

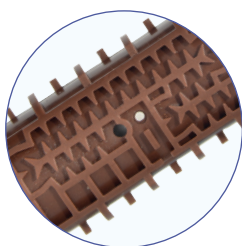
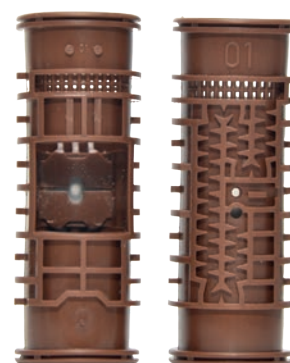


TURBOLINE PC - RID[®]

Root intrusion is an issue in subsurface drip irrigation systems mostly happening due to inadequate irrigation leading to water stress due to which crop roots enter and block drip irrigation emitters. Jain Irrigation has developed a proprietary 'Root Intrusion Deterrent' technology to avoid root intrusion. RID technology works by impregnation of a specially developed copper compound in the dripper. Copper with its potent biocidal properties, significantly reduces root intrusion.

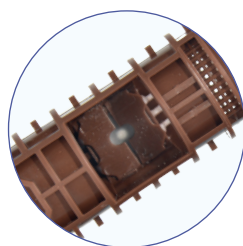
Turboline PC -RID inhibits root intrusion.

Turboline PC - RID®



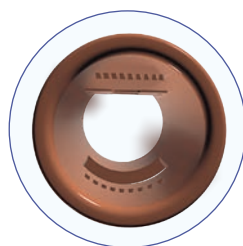
Integral, Cylindrical, Pressure Compensating Dripline

State-of-the-art cylindrical PC (Pressure Compensating) dripper ensures highest durability and excellent performance.



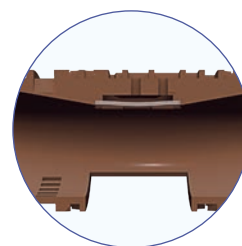
Root Intrusion Deterrent dripper

Dripper is manufactured with infused copper material to inhibit root intrusion inside the drippers flow path. Offers long lasting protection.



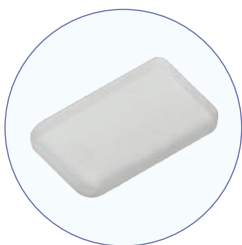
Double Built-in Filters

Each dripper has two built-in filters placed opposite to each other prevents entry of contaminats and even-if one side filter gets plugged, water can percolate from the other side filter.



Dynamic Self Cleaning mechanism

Dynamic movement of diaphragm retracts to flush away particles which are trying to plug the flow path of the dripper.



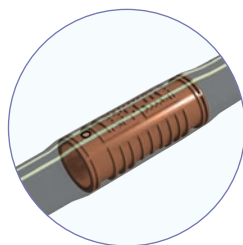
Injection Moulded Silicone Diaphragm

Silicone offers high chemical resistance and moulding of liquid silicone offers dimensionals stability and prevention of erosion.



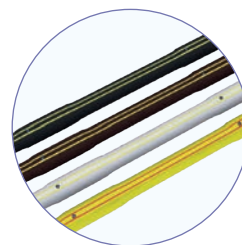
Marked with Two Parallel White Stripes 'Twin- Line'®

Protected Intellectual Property of Jain Irrigation and a Symbol of quality.



Stringent Quality Control

Each batch is tested for stringent quality parameter. Conforming to Indian standard IS 13488:2008 and international standard ISO 9261.



Flexibility in color selection

Black - for agriculture,
Brown - for landscape
White - for greenhouse
Purple - for reclaimed water

Turboline PC - RID®

Other Important Features

Manufactured from Special Grade Virgin Plastic Material

Makes the tubing durable and gives best environmental stress crack resistance (ESCR).

Manufactured with Most Modern, State-Of-the-Art Equipment.

It's computerised continuous online quality control monitors emitter spacing and precision in outlet drilling. Thus ensures reliable quality and consistent performance.

Excellent C_vm, manufacturer's coefficient of variation

Maintains close dimensional tolerances to ensure best field emission uniformity.

Wide Pressure Compensating Range

Pressure regulation starts as low as 0.8 kg/cm² to as high as 4.2 kg/cm² pressure.

Longer Lateral Lengths

Can run for longer lengths without compromising the uniformity.

