pilot Decoders

1 & 2 Station Decoders:
 Height: 9 cm
 Width: 4 cm
 Depth: 2.5 cm
 Weight: 150 g

4 & 6 Station Decoders:

Height: 9 cm
 Width: 4.5 cm
 Depth: 4 cm
 Weight: 250 g



Distinct yellow design makes it much easier to find decoders in dark valve boxes or buried in the soil.

DS-G Surge Ground Arrestor

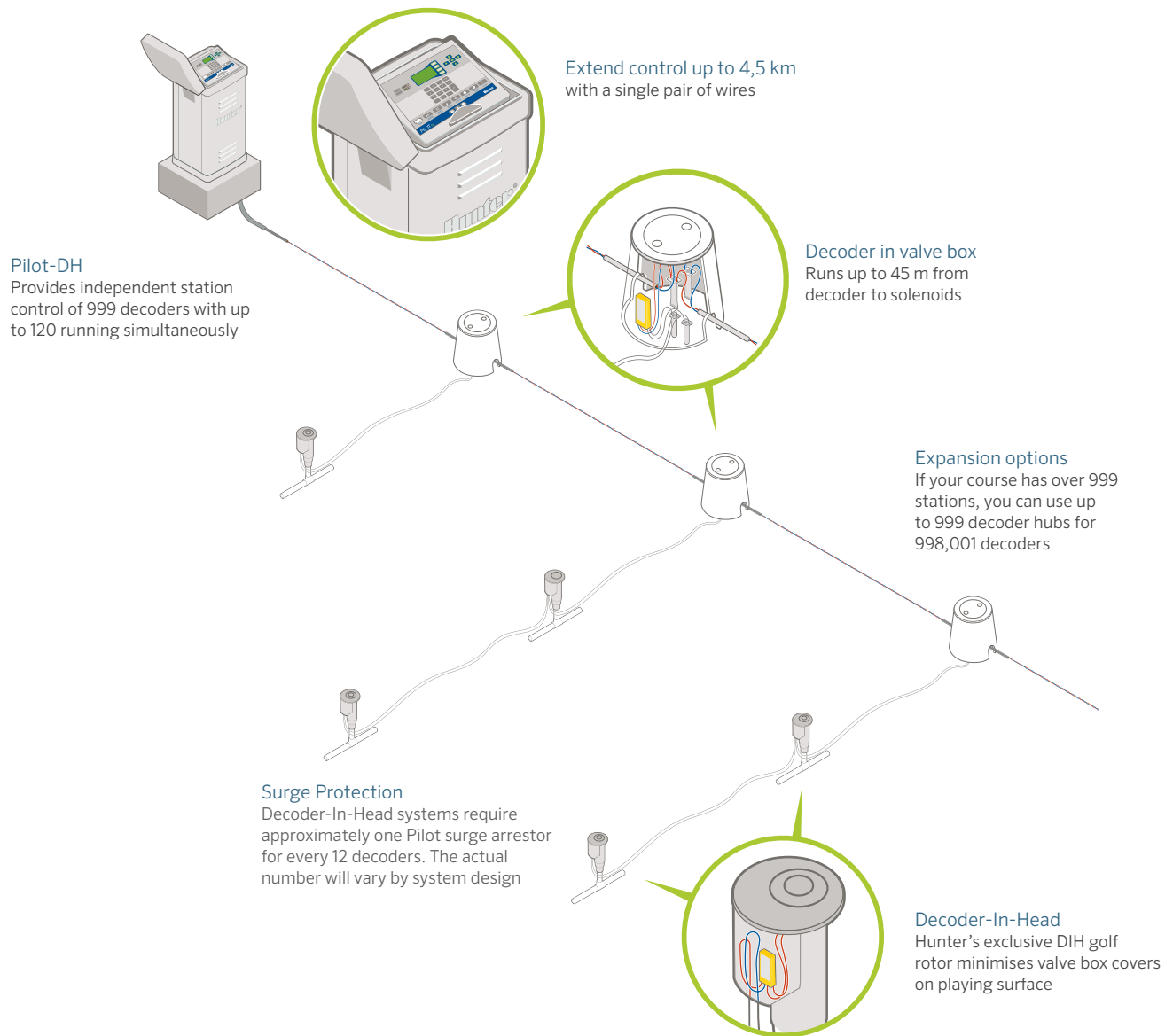
All DIH rotors include two IBM DBRY-6 splices for connection to the 2-wire path. DIH rotor control systems require grounding with Pilot-SG surge suppressors coupled to appropriate grounding plate or rod. Hunter recommends a minimum of one Pilot-SG for every 12 installed DIH rotors or as per project specification.



PILOT-DH - SPECIFICATION BUILDER ORDER 1 + 2 + 3

1 Model	2 Standard Features	3 Options
Pilot-DH250 (250-station)	Plastic pedestal (grey)	S Stand-alone decoder hub with no central communications
Pilot-DH500 (500-station)		HWR Hardwire communications
Pilot-DH750 (750-station)		UHF UHF radio communications (US only)
Pilot-DH999 (999-station)		LF Licence-free spread spectrum radio communications (900 MHz for North America and where permitted) ILF Licence-free spread spectrum radio communications (2.4 GHz for international, where permitted)

Examples:
Pilot-DH250-S = 250-station, stand-alone decoder hub with no central communications
Pilot-DH750-ILF = 750-station decoder hub with international licence-free radio communications
Pilot-DH999-HWR = 999-station decoder hub with hardwire communications



DECODERS - SPECIFICATION BUILDER ORDER 1		
1	Model	2 Standard Features
Pilot-100	1-station decoder	Built-in surge protection
Pilot-200	2-station decoder	DBRY-6 Waterproof Connectors included
Pilot-400	4-station decoder	
Pilot-600	6-station decoder	
Pilot-SG	Inline surge protection (for DIH rotor systems)	

Example:
Pilot-100 = 1-station decoder



Wireless Programming!

Communicate with decoders directly through plastic case: wireless electromagnetic induction saves waterproof connectors

See the ICD-HP on 110

CENTRAL CONTROL

WEATHER STATION

Application: **Golf**
 Range: **Wireless 1 km**
 Type: **Weather Station**

FEATURES

- Includes built-in 60-day data logger: With onboard evapotranspiration (ET) calculation (modified Penman-Monteith equation for turf grass)
- Wireless package uses 2.4 GHz licence-free technology
 - 2.4 GHz radio systems can reach up to 3 km
 - In rural areas, try the licence-free, 900 MHz radio for links up to 800 m
- Wired systems use Hunter GCBL, direct-bury cable with a range of 1.25 km (dedicated 9-pin serial computer port required)
- Optional solar panel kit provides wireless power
 - Simple installation and versatile mounting with on-board 800 mAh rechargeable gel cell battery with 18 VDC transformer and 7 m power cable.
- Weatherproof construction: With UV stabilised enclosure, weather-proof external connectors and long-life coated circuit boards
- UL, c-UL and CE certifications



TurfWeather Station

Height: 61 cm
 Width: 40.5 cm
 Depth: 38 cm
 Weight: 6 kg

COMPLETE PACKAGES INCLUDE HUNTER WEATHER SOFTWARE

Model	Description
TWHW	Wired communications to central computer – GCBL cable is required
TW24	2.4 GHz licence-free radio communication to central computer
TW916	916 MHz licence-free radio communication to central computer
TW922A	922 MHz licence-free radio communication to central computer
TWSUN	Optional solar power kit for all TurfWeather models

MAINTENANCE RADIO

Application: **Golf**
 Range: **Up to 3.5 km**
 Type: **Remote Control**

FEATURES

- Instant control of stations, blocks and programs
- Fewer buttons to push
- Instant audio confirmation of commands
- Hunter's famous StraightTalk™ Technology: Enables wireless remote control at ranges up to 3.5 km whether or not the central computer is turned on
- Easy commands that show in display before sending
- Compact size, industrial construction
- Suitable for two-way voice communication with crews and office
- High signal output: 2 watts, UHF (450-470 MHz)*

* Note: Licence required in most countries



TRNR Radio
 Height: 10.25 cm
 Width: 5.25 cm
 Depth: 3 cm
 Weight: 200 grams

ICD-HP

WIRELESS HANDHELD
 DECODER PROGRAMMER

Type: **Decoder Programmer**

FEATURES

- Program or re-program decoder stations, whether new or installed
- Program any station numbers in any order, or skip stations for future expansion
- Turn decoder stations on and view solenoid status, current in milliamps, and more
- Built-in voltmeter for decoder path
- Communicates with decoders directly through plastic case: wireless electro-magnetic induction saves waterproof connectors
- Communicates through the top of DIH rotors- no cover removal required



ICD-HP
 Height: 21 cm
 Width: 9 cm
 Depth: 5 cm

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 field work.

ICD-HP





TECHNICAL

SECTION 10:

TECHNICAL INFORMATION



TECHNICAL

HUNTER

Technical Services



Our Hunter Technical Service Team has more than 197 years of combined industry expertise.

Anyone can sell you products. At Hunter, we've always believed the difference lies in providing world-class product support to make your job easier. When you need technical help, whether it's to ask a quick question or to get product-specific troubleshooting assistance, you can count on Hunter's Technical Services Team to provide the best support in the industry. Our knowledgeable experts are always available to help you.

In addition, our Field Service Team provides on-site training and troubleshooting assistance with central control, decoder system, and other commercial, residential, municipal, and golf course installations. Their combined experience of 200+ years in the industry is invaluable when you need factory support by phone, remote desktop, or at the job site.

Contact Us

Phone: 1-800-733-2823, Mon-Fri 6 a.m.-4 p.m. PST

Email: huntertechnicalsupport@hunterindustries.com

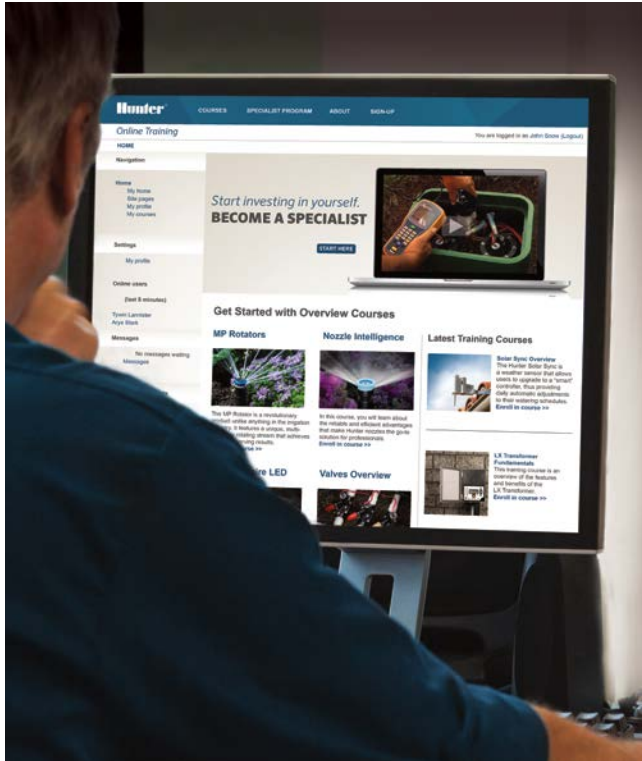
After Hours: Leave us a voice message and someone from our team will return your call the next business day

Online Product Information

Visit our Support Library for instructional videos, owner's manuals, installation details, articles, and more.

