

INOVATO

CONTROL EQUIPMENT PRODUCT MANUAL

益诺威拓控制设备
产品手册





About us

Ningbo Innovator Control Equipment Co., Ltd. is located in Yuyao City, Zhejiang Province. We are an innovation-oriented manufacture, integrating technological innovation, product research and development, production and sales, and customer service. Our research and development team has 20 years of product development and manufacturing experience in the intelligent irrigation industry. And we are specialized in intelligent irrigation system, pop-up sprinklers, valves, and controllers.

We continues to promote technological innovation and improve our manufacturing level to intelligent manufacturing and lead the industry's needs. We adhere to the production of global professional intelligent control products and the application areas of the products include agricultural irrigation, landscaping, animal husbandry, smart courtyards, and golf courses. And we provide industry-leading intelligent control integrated solutions.

Our Spirit: We have the pioneering and innovative spirit and are eager to progress.

Our Vision: To build a world-class technology enterprise and create a harmonious and beautiful life.

Our Mission: Every family can enjoy a green and healthy life.

Our Values: The product is like the personal character and the quality is life. We will focus on customer satisfaction and create values for our customers.



目 录

CONTENTS

Sprinklers	Application	01
	GF	03
	SF	04
	FF Nozzles	05
	RF Nozzles	07
	HF	10

Valves	Y-type	13
	T-type	14
	Solenoid Valve Accessories	15
	Solenoid Valve Code	17
	Solenoid Valve Oem Series	19

地埋系列

POP-UP SPRINKLERS

This sprinkler is available in 5cm, 10cm, and 15cm models. It has a two-piece ratcheting riser, which is reliable and durable. The male-threaded riser is compatible with all INVOTA female-threaded nozzles. It has two versions. One is nozzle preinstalled version, which has a large filter screen for debris resistance. And the other one is plug preinstalled version, which is available without a nozzle or filter screen. All FN nozzles are compatible with this sprinkler.



Applications Comparison

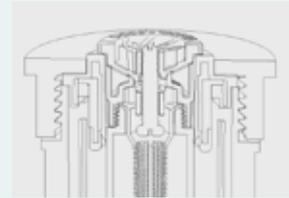
APPLICATIONS	GF	SF
Shrubs	⊙	⊙
Agriculture		⊙
Garden	⊙	⊙
Courtyard		⊙
Municipalities		⊙
Golf Course		⊙

△ Optional check valve available

Our Advantage

CO-MOLDED WIPER SEAL

Molded with two types of chemical and chlorine-resistant materials, this multi-function wiper seal reduces flow-by, allowing more heads on one zone, and prevents debris from entering the seal, reducing riser stick-ups.



FLOGUARD TECHNOLOGY

In the event of a missing nozzle, Flo Guard technology reduces the flow of water from the riser to a 1.9L/MIN(3M tall) indicator stream, eliminating water waste and preventing landscape erosion while providing a visual indicator for repair.



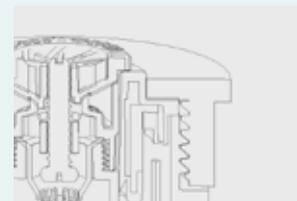
HEAVY-DUTY SPRING

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



INDUSTRY'S STRONGEST SPRAY BODY

The sprinkler 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.



GF

02”、04”、06”

Applications

It is applied to turfgrass, shrubs, garden, etc.

Features

- Small exposed cover for more attractive landscapes.
- Compact shape makes it more economical.
- Pressure-activated wiper seal prevents excessive flow-by and water waste and keeps debris from entering upon retraction.
- Constructed of durable materials including corrosion resistant stainless steel.
- Male threaded riser to accept all INOVATO female nozzles.

Operating Specifications

- Recommended pressure range:1.0~4.8 bar
- Radius:2.5 - 9.1m
- Connection:1/2” female thread

Factory Installed Options

- Drain check valve:10cm,15cm models (up to 2m of elevation)
- Flush plug (large basket filter screen not included)

Detailed Pictures



Operating Picture



GF02

overall height:12.7cm
Pop up height:5cm
exposure diameter:3cm
inlet size:1/2” female thread



GF04

overall height:18.4cm
pop up height:10cm
exposure diameter:3cm
inlet size:1/2” female thread



GF06

overall height:24.1cm
pop up height:15cm
exposure diameter:3cm
inlet size:1/2” female thread

SF

02”、03”、04”

Applications

It is applied to turfgrass, shrubs, garden, etc.

