SMART IRRIGATION SYSTEM SOLUTIONS

Smaart Irrigation Product Catalogue

Complete end-to-end irrigation engineering — valves, pipes, fittings, sprinklers, drip systems and controls for agriculture, landscaping and horticulture.



90%+ Water Efficiency (Drip)

360° Rotor Coverage

23m Max Sprinkler Radius

24V AC Automatic Zone Control

Astral · Hunter · Jain Irrigation · Prince · Weld-On · Polycab

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01 Valves

UPVC ball valves for isolation, Hunter solenoid valves for zone automation, and Jain AV/VB for pipeline protection — the flow-control backbone of every irrigation system.

ASTRAL

UPVC Ball Valve

2-Way · SCH 40/80 · PN10/PN16 · 15–50mm



Parameter	Specification
Brand	Astral
Type	2-Way Ball Valve
Material	UPVC
Standard	SCH 40 / SCH 80
Nominal Pressure	PN 10 / PN 16
Size Range	15 mm – 50 mm (½″ – 2″)
Connection	Socket / Threaded / Flanged
Operation	Manual Lever (Quarter Turn)
Ball Material	UPVC / PTFE Coated
Seat Material	PTFE
Seal Material	EPDM / FKM
Temperature Range	0 to 60°C
Flow Type	Full Bore
Colour	White / Off-white
Application	Water, Pool, WTP, ETP, Irrigation
Quality	ISO 9001:2015

★ WHY THIS IS NECESSARY

- Isolation on every irrigation zone allows individual zones to be serviced without stopping the full system.
- UPVC is completely corrosion-free — critical for outdoor irrigation systems exposed to fertiliser-rich water and soil chemicals.
- PN16 rating provides safe working margin above typical irrigation pressures of 2–4 bar.

HUNTER

Solenoid Operated Irrigation Valve

PGV Series · 24V AC · 1″ / 1.5″ / 2″



Parameter	Specification
Brand	Hunter
Product Type	Solenoid Operated Irrigation Valve
Series	PGV Series
Operation	Electrically Actuated (Solenoid)
Control Voltage	24V AC
Solenoid Current	350 mA (inrush), 190–210 mA (holding)
Body Material	High Grade PVC / Reinforced Thermoplastic
Seal Type	Diaphragm Seal
Connection Type	Female Threaded (BSP/NPT)
Available Sizes	1″, 1.5″, 2″
Flow Range	0.05 – 9 m³/hr (1″ model)
Pressure Range	1 – 10 bar
Temperature Range	Up to 66°C
Flow Control	Adjustable (selected models)
Application	Irrigation Automation

★ WHY THIS IS NECESSARY

- Enables fully automatic zone-by-zone irrigation — the controller opens and closes each valve on schedule without manual intervention.
- 24V AC operation is safe for underground burial and wet environments — standard for all Hunter irrigation systems.
- Double-beaded diaphragm seal prevents leaks even after years of daily cycling — critical reliability for commercial landscaping.

JAIN IRRIGATION

Air Valve / Vacuum Breaker (AV/VB)

UPVC Float Type · Up to 10 bar · 20–90mm



Parameter	Specification
Brand	Jain Irrigation
Product Type	Air Valve / Vacuum Breaker
Valve Type	Air Release + Vacuum Relief Valve
Operation	Float Operated / Pressure Actuated
Material	High Performance Rigid UPVC / Engineering Plastic
Seal Material	Nitrile Rubber / EPDM
Pressure Rating	Up to 5.6 kg/cm² (VB type)
Max Pressure	Up to 150 PSI (~10 bar)
Sizes Available	20 mm to 90 mm / ½″ to 3″
Connection Type	BSP Threaded / Compression / Solvent Weld
Mounting	Vertical Installation
Application	Irrigation / Pipeline Protection

★ WHY THIS IS NECESSARY

- Air pockets in pressurised irrigation mains cause water hammer, reduced flow and pump cavitation — the AV automatically bleeds air at every high point.
- Vacuum breaker prevents pipe collapse and back-siphonage when the system shuts down — protects the entire pipeline and pump from damage.
- Mandatory in extended irrigation mains serving large gardens, parks and agricultural fields to maintain consistent pressure throughout.

