

# Systems questrian ш



# Access Irrigation Guide to Equestrian Systems

# **Guide to Equestrian Systems**

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Welcome to the 'Access Irrigation Guide to Equestrian Systems'. We hope you will find this guide helpful and provides you with the information you need to decide on a suitable system for your arena.

Access Irrigation is one of the longest established irrigation companies in the UK and has been providing watering solutions for over 40 years. Many of these projects involve systems for the sports industry, including riding arenas, tennis courts (grass and clay) and bowls clubs.

This booklet covers typical riding arena and ménage watering systems, along with some technical information on individual products and components. All of the equipment we supply is specially selected for its robustness, reliability and 'fitness for purpose'.

As a company, Access Irrigation can provide specialist advice and detailed costs for each project, along with full specifications for the client. Where funding is being sought Access can provide basic costing and technical details to aid the process, along with tender specifications if required.

Our website is packed with helpful information including downloadable specific product information and an on-line shop where new and replacement parts can be purchased directly. Look out for our SPORTS section on the website and in our catalogue.

If you wish to discuss further any of the systems mentioned in this guide you can contact us via telephone, fax or email, or visit our website where you can view further technical information and order online.

We hope to hear from you soon.

Mike Briley Sales Director

Access Irrigation Ltd Crick NORTHAMPTON **NN6 7XS** 

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# Introduction



Riding arena surfaces (Footings) whether located inside or out can quickly dry out causing problems with dust and lack of firmness. To remedy this the surface needs to be dampened down every few days. This can be done by simply watering manually using a hand held sprayer. However this is not only time consuming but can, if not done with care, cause areas of puddling.

There are various watering systems available to improve on this from the simple manual, semi-automatic right through to fully automatic or combination of these, depending upon situation and budget. This guide is intended to give an overview of the Equestrian systems available to you.

# Mobile system (Indoor/Outdoor Arena)





3 Riser Kit

## System Schematic

This system is suitable for both indoor and outdoor arenas and provides a cost effective alternative to using a hand held sprayer, which in itself is quite labour intensive. Although a manual system requires some user input for initial setting up, by the addition of a simple battery timer the actual watering operation can be done outside of working hours. This also means the exact amount of water can be controlled and overwatering can be avoided.

The system consists of 3-5 moveable metal risers fitted with Naan 501 large diameter sprinklers. The risers are linked together using flexible hose and connected using Geka type quick couplers. The last riser on the run is fitted with a stop end. The sprinklers cover a diameter of 14m and, for even coverage of the area, spaced approx 7m - 8m apart. They are placed along one side of the area first then moved to the other side once watering has taken place. The risers have a sled type base which means they can be dragged across the surface for repositioning without the need for disconnection. The design of the sprinkler itself, coupled with the wide metal base, gives stability when operating without the need for additional ballast. When not in use the bases can be left coupled. Alternatively each of the connection hoses can be linked together and stored on a wall mounted hose reel or trolley.

The water supply for the system can usually be taken directly from the mains via hose or tap takeoff point. There is no need for additional water regulation compliance. The supply required is 600-1000 litres/hour at 2.5-3.0 bar (each sprinkler uses 200litres/hour). Watering times will vary according to surface make up and conditions. However, as a base guide, the sprinklers will need to run for around 1 hour in each of the two locations.

# Advantages/Disadvantages

The advantage of this system is that it provides a simple and relatively cheap method of damping down the riding surface.

The disadvantage is that setting and resetting each time watering is required can be time consuming. Care must also be taken when moving the sprinklers as any debris entering the pipework may block the sprinklers. Overspray to surrounding areas is inevitable with this type of system. Adequate water supply required.

For prices and drawings see drawing reference 5302 or 5304.

# Overhead system (Indoor Arena)





**Overhead Pipework** 

## **System Schematic**

An overhead system enables the riding area to remain totally clear of pipework. Distribution lines of uPVC pipe are attached to straining wires, fixed to the roof structure suspended above the riding area. The lines are spaced at regular intervals across the area. At 2.5m intervals along the line a downtube/sprinkler assembly is fitted into the pipe. The lines are connected to the main supply pipe and operated as pairs or, on longer runs, independently.