Features

- ⦿ Small exposed cover for more attractive landscapes.
- ⦿ Compact shape makes it more economical.
- ⦿ Pressure-activated wiper seal prevents excessive flow-by and water waste and keeps debris from entering upon retraction.
- ⦿ Constructed of durable materials including corrosion resistant stainless steel.
- ⦿ Male threaded riser to accept all INOVATO female nozzles.

Operating Specifications

- Recommended pressure range:1.0~7.0 bar
- Optimum working pressure: 2.1 bar
- Connection: 1/2”female thread

Factory Installed Options

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

User Installed Options

- Drain check valve (up to 3m of elevation)
- Reclaimed water ID cap
- Snap-on reclaimed cover



SF02

overall height:10cm
Pop up height:5cm
exposure diameter:5.7cm
inlet size: 1/2” female thread



SF03

overall height:12.5cm
Pop up height:7.5cm
exposure diameter:5.7cm
inlet size: 1/2” female thread



SF04

overall height:15.5cm
Pop up height:10cm
exposure diameter:5.7cm
inlet size: 1/2” female thread

Operating picture



Detailed picture



FN

4A、6A、8A、10A、12A、15A、17A

Applications

It is applied to turfgrass, shrubs, garden, etc.

Features

- Well-defined edges
- Matched precipitation rate of 2.4m to 5.2m
- Easy grip top to simple adjustment
- Designed with large water droplets to withstand light winds
- Even distribution results in beautiful pattern
- Color-coded for easy field identification
- Adjustable from 0° to 360°

Operating Specifications

- Recommended operating pressure: 2.1 bar



Operating pictures



/ Performance Data FN

Angle	Pressure bar kPa	4AN Lt.Green 1.2 Radius Adjustable:0°~360° Trajectory:0°					6AN Sky Blue 1.8 Radius Adjustable:0°~360° Trajectory:0°					8AN Green 2.4 Radius Adjustable:0°~360° Trajectory:0°					10AN Dark Blue 3.0 Radius Adjustable:0°~360° Trajectory:15°				
		Radius		Flow	Precip mm/h		Radius		Flow	Precip mm/h		Radius		Flow	Precip mm/h		Radius		Flow	Precip mm/h	
		m	m ² /hr	l/m	■	▲	m	m ² /hr	l/m	■	▲	m	m ² /hr	l/m	■	▲	m	m ² /hr	l/m	■	▲
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	2.6	0.04	0.68	49	56
	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	2.8	0.05	0.80	49	57
	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	3.0	0.06	0.94	49	56
	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	3.2	0.06	1.06	48	56
	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	3.5	0.07	1.18	47	54
90°	1.0 100	0.9	0.04	0.72	213	246	1.5	0.06	1.08	116	134	2.0	0.07	1.24	77	89	2.6	0.08	1.35	49	56
	1.5 150	1.0	0.05	0.76	182	210	1.6	0.07	1.21	109	126	2.2	0.09	1.44	72	83	2.8	0.10	1.61	49	57
	2.1 210	1.2	0.05	0.83	139	160	1.8	0.08	1.35	102	118	2.4	0.10	1.65	67	77	3.0	0.11	1.89	49	56
	2.5 250	1.3	0.05	0.91	129	149	1.9	0.09	1.47	97	112	2.6	0.11	1.82	63	73	3.2	0.13	2.11	48	56
	3.0 300	1.4	0.06	0.95	116	134	2.1	0.10	1.61	92	106	2.9	0.12	2.02	59	68	3.5	0.14	2.37	47	54
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	2.6	0.11	1.80	49	56
	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	2.8	0.13	2.14	49	57
	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	3.0	0.15	2.52	49	56
	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	3.2	0.17	2.82	48	56
	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	3.5	0.19	3.16	47	54
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	2.6	0.16	2.71	49	56
	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	2.8	0.19	3.21	49	57
	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	3.0	0.23	3.78	49	56
	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	3.2	0.25	4.23	48	56
	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	3.5	0.28	4.73	47	54
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	2.6	0.22	3.61	49	56
	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	2.8	0.26	4.28	49	57
	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	3.0	0.30	5.03	49	56
	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	3.2	0.34	5.64	48	56
	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	3.5	0.38	6.31	47	54
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	2.6	0.24	4.06	49	56
	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	2.8	0.29	4.82	49	57
	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	3.0	0.34	5.66	49	56
	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	3.2	0.38	6.34	48	56
	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	3.5	0.43	7.10	47	54
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	2.6	0.32	5.41	49	56
	1.5 150	1.0	0.16	2.60	148	171	1.6	0.24	4.07	92	105	2.2	0.34	5.75	72	83	2.8	0.39	6.43	49	57
	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	3.0	0.45	7.55	49	56
	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	3.2	0.51	8.45	48	56
	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	3.5	0.57	9.47	47	54