Rotors, Controllers, Sensors, Drip/Micro Irrigation, Valves, Sprays, Nozzles, FX Control, and Central Control

www.hunterindustries.com/support



PRODUCT

Specialist Program

This unique training program is designed to equip contractors, distributors, and other professionals with the knowledge to become familiar with Hunter products.

To get started:

1. Access the training website:

- Visit www.training.hunterindustries.com
- Log in or create a new account
- Click on courses, enroll at no cost, watch the training module, and take the quiz

2. Take courses for the level you choose:

- Click on the Specialist Program and choose the level you need
- Click on the courses required for each level and enroll in the courses
- Watch the training module and take the quiz

3. Apply for your certificate:

- Submit the Completion Notification Form for each level
- Obtain your certificate and use your membership card. You may use your certificates to apply for Continuing Education Unit Credits through the Irrigation Association

Choose from three levels of training:

Technician Level: Basic knowledge of the entire Hunter product line

Specialist Level: In-depth knowledge on a particular product

Expert Level: Thorough knowledge on a product category

REPLACEMENT GUIDE

Bringing together a combination of intelligent design, carefully controlled manufacturing, and regular testing to ensure conformity to the strictest standards, Hunter has been able to create truly exceptional nozzles. Essentially, we have made the science of developing superior nozzles—and thus, superior sprinklers—look easy. In the process, we have also made it easy for you to determine which of these high performance sprinklers can be used to replace other brands. Simply consult the following replacement guide to find the appropriate Hunter sprinkler for any irrigation need.

PGJ GEAR DRIVEN ROTARY SPRINKLERS		
To Replace	Use Hunter Nozzle	
RAIN BIRD®	● Red	
3500	0.75	0.75
	1	1.0
	1.5	1.5
	2	2.0
	3	3.0
T-Bird T-22	4	4.0
	.65 (Blue)	0.75
	1.0 (Red)	1.0
	1.3 (Black)	1.5
	2.0 (Brown)	2.0
T-Bird T-30	2.5 (Grey)	2.5
	4.0 (Yellow)	4.0
	5.0 (Green)	5.0

To Replace	Use Hunter Nozzle	
TORO®	● Red	
300/340	1	0.75
Stream Rotor	2	1.5
	3	3.0

To Replace	Use Hunter Nozzle	
NELSON®	● Red	
5500	#51	0.75
	#52	1.5
	#53	2.0
	#54	2.5

PGP® GEAR DRIVEN ROTARY SPRINKLERS			
To Replace	Use Hunter Nozzle		
RAIN BIRD®	● Red ● Blue		
Mini-Paw 15103	07 (Black)	6	2.5
	09 (Green)	7	3.0
Maxi-Paw 2045	06 (Red)	5	2.0
	07 (Black)	6	2.5
	08 (Blue)	8	4.0
	10 (Yellow)	9	5.0
	12 (Beige)	10	8.0
R-50	1.5 (Black)	5	2.0
	2.0 (Brown)	7	3.0
	3.0 (Grey)	8	4.0
	4.0 (Yellow)	9	5.0
	6.0 (Green)	10	8.0
T-Bird T-30	1.3 (Black)	4	1.5
	2.5 (Grey)	6	2.5
	5.0 (Green)	9	5.0
5000	1.5	4	1.5
	2.0	5	2.0
	3.0	7	3.0
	4.0	8	4.0
	6.0	9	5.0
	8.0	10	8.0
5505	2	5	2.0
	3	6	2.5
	4	7	3.0
	5	8	4.0
	6	9	5.0
	8	10	8.0
	10	10	8.0
	12	11	8.0

To Replace	Use Hunter Nozzle		
K-RAIN®	● Red ● Blue		
RPS75	0.50	1	--
	0.75	2	--
	1.0	4	1.5
	2.0	6	2.0
	2.5	7	2.5
	3.0	8	3.0
	4.0	9	4.0
	6.0	10	6.0
	8.0	11	8.0

PGP® GEAR DRIVEN ROTARY SPRINKLERS			
To Replace	Use Hunter Nozzle		
TORO®	● Red ● Blue		
300/340	308-XX-02	4	1.5
Stream Rotor	308-XX-03	7	3.0
	316-XX-02	7	3.0
	316-XX-03	10	8.0
XP-300 Series	XP-300-090-07	4	1.5
	180-07	7	3.0
	360-07	10	8.0
	XP-300-090-09	5	2.0
	180-09	8	4.0
	360-09	11	--
	XP-300-090-10	5	2.0
Super 600	180-10	9	5.0
	360-10	12	--
	1.3	4	1.5
Super 700	2.5	7	3.0
	5.0	10	8.0
	6.0	10	8.0
	1.3	3	1.5
Super 800	1.5	4	1.5
	2.0	5	2.0
	3.0	7	3.0
	4.5	8	4.0
	6.0	9	5.0
	7.5	10	8.0
	9.0	11	8.0
	0.50	1	--
TR50	0.75	2	--
	1.0	4	1.5
	2.0	5	2.0
	3.0	6	3.0
	4.5	8	4.0
	6.0	9	6.0
	7.5	10	8.0
	9.0	11	8.0

TECHNICAL

REPLACEMENT GUIDE

PGP® ULTRA / I-20 GEAR DRIVEN ROTARY SPRINKLERS		
To Replace	Use Hunter Nozzle	
RAIN BIRD®	● Blue	
Mini-Paw 15103	07 (Black)	2.5
	09 (Green)	3.0
Maxi-Paw 2045	06 (Red)	2.0
	07 (Black)	2.5
	08 (Blue)	4.0
	10 (Yellow)	5.0
R-50	12 (Beige)	8.0
	1.5 (Black)	2.0
	2.0 (Brown)	3.0
	3.0 (Grey)	4.0
	4.0 (Yellow)	5.0
T-Bird T-30	6.0 (Green)	8.0
	1.3 (Black)	1.5
	2.5 (Grey)	2.5
5000	5.0 (Green)	5.0
	1.5	1.5
	2.0	2.0
	3.0	3.0
	4.0	4.0
5505	6.0	5.0
	8.0	8.0
	2	2.0
	3	2.5
	4	3.0
	5	4.0
	6	5.0
8	8.0	
10	8.0	
12	8.0	

To Replace	Use Hunter Nozzle	
K-RAIN®	● Blue	
RPS75	0.50	--
	0.75	--
	1.0	1.5
	2.0	2.0
	2.5	2.5
	3.0	3.0
	4.0	4.0
	6.0	6.0
8.0	8.0	

PGP® ULTRA / I-20 GEAR DRIVEN ROTARY SPRINKLERS		
To Replace	Use Hunter Nozzle	
TORO®	● Blue	
300/340	308-XX-02	1.5
Stream Rotor	308-XX-03	3.0
	316-XX-02	3.0
	316-XX-03	8.0
XP-300 Series	XP-300-090-07	1.5
	180-07	3.0
	360-07	8.0
	XP-300-090-09	2.0
	180-09	4.0
	360-09	--
	XP-300-090-10	2.0
	180-10	5.0
	360-10	--
	Super 600	1.3
	2.5	3.0
	5.0	8.0
	6.0	8.0
Super 700	1.3	1.5
	1.5	1.5
	2.0	2.0
	3.0	3.0
	4.5	4.0
	6.0	5.0
	7.5	8.0
9.0	8.0	
Super 800	0.50	--
	0.75	--
	1.0	1.5
	2.0	2.0
	2.5	2.5
	3.0	3.0
	4.0	4.0
	6.0	6.0
8.0	8.0	
TR50	1.0	--
	1.5	1.5
	2.0	2.0
	3.0	3.0
	4.5	4.0
	6.0	6.0
	7.5	8.0
	9.0	8.0

SPRAY SPRINKLERS		
To Replace	Use Hunter Product	
ANY MFRS NOZZLES	Nozzles	
Nozzles	8 Radius	8A
	10 Radius	10A
	12 Radius	12A
	15 Radius	15A
	17 Radius	17A
Rain Bird 1800	Pro-Spray	
1800 SAM	Pro-Spray-CV	
1800 SAM PRS	Pro-Spray-PRS30-CV	
Uni-Spray	PS Ultra	

REPLACEMENT GUIDE

I-25 GEAR DRIVEN ROTARY SPRINKLER

To Replace	Use Hunter Nozzle	
RAIN BIRD®		
FALCON	4 (Black) 6 (Lt. Blue) 8 (Dk. Green) 10 (Grey) 12 (Beige) 14 (Lt. Green) 16 (Dk. Brown) 18 (Dk. Blue)	4 (Yellow) 5 (White) 7 (Orange) 8 (Lt. Brown) 10 (Lt. Green) 13 (Lt. Blue) 18 (Red) 20 (Dk. Brown)
41-51A	18 x 11.5	20 (Dk. Brown)
41-51A	13 x 11	13 (Lt. Blue)
47A	16	13 (Lt. Blue)
37A	14	8 (Lt. Brown)
7005	4 (Black) 6 (Lt. Blue) 8 (Dk. Green) 10 (Grey) 12 (Beige) 14 (Lt. Green) 16 (Dk. Brown) 18 (Dk. Blue)	4 (Yellow) 5 (White) 8 (Lt. Brown) 10 (Lt. Green) 13 (Lt. Blue) 15 (Grey) 18 (Red) 20 (Dk. Brown)
8005	12 (Beige) 14 (Lt. Green) 16 (Dk. Brown) 18 (Dk. Blue) 20 (Red) 22 (Yellow) 24 (Orange)	13 (Lt. Blue) 15 (Grey) 18 (Red) 20 (Dk. Brown) 23 (Dk. Green) 25 (Dk. Blue) 28 (Black)

To Replace TORO® Use Hunter Nozzle

2001	6 (Yellow) 9 (Red) 12 (Brown) 18 (Blue) 24 (Green)	7 (Orange) 8 (Lt. Brown) 10 (Lt. Green) 18 (Red) 25 (Dk. Blue)
640	40 41 42 43 44	8 (Lt. Brown) 10 (Lt. Green) 13 (Lt. Blue) 15 (Grey) 20 (Dk. Brown)

To Replace NELSON® Use Hunter Nozzle

7000 & 7500	1 2 3 4 5 6 7 8	7 (Orange) 8 (Lt. Brown) 10 (Lt. Green) 13 (Lt. Blue) 15 (Grey) 20 (Dk. Brown) 23 (Dk. Green) 25 (Dk. Blue)
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I-40 GEAR DRIVEN ROTARY SPRINKLERS