Because the system has a higher water and pressure requirement than a simple manual system, a mains water supply is not usually good enough so a pressurisation unit and separate water storage tank is required.

The system can be operated manually via lever type valves located at ground level.

For automatic operation a 230v ac controller is used. This operates the lines via signal cable and 24vac solenoid valves. The controller would normally be set up to operate outside of working hours and also has the ability for manual operation if required.

Watering times are usually around 15 mins per line or pair of lines.

# Advantages/Disadvantages

The advantage of this system is that it provides a neat 'out of the way' solution. The horse or rider is unaware of its presence. If controlled automatically the system can be set to operate out of working hours ensuring the area is ready for action first thing in the morning.

The disadvantage is that being positioned high up at roof level, maintenance may be an issue. uPVC pipe is also vulnerable to frost damage so the system must be protected with a suitable frost protection system or drained down early before any chance of frost. This may reduce the system operating period when the arena is still in use. Overspray to surrounding areas is inevitable with this type of system. A 230v ac power supply is required for the pressurisation unit and controller.

If the system is required to run during the winter months then a frost protection system must be incorporated.

For prices and drawing see drawing reference 5305.

# Perimeter system (Indoor / Outdoor Arena)





**Perimeter sprinkler** 

## **System Schematic**

A perimeter system is the most popular method of watering an arena whether inside or out. The pipework can be surface clipped or hidden behind boarding or fencing as required. The system requires no user intervention and waters from the perimeter of the area using large radius type sprinklers on each corner and along each side. The water and pressure required means that a pressurisation unit and separate water storage tank is required.

A 230v ac controller operates the system on a timed basis via signal cable and 24v ac solenoid valves. The valves can be located together in one position and individual pipes then taken around the arena. Alternatively a single larger pipe is taken around the perimeter and the valves fitted at each of the sprinkler positions. This will largely depend upon size of area and available fixing points.

On outside arenas the addition of a rain sensor is recommended to ensure the system doesn't operate when the area is already sufficiently damp.

Watering times are usually 20-30mins per sprinkler and total water usage around 3000litres (dependent upon number and type of sprinkler used).

## Advantages/Disadvantages

The biggest advantage of perimeter sprinklers is that there is reduced overspray in the surrounding areas. This type of system is generally easier to install and maintain.

The disadvantages are that a 230v ac power supply is required for the pressurisation unit and controller. Space and suitable base is needed for the water storage tank. Also if in an exposed location the sprinkler throw may be reduced.

If the system is located inside and required to run during the winter months then a frost protection system must be incorporated.

For prices and drawings see drawing reference 5301 or 5303.

# **Technical information**

The following is a selection of typical system components. These are intended as a guide only and components may vary according to specific systems supplied. Additional product information is available to download from our website.

# Controller

For automatic operation an irrigation controller is used:

For mobile systems a simple Galcon battery timer can be used to switch the water supply on and off . This has clear digital display and offers 4 start times per day running single or multiple valves. The unit is powered by a single 9v battery which should last the entire season. The controller valve simply screws onto the outlet of a standard hose tap.





For integrated systems a 230v ac controller is used. Manufactured by Heron, one of the country's leading manufacturers. The unit has a clear digital display and is easily programmed to give a timed operation daily, weekly or, if operating an external arena as weather conditions dictate. Individual watering times or suspension for each zone can also be entered. The unit requires a 230v ac power supply usually a 3 pin socket is sufficient. The unit in standard form needs to be located in a clean dry covered area, however there is an option of a weatherproof controller enclosure if required.

A signal cable needs to run from the controller position to each of the solenoid valve locations. This operates at a safe 24v ac voltage.

If a weather sensor is specified a signal cable needs to run from the controller position to the sensor location.

# Pressurisation unit

The pressurised water supply to the system, if not taken from the mains, would usually be provided by a 230v ac single phase pump. The pump would be sized according to the system requirements. Connected directly to the water storage tank, it would be of the constantly pressurised type, or operated via an irrigation controller.



The pump can be surface mounted or submersible (inside the tank) depending upon specific system requirements.

If the pump is surface mounted it needs to be protected from the elements.