02 Pipes

Prince PVC pressure mains as the backbone distribution network, and Jain LDPE drip laterals for precise root-zone water delivery.

PRINCE

PVC Pressure Pipe

IS 4985 / ASTM D1785 · 20mm to 400mm · Class 1–5



Parameter	Specification
Brand	Prince
Product Type	PVC Pressure Pipe
Material	Polyvinyl Chloride
Standard	IS 4985 / ASTM D1785 / ASTM D1784
Size Range	20 mm to 400 mm
Length	3 m / 6 m standard
Pressure Classes	Class 1 to Class 5 (2.5 to 10 kg/cm²)
Schedule Type	SCH 40 / SCH 80 (Industrial)
Temperature Limit	Up to 45°C
Jointing	Solvent Cement / Threaded
Surface Finish	Smooth Internal Bore
Application	Water Supply / Irrigation / Plumbing

★ WHY THIS IS NECESSARY

- The backbone of every irrigation network — PVC mains carry water from pump to distribution zones at working pressures of 2.5–10 kg/cm².
- Smooth internal bore minimises friction loss — critical for maintaining pressure at the furthest sprinkler heads in large installations.
- IS 4985 certification ensures consistent wall thickness and pressure rating — uncertified pipes fail prematurely under irrigation system pressures.

JAIN IRRIGATION

Drip Pipe / Lateral Pipe

LDPE / LLDPE UV Stabilized · 12mm–32mm · 50m–400m Rolls



Parameter	Specification
Brand	Jain Irrigation
Product Type	Drip Pipe / Lateral Pipe
Type	Online / Inline Drip Lateral
Material	LDPE / LLDPE (UV Stabilized)
Diameter Range	12 mm to 32 mm
Common Sizes	12 mm, 16 mm, 20 mm
Wall Thickness	0.9 mm to 1.2 mm
Length	50 m / 100 m / 200 m / 400 m
Working Pressure	2 to 4 kg/cm²
Max Pressure	Up to ~6 kg/cm²
Colour	Black (UV resistant)
UV Protection	Yes
Temperature Range	0°C to 60°C
Installation	Surface / Subsurface

★ WHY THIS IS NECESSARY

- Carries water from the mainline directly to each plant row — the distribution network for drip irrigation delivering water at root level.
- UV-stabilized LDPE withstands years of outdoor sun exposure without becoming brittle — essential for surface-laid agricultural drip systems.
- Flexible pipe allows it to be laid along any row geometry — works on curved beds, uneven terrain, and around trees.

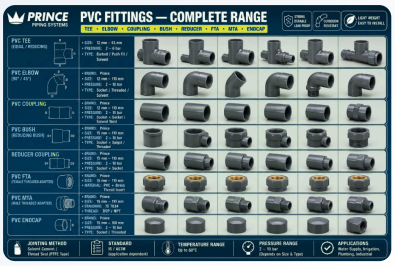
03 Fittings

Prince PVC fittings for the mainline network, Weld-On 705 solvent cement for permanent joints, and Jain drip accessories for the complete lateral-to-plant connection.

PRINCE

PVC Fittings — Complete Range

Tee · Elbow · Coupling · Bush · Reducer · FTA · MTA · Endcap



Parameter	Specification
PVC Tee (Equal / Reducing)	12 mm – 63 mm | 2–6 bar | Barbed / Push Fit / Solvent
PVC Elbow (90° / 45°)	Prince | 12 mm – 110 mm | 2–10 bar | Socket/Threaded/Solvent
PVC Coupling	Prince | 12 mm – 110 mm | 2–10 bar | Socket × Socket / Solvent Weld
PVC Bush (Reducing Bush)	Prince | 15 mm – 110 mm | 2–10 bar | Socket × Spigot / Threaded
Reducer Coupling	Prince | 15 mm – 110 mm | 2–10 bar | Socket × Socket
PVC FTA (Female Threaded Adapter)	Prince | 15 mm – 110 mm | Material: PVC + Brass Thread Insert
PVC MTA (Male Threaded Adapter)	Prince | 15 mm – 110 mm | IS 7834 | BSP / NPT
PVC Endcap	Prince | 15 mm – 160 mm | 2–10 bar | Socket / Threaded
Jointing Method	Solvent Cement / Thread Seal (PTFE Tape)
Standard	IS / ASTM (application dependent)
Temperature Range	Up to 60°C