To Replace	Use Hunter Nozzle	
RAIN BIRD®		
41-51A	18 x 11.5	23 (Dk. Green)
41-51A	13 x 11	15 (Grey)
47A-SAM	16	13 (Lt. Blue)
37A	14	10 (Lt. Green)
65 SERIES	16	13 (Lt. Blue)
8005	12 (Beige) 14 (Lt. Green) 16 (Dk. Brown)	10 (Lt. Green) 15 (Grey) 15 (Grey)
	18 (Dk. Blue) 20 (Red) 22 (Yellow)	23 (Dk. Green) 25 (Dk. Blue) 25 (Dk. Blue)
TALON	14 16 18 20 22	13 (Lt. Blue) 10 (Lt. Green) 23 (Dk. Green) 25 (Dk. Blue) 25 (Dk. Blue)

To Replace TORO® Use Hunter Nozzle

640	40 41 42 43 44	8 (Lt. Brown) 10 (Lt. Green) 13 (Lt. Blue) 15 (Grey) 23 (Dk. Green)
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To Replace THOMPSON® Use Hunter Nozzle

186/7	R-Nozzle S-Nozzle T-Nozzle	13 (Lt. Blue) 15 (Grey) 15 (Grey)
188/9	U-Nozzle V-Nozzle	23 (Dk. Green) 25 (Dk. Blue)

TECHNICAL

REPLACEMENT GUIDE

HQ - KEYS

To Replace RAIN BIRD®	To Replace TORO®	To Replace BUCKNER	To Replace WEST AG/STORM	Use Hunter
33K, 33DK 44K 4K-Acme 55K-1	075-SLK 100-SLK 100-AK	QB33K07 QB44K10 QB44KAT10 QB5RK10	4C075, C075 4C100, C100 4C100A, C100A 4C101, C101	HK-33 HK-44 HK-44A HK-55

HQ - SWIVELS

To Replace RAIN BIRD®	To Replace TORO®	To Replace BUCKNER	To Replace WEST AG/STORM	Use Hunter
SH-0 SH-1 SH-2	075-75MHS 075-MHS 100-MHS	HS075 HS100 HS101 HS100BS HS101BS	4HS-075, HS075 4HS-100, HS-100 4HS-101, HS-101 4HS-100-BS, HS-100-BS 4HS-101-BS, HS-101-BS	HS-0 HS-1 HS-2 HS-1-B HS-2-B

HQ - QUICK COUPLERS

To Replace RAIN BIRD®	To Replace TORO®	To Replace BUCKNER	To Replace WEST AG/STORM	Use Hunter
3RC 33DRC 33DLRC 33DNP 44RC	075-SLSC	QB3RC07 QB33RC07 QB33LRC07 QB33NP07 QB44RC10	4V075-RY, QCV075-R 4V133-4A-RY, QCV133-4A-R 4V133-4A-RLY, QCV133-4A-RL-2 4V133-4A-RL-NP, QVC133-4A-N-2 4V144-RY, QCV-144-R	HQ-3RC HQ-33DRC HQ-33DLRC HQ-33DLRC-R HQ-44RC
44LRC 44NP	100-SLVC, 100-2SLVC 100-SLVLC 100-2SLLVC	QB44LRC10 QB44N010 QB44RCATAR10 QB44LRCATAR10 QB44NPATAR10	4V144-RLY, QCV-144-RL 4V144-RL-NP, QCV-144-N	HQ-44LRC HQ-44LRC-R HQ-44RC-AW HQ-44LRC-AW HQ-44LRC-AW-R
4NP-Acme 5RC	100-ATLVC	QBRB5RC10	4V101-RY, QCV-101-R	HQ-5RC
5LRC 5NP 5RC-BSP 5LRC-BSP 5NP-BSP		QBRB5LRC10 QBRB5NP10 QBRB5RC10BS QBRB5LRC10BS QBRB5NP10BS	4V101-RLY, QCV-101-RL 4V101-RL-NP, QCV-101-N 4V101-RY-BS, QCV-101-R-BS 4V101-RLY-BS, QCV-101-RL-BS 4V101-RL-NP-BS, QCV-101-N-BS	HQ-5LRC HQ-5LRC-R HQ-5RC-BSP HQ-5LRC-BSP HQ-5LRC-BSPR

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 25mm 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 25mm of water in one hour has a precipitation rate of one meter per hour (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 excessive run times, which lead to high water consumption and increased 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
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The flow rate of half-circle heads must be two times the flow rate of the quarter-circle heads, and the full-circle heads must have two times the flow rate of the half-circle heads. In the illustration, the same amount of water is applied to each quarter circle area and precipitation is therefore matched.

CALCULATING PRECIPITATION RATES

Depending upon the construction of the irrigation system, the precipitation rate may be calculated by either a Sprinkler Spacing or a Total Area method.

Sprinkler Spacing Method (■)

The precipitation rate should be calculated for each individual zone. If all sprinkler heads on the zone have the same spacing, flow rate, and arc of coverage, use one of the following formulas:

Any Arc and Any Spacing (■):

$$\text{P.R. (in/hr)} = \frac{\text{Flow Rate (GPM) for any Arc} \times 34,650}{\text{Degrees of Arc} \times \text{Head Spacing (ft.)} \times \text{Row Spacing (ft.)}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow Rate (m}^3\text{/hr) for any Arc} \times 360,000}{\text{Degrees of Arc} \times \text{Head Spacing (m)} \times \text{Row Spacing (m)}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow Rate (l/min) for any Arc} \times 21,600}{\text{Degrees of Arc} \times \text{Head Spacing (m)} \times \text{Row Spacing (m)}}$$

Sprinkler Spacing Method (▲)

The precipitation rate should be calculated for each individual zone. If all sprinkler heads on the zone have the same spacing, flow rate, and arc of coverage, use one of the following formulas:

Equilateral Triangular Spacing (▲):

$$\text{P.R. (in/hr)} = \frac{\text{Flow Rate (GPM) for any Arc} \times 34,650}{\text{Degrees of Arc} \times (\text{Head Spacing})^2 \times 0.866}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow Rate (m}^3\text{/hr) for any Arc} \times 360,000}{\text{Degrees of Arc} \times (\text{Head Spacing})^2 \times 0.866}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow Rate (l/min) for any Arc} \times 21,600}{\text{Degrees of Arc} \times (\text{Head Spacing})^2 \times 0.866}$$

Total Area Method

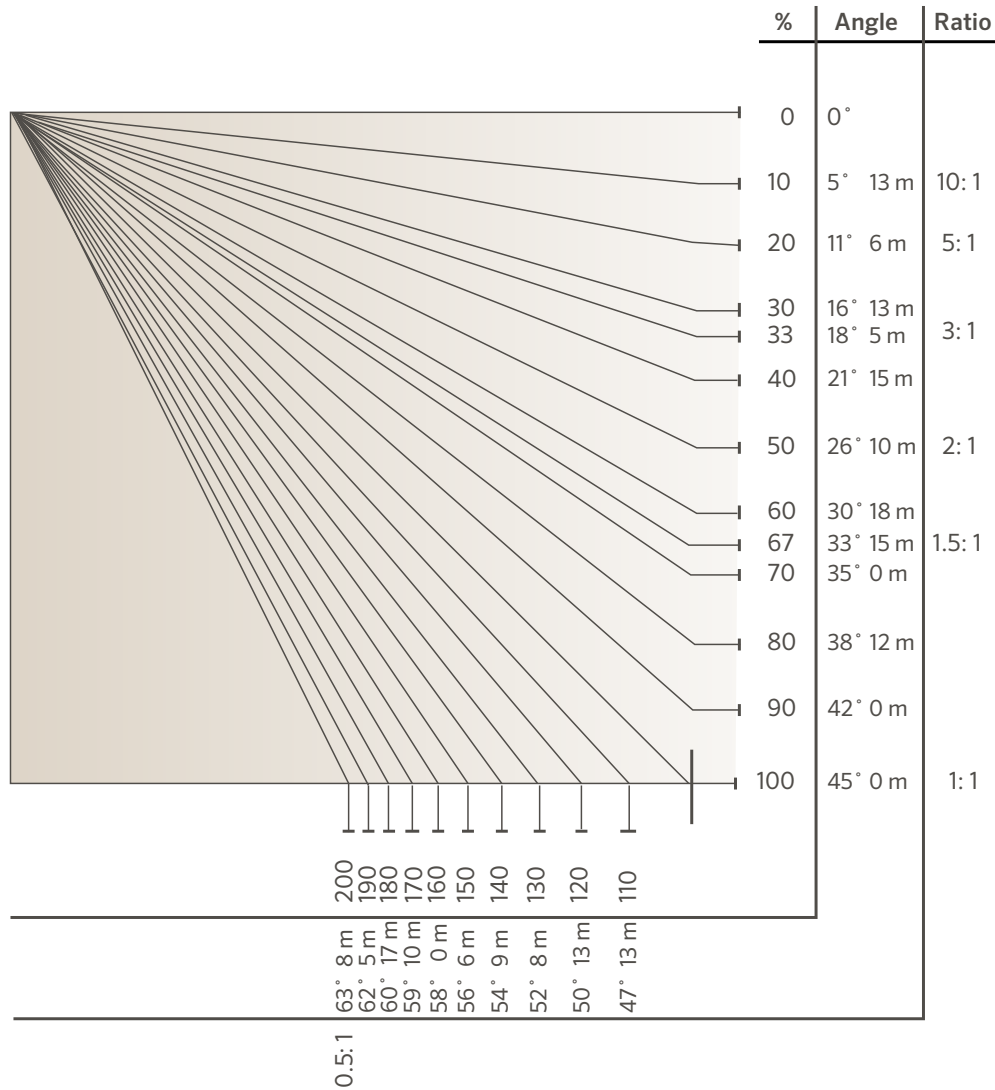
The precipitation rate for a “system” is the average precipitation rate of all sprinklers in an area, regardless of the spacing, flow rate, or arc for each head. The Total Area Method calculates all the flows of all of the heads in any given area.

$$\text{P.R. (in/hr)} = \frac{\text{Flow (GPM)} \times 96.25}{\text{Total Area (ft.}^2\text{)}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow (m}^3\text{/hr)} \times 1,000}{\text{Total Area (m}^2\text{)}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{Flow (l/min)} \times 60}{\text{Total Area (m}^2\text{)}}$$

SLOPE EQUIVALENTS/IRRIGATION



SLOPE IRRIGATION: Maximum precipitation rates for slopes in mm/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	51	51	51	38	38	25	25	13
Coarse sandy soils over compact subsoils	44	38	32	25	25	19	19	10
Light sandy loams uniform	44	25	32	20	25	15	19	10
Light sandy loams over compact subsoils	32	19	25	13	19	10	13	8
Uniform silt loams	25	13	20	10	15	8	10	5
Silt loams over compact subsoil	15	8	13	6	10	4	8	3
Heavy clay or clay loam	5	4	4	3	3	2	3	2

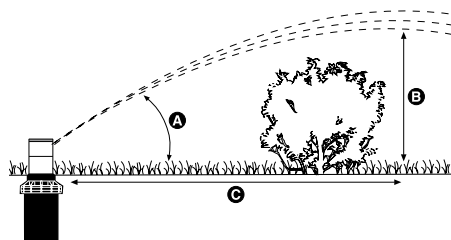
Notes:

Maximum precipitation rates for slopes in mm/hr

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 condition and condition of ground cover.