# Water storage tank

To comply with Water Supply (Water Fittings) Regulations 1999, a break tank is usually included in the system. The tank provides a Type AB air gap to prevent back-syphonage into the public mains.

The tank will be sized according to the specific situation. A surface or subsurface tank can be used. For surface tanks the tank is made from either sectional steel or black MDPE, to reduce



visual impact, and has a 2 year guarantee. The tank is usually circular and needs to be sited on a firm level base, at least 0.6m larger in diameter than the diameter of the tank. A floating level switch is fitted in the tank, to protect the pump against running dry.

A mains water supply will be required to supply the tank. The water supply needs to be in the region of 1200l/h at 1-2 bar pressure.

If required, a rainwater harvesting system can also be incorporated in the system.

# Warranty

All materials and workmanship are guaranteed for twelve months from date of invoice.

The limitation of liability due to failure of goods shall be limited to the value of the goods and Access Irrigation shall have no liability whatsoever for loss or damage of any sort suffered by the customer or any third party.

# Permissions required

If water is being drawn from the public main it is a legal requirement that, before installation of the system can begin, the local Water Company be informed.

# Legionnaires Disease

It is the responsibility of the user of the irrigation system / equipment to satisfy themselves that they have taken every precaution against airborne contaminated water droplets (Legionnaires Disease) when using the system. Information on Legionnaires Disease can be found on the Health and Safety Executive website, in Document L8: 'Approved Code of Practice (AcoP) Control of Legionnaires Disease and Management in Water Systems'.



Drawing Ref:	Description:	Guide Price
5301	Perimeter sprinkler system for <b>20m x 40m</b> ménage. System uses 8 no. Hunter PGP-Ultra rotary sprinklers, operating automatically in pairs. System includes 2500 litre plastic tank, pump and Heron controller.	£3650
Drawing Ref:	Description:	Guide Price
5302	Portable sprinkler system for <b>20m x 40m</b> ménage, using 4 no. Naan Adjustable sprinklers on sled risers and 50m x 1" hose with trolley. A water supply delivering 2000 l/h at 3 bar is required.	£725
Drawing Ref.	Descrintion:	Guide Price
5303	Perimeter sprinkler system for <b>30m x 60m</b> ménage. System uses 8 no. Hunter I25 rotary sprinklers, operating individually. System includes 5500 litre plastic tank, pump and Heron 8-station controller.	£8200
Drawing Ref:	Description:	Guide Price
5304	Portable sprinkler system for <b>30m x 60m</b> ménage. System uses 5 no. Naan Adjustable sprinklers on sled risers linked with 1" hose. System will cover half the arena with each setting of the sprinklers. Hose trolley included. A water supply delivering 2500 l/h at 3 bar is required.	£875



Drawing Ref:	Description:	Guide Price
5305	Overhead sprinkler system for indoor riding arena <b>27m x 47m</b> .System uses ACCESS mini-sprinklers which are inserted into high level 25mm uPVC pipework. System includes 5000 litre plastic tank, pump and automatic controls, running one sprinkler line at a time.	£4300
Drawing Ref:	Description:	Guide Price £
Drawing Ref:	Description:	Guide Price £
Drawing Ref:	Description:	Guide Price £





Design and pricing guides/Equestrian watering



# Drawing Ref: 5302

Notes:

Crick, Northampton NNG 7XS 01788 823811 sales@access-irrigation.co.uk www.access-irrigation.co.uk

# **Equestrian Watering**







Design and pricing guides/Equestrian watering



# Drawing Ref: 5304

Notes:

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# **Equestrian Watering**





Design and pricing guides/Equestrian watering



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# Galconette

A simple yet reliable tap timer with large LCD display and plenty of features.

Manual override allows additional watering at the touch of a button. During wet weather the 'rain-off' button can be pressed.

# **Galconette Dial**

For simple and easy operation, this unit has two programmable dials with easy pre-set options.

The two dials show at a glance the watering times set.

The 'start' button allows additional watering at the touch of a button





- 4 starts per day
- 1min-12hr watering time
- 1 year battery life (average)
- Fits to an outdoor tap
- Order code EPAGT

- 8 starts per day
- 2min-9hr watering time
- 1 year battery life (average)
- Fits to an outdoor tap
- Order code EPAGD

# Heron

# Multi-Wire Irrigation Controller



The most comprehensive range of features in the marketplace.