Angle	Pressure bar kPa	12AN Brown 3.7 Radius Adjustable:0°~360° Trajectory:28°					15AN Black 4.6 Radius Adjustable:0°~360° Trajectory:28°					17AN Gray 5.2 Radius Adjustable:0°~360° Trajectory:28°				
		Radius		Flow	Precip mm/h		Radius		Flow	Precip mm/h		Radius		Flow	Precip mm/h	
		m	m ² /hr	l/m	■	▲	m	m ² /hr	l/m	■	▲	m	m ² /hr	l/m	■	▲
45°	1.0 100	3.2	0.04	0.73	34	40	4.0	0.08	1.27	38	43	4.6	0.10	1.68	38	43
	1.5 150	3.4	0.06	0.97	40	46	4.3	0.09	1.51	39	45	4.9	0.12	1.94	38	44
	2.1 210	3.7	0.07	1.23	44	51	4.6	0.11	1.79	40	46	5.2	0.13	2.23	39	45
	2.5 250	3.9	0.09	1.44	46	54	4.6	0.12	2.00	40	46	5.5	0.15	2.46	39	45
	3.0 300	4.1	0.10	1.68	48	56	5.2	0.14	2.25	40	46	5.8	0.16	2.72	39	45
90°	1.0 100	3.2	0.09	1.46	34	40	4.0	0.15	2.53	38	43	4.6	0.20	3.36	38	43
	1.5 150	3.4	0.12	1.93	40	46	4.3	0.18	3.03	39	45	4.9	0.23	3.88	38	44
	2.1 210	3.7	0.15	2.46	44	51	4.6	0.21	3.57	40	46	5.2	0.27	4.45	39	45
	2.5 250	3.9	0.17	2.88	46	54	4.6	0.24	4.01	40	46	5.5	0.30	4.92	39	45
	3.0 300	4.1	0.20	3.36	48	56	5.2	0.27	4.50	40	46	5.8	0.33	5.44	39	45
120°	1.0 100	3.2	0.12	1.94	34	40	4.0	0.20	3.38	38	43	4.6	0.27	4.48	38	43
	1.5 150	3.4	0.15	2.58	40	46	4.3	0.24	4.03	39	45	4.9	0.31	5.17	38	44
	2.1 210	3.7	0.20	3.28	44	51	4.6	0.29	4.76	40	46	5.2	0.36	5.94	39	45
	2.5 250	3.9	0.23	3.84	46	54	4.6	0.32	5.34	40	46	5.5	0.39	6.56	39	45
	3.0 300	4.1	0.27	4.48	48	56	5.2	0.36	6.00	40	46	5.8	0.43	7.25	39	45
180°	1.0 100	3.2	0.17	2.91	34	40	4.0	0.30	5.07	38	43	4.6	0.40	6.71	38	43
	1.5 150	3.4	0.23	3.86	40	46	4.3	0.36	6.05	39	45	4.9	0.47	7.75	38	44
	2.1 210	3.7	0.30	4.92	44	51	4.6	0.43	7.14	40	46	5.2	0.53	8.91	39	45
	2.5 250	3.9	0.35	5.76	46	54	4.6	0.48	8.02	40	46	5.5	0.59	9.83	39	45
	3.0 300	4.1	0.40	6.71	48	56	5.2	0.54	9.00	40	46	5.8	0.65	10.87	39	45
240°	1.0 100	3.2	0.23	3.88	34	40	4.0	0.41	6							

RF NOZZLES

RF

Application

It is applied to turfgrass, shrubs, garden, etc.