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		Degrees of Trajectory	Max Height of Spray (m)	Distance from Head to Maximum Height (m)
		bar	kPa			
MP ROTATOR®	800	2.8	275	18	0.4	Varies
	1000	2.8	275	20	0.5	Varies
	2000	2.8	275	26	1.1	Varies
	3000	2.8	275	26	2.0	Varies
	3500	2.8	275	28	2.5	Varies
	Corner	2.8	275	14	0.4	Varies
	Side Strip	2.8	275	16	0.5	Varies
	Left Strip	2.8	275	16	0.5	Varies
PGJ	0.75	2.8	275	10	0.6	1.2
	1.0	2.8	275	10	0.6	2.4
	1.5	2.8	275	10	0.9	3.7
	2.0	2.8	275	15	1.5	4.9
	2.5	2.8	275	12	1.5	6.1
	3.0	2.8	275	15	1.5	6.1
	4.0	2.8	275	15	1.5	6.7
	5.0	2.8	275	15	1.8	7.3
	PGP® RED NOZZLES	1.0	3.5	350	26	2.1
2.0		3.5	350	26	2.1	6.7
3.0		3.5	350	26	2.4	7.0
4.0		3.5	350	26	2.4	7.0
5.0		3.5	350	27	2.7	7.9
6.0		3.5	350	27	3.0	8.5
7.0		3.5	350	26	3.4	9.1
8.0		3.5	350	26	3.4	9.1
9.0		3.5	350	27	3.7	9.8
10.0		4.0	400	25	4.0	9.8
11.0		4.0	400	25	4.0	11.6
12.0		4.0	400	25	4.0	12.2
PGP LOW ANGLE GREY NOZZLES	4.0	3.5	350	15	1.5	6.7
	5.0	3.5	350	15	1.2	6.7
	6.0	3.5	350	14	1.2	6.7
	7.0	3.5	350	14	1.2	6.7
	8.0	3.5	350	14	1.5	7.3
	9.0	3.5	350	15	1.5	7.9
	10.0	4.0	400	15	1.8	9.1
PGP BLUE NOZZLES	1.5	3.0	300	25	2.4	7.0
	2.0	3.0	300	25	2.4	7.0
	2.5	3.0	300	25	2.7	7.9
	3.0	3.0	300	25	3.0	8.5
	4.0	3.0	300	25	3.4	9.1
	5.0	3.0	300	25	3.4	9.1
	6.0	3.8	380	25	3.7	9.8
	8.0	3.8	380	25	4.0	9.8
PGP ULTRA/I-20 DARK BLUE NOZZLES	1.0	3.5	350	26	2.4	7.0
	1.5	3.5	350	26	2.4	7.0
	2.0	3.5	350	27	2.7	7.9
	3.0	3.5	350	27	3.0	8.5
	3.5	3.5	350	26	3.4	9.1
	4.0	3.5	350	26	3.4	9.1
	6.0	3.5	350	27	3.7	9.8
	8.0	4.0	400	25	4.0	9.8
PGP ULTRA/I-20 BLUE NOZZLES	1.5	3.0	300	25	2.4	7.0
	2.0	3.0	300	25	2.4	7.0
	2.5	3.0	300	25	2.7	7.9
	3.0	3.0	300	25	3.0	8.5
	4.0	3.0	300	25	3.4	9.1
	5.0	3.0	300	25	3.4	9.1
	6.0	3.8	380	25	3.7	9.8
	8.0	3.8	380	25	4.0	9.8

HEIGHT OF SPRAY

HUNTER NOZZLE HEIGHT AND TRAJECTORY CHART						
Model	Nozzle No.	Pressure		Degrees of Trajectory	Max Height of Spray (m)	Distance from Head to Maximum Height (m)
		bar	kPa			
PGP® Ultra/I-20 Low Angle Grey Nozzles	2.0 LA	3.5	350	13	1.5	6.7
	2.5 LA	3.5	350	13	1.2	6.7
	3.5 LA	3.5	350	13	1.2	6.7
	4.5 LA	3.5	350	13	1.2	6.7
PGP Ultra/I-20 Short Radius Black Nozzles	0.5	3.5	350	15	1.5	2.4
	1.0	3.5	350	14	1.8	2.7
	2.0	3.5	350	3	0.3	1.8
PGP Ultra/I-20 Short Radius Black Nozzles	0.75	3.5	350	22	2.1	4.0
	1.5	3.5	350	18	2.1	4.0
	3.0	3.5	350	8	0.3	1.8
I-25	4	3.5	350	25	2.7	6.7
	5	3.5	350	25	3.4	8.5
	7	3.5	350	25	3.0	8.5
	8	3.5	350	25	3.4	8.5
	10	4	400	25	3.7	9.1
	13	4	400	25	4.0	9.4
	15	4	400	25	3.7	9.4
	18	4	400	25	4.6	10.4
	20	5	500	25	4.6	10.7
	23	5	500	25	4.9	11.6
	25	5	500	25	4.9	11.6
I-40	8 (40)	3.5	350	25	3.7	9.8
	10 (41)	4	400	25	4.3	9.8
	13 (42)	4	400	25	4.3	10.4
	15 (43)	4	400	25	4.6	12.8
	23 (44)	5	500	25	5.2	14.0
	25 (45)	5	500	25	5.2	14.6
I-90 ADV	33	5.5	550	22	4.6	12.8
	38	5.5	550	22	4.9	14.6
	43	5.5	550	22	4.9	14.6
	48	5.5	550	22	5.2	16.5
	53	5.5	550	22	5.2	17.1
	63	5.5	550	22	5.5	19.5
I-90 36V	33	5.5	550	22	5.2	14.0
	38	5.5	550	22	5.2	15.2
	43	5.5	550	22	5.2	16.5
	48	5.5	550	22	5.2	17.1
	53	5.5	550	22	5.2	17.7
	63	5.5	550	22	5.5	18.9

PLD CHARTS

PLD APPLICATION RATES

16 MM EMITTER FLOW RATE - 3.8 l/hr			16 MM EMITTER FLOW RATE - 2.2 l/hr		
Row Spacing (m)	Emitter Spacing (m)		Row Spacing (m)	Emitter Spacing (m)	
	0.30	0.50		0.30	0.50
0.30	42	25	0.30	24	15
0.35	36	22	0.35	21	13
0.40	32	19	0.40	18	11
0.45	28	17	0.45	16	10
0.50	25	15	0.50	15	9
0.55	23	14	0.55	13	8
0.60	21	13	0.60	12	7

Notes
Application rates in m per hour

17 MM EMITTER FLOW RATE - 3.8 l/hr				17 MM EMITTER FLOW RATE - 2.3 l/hr				17 MM EMITTER FLOW RATE - 1.5 l/hr			
Row Spacing (m)	Emitter Spacing (m)			Row Spacing (m)	Emitter Spacing (m)			Row Spacing (m)	Emitter Spacing (m)		
	0.30	0.45	0.61		0.30	0.45	0.61		0.30	0.45	0.61
0.30	42	28	21	0.30	26	17	13	0.30	17	11	8
0.35	36	24	18	0.35	22	15	11	0.35	14	10	7
0.40	32	21	16	0.40	19	13	9	0.40	13	8	6
0.45	28	19	14	0.45	17	11	8	0.45	11	7	5
0.50	25	17	12	0.50	15	10	8	0.50	10	7	5
0.55	23	15	11	0.55	14	9	7	0.55	9	6	4
0.60	21	14	10	0.60	13	9	6	0.60	8	6	4

PLD EMITTER LINE MAXIMUM LENGTH CHARTS

16 MM EMITTER LINE MAX LENGTH - 2.2 l/hr			16 MM EMITTER LINE MAX LENGTH - 3.8 l/hr		
Pressure (bar)	Emitter Spacing (m)		Pressure (bar)	Emitter Spacing (m)	
	0.30	0.50		0.30	0.50
1.0	47	73	1.0	35	54
2.0	84	131	2.0	59	91
3.0	104	162	3.0	72	112

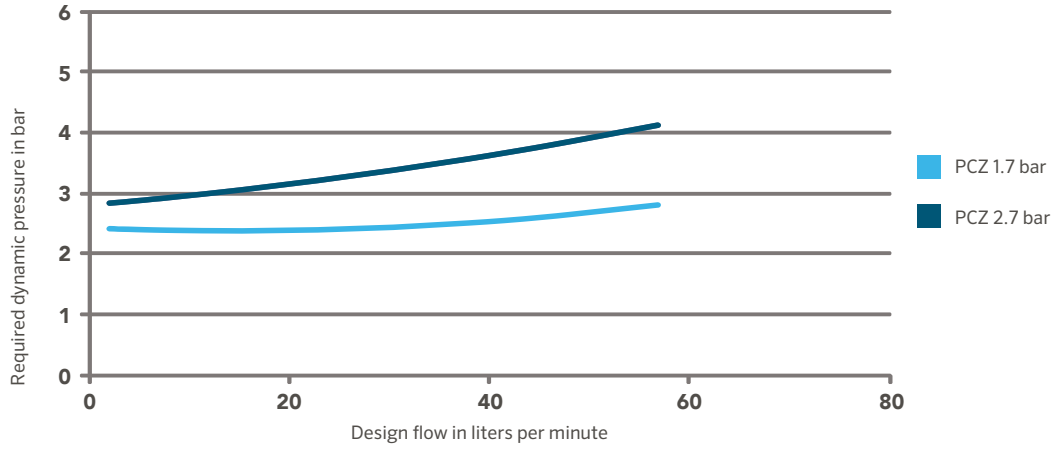
17 MM EMITTER LINE MAX LENGTH - 1.5 l/hr				17 MM EMITTER LINE MAX LENGTH - 2.3 l/hr				17 MM EMITTER LINE MAX LENGTH - 3.8 l/hr			
Pressure (bar)	Emitter Spacing (m)			Pressure (bar)	Emitter Spacing (m)			Pressure (bar)	Emitter Spacing (m)		
	0.30	0.50	0.60		0.30	0.50	0.60		0.30	0.50	0.60
1.0	86	119	149	1.0	51	71	88	1.0	37	52	65
2.0	132	185	232	2.0	89	124	156	2.0	65	92	115
3.0	159	223	281	3.0	108	152	191	3.0	80	112	142

PLD FLOW CONVERSION CHARTS

16 MM QUICK REFERENCE CHART - l/min PER 100 M			17 MM QUICK REFERENCE CHART - l/min PER 100 M			
Emitter (l/hr)	Emitter Spacing (m)		Emitter (l/hr)	Emitter Spacing (m)		
	0.30	0.50		0.30	0.50	0.60
2.2	12.2	7.3	1.5	8.1	5.4	4.2
3.8	21.1	12.7	2.3	12.6	8.5	6.4
			3.8	20.2	13.6	10.2