★ WHY THIS IS NECESSARY

- FTA/MTA adapters are the critical connection between PVC mains and all threaded equipment — valves, filters, pressure gauges and pump outlets.
- Elbows route mains around walls and obstacles — supporting every routing decision in the irrigation layout.
- Reducers and Bushes step down from main header sizes to smaller lateral sizes — essential for multi-zone systems with varied flow requirements.

WELD-ON (IPS CORPORATION, USA)

UPVC Solvent Cement

Model 705 · ASTM D2564 · Fast Setting · Clear · Up to 6″



Parameter	Specification
Brand	Weld-On
Model	705
Type	UPVC Solvent Cement
Packing Size	473 ml (Pint)
Colour	Clear
Setting Type	Fast Setting
Application	UPVC Pipe & Fittings Jointing
Suitable Pipe Type	UPVC Pressure Pipes
Pipe Size Range	Up to 6″ dia (Interference Fit)
Schedule	SCH 40 / SCH 80
Standard	ASTM D2564
Initial Set Time	1–2 minutes
Handling Time	5–10 minutes
Full Cure	24 hours

★ WHY THIS IS NECESSARY

- Creates a permanent chemical fusion bond between PVC pipe and fittings — no joint can loosen or leak under irrigation pressures.
- Fast-set formulation (1–2 minute initial set) enables rapid installation — critical for large irrigation projects with hundreds of joints.
- ASTM D2564 certified solvent cement is the specified product for UPVC pressure pipe systems — non-certified cements fail in pressurised irrigation mains.

JAIN IRRIGATION

Drip System Fittings & Accessories

Polly Off Take · Tube Holder Stake · Grommet · Joiner · Cock · Endcap · Elbow · Tee · Punch Tool



Parameter	Specification
Polly Off Take (Take-Off Connector)	Jain | PP | 4–20 mm | Barb × Grommet Fit | 0–4 bar
Polly Tube Holder Stake	Jain | PP UV Stabilized | 12/16/20 mm | 100–200 mm length
Grommet Rubber	Jain | EPDM Rubber | 8–20 mm | Up to 6 kg/cm²
Drip Joiner (TLJ16 / JO16)	Jain | PP | 12/16/20 mm | Barb × Barb | Multi-barb grip
Drip Cock (PMV1616)	Jain | PP/PVC | 12/16/20 mm | Inline Control Valve | 0–4 bar
Drip Endcap (EC16)	Jain | PP/LDPE | 12/16/20 mm | Push-fit / Fold-lock
Drip Elbow (EL16)	Jain | PP | 12/16/20 mm | 90° Barb × Barb | 0–4 bar
Drip Tee (TEE16)	Jain | PP | 12/16/20 mm | 3-Way Barb × Barb × Barb
Drip Punch Tool	Jain | SS Needle + Plastic Body | 2–4 mm hole | For lateral pipe
PVC Pipe Hole Tool	Jain/Generic | MS/SS blade | 12–20 mm hole | Manual/Drill

★ WHY THIS IS NECESSARY

- Off-takes and grommets connect each drip lateral to the mainline — the precise interface between bulk water supply and individual plant delivery.
- Joiners and elbows repair or reroute damaged laterals in the field without replacing the whole pipe — essential for long-term maintainability.
- Stakes keep laterals in position on the soil surface — prevents pipes being displaced by cultivation, wind or foot traffic, maintaining uniform water distribution.

04 Irrigation Material

Hunter and Jain gear-driven rotors, pop-up sprays, J-Mini micro sprinklers, swing joints and Jain drippers — every emitter type for agriculture, landscaping and horticulture.