Features

- True matched precipitation any arc or radius setting
- Radius can be reduced up to 25% on all models
- Color-coded for easy identification
- Removable filter screen prevents large objections from clogging nozzle
- Low precipitation rate
- Wind-resistant multi-stream technology
- Adjustable arc and radius.



VERTICAL VIEW

Operation Specification

- Recommended working pressure: 2.8 bar

		Pressure		Radius	Flow	Flow
		bar	kPa	m	m ³ /hr	l/m
Left Strip		1.7	170	1.1*4.2	0.04	0.67
		2.0	200	1.2*4.3	0.04	0.72
		2.5	250	1.4*4.5	0.05	0.79
		2.8	280	1.5*4.6	0.05	0.84
		3.0	300	1.6*4.7	0.06	0.87
		3.5	350	1.7*4.8	0.06	0.94
Right Strip		1.7	170	1.1*4.2	0.04	0.67
		2.0	200	1.2*4.3	0.04	0.72
		2.5	250	1.4*4.5	0.05	0.79
		2.8	280	1.5*4.6	0.05	0.84
		3.0	300	1.6*4.7	0.06	0.87
		3.5	350	1.7*4.8	0.06	0.94
Right Strip		1.7	170	1.1*8.3	0.08	1.34
		2.0	200	1.2*8.6	0.09	1.43
		2.5	250	1.4*8.9	0.09	1.57
		2.8	280	1.5*9.1	0.10	1.66
		3.0	300	1.6*9.3	0.10	1.72
		3.5	350	1.7*9.6	0.11	1.87
		3.8	380	1.8*9.9	0.12	1.96

Model	Color	Radius
RF LS	Dark purple	1.5*4.6m
RF RS	Olive green	1.5*4.6m
RF SS	Mocha brown	1.5*9.1m

RF strip pattern

		Pressure		Radius	Flow	Flow
		bar	kPa	m	m ³ /hr	l/m
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

Model	Color	Radius
RF COR1	Corner Blue	2.4 ~ 4.5m
RF COR2	Corner Green	2.4 ~ 4.5m

Corner pattern

Note: The above data is taken in zero wind conditions.

■ Indicates that the sprinklers are installed in a square. Space based on radius

▲ Indicates that the sprinklers are installed in a triangle. Space based on radius

/ Performance Data

RF NOZZLES

- RF101 Red 90°~210°
- RF 201 Apple green 90°~210°
- RF 301 Violet 90°~210°
- RF 305 Beige 90°~210°
- RF102 Orange 210°~270°
- RF 202 Green 210°~270°
- RF 302 Purplish red 210°~270°
- RF 303 Black 360°
- RF103 Yellow 360°
- RF 203 Blue 360°