DRIP CONTROL ZONE KIT CHARTS

PCZ101: Inlet pressure required for designed outlet pressure



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

UPVC PIPE CLASS 3 (6 BAR)																	
C=150 • PRESSURE LOSS (BAR/100 METERS)																	
Nominal Size		40 mm		50 mm		63 mm		75 mm		90 mm		110 mm		160 mm		200 mm	
Pipe ID		36.4 mm		46.4 mm		59.2 mm		70.6 mm		84.6 mm		103.6 mm		153.2 mm		188.2 mm	
Pipe OD		40 mm		50 mm		63 mm		75 mm		90 mm		110 mm		160 mm		200 mm	
Wall Thick		1.8 mm		1.8 mm		1.9 mm		2.2 mm		2.7 mm		3.2 mm		3.4 mm		5.9 mm	
Flow l/min	Flow m³/hr	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss
3.8	0.25																
7.6	0.5																
11.4	0.75																
15.1	1	0.3	0.03														
26.5	1.5	0.4	0.06	0.2	0.02												
34.1	2	0.5	0.09	0.3	0.03												
41.6	2.5	0.7	0.14	0.4	0.04												
49.2	3	0.8	0.20	0.5	0.06												
56.8	3.5	0.9	0.27	0.6	0.08												
68.1	4	1.1	0.34	0.7	0.10												
83.3	5	1.3	0.52	0.8	0.16												
98.4	6	1.6	0.72	1.0	0.22	0.6	0.07	0.4	0.03								
117.3	7	1.9	0.96	1.1	0.30	0.7	0.09	0.5	0.04								
132.5	8	2.1	1.23	1.3	0.38	0.8	0.12	0.6	0.05								
151.4	9	2.4	1.53	1.5	0.47	0.9	0.14	0.6	0.06								
166.6	10	2.7	1.86	1.6	0.57	1.0	0.17	0.7	0.07								
181.7	11			1.8	0.68	1.1	0.21	0.8	0.09	0.5	0.04						
200.6	12			2.0	0.8	1.2	0.24	0.9	0.10	0.6	0.04						
215.8	13			2.1	0.93	1.3	0.28	0.9	0.12	0.6	0.05						
234.7	14			2.3	1.07	1.4	0.33	1.0	0.14	0.7	0.06						
249.8	15			2.5	1.21	1.5	0.37	1.1	0.16	0.7	0.06	0.5	0.02				
265.0	16					1.6	0.42	1.1	0.18	0.8	0.07	0.5	0.03				
283.9	17					1.7	0.47	1.2	0.20	0.8	0.08	0.6	0.03				
299.0	18					1.8	0.52	1.3	0.22	0.9	0.09	0.6	0.03				
318.0	19					1.9	0.57	1.3	0.24	0.9	0.10	0.6	0.04				
333.1	20					2.0	0.63	1.4	0.27	1.0	0.11	0.7	0.04				
348.3	21					2.1	0.69	1.5	0.29	1.0	0.12	0.7	0.05				
367.2	22					2.2	0.75	1.6	0.32	1.1	0.13	0.7	0.05				
382.3	23					2.3	0.82	1.6	0.35	1.1	0.14	0.8	0.05				
401.3	24							1.7	0.37	1.2	0.16	0.8	0.06				
416.4	25							1.8	0.40	1.2	0.17	0.8	0.06				
431.5	26							1.8	0.43	1.3	0.18	0.9	0.07				
450.5	27							1.9	0.47	1.3	0.19	0.9	0.07				
465.6	28							2.0	0.50	1.4	0.21	0.9	0.08				
484.5	29							2.1	0.53	1.4	0.22	1.0	0.08				
499.7	30							2.1	0.57	1.5	0.23	1.0	0.09				
583.0	35									1.7	0.31	1.2	0.12				
666.2	40									2.0	0.40	1.3	0.15				
749.5	45									2.2	0.50	1.5	0.19				
832.8	50											1.6	0.23				
916.1	55											1.8	0.27				
999.3	60											2.0	0.32				
1082.6	65											2.1	0.37	1.0	0.05		
1165.9	70											2.3	0.42	1.1	0.06		
1249.2	75													1.1	0.07		
1332.5	80													1.2	0.08		
1415.7	85													1.3	0.09		
1499.0	90													1.4	0.10		
1665.6	100													1.5	0.12	1.0	0.04
1832.1	110													1.7	0.14	1.1	0.05
1998.7	120													1.8	0.17	1.2	0.06
2165.3	130													2.0	0.20	1.3	0.07
2331.8	140													2.1	0.23	1.4	0.08
2498.4	150													2.3	0.26	1.5	0.09

Notes: Shaded area represents velocities over 1.5 m/s. Use with caution where water hammer is a concern.

FRICION LOSS CHARTS

UPVC PIPE CLASS 4 (10 BAR)

C=150 • PRESSURE LOSS (BAR/100 METERS)

Nominal Size		25 mm		32 mm		40 mm		50 mm		63 mm		75 mm		90 mm		110 mm		160 mm		200 mm	
Pipe ID		22 mm		28.4 mm		36.2 mm		45.2 mm		57 mm		67.8 mm		81.4 mm		99.4 mm		144.6 mm		180.8 mm	
Pipe OD		25 mm		32 mm		40 mm		50 mm		63 mm		75 mm		90 mm		110 mm		160 mm		200 mm	
Wall Thick		1.5 mm		1.8 mm		1.9 mm		2.4 mm		3.0 mm		3.6 mm		4.3 mm		5.3 mm		7.7 mm		9.6 mm	
Flow l/min	Flow m ³ /hr	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss
3.8	0.25	0.2	0.02																		
7.6	0.5	0.4	0.08																		
11.4	0.75	0.5	0.18																		
15.1	1	0.7	0.30																		
26.5	1.5	1.1	0.64	0.7	0.19																
34.1	2	1.5	1.10	0.9	0.32																
41.6	2.5	1.8	1.66	1.1	0.48	0.7	0.15														
49.2	3	2.2	2.33	1.3	0.67	0.8	0.21														
56.8	3.5	2.6	3.10	1.5	0.89	0.9	0.27														
68.1	4			1.8	1.14	1.1	0.35	0.7	0.12												
83.3	5			2.2	1.73	1.3	0.53	0.9	0.18												
98.4	6			2.6	2.42	1.6	0.74	1.0	0.25	0.7	0.08										
117.3	7					1.9	0.99	1.2	0.34	0.8	0.11										
132.5	8					2.2	1.27	1.4	0.43	0.9	0.14										
151.4	9					2.4	1.58	1.6	0.53	1.0	0.17	0.7	0.07								
166.6	10							1.7	0.65	1.1	0.21	0.8	0.09								
181.7	11							1.9	0.77	1.2	0.25	0.8	0.11								
200.6	12							2.1	0.91	1.3	0.29	0.9	0.13								
215.8	13							2.3	1.06	1.4	0.34	1.0	0.15								
234.7	14							2.4	1.21	1.5	0.39	1.1	0.17								
249.8	15							2.6	1.38	1.6	0.44	1.2	0.19								
265.0	16									1.7	0.50	1.2	0.22	0.9	0.09						
283.9	17									1.9	0.56	1.3	0.24	0.9	0.10						
299.0	18									2.0	0.62	1.4	0.27	1.0	0.11						
318.0	19									2.1	0.69	1.5	0.30	1.0	0.12						
333.1	20									2.2	0.76	1.5	0.33	1.1	0.13						
348.3	21									2.3	0.83	1.6	0.36	1.1	0.15						
367.2	22									2.4	0.90	1.7	0.39	1.2	0.16						
382.3	23									2.5	0.98	1.8	0.42	1.2	0.17						
401.3	24											1.8	0.46	1.3	0.19						
416.4	25											1.9	0.49	1.3	0.20						
431.5	26											2.0	0.53	1.4	0.22	0.9	0.08				
450.5	27											2.1	0.57	1.4	0.23	1.0	0.09				
465.6	28											2.2	0.61	1.5	0.25	1.0	0.09				
484.5	29											2.2	0.65	1.5	0.27	1.0	0.10				
499.7	30											2.3	0.69	1.6	0.28	1.1	0.11	0.5	0.02		
583.0	35													1.9	0.38	1.3	0.14	0.6	0.02		
666.2	40													2.1	0.48	1.4	0.18	0.7	0.03		
749.5	45													2.4	0.60	1.6	0.23	0.8	0.04		
832.8	50															1.8	0.28	0.8	0.04		
916.1	55															2.0	0.33	0.9	0.05		
999.3	60															2.1	0.39	1.0	0.06		
1082.6	65															2.3	0.45	1.1	0.07		
1165.9	70															2.5	0.51	1.2	0.08		
1249.2	75															2.7	0.58	1.3	0.09		
1332.5	80															2.9	0.66	1.4	0.11		
1415.7	85															3.0	0.74	1.4	0.12		
1499.0	90															3.2	0.82	1.5	0.13	1.0	0.04
1665.6	100																	1.7	0.16	1.1	0.05
1832.1	110																	1.9	0.19	1.2	0.06
1998.7	120																	2.0	0.22	1.3	0.08
2165.3	130																	2.2	0.26	1.4	0.09
2331.8	140																	2.4	0.30	1.5	0.10
2498.4	150																	2.5	0.34	1.6	0.11

Notes: Shaded area represents velocities over 1.5 m/s. Use with caution where water hammer is a concern.