Applications

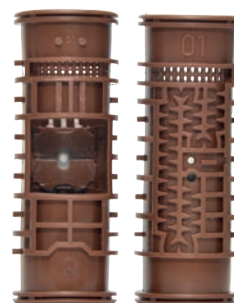
- Ideal for irrigation of closely spaced row crops like sugarcane, cotton, banana, strawberry, floriculture, vegetables and spices. Landscape and turf irrigation applications.
- Recommended for undulating terrain & steep slopes and where longer lateral running length is necessary.
- Open field application to maintain high field application efficiency.
- Recommended to prevent root intrusion in subsurface drip irrigation applications

Specifications

- **Nominal Discharges** : 16 mm OD (14.2mm ID): 1.1, 1.6, 2.2 and 3.5 lph for tubing wall thickness as per pressure class2.
16 mm OD (13.9mm ID): 2.0 and 3.2 lph for tubing wall thickness as per pressure class3.
20 mm OD (18mm ID): 0.9, 1.6, 2.2 and 3.8 lph for tubing wall thickness as per pressure class 1.
- **Emitter Spacing** : Standard emitter spacing of 15, 20, 30, 40, 50, 60, 75, 90, 100, 120 and 150 cm. Any other emitter spacing and group spacing can be supplied on demand.
- **Sizes** : Standard sizes of 16mm OD (14.2 and 13.9 mm ID) and 20 mm OD (18 mm ID).
- **Pressure Compensating Range** : 0.8 to 4.2 kg/cm² (11 to 60 psi).

Operating Specifications

- Maintain the operating pressure within the pressure regulating range.
- Specially designed emitting pipe fittings are available.
- Filtration recommendation 130 micron or less. Actual quality of filtration can be decided by quality of source water.
- For subsurface application, install vacuum breaker valves on the submain as well as on the collective drain to avoid soil suction during system shutdown.



Turboline PC - RID®

Technical Specifications - Tubing

Nominal Dia. (mm)	Inside Dia. (mm)	Minimum Wall Thickness(mm)				Standard Coil Length (m)
		Class-1	Class-2	Class-3	Class-4	
*16	14.2	0.5	0.7	1.0	1.3	100, 250, 400
16	13.9	-	-	1.1	-	100, 250, 400
*20	18.0	0.7	0.9	1.2	1.5	100, 250

* Dimensions are as per Indian Standard IS 13488:2008.

Technical Specifications - Emitter Technical Specifications for Emitter - Metric

Nominal Discharge (lph)	Emitter exponent	Flow coefficient	Coeff. of mfgr. variation,	Flow path dimensions (mm)			Inlet filter area (mm ²)
	x	k	CVm	Length	Width	Depth	
16 mm							
1.1	0	1.1	2.5	60	0.70	0.98	14.08
1.6	0	1.6	2.5	60	0.78	1.08	14.08
2.2	0	2.2	1.5	60	0.80	1.10	14.08
3.5	0	3.5	4.0	60	1.04	1.32	14.08
20 mm							
0.9	0	0.9	2.5	110	0.74	1.10	7.29
1.6	0	1.6	2.5	87	1.04	1.10	9.20
2.2	0	2.2	3.0	87	1.04	1.30	11.00
3.8	0	3.8	3.0	128	1.00	1.20	14.40

Flow equation $q = kH^x$, q = Nominal Discharge, lph, H = Pressure head, kg/cm², x = Emitter exponent

Technical Specifications for Emitter - US

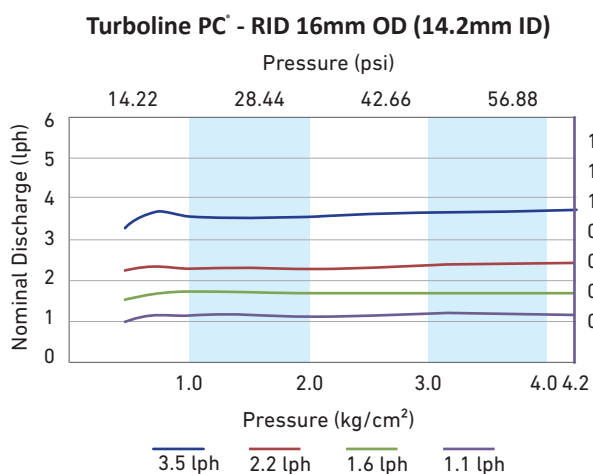
Nominal Discharge (gph)	Emitter exponent	Flow coefficient	Coeff. of mfgr. variation,	Flow path dimensions (inch)			Inlet filter area (inch ²)
	x	k	CVm	Length	Width	Depth	
16 mm							
0.29	0	0.290	2.5	2.36	0.028	0.039	0.022
0.42	0	0.423	2.5	2.36	0.031	0.043	0.022
0.58	0	0.581	1.5	2.36	0.031	0.043	0.022
0.93	0	0.925	3.0	2.36	0.041	0.052	0.022
20 mm							
0.24	0	0.238	2.5	4.33	0.023	0.043	0.011
0.42	0	0.423	2.5	3.43	0.041	0.043	0.014
0.58	0	0.581	3.0	3.43	0.041	0.051	0.017
1.00	0	1.004	3.0	5.04	0.04	0.047	0.022

