

DRIP-IN™ with ROOTGUARD® Protection

FOR LANDSCAPES AND GARDENS

Irritrol®

Subsurface Drip System for Residential, Commercial & Sports Turf Applications. Available in 13 I.D., 16 O.D. and 20 O.D. mm, and a variety of flow rates.

ARE YOU LOOKING FOR:

- **Application versatility?**
- **Safe and Environmentally friendly systems?**
- **Precise water application?**
- **Low maintenance and running costs?**

Drip-In™ with Rootguard® is the most technologically advanced subsurface irrigation system available. Through revolutionary Rootguard technology, Drip-In with Rootguard delivers optimal water application directly to the root zone while impeding roots from clogging the emitters. Drip-In with Rootguard is suited to the irrigation of lawns, shrub areas, median strips, public recreation areas, sports fields, corporate gardens, car yards, parking islands and vandal prone areas. Drip-In with Rootguard is also a solution for golf course applications including bunker edges, bunker tongues, tees and greens.

ADVANTAGES

- More efficient water usage.
- Greater application uniformity.
- No run-off, overspray or evaporation.
- Reduced weed growth.
- Healthier plants.
- Less pest and vandal damage.
- No irrigation down-time (Area can be used all day, every day).
- Reduced pumping costs.
- Controlled application of effluent water.



Installation on North Terrace, Adelaide.

PROFESSIONAL, FLEXIBLE AND RELIABLE

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ROOTGUARD® TECHNOLOGY

How it Works

Toro Drip-In with Rootguard dripline features patented, Rootguard technology, which prevents roots from clogging irrigation emitters. The pre-emergent, TREFLAN, is impregnated into the emitter during the moulding process and requires virtually no maintenance. There are no filters to change and no chemically treated disks to handle, making it the safest subsurface system on the market. Once Drip-In with Rootguard is installed in the ground, the slow release of TREFLAN creates a barrier around the emitter. Roots are directed away from the emitter opening, ensuring optimal water application.



Drip-In with Rootguard protection inhibits root intrusion directly at the emitter opening.

Drip Zone Valve Assembly

- Place the assembly before each drip zone.
- Assembly to include ball valve, Y-filter, control valve, pressure regulator and necessary fittings.

Automatic Line Flushing Valve

- Provides for system flushing each time the system is started.
- Install at furthest point from the water source.
- Install in valve box with gravel bed capable of absorbing about 4 litres of water.

FEATURES

Precise Water Application

Flowers, shrubs and grass will receive the precise amount of water required for proper plant health, while at the same time eliminating water marks on expensive hardscapes such as walls, glass or signage.

Safer Surroundings

When Drip-In with Rootguard is installed below ground, the landscape surface is free from irrigation equipment that may disrupt activities or cause injury. Over spray and irrigation run-off are minimised as the water is applied directly to the root zone, therefore slippery walkways are no longer a liability.

Design Flexibility

Drip-In with Rootguard fits narrow and odd-shaped landscapes perfectly. Irrigate trees, shrubs, ground cover and turf in virtually any landscape area.

Environmentally Friendly

Irrigating with Drip-In with Rootguard saves water. Irrigation takes place at or below grade so there is minimal water loss due to mist, evaporation, run-off or wind. In addition, the amount of chemigation and fertigation required to maintain the health of your landscape is decreased since these are applied directly at the root zone. Drip-In with Rootguard requires less handling, so it is safer than any other sub-surface irrigation product on the market.

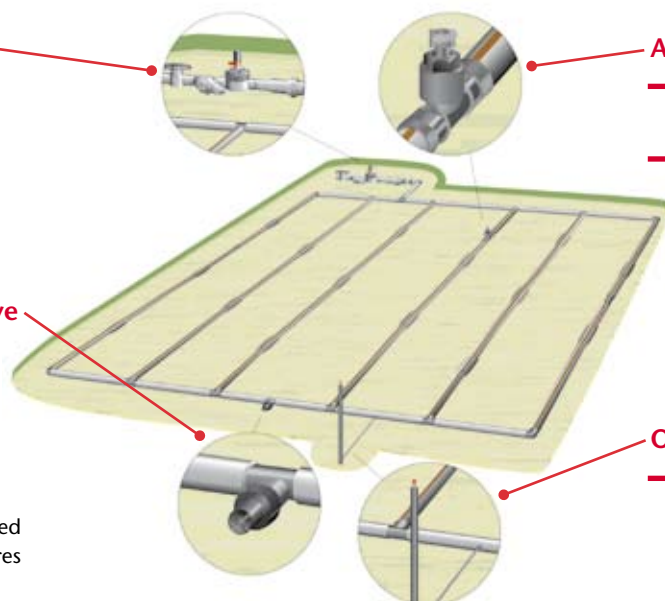
Pressure Compensated Version

Drip-In with Rootguard is also available in a PC version. Pressure compensating emitters allow for longer run lengths and cope with steeper and undulating terrain, making difficult design scenarios easier. Pressure compensating, self-cleaning emitters provide precise water application. Available in 30 and 40cm spacing.

MAINTENANCE TIPS

- Flushing keeps the Drip-In with Rootguard dripline clean. Any particles that accumulate at the end of the submains and driplines will be expelled from the system. This process can be automated or done manually.
- Problem detection is not complicated. Leaks can be found easily by walking the system and looking for excessively wet areas. Pressures should be checked routinely and compared to the design parameters.

- Clean the filter as often as necessary. In new installations the filter should be checked frequently. When using clean potable water sources, two cleanings a year should be enough.



Air/Vacuum Relief Valves

- Essential to provide vacuum relief within the irrigation system. (Part Number 101VB15)
- Recommended on all high points of an irrigation system to provide vacuum relief at system shutdown.