TECHNICAL

FRICITION LOSS CHARTS

UPVC PIPE CLASS 5 (16 BAR)															
C=150 • PRESSURE LOSS (BAR/100 METERS)															
Nominal Size Pipe ID Pipe OD Wall Thick	25 mm 21.2 mm 25 mm 1.5 mm	32 mm 27.2 mm 32 mm 1.8 mm	40 mm 34 mm 40 mm 1.9 mm	50 mm 42.6 mm 50 mm 2.4 mm	63 mm 53.6 mm 63 mm 3 mm	75 mm 63.8 mm 75 mm 3.6 mm	90 mm 76.6 mm 90 mm 4.3 mm	110 mm 93.6 mm 110 mm 5.3 mm	160 mm 136.2 mm 160 mm 7.7 mm	200 mm 170.2 mm 200 mm 14.9 mm	Velocity m/s	bar loss	Velocity m/s	bar loss	
Flow l/min	Flow m ³ /hr	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss
3.8	0.25	0.2	0.03												
7.6	0.5	0.4	0.10												
11.4	0.75	0.6	0.21	0.4	0.06										
15.1	1	0.8	0.36	0.5	0.11	0.3	0.04								
26.5	1.5	1.2	0.77	0.7	0.23	0.5	0.08	0.3	0.03						
34.1	2	1.6	1.32	1.0	0.39	0.6	0.13	0.4	0.04						
41.6	2.5	2.0	1.99	1.2	0.59	0.8	0.20	0.5	0.07						
49.2	3	2.4	2.79	1.4	0.83	0.9	0.28	0.6	0.09						
56.8	3.5			1.7	1.10	1.1	0.37	0.7	0.12						
68.1	4			1.9	1.41	1.2	0.48	0.8	0.16						
83.3	5			2.4	2.13	1.5	0.72	1.0	0.24						
98.4	6					1.8	1.01	1.2	0.34	0.7	0.11				
117.3	7					2.1	1.34	1.4	0.45	0.9	0.15				
132.5	8					2.4	1.72	1.6	0.57	1.0	0.19				
151.4	9							1.8	0.71	1.1	0.23				
166.6	10							1.9	0.87	1.2	0.28				
181.7	11							2.1	1.03	1.4	0.34	1.0	0.14		
200.6	12							2.3	1.21	1.5	0.40	1.0	0.17		
215.8	13									1.6	0.46	1.1	0.20		
234.7	14									1.7	0.53	1.2	0.23		
249.8	15									1.8	0.60	1.3	0.26		
265.0	16									2.0	0.68	1.4	0.29	1.0	0.12
283.9	17									2.1	0.76	1.5	0.32	1.0	0.13
299.0	18									2.2	0.84	1.6	0.36	1.1	0.15
318.0	19									2.3	0.93	1.7	0.40	1.1	0.16
333.1	20									2.5	1.02	1.7	0.44	1.2	0.18
348.3	21									1.8	0.48	1.3	0.20		
367.2	22									1.9	0.52	1.3	0.21		
382.3	23									2.0	0.57	1.4	0.23		
401.3	24									2.1	0.61	1.4	0.25	1.0	0.09
416.4	25									2.2	0.66	1.5	0.27	1.0	0.10
431.5	26									2.3	0.71	1.6	0.29	1.0	0.11
450.5	27									2.3	0.76	1.6	0.31	1.1	0.12
465.6	28									2.4	0.82	1.7	0.33	1.1	0.13
484.5	29									2.5	0.87	1.7	0.36	1.2	0.13
499.7	30											1.8	0.38	1.2	0.14
583.0	35											2.1	0.51	1.4	0.19
666.2	40											2.4	0.65	1.6	0.24
749.5	45											2.7	0.81	1.8	0.30
832.8	50													2.0	0.37
916.1	55													2.2	0.44
999.3	60													2.4	0.52
1082.6	65													2.6	0.60
1165.9	70													2.8	0.69
1249.2	75													3.0	0.78
1332.5	80													3.2	0.88
1415.7	85														
1499.0	90													1.6	0.16
1665.6	100													1.7	0.18
1832.1	110													1.9	0.21
1998.7	120													2.1	0.26
2165.3	130													2.3	0.30
2331.8	140													2.5	0.35
2498.4	150													2.7	0.40
														2.9	0.45
														1.2	0.07
														1.3	0.09
														1.5	0.10
														1.6	0.12
														1.7	0.14
														1.8	0.15

Notes: Shaded area represents velocities over 1.5 m/s. Use with caution where water hammer is a concern.

FRICION LOSS CHARTS

SCHEDULE 40 IPS PVC PLASTIC PIPE C=150 • PRESSURE LOSS (BAR/100 METERS)

Nominal Size	1"	1¼"	1½"	2"	2½"	3"	4"	6"	8"				
Pipe OD	1.315"	1.66"	1.900"	2.375"	2.375"	3.500"	4.500"	6.625"	8.625"				
Pipe ID	1.049"	1.380"	1.610"	2.067"	2.469"	3.068"	4.026"	6.065"	7.981"				
Pipe ID mm	26.64	35.05	40.89	52.50	62.71	77.93	102.26	154.05	202.72				
Wall Thick	0.133"	0.140"	0.145"	0.154"	0.203"	0.216"	0.237"	0.280"	0.322"				
Flow l/min	Flow m³/hr	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss
3.8	0.25	0.1	0.01										
7.6	0.5	0.2	0.03										
11.4	0.75	0.4	0.07	0.2	0.02								
15.1	1	0.5	0.12	0.3	0.03	0.2	0.01						
26.5	1.5	0.7	0.25	0.4	0.07	0.3	0.03						
34.1	2	1.0	0.43	0.6	0.11	0.4	0.05						
41.6	2.5	1.2	0.65	0.7	0.17	0.5	0.08						
49.2	3	1.5	0.92	0.9	0.24	0.6	0.11						
56.8	3.5	1.7	1.22	1.0	0.32	0.7	0.15						
68.1	4	2.0	1.56	1.2	0.41	0.8	0.19						
83.3	5	2.5	2.36	1.4	0.62	1.1	0.29						
98.4	6			1.7	0.87	1.3	0.41	0.5	0.05	0.3	0.02		
117.3	7			2.0	1.16	1.5	0.55	0.6	0.07	0.4	0.02		
132.5	8			2.3	1.48	1.7	0.70	1.0	0.21	0.7	0.09	0.5	0.03
151.4	9			2.6	1.84	1.9	0.87	1.2	0.26	0.8	0.11	0.5	0.04
166.6	10			2.9	2.24	2.1	1.06	1.3	0.31	0.9	0.13	0.6	0.05
181.7	11					2.3	1.26	1.4	0.37	1.0	0.16	0.6	0.05
200.6	12					2.5	1.48	1.5	0.44	1.1	0.18	0.7	0.06
215.8	13					2.7	1.72	1.7	0.51	1.2	0.21	0.8	0.07
234.7	14					3.0	1.97	1.8	0.58	1.3	0.25	0.8	0.09
249.8	15					3.2	2.24	1.9	0.66	1.3	0.28	0.9	0.10
265.0	16							2.1	0.75	1.4	0.31	0.9	0.11
283.9	17							2.2	0.84	1.5	0.35	1.0	0.12
299.0	18							2.3	0.93	1.6	0.39	1.0	0.14
318.0	19							2.4	1.03	1.7	0.43	1.1	0.15
333.1	20							2.6	1.13	1.8	0.48	1.2	0.17
348.3	21									1.9	0.52	1.2	0.18
367.2	22									2.0	0.57	1.3	0.20
382.3	23									2.1	0.62	1.3	0.21
401.3	24									2.2	0.67	1.4	0.23
416.4	25									2.2	0.72	1.5	0.25
431.5	26									2.3	0.77	1.5	0.27
450.5	27									2.4	0.83	1.6	0.29
465.6	28											1.6	0.31
484.5	29											1.7	0.33
499.7	30											1.7	0.35
583.0	35									2.0	0.47	1.2	0.12
666.2	40									2.3	0.60	1.4	0.16
749.5	45									2.6	0.74	1.5	0.20
832.8	50									2.9	0.90	1.7	0.24
916.1	55											1.9	0.29
999.3	60											2.0	0.34
1082.6	65											2.2	0.39
1165.9	70											2.4	0.45
1249.2	75											2.5	0.51
1332.5	80											2.7	0.57
1415.7	85											2.9	0.64
1499.0	90											3.0	0.71
1665.6	100											1.5	0.15
1832.1	110											1.6	0.18
1998.7	120											1.8	0.21
2165.3	130											1.9	0.25
2331.8	140											2.1	0.28
2498.4	150											2.1	0.32
												0.8	0.03
												0.9	0.04
												1.0	0.04
												1.1	0.05
												1.2	0.06
												1.3	0.07

Notes: Shaded area represents velocities over 1.5 m/s. Use with caution where water hammer is a concern.

TECHNICAL

FRICITION LOSS CHARTS

SCHEDULE 80 IPS PVC PLASTIC PIPE																			
C=150 • PRESSURE LOSS (BAR/100 METERS)																			
Nominal Size		1"		1¼"		1½"		2"		2½"		3"		4"		6"		8"	
Pipe OD		1.315"		1.660"		1.900"		2.375"		2.875"		3.500"		4.500"		6.625"		8.625"	
Pipe ID		0.957"		1.278"		1.500"		1.939"		2.323"		2.900"		3.826"		5.761"		7.625"	
Pipe ID mm		24.31		32.46		38.10		49.25		59.00		73.66		97.18		146.33		193.68	
Wall Thick		0.179"		0.191"		0.200"		0.218"		0.276"		0.300"		0.337"		0.432"		0.500"	
Flow l/min	Flow m³/hr	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss
3.8	0.25	0.1	0.01																
7.6	0.5	0.3	0.05																
11.4	0.75	0.4	0.11	0.3	0.03														
15.1	1	0.6	0.19	0.3	0.05	0.2	0.02												
26.5	1.5	0.9	0.40	0.5	0.10	0.4	0.04	0.2	0.01										
34.1	2	1.2	0.68	0.7	0.17	0.5	0.08	0.3	0.02										
41.6	2.5	1.5	1.02	0.8	0.25	0.6	0.11	0.4	0.03										
49.2	3	1.8	1.43	1.0	0.35	0.7	0.16	0.4	0.05										
56.8	3.5	2.1	1.90	1.2	0.47	0.9	0.21	0.5	0.06										
68.1	4	2.4	2.44	1.3	0.60	1.0	0.27	0.6	0.08										
83.3	5	3.0	3.69	1.7	0.90	1.2	0.41	0.7	0.12										
98.4	6			2.0	1.26	1.5	0.58	0.9	0.17	0.6	0.07	0.4	0.02						
117.3	7			2.3	1.68	1.7	0.77	1.0	0.22	0.7	0.09	0.5	0.03						
132.5	8			2.7	2.15	1.9	0.99	1.2	0.28	0.8	0.12	0.5	0.04						
151.4	9			3.0	2.68	2.2	1.23	1.3	0.35	0.9	0.15	0.6	0.05						
166.6	10					2.4	1.49	1.5	0.43	1.0	0.18	0.7	0.06						
181.7	11					2.7	1.78	1.6	0.51	1.1	0.21	0.7	0.07						
200.6	12					2.9	2.09	1.7	0.60	1.2	0.25	0.8	0.08						
215.8	13							1.9	0.69	1.3	0.29	0.8	0.10						
234.7	14							2.0	0.80	1.4	0.33	0.9	0.11						
249.8	15							2.2	0.91	1.5	0.38	1.0	0.13						
265.0	16							2.3	1.02	1.6	0.42	1.0	0.14						
283.9	17							2.5	1.14	1.7	0.47	1.1	0.16						
299.0	18							2.6	1.27	1.8	0.53	1.2	0.18						
318.0	19									1.9	0.58	1.2	0.20						
333.1	20									2.0	0.64	1.3	0.22						
348.3	21									2.1	0.70	1.4	0.24						
367.2	22									2.2	0.76	1.4	0.26						
382.3	23									2.3	0.83	1.5	0.28						
401.3	24									2.4	0.90	1.6	0.30						
416.4	25									2.5	0.97	1.6	0.33						
431.5	26											1.7	0.35						
450.5	27											1.8	0.38						
465.6	28											1.8	0.41	1.0	0.11				
484.5	29											1.9	0.43	1.1	0.11				
499.7	30											2.0	0.46	1.1	0.12				
583.0	35											2.3	0.61	1.3	0.16				
666.2	40											2.6	0.78	1.5	0.20				
749.5	45													1.7	0.25				
832.8	50													1.9	0.31				
916.1	55													2.1	0.37				
999.3	60													2.2	0.43				
1082.6	65													2.4	0.50	1.1	0.07		
1165.9	70													2.6	0.57	1.2	0.08		
1249.2	75													2.8	0.65	1.2	0.09		
1332.5	80													3.0	0.73	1.3	0.10		
1415.7	85													3.2	0.82	1.4	0.11		
1499.0	90													3.4	0.91	1.5	0.12		
1665.6	100															1.7	0.15	0.9	0.04
1832.1	110															1.8	0.18	1.0	0.05
1998.7	120															2.0	0.21	1.1	0.05
2165.3	130															2.1	0.25	1.2	0.06
2331.8	140															2.3	0.28	1.3	0.07
2498.4	150															2.5	0.32	1.4	0.08

Notes: Shaded area represents velocities over 1.5 m/s. Use with caution where water hammer is a concern.