	Pressure bar kPa	Radius Flow				Precip mm/h				Radius Flow				Precip mm/h				Radius Flow				Precip mm/h			
		m	m ³ /hr	l/m		■	▲	m	m ³ /hr	l/m		■	▲	m	m ³ /hr	l/m		■	▲	m	m ³ /hr	l/m		■	▲
90°	1.7 170	--	--	--	--	--	5.2	0.08	1.29	12	13	7.6	0.16	2.69	11	13	10.1	0.24	3.94	9	11				
	2.0 200	3.7	0.04	0.64	11	13	5.5	0.09	1.44	12	13	8.2	0.17	2.88	10	12	10.4	0.26	4.28	10	11				
	2.5 250	4.0	0.04	0.72	11	13	5.8	0.09	1.52	11	13	8.5	0.19	3.11	10	12	10.4	0.28	4.58	10	12				
	2.8 280 ●	4.1	0.05	0.80	11	13	6.1	0.10	1.63	11	12	9.1	0.20	3.26	10	11	10.7	0.29	4.84	10	12				
	3.0 300	4.3	0.05	0.87	11	13	6.4	0.11	1.74	10	12	9.1	0.21	3.41	10	12	10.7	0.31	5.22	11	13				
	3.5 350	4.5	0.06	0.95	11	13	6.4	0.11	1.78	11	12	9.1	0.22	3.60	11	12	10.7	0.33	5.41	11	13				
	3.8 380	4.5	0.06	1.02	12	14	6.4	0.11	1.82	11	12	9.1	0.23	3.83	11	13	10.7	0.34	5.68	12	14				
180°	1.7 170	--	--	--	--	--	4.9	0.14	2.27	11	13	7.6	0.33	5.46	11	13	10.1	0.50	8.36	10	11				
	2.0 200	3.7	0.08	1.29	11	13	5.2	0.15	2.43	11	13	8.2	0.36	5.99	11	12	10.4	0.51	8.48	9	11				
	2.5 250	4.0	0.09	1.44	11	13	5.5	0.16	2.69	11	12	8.5	0.39	6.44	11	12	10.4	0.60	10.03	11	13				
	2.8 280 ●	4.1	0.10	1.59	11	13	5.8	0.18	2.92	11	12	9.1	0.42	6.90	10	12	10.7	0.65	10.83	11	13				
	3.0 300	4.3	0.10	1.67	11	13	6.1	0.20	3.22	11	12	9.1	0.44	7.31	11	12	10.7	0.70	11.73	12	14				
	3.5 350	4.4	0.12	1.90	11	13	6.4	0.21	3.45	10	12	9.1	0.47	7.73	11	13	10.7	0.73	12.15	13	15				
	3.8 380	4.5	0.12	1.93	12	13	6.4	0.22	3.60	11	12	9.1	0.49	8.07	12	14	10.7	0.75	12.41	13	15				
210°	1.7 170	--	--	--	--	--	4.9	0.17	2.73	12	14	7.6	0.39	6.37	11	13	10.1	0.59	9.80	10	12				
	2.0 200	3.7	0.09	1.52	12	13	5.2	0.17	2.84	11	13	8.2	0.42	6.97	11	12	10.4	0.65	10.75	10	12				
	2.5 250	4.0	0.10	1.71	11	13	5.5	0.19	3.07	11	12	8.5	0.46	7.54	11	13	10.4	0.70	11.66	11	13				
	2.8 280 ●	4.1	0.11	1.86	11	13	5.8	0.20	3.26	10	12	9.1	0.49	8.03	10	12	10.7	0.75	12.45	11	13				
	3.0 300	4.3	0.12	1.93	11	13	6.1	0.21	3.45	10	11	9.1	0.52	8.53	11	12	10.7	0.80	13.40	12	14				
	3.5 350	4.4	0.13	2.16	11	13	6.4	0.23	3.71	9	11	9.1	0.55	8.98	11	13	10.7	0.85	14.23	13	15				
	3.8 380	4.5	0.14	2.24	11	13	6.4	0.23	3.83	10	11	9.1	0.57	9.44	12	14	10.7	0.90	14.91	13	16				
270°	1.7 170	--	--	--	--	--	4.9	0.20	3.30	11	13	7.6	0.50	8.30	12	13									
	2.0 200	3.7	0.11	1.82	11	12	5.2	0.22	3.60	11	12	8.2	0.55	8.98	11	12									
	2.5 250	4.0	0.12	2.01	10	12	5.5	0.24	3.90	10	12	8.5	0.59	9.66	11	12									
	2.8 280 ●	4.1	0.14	2.39	11	13	5.8	0.25	4.17	10	12	9.1	0.63	10.35	10	12									
	3.0 300	4.3	0.15	2.54	11	13	6.1	0.27	4.43	10	11	9.1	0.66	10.95	11	12									
	3.5 350	4.4	0.17	2.73	11	13	6.4	0.28	4.66	9	11	9.1	0.70	11.60	11	13									
	3.8 380	4.5	0.17	2.84	11	13	6.4	0.30	4.93	10	11	9.1	0.74	12.20	12	14									
360°	1.7 170	--	--	--	--	--	4.9	0.28	4.55	11	13	7.6	0.66	10.92	11	13									
	2.0 200	3.5	0.16	2.62	12	13	5.2	0.29	4.85	11	13	8.2	0.72	11.94	11	12									
	2.5 250	4.0	0.18	2.92	11	13	5.5	0.32	5.19	10	12	8.5	0.78	12.89	11	12									
	2.8 280 ●	4.1	0.19	3.18	11	13	5.8	0.34	5.61	10	12	9.1	0.84	13.80	10	12									
	3.0 300	4.3	0.20	3.34	11	13	6.1	0.36	5.95	10	11	9.1	0.89	14.63	11	12									
	3.5 350	4.4	0.23	3.71	11	13	6.4	0.39	6.37	9	11	9.1	0.94	15.43	11	13									
	3.8 380	4.5	0.23	3.83	11	13	6.4	0.40	6.59	10	11	9.1	0.98	16.18	12	14									