JAIN IRRIGATION / HUNTER

Gear Driven Sprinkler / Rotor

Jain 525/5035 · Hunter I-20/I-25/I-40/I-90 · 40°–360° · Radius 10–23m



Parameter	Specification
Brands / Models	Jain 525 / 5035 & Hunter I-20 / I-25 / I-40 / I-90
Product Type	Gear Driven Sprinkler / Rotor
Operation	Hydraulic (water pressure driven)
Rotation Type	Gear Driven Continuous Rotation
Rotation Angle	40° to 360° adjustable
Flow Rate	35 – 90 LPM (model dependent)
Discharge	~2100 – 5400 LPH
Working Pressure	2.0 – 4.0 bar
Wetted Radius	10 – 23 meters
Coverage Area	400 – 1800 m²
Nozzle Type	Interchangeable / Bayonet nozzle
Inlet Size	½" / ¾" BSP
Mounting	Pop-up / Spike / Riser mounted
Material	Engineering Plastic + SS components
Application	Agriculture / Lawn / Landscape

★ WHY THIS IS NECESSARY

- Covers 400–1800 m² per head with one connection — dramatically fewer heads and pipe runs needed compared to sprays, reducing installation cost.
- Gear-driven rotation ensures perfectly even water distribution across the entire arc — no dry spots or over-watered areas within the coverage radius.
- Adjustable arc from 40° to 360° in one unit means the same head works for corners, edges, and full circles — reduced inventory and installation flexibility.

JAIN IRRIGATION

Spray Pop-Up Sprinkler

Fixed / Adjustable Arc · 2″–6″ Pop-Up · Radius 2–5m



Parameter	Specification
Brand	Jain Irrigation
Product Type	Spray Pop-Up Sprinkler
Type	Fixed Spray / Pop-Up Spray Head
Pop-Up Height	2″, 3″, 4″, 6″ (model dependent)
Spray Pattern	Fixed / Adjustable arc (0–360°)
Flow Rate	2 – 15 LPM (model dependent)
Discharge	~120 – 900 LPH
Working Pressure	1.5 – 3.0 bar
Optimum Pressure	~2.0 bar
Wetted Radius	2 – 5 meters
Coverage Area	10 – 80 m²
Inlet Size	½″ female threaded
Filtration	Built-in filter screen
Material	ABS / Engineering Plastic
Application	Lawn, Garden, Landscape

★ WHY THIS IS NECESSARY

- Ideal for smaller zones — gardens, flower beds, tight spaces where rotor radius is too large; provides gentle, uniform coverage from 2–5 m radius.
- Retracts flush with ground when not in use — no obstruction to mowing, foot traffic or vehicles; invisible when the system is off.
- Built-in filter screen protects the nozzle from blockage by debris entering the system — extends service life between maintenance interventions.

JAIN IRRIGATION

Mini Jet Micro Sprinkler

J-Mini Series · 360° / Adjustable · Radius 2.5–4m · 85–175 LPH



Parameter	Specification
Brand	Jain Irrigation
Product Type	Mini Jet Sprinkler / Micro Sprinkler
Series	J-Mini / Mini Jet
Type	Rotating Micro Sprinkler (Swivel Rotor)
Spray Pattern	Full Circle (360°) / Adjustable
Flow Rate	85 – 175 LPH
Working Pressure	0.5 – 3.0 bar
Optimum Pressure	1 – 2 bar
Wetted Radius	2.5 – 4 m (8–13 feet)
Coverage Area	20 – 50 m²
Inlet Size	4 mm micro tube / barb connection
Mounting	Stake / Riser / Hanging
Nozzle Type	Fixed / Colour coded
Rotation	Free rotating spinner
Application	Drip + Micro Irrigation, Orchards, Nurseries

★ WHY THIS IS NECESSARY

- Bridges the gap between drip and full sprinkler — provides gentle umbrella-like coverage perfect for orchards, nurseries and landscape plantings.
- Confirmed to IS 14605 and ISO 8026 — precision-moulded for uniform water distribution with no damage to delicate flowers or seedlings.
- Colour-coded nozzles allow instant identification and easy field replacement of different flow-rate heads within the same installation.