A versatile irrigation controller for horticulture, landscape and agriculture.







# Why the Heron Multi Wire Controller ?

- A superbirange of software features enable you to customize the controller to match the exact needs of each installation.
- Oreate irrigation programs, running any valve in any order.
- Run up to 6 valves in parallel.
- Option to operate your controller from a PC or a mobile phone
- Integrate with sensors and dosing systems.
- Unique lightraine surge suppression feature utilizing optical technology built in to all controllers.
- Battery powered versions available.

# Controller Sizes

The Heren K i range of multi wild in ight on variabilities ope a  $\omega$  from 4 to 144 values

Victols sizes u clavel able for 4, 8, 12 or 15 vulves

The Mri-144 might an adulter lune 15 valves as standard but can be upgraden to support 144 valves using expansion boxes and additional outputter ds. Each expansion how our anonymodate four 16 valve output cands



# Easy To Use

the large display and manuichiven operation of the Heron might on control term moves them in tuitive and easy to use.



To simplify the creation of intigation programs values can be individually maned. In gation blog camp can be completely during the user to change the value order, add sind de som values.



# Tailor Your Controller to Meet Your Needs

Secure every a tells offerent, Hanch inigation controllers con up confligued to metch the model of costh installation. You can apply the number of programs, the type and number of outformition units incorted. You can unable or dischoutho activate Aschues recurst.

Simply select the features you want from a list of options. The features will then appear in the controllar's Main Menu for you to use.



# Complete Control

Minor trollers can be integrated with sensors and dosing systems

Irr gation car balcontrol ad by light, rain temparatura, humidity, whicispeed, which direction or flow meters.

For example, your Millechto for can be seulubite.

- Coerate a mating imigation program initiated by light and hum dily.
- The misting in gation program can be set to take priority over cuttaide intigation programs
- The initiale in gation car be configured to reduce bosod on juin fail.



Huron contro to si car utso to comported to Honon's fart lipe and sold doeing systema. Up to 4 heron dosing systema can be venimoored to one in igation controllor. Alternative y her an control or som op used to up not the dosing of 16 till zer on a proportional pasts up again the two meters. One Fow matter maasuring the imigation flow and the other measuring fait lizer flow.

Ly addring an additional outpurcetio M, controllerio can also operate back trush inters on be used for thost protection

# No Mains Power

Horon multi willo unitary covered control are ploy do unitideal so ut arr to the integrition of remote areas on tarms or nuiser es, other come in an other chemical entry.

- Mhare there is no mains electrical power
  The letching polehold version can be privated from a small solar panel.
- The controllers are available in two sizes. The MI-30 operates up 20 Bin rigation valves, the Mi-BL6 operates 16 intigation valves.





# Choose How You Want to Work

To give you a true degree of flexibility in how you work. Heron's Minange of inigation controllers can be operated os standa one controllers, from a PC or via a mobile phone.



# PC Operation

Using Heron's "Ground Control" software you can generate inrigation programs and operate your inrigation system. from a PU, Controllers can be directly connected to your PC or dialled up remotaly.

All the functions on the inigation controller can be operated from the PC.

The software includes a number of functions to help you reduce casts through water budgeting.

Irrigation programs can be automatically generated to optimise water usage. Estimated water usage is calculated. Actual water usage can be reported.

"Ground Control" also available with a full graphical drawing lacitly enabling you to draw a realistic picture of your institution. You can operate your inigation system, or view historical data by simply clicking on the picture.



# Mobile Phone Operation

Take advantage of the mobile phone hetwork to operate your controller.

Use your mobile phone as a remote control to start a vaive, a program, or a pump, Receive a text message from your controller should an alarm condition arise. In built security prevents unauthorized mobile phones from dialling up.