RF101 90°~210° RF102 210°~270° RF103 360° RF201 90°~210° RF202 210°~270° RF203 360° RF301 90°~210° RF302 210°~270° RF302 360° RF305 90°~210°

RF1000:2.5~4.5m

RF2000:4~6.4m

RF3000:6.7~9.1m

RF3500:
9.1~10.7m

RF NOZZLES

HIGH EFFICIENCY NOZZLE WITH SHORT RADIUS

Application

It is applied to turfgrass, shrubs, garden, etc.

Features

- Radius: 1.8~3.5m
- Color-coded for easy identification.
- Removable filter screen prevents large objections from clogging nozzle
- Low precipitation rate increasing irrigation efficiency
- Wind-resistant multi-stream technology
- Adjustable arc and radius.

Operating Data

- Recommended working pressure: 2.8 bar
- Recommend to use pure water



		Performance Data									
		RF 201 Green 90°~210°				RF 202 Purple 360°					
RF NOZZLES		maximum radius				minimum radius					
		Pressure	Radius	Flow	Flow	Precipmm/h	Radius	Flow	Flow		
		bar	kPa	m	m ³ /hr	l/m	■	▲	■	▲	
90°		2.1	210	2.6	0.04	0.64	23	27	1.8	0.03	0.49
		2.5	250	2.6	0.05	0.78	23	26	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	210	2.6	0.07	1.25	22	26	1.8	0.06	0.98
		2.5	250	2.8	0.09	1.44	22	25	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	210	2.6	0.09	1.44	22	26	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	210	2.6	0.15	2.50	23	26	1.8	0.11	1.78
		2.5	250	2.8	0.16	2.69	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		



RF202
90°~210°



RF203
360°

RF800 Radius: 1.8~3.5m

		Performance Data																				
		RF 201 Pink 90°~210°				RF 202 Orange 210°~270°				RF 203 Yellow 360°												
RF NOZZLES		Pressure				Radius				Flow				Precipmm/h								
		bar	kPa	m	m ³ /hr	l/m	■	▲	■	▲	■	▲	■	▲	■	▲						
90°		2.1	210	4.3	0.10	1.59	21	24	2.5	250	4.5	0.10	1.74	21	24	2.8	280	4.6	0.11	1.85	21	24
		3.1	310	4.8	0.12	1.97	21	24	3.5	350	4.9	0.12	2.08	21	24	3.8	380	4.9	0.13	2.20	22	25
		2.1	210	4.0	0.17	2.84	21	25	2.5	250	4.3	0.20	3.26	21	24	2.8	280	4.5	0.21	3.52	21	24
		3.1	310	4.6	0.22	3.63	21	24	3.5	350	4.8	0.24	4.01	21	24	3.8	380	4.9	0.25	4.20	21	24
		2.1	210	4.0	0.20	3.33	21	25	2.5	250	4.3	0.22	3.63	20	23	2.8	280	4.5	0.25	4.16	21	24
3.1	310	4.6	0.26	4.39	21	25	3.5	350	4.8	0.28	4.69	21	24	3.8	380	4.9	0.30	4.92	21	24		
270°		2.1	210	4.0	0.26	4.31	22	25	2.5	250	4.3	0.28	4.69	20	23	2.8	280	4.5	0.32	5.30	21	24
		3.1	310	4.6	0.33	5.56	21	24	3.5	350	4.8	0.35	5.83	20	23	3.8	380	4.9	0.37	6.09	20	23
		2.1	210	4.0	0.35	5.75	22	24	2.5	250	4.3	0.39	6.43	21	24	2.8	280	4.5	0.42	7.08	21	24
		3.1	310	4.6	0.45	7.57	21	25	3.5	350	4.8	0.48	8.06	21	24	3.8	380	4.9	0.51	8.55	21	25
		2.1	210	4.0	0.35	5.75	22	24	2.5	250	4.3	0.39	6.43	21	24	2.8	280	4.5	0.42	7.08	21	24
3.1	310	4.6	0.45	7.57	21	25	3.5	350	4.8	0.48	8.06	21	24	3.8	380	4.9	0.51	8.55	21	25		