JAIN IRRIGATION

Swing Joint

Flexible Multi-Elbow Connector · ½″ / ¾″ BSP · 150–300mm



Parameter	Specification
Brand	Jain Irrigation
Product Type	Swing Joint
Type	Flexible Multi-Elbow Pipe Connector
Function	Connects sprinkler to pipeline with flexibility
Connection Type	Male Thread × Male Thread
Standard Sizes	½″ / ¾″ BSP
Length	150 mm to 300 mm (6″–12″)
Pressure Rating	4 – 10 bar
Operating Pressure	2 – 4 bar
Material	Polypropylene (PP) / PVC / ABS
Installation	Below ground / inline with sprinkler

★ WHY THIS IS NECESSARY

- Absorbs ground movement and pipe settlement — prevents the rigid connection between mainline and sprinkler from cracking under soil expansion/contraction.
- Allows sprinkler to be repositioned vertically above or below grade without cutting any pipe — essential for seasonal adjustments in landscaped areas.
- Protects the mainline from mower strikes and vehicle damage — the flexible joint absorbs the impact that would otherwise fracture the pipe.

JAIN IRRIGATION

Dripper / Emitter

Turbo Key Plus · 2/4/8/12 LPH · Non-PC & PC Types · Online/Inline



Parameter	Specification
Brand	Jain Irrigation
Product Type	Dripper / Emitter
Type	Online / Inline Dripper
Operation	Pressure Compensating (PC) / Non-PC
Discharge Rates	2 LPH / 4 LPH / 8 LPH / 12 LPH
Working Pressure	0.5 – 3.0 bar
Optimum Pressure	1 – 2 bar
Flow Accuracy	High uniformity (CV ≤ 4%)
Inlet Size	4 mm compatible
Filtration Requirement	120–130 micron
Installation	On lateral pipe (12–16 mm)
Material	Engineering Plastic / LDPE
Application	Drip irrigation system

★ WHY THIS IS NECESSARY

- Delivers water directly to the root zone at exactly 2–12 LPH per plant — eliminates evaporation losses and achieves 90%+ water use efficiency vs surface irrigation.
- CV ≤ 4% flow accuracy ensures every plant in the system receives the same volume of water — uniform crop growth and zero wastage on large agricultural installations.
- Pressure-compensating (PC) versions maintain constant flow rate across the full pressure range — essential on sloped terrain where pressure varies between emitters.

05

Hardware & Site Accessories

Every clamp, seal, tape and fastener for a professional, code-compliant installation — supplied as a complete package.

Product	Specification & Application
C Clamp	MS / SS, Rubber Lined, Heavy Duty, Size as per Pipe OD — supports mainline pipes on walls and risers
D Clamp	MS, Saddle Type, Painted / GI Finish — wall saddle support for PVC mains in plant rooms and pump stations
Teflon Tape	PTFE, 12 mm Width, High Density — seals all threaded joints on valves, filters and sprinkler risers
Insulation Tape	PVC Electrical, Flame Retardant, 0.125 mm — insulates all cable terminations at solenoid valve connections
Waterproof Tape	Self-Adhesive Butyl / PVC, Weather Resistant — protects outdoor cable splices and conduit entry points from rain
Cable Tie	Nylon 66, UV Resistant, 100–300 mm — bundles control cables along irrigation mainlines and in controller panel
Screw	MS / SS, Self-Tapping / Machine Type — fixing conduit saddles, controller enclosure and junction boxes
Rawl Plug	Nylon, 6 / 8 / 10 mm — masonry plugs for all wall-mounted clamps, controller and conduit fixings
Foot Valve Mesh	SS 304, Corrosion Resistant — strainer mesh in pump suction preventing debris from entering the irrigation pump

06 Electricals

Hunter irrigation controller panels for automatic zone scheduling, Polycab FR/FRLS cables for pump and valve power, and ISI-marked PVC conduit for code-compliant wiring protection.