Flow equation $q = kH^x$, q = Nominal Discharge, gph, H = Pressure head, psi, x = Emitter exponent

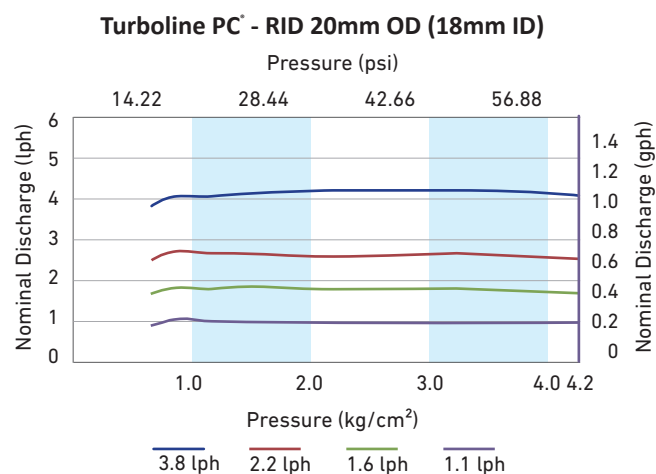


Turboline PC - RID®

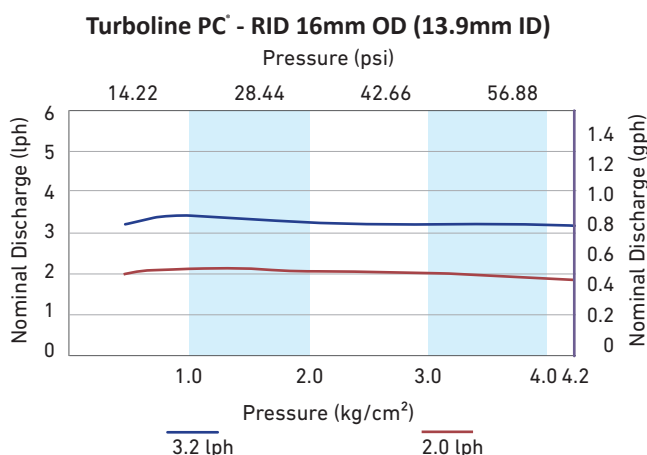
Performance Graph



Note: Performance graph for Turboline PC® - RID as per Pressure Class-2.



Note: Performance graph for Turboline PC® - RID PC® as per Pressure Class-1.



Note: Performance graph for Turboline PC® - RID as per Pressure Class-2.



Technical Specifications for Emitter with different wall thickness tube

OD	ID	Nominal Discharge (lph)	Nominal Flow rate as per wall thickness			
Wall thickness (mm)			0.5 - 0.6	0.7 - 0.9	1.0 - 1.2	
16	14.2	1.1	1.4	1.3	1.1	
		1.6	2.0	2.0	1.3	
		2.2	2.8	2.6	2.2	
		3.5	3.8	3.6	2.8	
	13.9	2.2	MTO	MTO	2.0	
		3.5	MTO	MTO	3.2	
Wall thickness (mm)			0.7 - 0.8	0.9 - 1.1	1.2 - 1.4	
20	18.0	0.9	1.1	0.9	MTO	
		1.6	2.0	1.7	MTO	
		2.2	2.6	1.8	MTO	
		3.8	4.3	4.0	MTO	

Note: MTO refers to Make To Order

The Corporation

There is more to Jain Irrigation than irrigation

Global Presence: Jain Irrigation Systems Ltd. (JISL) derives its name from the pioneering work it did for the Micro Irrigation Industry in India. However, there is more to Jain Irrigation than Irrigation. Now Jain Irrigation is a diversified entity with turnover in excess of Rs. 5800 crore. We have a Pan- India & Global presence with 24 manufacturing bases spread over 4 continents. Our products are supplied to over 126 countries with able assistance from more than 5500 dealers and distributors worldwide.