FRICION LOSS CHARTS

HDPE PRESSURE PIPE PE80 SDR 17.6 PN6

C=140 • PRESSURE LOSS (BAR/100 METERS)

Nominal Size		25 mm		32 mm		40 mm		50 mm		63 mm		75 mm		90 mm		110 mm		160 mm		200 mm	
Pipe ID mm		21.40		28.40		35.40		44.20		55.80		66.40		79.80		97.40		141.80		177.20	
Wall Thick		1.8		1.8		2.3		2.9		3.6		4.3		5.1		6.3		9.1		11.4	
Flow l/min	Flow m³/hr	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss
3.8	0.25	0.2	0.03																		
7.6	0.5	0.4	0.11																		
11.4	0.75	0.6	0.23	0.3	0.06																
15.1	1	0.8	0.40	0.4	0.10	0.3	0.03														
26.5	1.5	1.2	0.84	0.7	0.21	0.4	0.07	0.3	0.02												
34.1	2	1.5	1.43	0.9	0.36	0.6	0.12	0.4	0.04												
41.6	2.5	1.9	2.16	1.1	0.54	0.7	0.19	0.5	0.06												
49.2	3	2.3	3.03	1.3	0.76	0.8	0.26	0.5	0.09												
56.8	3.5	2.7	4.03	1.5	1.01	1.0	0.35	0.6	0.12												
68.1	4	3.1	5.16	1.8	1.30	1.1	0.44	0.7	0.15												
83.3	5			2.2	1.96	1.4	0.67	0.9	0.23												
98.4	6			2.6	2.75	1.7	0.94	1.1	0.32	0.7	0.10	0.5	0.04								
117.3	7			3.1	3.66	2.0	1.25	1.3	0.42	0.8	0.14	0.6	0.06								
132.5	8			3.5	4.69	2.3	1.60	1.4	0.54	0.9	0.17	0.6	0.07								
151.4	9					2.5	2.00	1.6	0.68	1.0	0.22	0.7	0.09								
166.6	10					2.8	2.43	1.8	0.82	1.1	0.26	0.8	0.11								
181.7	11							2.0	0.98	1.2	0.32	0.9	0.14								
200.6	12							2.2	1.15	1.4	0.37	1.0	0.16								
215.8	13							2.4	1.34	1.5	0.43	1.0	0.18								
234.7	14							2.5	1.53	1.6	0.49	1.1	0.21								
249.8	15							2.7	1.74	1.7	0.56	1.2	0.24								
265.0	16							2.9	1.96	1.8	0.63	1.3	0.27								
283.9	17							3.1	2.20	1.9	0.71	1.4	0.30								
299.0	18							3.3	2.44	2.0	0.79	1.4	0.34								
318.0	19									2.2	0.87	1.5	0.37								
333.1	20									2.3	0.95	1.6	0.41								
348.3	21									2.4	1.04	1.7	0.45	1.2	0.18						
367.2	22									2.5	1.14	1.8	0.49	1.2	0.20						
382.3	23									2.6	1.24	1.8	0.53	1.3	0.22						
401.3	24									2.7	1.34	1.9	0.57	1.3	0.23						
416.4	25									3.8	1.44	2.0	0.62	1.4	0.25						
431.5	26											2.1	0.67	1.4	0.27	1.0	0.10	0.5	0.02		
450.5	27											2.2	0.71	1.5	0.29	1.0	0.11	0.5	0.02		
465.6	28											2.2	0.76	1.6	0.31	1.0	0.12	0.5	0.02		
484.5	29											2.3	0.81	1.6	0.33	1.1	0.13	0.5	0.02		
499.7	30											2.4	0.87	1.7	0.35	1.1	0.13	0.5	0.02		
583.0	35											2.8	1.15	1.9	0.47	1.3	0.18	0.6	0.03		
666.2	40											3.2	1.48	2.2	0.60	1.5	0.23	0.7	0.04		
749.5	45													2.5	0.75	1.7	0.28	0.8	0.05		
832.8	50													2.8	0.91	1.9	0.35	0.9	0.06		
916.1	55													3.1	1.09	2.1	0.41	1.0	0.07		
999.3	60													3.3	1.28	2.2	0.48	1.1	0.08		
1082.6	65															2.4	0.56	1.1	0.09		
1165.9	70															2.6	0.64	1.2	0.10		
1249.2	75																	1.3	0.12		
1332.5	80																	1.4	0.13		
1415.7	85																	1.5	0.15		
1499.0	90																	1.6	0.16		
1665.6	100																	1.8	0.20	1.1	0.07
1832.1	110																	1.9	0.24	1.2	0.08
1998.7	120																	2.1	0.28	1.4	0.09
2165.3	130																	2.3	0.33	1.5	0.11
2331.8	140																			1.6	0.13
2498.4	150																			1.7	0.14

Notes: Shaded area represents velocities over 1.5 m/s. Use with caution where water hammer is a concern.

TECHNICAL

FRICITION LOSS CHARTS

HDPE PRESSURE PIPE PE80 SDR 11 PN10																					
C=140 • PRESSURE LOSS (BAR/100 METERS)																					
Nominal Size		25 mm		32 mm		40 mm		50 mm		63 mm		75 mm		90 mm		110 mm		160 mm		200 mm	
Pipe ID mm		20.40		26.20		32.60		40.80		51.40		61.40		73.60		90.00		130.80		163.60	
Wall Thick		2.3		2.9		3.7		4.6		5.8		6.8		8.2		10		14.6		18.2	
Flow l/min	Flow m ³ /hr	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss	Velocity m/s	bar loss
3.8	0.25	0.2	0.04																		
7.6	0.5	0.4	0.14																		
11.4	0.75	0.6	0.29	0.4	0.09																
15.1	1	0.8	0.50	0.5	0.15																
26.5	1.5	1.3	1.06	0.8	0.31	0.5	0.11														
34.1	2	1.7	1.80	1.0	0.53	0.7	0.18														
41.6	2.5	2.1	2.73	1.3	0.81	0.8	0.28	0.5	0.09												
49.2	3	2.5	3.82	1.5	1.13	1.0	0.39	0.6	0.13												
56.8	3.5	3.0	5.08	1.8	1.50	1.2	0.52	0.7	0.17												
68.1	4			2.1	1.92	1.3	0.66	0.8	0.22	0.5	0.07										
83.3	5			2.6	2.91	1.7	1.00	1.1	0.34	0.7	0.11										
98.4	6			3.1	4.08	2.0	1.41	1.3	0.47	0.8	0.15										
117.3	7					2.3	1.87	1.5	0.63	0.9	0.20										
132.5	8					2.7	2.40	1.7	0.8	1.1	0.26										
151.4	9					3.0	2.98	1.9	1.00	1.2	0.32										
166.6	10							2.1	1.21	1.3	0.39										
181.7	11							2.3	1.45	1.5	0.47	1.0	0.20								
200.6	12							2.5	1.70	1.6	0.55	1.1	0.23								
215.8	13							2.8	1.97	1.7	0.64	1.2	0.27								
234.7	14							3.0	2.27	1.9	0.74	1.3	0.31								
249.8	15									2.0	0.84	1.4	0.35								
265.0	16									2.1	0.94	1.5	0.40								
283.9	17									2.3	1.05	1.6	0.44	1.1	0.18						
299.0	18									2.4	1.17	1.7	0.49	1.2	0.20						
318.0	19									2.5	1.30	1.8	0.54	1.2	0.23						
333.1	20									2.7	1.42	1.9	0.60	1.3	0.25						
348.3	21									2.8	1.56	2.0	0.66	1.4	0.27						
367.2	22									2.9	1.70	2.1	0.71	1.4	0.30						
382.3	23									3.1	1.84	2.2	0.78	1.5	0.32						
401.3	24											2.3	0.84	1.6	0.35						
416.4	25											2.3	0.91	1.6	0.37						
431.5	26											2.4	0.97	1.7	0.40	1.1	0.15				
450.5	27											2.5	1.04	1.8	0.43	1.2	0.16				
465.6	28											2.6	1.12	1.8	0.46	1.2	0.17				
484.5	29											2.7	1.19	1.9	0.49	1.3	0.19				
499.7	30											2.8	1.27	2.0	0.53	1.3	0.20				
583.0	35											3.3	1.69	2.3	0.70	1.5	0.26				
666.2	40													2.6	0.89	1.7	0.34				
749.5	45													2.9	1.11	2.0	0.42				
832.8	50													3.3	1.35	2.2	0.51	1.0	0.08		
916.1	55															2.4	0.61	1.1	0.10		
999.3	60															2.6	0.71	1.2	0.12		
1082.6	65															2.8	0.83	1.3	0.13		
1165.9	70															3.1	0.95	1.4	0.15		
1249.2	75															3.3	1.08	1.6	0.17		
1332.5	80																	1.7	0.20		
1415.7	85																	1.8	0.22	1.1	0.07
1499.0	90																	1.9	0.24	1.2	0.08
1665.6	100																	2.1	0.30	1.3	0.10
1832.1	110																	2.3	0.35	1.5	0.12
1998.7	120																	2.5	0.42	1.6	0.14
2165.3	130																	2.7	0.48	1.7	0.16
2331.8	140																			1.8	0.19
2498.4	150																			2.0	0.21

Notes: Shaded area represents velocities over 1.5 m/s. Use with caution where water hammer is a concern.