# Irrigation Program Features

- Up to 60 independent programs.
- Run up to 6 valves in parallel as standard ٠
- Possibility to run up to 12 valves in parallel with additional output cards. ٠
  - Up to 64 automatic starts.
  - Daily, weekly and variable period automatic starts.
  - Automatic starts can be set to run on odd or even days.
  - Valves can be individually named e.g. Lawn1, Bed1.
  - Valves can be specified to run on a time or volume basis.
- Valves can be allocated to one of five water meters.
- An optimal flow can be entered for every valve.
- · A minimum, maximum and pipe break flow rate can be specified for each water meter.
- Valve times can be set from a minimum of 1 second to 10 hours.
- Valves can be allocated to an irrigation group.
- Rainfall can be monitored over 1 to 4 days, irrigation programs can be reduced by 25%, 50%, 75% or 100%.
- Manually percentage adjust (0% to 250%).
- Separate manual percentage adjust for programs and valve groups.
- Continual cycling of irrigation programs between specified time of day. Delay between cycles can be set from 1 minute to 9 hours.
- Manually start an individual program or valve.
- Manually start multiple programs.
- · User can select which program to stop or manually advance if multiple programs are running.
- Pump pressurisation time can be set in minutes and seconds.
- Programs can be configured to start, stop, freeze or manually advance on a remote input.
- Up to 10 remote inputs can be connected.
- Programs can be allocated up to 5 pump starts or master valves.
- Valves can be defined as 'special outputs' to control external devices e.g. fill a pond, switch lighting,
- Valves can be defined for back flush use.
- Irrigation programs can be inhibited by wind speed or wind direction.
- Programs can be integrated with light, rain, humidity, temperature sensors.
- Irrigation can be controlled from a calculated evapotransprition (ET) value. The ET value can be calculated using a variety of sensors depending upon the required accuracy.
- Programs can be attached to a dosing recipe.
- Compatible with any 24V AC solenoid valve. ٠

# Hardware

# Features

Unit G15,

# Rudford Industrial Estate,

Arundel,

West Sussex

ENGLAND

BN18 0BD



- Option to operate DC valves.
- Output current 1.2 Amps (resistive) with electronic overload cut-out. •
- Output current is measured which can be displayed for diagnostic purposes.
- Two pump start outputs.
- Three digital inputs.
- One socket to connect additional cards. •
- Two sockets for connecting additional output-boxes (MI-144 only).
- One data connector to connect PC and GSM mobile phone module.
- Designed to operate in an industrial environment. High electrical noise immunity, can withstand a 2.5KV spike.
- Battery backed up real time clock. Real time clock immune to high electrical ٠ noise.
- All outputs protected against electrical surges exceeding ANSI C62 surge suppression standards.
- Lockable outdoor steel enclosure version available.

# www.heron-electric.com

E-mail: sales@heron-electric.com

Phone: Int. 44 1903 724343

ROTORS SPRAYS VALVES CONTROLLERS SENSORS CENTRAL CONTROLS MICRO



# Hunter



# Action Packed and Feature Stacked

The new PGP Ultra is a blockbuster of epic proportions.

Ready to thrill you, this action packed feature from the award-winning Hunter Industries stars the same great lineup of the original PGP: Throughthe-top adjustment, large nozzle selection, and the industry's most reliable and proven drivetrain assembly. But the newcomers are what makes it Ultra: Full-circle adjustment from 50 to 360 degrees; non-strippable drive mechanism with auto-arc return; headed and slotted nozzle retainer screw, using either a Hunter wrench or a standard slotted screwdriver; and improved dirty-water tolerance on the internal gear drive. Five stars.

Each PGP Ultra comes with an easy-to-install, square top rack of 8 standard nozzles and 4 low angle nozzles. And optional racks of short range nozzles, for the smallest of areas, are available, too.

> Now you have a choice. Use a slotted screwdriver or the Hunter wrench with the PGP, for easier and simpler adjustments as you need to make them.



# Roll Out the Green Carpet

Twenty-eight years in the spotlight and still center stage, the PGP has proven its status as a superstar. The best selling rotor in the world since 1981, the PGP's original exceptional design and impressive performance along with

> continuous improvements and enhancements have meant decades of unmatched durability, versatility, and value.

Patented non-reversing 360: Part and full circle in one model, 50 - 360 degrees.

NE W



Turret turns 360 degrees continuous counter-clockwise.

Optional factory-installed drain check valve for up to 10' (3 m ) of elevation change. Saves water, reduce liability.