RF201
90°~210°



RF202
210°~270°



RF203
360°

RF815 Radius: 2.5~4.9m

HF02

02"

Application

It is applied to turfgrass, shrubs, garden, etc.

Features

- Models: HF02-10cm
- Arc setting: 50°~360°
- Factory installed rubber cover
- Through-the-top arc adjustment
- Quick check arc mechanism
- Water lubricated gear-drive
- Nozzle choice: blue, grey
- Nozzle range: 1.5~8.0 blue, 2.0~4.5 low angle blue
- Warranty: 5 years

Operating Specification

- Radius: 4.9~14.0m
- Flow: 0.07~3.23m³/hr; 1.2~53.8l/min
- Recommended working pressure: 1.7~4.5bar; 170~450kPa
- Operating working pressure: 1.4~7bar; 140~700kPa



Operating Specification

- Inlet size: 3/4" female
- Precipitation rate: 10mm/hr approx
- Trajectory: Standard = 25° Low angle= 13°



HF02-00

Overall height: 21cm
Exposed diameter: 4.5cm
Inlet size: 3/4" female

Models	Standard	Options	Optional nozzles
HF02=10cm pop-up	Adjustable arc, 8 standard nozzles 4 low angle nozzles	(blank)=nil	1.5-4.0=factory installed nozzle number Blue 1.5-8.0 Blue low angle 2.0-4.5

Examples:

HF-02=10cm pop-up, adjustable arc

/ Performance Data

HF02 standard blue nozzle

	Pressure bar kPa	Radius m	Flow m ³ /hr	Flow l/m	Precipmm/h	
					■	▲
1.5 ■ Blue Haze	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	7.8	10	11
2.0 ■ Blue Haze	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 Haze	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 Haze	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 Haze	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 Haze	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 Haze	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 Haze	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

/ Performance Data

HF02 low angle blue nozzle

	Pressure bar kPa	Radius m	Flow m ³ /hr	Flow l/m	Precipmm/h	
					■	▲
2.0 ■ Blue Haze	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 ■ Blue Haze	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 ■ Blue Haze	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 ■ Blue Haze	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

电磁阀系列

BURIED SERIES

The outer flow channel design and 3-way waterproof coil makes the corresponding speed of solenoid valve faster.

The outer flow channel of the solenoid is increased and the anti blocking ability is stronger.

The solenoid has low energy consumption and can realize long-distance control.

The solenoid has a built-in three-way flow channel base and can be equipped with a two position three-way control valve

The solenoid is equipped with a manual control knob, which has open, close, and automatic three modes.

Split structure design, built-in diaphragm, solenoid separated from overflow channel, long service life.



Y SERIES SOLENOID VALVE

INOVATO SERIES

APPLICATION

The Y series solenoid valves have full sizes from 2 " to 6" , optional connection include flanges or female thread.

Designed for serving on wide range of pressure and flow conditions, from low flow dripping to ultra-high flow system.

FEATURE

- Pilot operated diaphragm structure, nylon reinforced.
- Double filtration to protect the solenoid core.
- Waterproof sealing coil.
- Closing slowly to prevent the water hammer.
- Flow control handle adjust the flow rate as need
- Y shape valve body design support higher flow rate.