FRICTION 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	0.18	0.24	0.30	0.37	0.46	0.61	0.76	0.91	1.21	1.82	2.40
Run of St. Tee	0.30	0.30	4.60	0.60	0.60	0.76	0.91	1.21	1.52	2.13	3.05
Tee, Side Outlet	0.91	1.38	1.50	2.13	2.74	3.35	4.0	4.90	6.1	9.44	12.1
Tee, Run Reduced ½"	0.45	0.76	0.91	1.21	1.50	1.82	2.13	2.4	3.65	4.90	6.10
Elbow, 90°	0.45	0.76	0.91	1.21	1.50	1.82	2.13	2.4	3.65	4.90	6.10
Elbow, 45°	0.22	0.30	0.40	0.52	0.60	0.76	0.91	1.06	1.5	2.28	3.04
Corporation Stop	2.74	2.74	2.74	2.74	2.74	2.74					
Curb Stop	1.82	1.82	2.13	2.13	2.43	2.43					

Plastic IPS or Copper Fitting Type	½"	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	6"	8"
Coupling	0.46	0.76	0.91	0.91	1.22	1.82	2.13	2.43	3.35	5.50	7.31
Run of St. Tee	0.76	0.91	1.22	1.52	1.83	2.43	2.74	3.35	4.57	6.40	8.53
Tee, Side Outlet	2.13	2.74	3.65	4.57	5.48	7.31	9.14	11.0	13.71	21.33	27.43
Tee, Run Reduced ½"	1.06	1.37	1.82	2.43	2.74	3.35	4.26	5.18	7.31	10.36	13.71
Elbow, 90°	1.06	1.37	1.82	2.43	2.74	3.35	4.26	5.18	7.31	10.36	13.71
Elbow, 34°	0.46	0.60	0.91	1.06	1.22	1.52	2.13	2.44	3.04	4.90	6.10

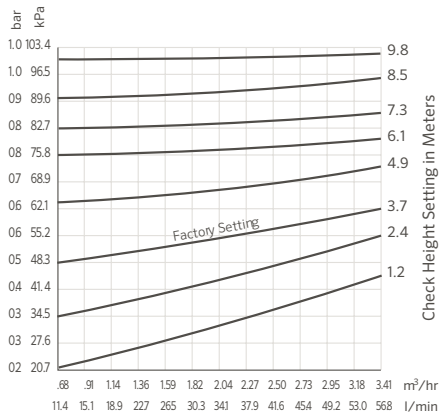
To use this chart, multiply the approximate "equivalent meter of pipe" value by the proper pipe pressure loss per 30 m rating, then divide by 100. The result is the fitting loss in bar; kPa.

Notes:

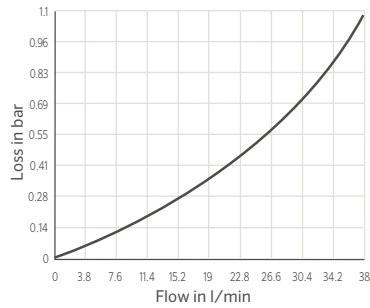
It is recommended that the above chart be used only when the manufacturers recommended pressure loss values are not available.

ACCESSORY PRESSURE LOSS CHARTS

HCV PRESSURE LOSS CHART



SWING JOINT FRICTION LOSS



WIRE DATA

STANDARD ANNEALED COPPER AT 20° C					
American Wire Gauge	Metric Wire Gauge	Diameter (Mils)	Diameter (mm)	Resistance (Per mft Ohms)	Resistance (Per km Ohms)
1		289.3	7.348	0.9239	0.4065
	7		7		0.448
2		257.6	6.543	0.1563	0.5128
	6		6		0.6098
3		229.4	5.827	0.1971	0.6466
4		204.3	5.189	0.2485	0.8152
	5		5		0.08781
5		181.9	4.62	0.3134	1.028
	4.5		4.5		1.084
6		162	4.115	0.3952	1.297
	4		4		1.372
7		144.3	3.665	0.4981	1.634
	3.5		3.5		1.792
8		128.5	3.264	0.6281	2.061
	3		3		2.439
9		114.4	2.906	0.7925	2.6
10		101.9	2.588	0.9988	3.277
	2.5		2.5		3.512
11		90.7	2.3	1.26	4.14
12		80.8	2.05	1.59	5.21
	2		2		5.49
13		72	1.83	2	6.56
	1.8		1.8		6.78
14		64.1	1.63	2.52	8.28
	1.6		1.6		8.58
15		57.1	1.45	3.18	10.4
	1.4		1.4		11.2
16		50.8	1.29	4.02	13.2
	1.2		1.2		15.2
17		45.3	1.15	5.05	16.6
18		40.3	1.02	6.39	21
	1		1		22
19		35.9	0.912	8.05	26.4
	0.9		0.9		27.1
20		32	0.813	10.1	33.2

WIRE SIZING

REQUIRED INFORMATION

Actual one-way length of wire between the controllers and the power source or the controllers and valves

Allowable voltage loss along the wire circuit

Accumulative current flowing through the wire section being sized in amperes

RESISTANCE IS CALCULATED USING THIS FORMULA:

$$R = \frac{1,000 \times AVL}{2L \times I}$$

R = Maximum Allowable Resistance of wire in ohms per 300 m
 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 600 m. 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).

$$R = \frac{1,000 \times 4}{2(600) \times 0.37}$$

$$R = \frac{4,000}{444}$$

$$R = 9.01 \text{ ohms}/1,000 \text{ m}$$

So, wire resistance cannot exceed 9 ohms per 1,000 m. Now go to table #1 and select the proper wire size. Since 1.5 mm² gauge wire has more resistance than 9 ohms per 300 m, choose 2.5 mm² 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		TABLE 2- VALVE WIRE SIZING							
Wire Size (mm ²)	Resistance at 20° C (68° F) (ohms per 1000 m)	Ground Wire			Control Wire				
		0.5	1	1.5	2.5	4	6	6	
0.5	38.4	0.5	140	190	210	235	250	260	1590
1.0	18.7	1.0	190	290	335	415	465	495	2440
1.5	13.6	1.5	208	335	397	515	595	647	3700
2.5	7.4	2.5	235	415	515	730	900	1030	5400
4.0	4.6	4.0	250	465	595	900	1175	1405	7690
6.0	3.1	6.0	260	495	647	1030	1405	1745	10530

Notes:

Maximum one-way distance in meters 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

ADDITIONAL DATA

WIRE SIZE REFERENCE CHART

Wire Size (mm ²)	25 mm	32 mm	40 mm	50 mm	63 mm	75 mm	90 mm	110 mm	160 mm	Wire Size (mm ²)
0.5	20	35	49	80	110	175	-	-	-	0.5
1	16	30	42	67	97	150	-	-	-	1
1.5	10	18	25	40	56	88	120	150	-	1.5
2.5	7	15	20	33	50	75	102	130	-	2.5
4	6	13	16	27	40	63	85	110	-	4
6	4	6	9	16	25	35	50	65	150	6

Notes:

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

CLIMATE ETp TABLE

Climate*	mm Daily
Cool Humid	2.5 to 3.8
Cool Dry	3.8 to 5.1
Warm Humid	3.8 to 5.1
Warm Dry	5.1 to 6.3
Hot Humid	5.1 to 7.6
Hot Dry	7.6 to 11.4

Notes:

- * Cool = under 21°C as an average mid-summer high
- * Warm = between 21° and 32° C as mid-summer highs
- * Hot = over 32° C
- * Humid = over 50% as average mid-summer relative humidity (dry=under 50%)

STATEMENT OF WARRANTY Hunter Residential & 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
TWO YEARS	ROTORS	PGP®-ADJ, PGJ	CONTROLLERS	Eco Logic, XC Hybrid, X-Core® and Pro-C® Families, ROAM, NODE, WVP, WVC, PSR
	SPRAYS	PS Ultra Family	SENSORS	ET System
	NOZZLES	Spray Nozzles, PCN, PCB, AFB, MSBN	MICRO	ACZ, PCZ, RZWS, Point Source Emitters
	VALVES	PGV Family, PSR	ACCESSORIES	HCV, SJ, FLEXsg, HSBF Family, SpotShot
THREE YEARS	CONTROLLERS	ROAM XL	MP ROTATOR®	All
FIVE YEARS	ROTORS	PGP Ultra, I-20, I-25, I-40, and I-90 Families	CENTRAL	IMMS® Central Control Products
	SPRAYS	Pro-Spray®, Pro-Spray PRS30, and Pro-Spray PRS40 Families	SENSORS	Clik Sensors, Solar-Sync®, Flow-Sync®, MWS
	VALVES	HQ, ICV, IBV	MICRO	ICZ and PLD Tubing, Eco-Mat®, Eco-Wrap™
	CONTROLLERS	I-Core®/DUAL® and ACC controller families, ICD and Dual Decoder Products, ICR Remotes		

If used for agricultural applications, Hunter limits the warranty for its spray, rotator and rotor products to a period of one (1) year from original date of manufacture. This agriculture limitation supersedes all other warranties expressed or implied. **Hunter warrants the battery life of the Wireless Rain-Clik and Wireless Solar Sync sensors for 10 years.** 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.

STATEMENT OF WARRANTY Hunter Golf and ST System Irrigation

Hunter will unconditionally repair, replace or repurchase, at its sole discretion, any defective Golf or ST Product Components listed below by category, returned freight prepaid, within a period of:

GOLF ROTOR PRODUCTS

- Three (3) years component* warranty from the date of manufacture
- Five (5) years component* warranty from the date of manufacture with one-for-one matching purchase of HSJ Swing Joints from authorized Hunter Golf distributor.

HSJ SWING JOINT, ST ROTOR, AND ST ACCESSORY PRODUCTS

- Five (5) years component* warranty from the date of manufacture

GOLF CONTROLLER PRODUCTS

- One (1) year component* warranty from the date of manufacture

PILOT GOLF DECODER PRODUCTS

- Three (3) years component* warranty from the date of manufacture

COMPUTERS, PRINTERS & ACCESSORIES

- Equipment manufacturer’s warranty (no Hunter warranty)

MAINTENANCE RADIO & BATTERY

- Equipment manufacturer’s warranty (no Hunter warranty)

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[®] | *Built on Innovation*[®]

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.

* 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.

** Where applicable, Hunter's statement of warranty complies with local directives.

If you have any questions concerning the warranty or its application, please email HunterTechnicalSupport@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, President of Hunter Industries

Website www.hunterindustries.com | **Customer Support** +1 760-744-5240 | **Technical Service** +1 760-591-7383

USA HEADQUARTERS

1940 Diamond Street
San Marcos, California 92078, USA
TEL: +1 760-744-5240

MEXICO MANUFACTURING

ISO 9001:2008 Certified
Calle Nordika #8615
Tijuana, B.C., Mexico C.P., 22640
TEL: +52 664-903-1300
FAX: +52 664-903-1325

Europe

Avda. Diagonal 523, 5°- 2°
Edificio Atalaya
08029 Barcelona, Spain
TEL: +34 9-34-94-88-81

Australia

Suite 7, 202 Ferntree Gully Road
Notting Hill, Melbourne, Victoria 3168, Australia
TEL: +61 3-9562-9918
FAX: +61 3-9558-6983

Middle East

P.O. Box 2370
Amman, 11941, Jordan
TEL: +962 6-5152882
FAX: +962 6-5152992

China

B1618, Huibin Office Bldg.
No.8, Beichen Dong Street
Beijing 100101, China
TEL/FAX: +86 10-84975146