Available in shrub, 10 cm (4"), and 30 cm (12") pop-up.

## Packed-to-go

New to town and ready to work, the PGP Ultra will be on hand in a convenient new six-pack design. Go on and grab some, because with a product like the PGP and a name like Hunter, you can bet they're going to be in demand. Headed and slotted screw:

Two adjustment tool choices, won't get lost, easy to clean.

## NEW

NEW

Blue square top nozzles: 8 standard, 4 low-angle, easy to install.

## NEW

Automatic arc return: Returns to the original arc regardless of where the turret is turned.

## NE W

Patent pending non-strippable, vandalproof drive mechanism enables the turret to be turned without causing damage.

> The PGP Ultra's backdrive mechanism up close.

## NEW

3-Year warranty: The most reliable rotor on the market, now a longer warranty.

## NEW

Rubber cover: Thicker and safer, allows the same through-the-top arc adjustment with user-friendly symbols.





# **Charts and Specs**

Nazle	Pres Bara	kPa	Radius	Pk mithr	Vmin	Precip	mm/h
1.00.01.00	2.0	200	9.1	0.29	48	7	8
4.5	3.0	300	9.8	0.35	5.9	7	9
1.5	3.5	3 50	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	200	10.1	0.35	5.8	7	8
1000	2.5	250	10.1	0.39	4.5	8	
2.0	3.0	300	10.4	0.43	7.2		
	4.0	400	10.4	0.50	8.3		11
	45	450	10.4	0.53	8.8	10	11
	2.0	200	10.4	0.43	7.1	8	9
	2.5	250	10.7	0.48	8.0	8	10
25	3.0	300	10.7	0.54	8.9	9	11
2.0	15	350	10.7	0.58	9.7	10	12
	4.5	400	10.7	0.62	11.1	12	13
	2.0	200	10.7	0.54	9.1	10	11
	2.5	250	11.0	0.61	10.2	10	12
20	3.0	300	11.6	86.0	11.4	10	12
3.0	15	350	11.9	0.74	12.3	10	12
	4.0	400	11.9	0.79	13.2	11	13
	4.5	400	11.9	0.84	14.0	12	14
	2.0	250	11.0	0.81	134	12	13
	3.0	300	12.2	0.90	15.0	12	14
4.0	3.5	3 50	12.2	0.97	14.2	13	15
	4.0	400	12.5	1.04	17.3	13	15
	4.5	450	12.5	1.10	18.3	14	16
	2.0	200	11.4	0.91	15.2	14	16
	2.5	250	11.9	1.02	12.1	15	17
5.0	3.5	150	12.0	1.24	20.6	15	12
	4.0	400	12.8	1.32	22.1	16	19
	4.5	450	12.8	1.41	23.4	17	20
	2.0	200	11.9	1.09	18.2	15	18
	2.5	250	12.2	1.22	20.4	16	19
6.0	3.0	300	13.1	1.36	22.7	16	18
	4.0	400	13.4	1.57	24.3	18	20
	45	450	13.4	1.67	27.9	19	21
	2.0	200	11.9	1.46	243	21	24
	2.5	250	12.5	1.43	27.2	21	24
0.0	3.0	300	13.4	1.81	30.2	20	23
0.0	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	37.6	23	26

	Pres	are .	Radus		D-WE	Precip	mm/hr
Narate	Bars	kPa	m	m7hr	1/min		
2.0 LA	1.7 2.0 2.5 3.0 3.5 4.0 4.5	172 200 248 303 <b>352</b> 400 448	73 76 79 82 8.5 88 9.1	0.33 0.36 0.40 0.45 0.45 0.52 0.55	5.6 6.7 7.4 8.0 8.6 9.1	12 13 13 13 13 13	14 14 15 15 15
2.5 LA	1.7 2.0 2.5 3.0 3.5 4.0 4.5	172 200 248 303 <b>352</b> 400 448	7.9 8.2 8.8 9.4 <b>90.1</b> 10.4 10.7	0.44 0.47 0.53 0.59 0.64 0.68 0.72	7.3 7.9 8.8 9.8 <b>10.6</b> 11.3 12.0	14 14 13 13 13 13	16 16 15 15 15
3.5 LA	1.7 2.0 2.5 3.0 3.5 4.0 4.5	172 200 248 303 <b>352</b> 400 448	85 88 9.1 10.1 <b>10.7</b> 11.0 11.3	0.58 0.62 0.68 0.75 0.85 0.85 0.85	9.7 10.3 11.4 12.5 13.3 14.1 14.8	16 16 15 14 14	18 19 17 16 16
4.5 LA	13 20 25 30 <b>35</b> 40 45	172 200 248 303 352 400 448	82 88 9,1 10,1 <b>10,7</b> 11,0 11,3	0.71 0.76 0.84 0.93 <b>1.00</b> 1.06 1.12	11.8 12.7 14.1 15.5 <b>16.6</b> 17.6 18.6	21 19 20 18 18 18 18	24 23 21 20 20 20