Micro Irrigation: The Corporation has pioneered and raised a new Micro Irrigation industry in India and thereby helped harbingers a Second Green Revolution. The Micro-Irrigation Division manufactures a full range of precision-irrigation products and provides services from soil/topographical survey, engineering design, supply, installation and commissioning to agronomic support for millions of farmers worldwide. It is the only company in the world which has the largest basket of product and system solutions that can suit any climatic/topographical/crop conditions. The division's pool of over 1000 agronomists, irrigation engineers and technicians are well equipped to support the farmer customers across the globe. The company nurtures a sprawling 2300 acre Hi-Tech Agri Demonstration farm and a training Institute.

Plastic Piping: Presently, JISL is the largest producer in Asia of PVC and PE piping systems for all conceivable applications with pipes ranging from as small as 3 mm to 2000 mm in diameter and in pressure ratings ranging from 1.00 kg/cm² to 25 kg/cm². JISL has a production capacity of over 5,00,000 tonne per annum or 8000 km/day of plastic pipes. The Piping Division includes a variety of PVC and PE Fittings catering to irrigation needs of the farmers apart from the urban and rural infrastructure needs. The pipes are manufactured conforming to BIS, DIN, ISO, ASTM, TEC, Australian Standards as well as other customised specifications.

Biotechnology: The Tissue Culture Division grows Banana, Pomegranate, Strawberry, Guava, Coffee, Sugarcane plantlets and has established vast primary and secondary hardening facilities and R&D labs.

Green Energy: JISL Pioneered Solar water pumping systems in the country. Jain Solar water pumping system is a standalone systems operating on power generated by Solar Photovoltaic panels which are also manufactured in house in state-of-the-art facility. JISL has installed more than 15000 Solar Pumps. All these products are in harmony with the group's mission, "Leave This World Better Than You Found It".

Jain Green Energy division also offers Solar Thermal Water Heating Systems, Solar Photovoltaic, Wind, Solar + Wind hybrid systems, Bio-Gas and Bio-Energy alternate energy solutions.

Agricultural Processing: Agro Processed Products Division processes tropical fruits such as Mango, Banana, Guava, Pomegranate into Purees, Concentrates & Juices. The company also has a Dehydration facility which dehydrates Onions & Vegetables. Agricultural and Fruit processing wastes from these processing plants are converted to Bio-Energy to partially run the plants. The

residue after the Bio-Energy generation is used as an Organic Manure.

Plastic sheet division's globally marketed products help conserve forests by providing alternatives to wood in the home building market.

Turnkey Projects: JISL undertakes Integrated Agricultural Development Projects on Turn-Key basis from Concept to Commissioning with value added services. JISL offers cost effective, down-to-earth solutions for complex challenges backed by our core strength of global knowledge and experience combined with local manpower which is an ideal combination of technology, intelligence and common sense.

Whatever be the nature of the project requirement, JISL can assure Total Turn-Key solutions and maximum value for the farmers. It can also undertake Watershed or Wasteland development projects. Such projects normally begin with selection of site, survey of the command area, identification of appropriate crops, designing of the suitable irrigation systems, determination of agronomic practices, use of other hi-tech agro inputs, providing on-going technical services & training and pre & post harvesting techniques, provide assistance for operation and maintenance of the systems.

The Company has successfully executed large scale turn-key irrigation projects from conception to completion not only in India but also overseas.

Jain Irrigation offers following turn- key Solutions:

- Integrated irrigation solutions.
- Integrated agricultural development projects.
- Reuse of waste water for agriculture.
- Dust suppression.
- Lift & Gravity water pipelines.
- 24x7 Water Supply.
- Effluent conveyance & disposal systems.
- Gas distribution System.
- Industrial fluid conveying systems, sewerage lines etc.
- Marine On-shore & Off-shore piping.
- Relining and rehabilitation of existing pipelines.
- Plumbing Systems.
- Solar pumping systems.
- Non-conventional power water heating projects.

In a nutshell, the Corporation is the only 'one-stop shop' encompassing manufacturing and marketing of hi-tech agricultural inputs and piping services as well as processing of agri produce. No wonder, it has distinguished itself as a leader in the domestic as well as global markets. The corporate product range improves productivity and adds value to the agri-sector. Conservation of scarce Natural resources, protection and improvement of the environment emerge as a blessed outcome. The reward has been over millions of smiling farmers and scores of customers in more than 116 countries.



Tel: +91-257-2258011; Fax: +91-257-2258111; E-mail: jisl@jains.com; Website: www.jains.com;
Toll Free: 1800 599 5000