Operation Indicator

- A visual indicator that pops-up during each subsurface irrigation cycle. (Part Number DL-MP9, Drip Tube Operation Indicator)

IRRIGATION FREQUENCY

- The interval between irrigations depends on the soil type. Light (sandy) soil should be watered frequently with short irrigation duration. Heavy (clay) soils can be watered less frequently with longer irrigation duration.
- Maximum daily plant requirements, lateral depth and soil types should be used to establish the emitter spacing in the dripline, as well as the flow rate of the emitters.
- Irrigation time should not exceed the soil's infiltration rate.

STORAGE

- It is important that the rolls of tube are installed below ground as close to the time of manufacture as possible. The TREFLAN release rate is affected by the temperature, the higher the temperature the greater the release rate.
- When the rolls need to be stored prior to installation, they should be stored in a dry, well ventilated place out of direct sunlight. It is recommended that Rootguard® tube be installed as close as possible to the time of manufacture. Do not store for more than six months from the date of manufacture, until installation.

APPLICATION RATES

Gross Precipitation Rate				
Emitter Flow Rate	1.6L/h	2.0L/h	2.4L/h	4.0L/h
Line and Dripper Spacing				
30cm x 30cm	17mm/hr	22mm/hr	26mm/hr	44mm/hr
30cm x 40cm	13mm/hr	16mm/hr	20mm/hr	33mm/hr
40cm x 40cm	10mm/hr	12mm/hr	15mm/hr	25mm/hr

SUGGESTED DRIP LINE & DRIPPER SPACING

Turf			
Soil Type	Line Spacing	Dripper Spacing	Burial Depth
Medium Sand	30cm	30cm	100mm
Loam	30cm	30cm	100mm
Clay Loam	40cm	40cm	100mm
Clay	30cm	40cm	100mm
Annuals, Ground Covers, etc			
Soil Type	Line Spacing	Dripper Spacing	Burial Depth
Medium Sand	30cm	30cm	100mm
Loam	30 to 40cm	40cm	100mm
Clay Loam	40cm	40cm	100mm
Clay	30cm	40cm	100mm
Large Shrubs, Trees, etc			
Soil Type	Line Spacing	Dripper Spacing	Burial Depth
Medium Sand	Vary to suit planting density	30cm	150cm
Loam	Vary to suit planting density	40cm	150cm
Clay Loam	Vary to suit planting density	40cm	150cm
Clay	Vary to suit planting density	40cm	150cm

INSTALLATION OF DRIP-IN WITH ROOTGUARD

- Backflow prevention regulations require the installation of a Reduced Pressure Zone (RPZ) device by a licensed plumber. These need to be checked on an annual basis. Contact your local water authority regarding exact requirements.

Carparks



Golf Courses



Borders/Median Strips



Lawned Areas



MAXIMUM RECOMMENDED RUN LENGTH 13MM DRIP-IN PC WITH ROOTGUARD

Inlet Pressure (kPa)	Spacing (m)	
	0.3	0.4
200	Length (m)	
	65	85
300	80	110
Nom. Flow L/h	2.0	2.0

All pressure compensating tube run lengths are based on a minimum operating pressure of 100 kPa, single laterals and flat ground.

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MAXIMUM RECOMMENDED RUN LENGTH 16MM DRIP-IN WITH ROOTGUARD

Inlet Pressure (kPa)	Spacing (m)															
	0.3		0.4		0.5		0.6		0.75		0.9		1.0		1.5	
	Length (m)															
100	65	40	85	55	100	65	115	70	135	85	165	100	185	110	230	145
Nom. Flow L/h	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0

All non-compensating tube run lengths are based on a variation in discharge of $\pm 10\%$ of the nominal dripper flow rate, single laterals and flat ground.

MAXIMUM RECOMMENDED RUN LENGTH 20MM DRIP-IN WITH ROOTGUARD

Inlet Pressure (kPa)	Spacing (m)															
	0.3		0.4		0.5		0.6		0.75		0.9		1.0		1.5	
	Length (m)															
100	115	75	145	90	175	115	200	130	235	150	265	175	285	185	380	250
Nom. Flow L/h	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0	2.0	4.0

All non-compensating tube run lengths are based on a variation in discharge of $\pm 10\%$ of the nominal dripper flow rate, single laterals and flat ground.

MAXIMUM RECOMMENDED RUN LENGTH 16MM DRIP-IN PC WITH ROOTGUARD

Inlet Pressure (kPa)	Spacing (m)																							
	0.3		0.4		0.5		0.6		0.75		0.9		1.0		1.5									
	Length (m)																							
200	95	65	50	125	85	65	150	105	80	180	125	95	215	150	115	255	175	135	275	190	145	385	265	200
300	120	85	60	155	110	80	190	135	100	225	155	120	275	190	145	320	225	170	350	245	185	485	340	255
Nom. Flow L/h	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0

All pressure compensating tube run lengths are based on a minimum operating pressure of 100 kPa, single laterals and flat ground.

MAXIMUM RECOMMENDED RUN LENGTH 20MM DRIP-IN PC WITH ROOTGUARD

Inlet Pressure (kPa)	Spacing (m)																							
	0.3		0.4		0.5		0.6		0.75		0.9		1.0		1.5									
	Length (m)																							
200	160	120	85	205	155	110	245	185	135	285	220	155	345	260	185	395	300	215	430	325	235	580	440	315
300	205	155	110	260	195	140	315	240	170	365	275	200	435	330	240	500	380	275	545	415	300	740	565	405
Nom. Flow L/h	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0	1.6	2.4	4.0

All pressure compensating tube run lengths are based on a minimum operating pressure of 100 kPa, single laterals and flat ground.

Dealer Stamp

**For Customer Service Call
Toro Irrigation on 1300 130 898**

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TORO Toro Australia Pty Ltd