HUNTER

Irrigation Controller / Control Panel

X-Core / Pro-C / X2 / Node · 24V AC · 230V Input · IP54/55



Parameter	Specification
Brand	Hunter
Product Type	Irrigation Controller Panel
Series	X-Core / Pro-C / X2 / Node
Controller Type	Automatic Irrigation Control Panel
Application	Sprinkler & Drip Irrigation Automation
Power Supply	230V AC input → 24V AC output
Transformer Output	24V AC, 1A
Power Consumption	~2W
Mounting	Wall Mount / Panel Mount
Enclosure	Plastic / ABS
Protection Class	IP54 / IP55 (outdoor models)
Programming	Time-Based / Smart (optional Wi-Fi)
Control Output	24VAC to Solenoid Valves
Communication	Wired / Wi-Fi
Battery Backup	Yes
Operating Temp	0°C to 60°C
Warranty	~2 Years

★ WHY THIS IS NECESSARY

- The brain of the entire irrigation system — programs each zone valve to open and close at precise times and durations automatically every day.
- 24V AC output safely drives all Hunter PGV solenoid valves — one controller manages up to 12+ zones eliminating the need for manual operation.
- Optional Wi-Fi connectivity enables remote monitoring, schedule changes and rain-delay activation from a smartphone — critical for large commercial sites.

POLYCAB

FR / FRLS Copper Power Cables

IS 694 / IS 1554 · 1100V · 1.5 / 2.5 / 4 Sq.mm × 3 Core



Parameter	Specification
Cable Sizes	2.5 Sq.mm × 3 Core & 4 Sq.mm × 3 Core & 1.5 Sq.mm × 3 Core
Brand	Polycab
Conductor	Annealed Copper
Insulation	PVC / FR / FRLS
Voltage Grade	1100 V
Standard	IS 694 / IS 1554
Temperature Rating	Up to 70–90°C
Application	Power supply, pump motor, panel wiring

★ WHY THIS IS NECESSARY

- Sized correctly for pump motor starting currents — undersized cable causes voltage drop and pump under-performance in irrigation systems.
- FRLS insulation required in pump rooms and enclosed spaces — low-smoke, flame-retardant as per NBC 2016.
- Polycab IS certification ensures true copper cross-section — uncertified cables cause motor overheating.

ISI MARKED

PVC Conduit Pipe, Flexible Conduit & Conduit Bend

IS 9537 · FR/FRLS · Heavy Duty 25mm · Grey / Black



Parameter	Specification
Conduit Pipe	25 mm, PVC Heavy Duty, ISI Marked
Conduit Bend	25 mm, PVC, Standard Radius
Flexible Conduit	25 mm, PVC Corrugated Type
Material	FR / FRLS PVC
Standard	IS 9537
Colour	Grey / Black
Application	Cable protection, concealed/exposed wiring

★ WHY THIS IS NECESSARY

- All irrigation system electrical wiring must be in conduit per IE Rules 1956 — protects cables from mechanical damage, UV and rodents in outdoor installations.
- Flexible conduit at pump and controller cable entries absorbs vibration — prevents wire fatigue failures at terminal connections.
- Conduit keeps control cables organised and identifiable for each zone — essential for fault-finding and future zone additions.

07 Applications

Where these systems are deployed.



APPLICATION

Agriculture & Farms

Drip & Sprinkler



APPLICATION

Landscaping & Gardens

Spray & Rotor



APPLICATION

Golf Courses & Sports Turf

Gear Drive

Smart Irrigation System Solutions — End-to-End Engineering, Trusted Global Brands

BRANDS FEATURED

Astral • Hunter Industries
Jain Irrigation • Prince Pipes
Weld-On • Polycab

CERTIFICATIONS

IS 4985 • ASTM D1785 • ISO 9001:2015
ASTM D2564 • IS 694 • IS 9537
IS 14605 • ISO 8026 • NSF/ANSI 14

SUPPLIED BY

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