PGP Ultra Low Angle Nozzle

Performance Data - Metric Pressure Nozzle Bars kPa Radius m Flow mithr 1/min Precip mm/hr 1.7 172 4.9 0.07 1.2 á 7 52 52 1.3 1.5 20 200 0.08 47 .50 2.5 248 0.09 8 3.0 303 5.2 0.10 1.7 9 8889 SR 352 400 5.5 5.5 0.12 1.9 9 3.5 4.0 448 5.5 45. 0.14 2.3 10 1.7 172 200 49 52 0.16 2.7 2.9 14 13 16 15 0.17 27 0.19 32 0.21 36 0.23 3.8 0.25 4.1 0.26 4.3 25 30 3.5 40 45 1.0 248 303 52 52 17 18 18 19 20 14 16 15 16 17 SR 352 400 448 55 55 4.7 172 0.28 24 27 1.7 4.9 23 27 31 27 31 35 0.31 2.0 200 5.2 5.2 40 49 7.6 82 89 2.0 52 52 55 25 248 303 0.36 SR 0.45 30 33 35 3.5 352 35 40 400 448 55 38 41

PGP Ultra 5.5 m Short Radius Nozzle

	Pres	84.0	Radius	E.	QW/	Predp	mmh
Nozzle	Bars	kPa.	m	miller	1/min		
	1.7	172	6.7	0.12	2.0	5	á
	2.0	200	7.0	0.13	2.2	5	6
.75	2.5	2.48	7.0	0.15	2.4	á	7
	3.0	303	7.3	0.16	2.7	á	7
SR	15	352	7.6	0.17	2.9	ð	7
	4.0	400	7.6	0.19	3.1	á	- 7
	4.5	448	7.6	0.20	3.3	7	в
	1.7	172	6.7	0.23	3.8	10	12
10.00	2.0	200	7.0	0.25	4.1	10	12
1.5	2.5	248	7.0	0.28	4.6	11	13
	3.0	303	7.3	0.31	5.2	12	13
SR	15	352	7.6	0.34	5.6	12	13
	4.0	400	7.6	0.36	6.0	12	14
	4.5	448	7.6	0.39	6.4	13	15
	1.7	172	6.7	0.53	8.9	24	27
	2.0	200	7.0	0.56	9.3	23	26
3.0	2.5	248	7.0	0.60	10.0	24	28
	3.0	303	7.3	0.64	10.7	24	28
SR	15	352	7.6	0.67	11.2	23	27
	4.0	400	7.6	0.70	11.7	24	28
	4.5	448	7.6	0.73	12.1	25	29

SPECIFICATIONBUILDE	R	
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MODEL PGP-00 = Struk PGP-04 = 4" Pop-up (10 m) PGP-12 = 12" Pop-up (10 m)		OPTIONS 1.5 - 4.0 - Factory initial edn carle number
PGP - 04	CV-R	▶3.0
	04 - CV-R	- 3.0 Note: Blue nozel e rack is supplied when no pre-installed nozel e is

specified.

KEY TO FEATURES XX = Adjustable arc 50:360 degrees, no check value CY = Adjustable arc 50:360 degrees, with check value CY# = Adjustable arc 50:360 degrees, with check value and reclaimed value CY# = Adjustable arc 50:360 degrees, with check value and reclaimed value CS = Clear dem or sprinkler (PGP-04 only)



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