- Medium: Water
- Temp: Water temp $\leq 53^{\circ}\text{C}$; Surrounding Temp $\leq 80^{\circ}\text{C}$

SPECIFICATION

- Flow: 2" $\leq 60.0\text{m}^3/\text{h}$, 2½" $\leq 65.0\text{m}^3/\text{h}$
3" $\leq 70.0\text{m}^3/\text{h}$, 3" L $\leq 70.0\text{m}^3/\text{h}$
3½" $\leq 120.0\text{m}^3/\text{h}$, 4" $\leq 125.0\text{m}^3/\text{h}$
5" $\leq 210.0\text{m}^3/\text{h}$, 6" $\leq 210.0\text{m}^3/\text{h}$
- Pressure: 1.0—10.0Bar
- Output pressure: 0.8—6.5Bar
- Port Size: 2", 2½", 3", 3" L, 3½", 4", 5", 6"
- Orifice: DN50, DN65, DN80, DN80L, DN80, DN100, DN125, DN150
- Voltage: AC220V/AC110V/AC24V, 50—60HZ
DC24V/DC12V/DC9V(customization)
DC Latching
- Material: Valve body—Glass filled Nylon
Sealing—NBR/EPDM
The movable core—430F
The static core—430F
Springs—SUS304
Shading coil—Red Copper



Y SERIES SOLENOID VALVE

T SERIES SOLENOID VALVE

INOVATO SERIES

APPLICATION

The T Series are widely used in large area lawn irrigation system, such as large park irrigation, road greening, golf course, also used in agriculture irrigation and industrial dedusting.

FEATURE

- Pilot operated diaphragm structure, nylon reinforced.
 - Double filtration to protect the solenoid core.
 - Waterproof sealing coil.
 - Closing slowly to prevent the water hammer.
 - Manually on/off the valve by turning the coil.
 - Flow control handle adjust the flow rate as needed.
- Medium: Water
 - Temp: Water temp $\leq 53^{\circ}\text{C}$; Surrounding Temp $\leq 80^{\circ}\text{C}$

SPECIFICATION

- Flow: $\frac{1}{2}'' \leq 3\text{m}^3/\text{h}$, $\frac{3}{4}'' \leq 9\text{m}^3/\text{h}$
 $1'' \leq 9\text{m}^3/\text{h}$, $1\frac{1}{2}'' \leq 21\text{m}^3/\text{h}$
 $2'' \leq 34\text{m}^3/\text{h}$
- Pressure: 1.0—10.0Bar
- Port thread: Female G BSP
- Port Size: $\frac{1}{2}''$, $\frac{3}{4}''$, 1", 1 $\frac{1}{2}''$, 2"
- Orifice: DN15, DN20, DN25, DN40, DN50
- Voltage: AC220V/AC110V/AC24V, 50—60HZ
 DC24V/DC12V/DC9V(customization)
 DC Latching
- Material: Valve body—Glass filled Nylon
 Sealing—NBR/EPDM
 The movable core—430F
 The static core—430F
 Springs—SUS304
 Shading coil—Red Copper



T SERIES SOLENOID VALVE

附件 电磁阀配件

配件

	产品编号	产品描述	
	Y-FJ-01-18	直通接头,螺纹1/8-BSPT	
	Y-FJ-02-18	L型弯头,螺纹1/8-BSPT	
	Y-FJ-02-14	L型弯头,螺纹1/4-NPT	
	Y-FJ-03-14	堵头,螺纹1/4-NPT	
	Y-FJ-03-38	堵头,螺纹3/8-BSPT	
	Y-FJ-04-18	T型接头,螺纹1/8-BSPT	
	Y-FJ-05-18	锁帽,螺纹1/8-BSPT	
	Y-FJ-06-18	铜四通,外观一样,就底座螺纹区别	
	Y-FJ-06-14	铜四通,外观一样,就底座螺纹区别	
	Y-FJ-07-14	压力表连接件,螺纹1/4-NPT	
	Y-FJ-08	生料带	
	Y-FJ-09-L59	内置过滤器L59,1/4NPT,长度59	

附件 电磁阀配件

配件

	产品编号	产品描述	
	Y-FJ-09-L41	内置过滤器L41,1/4NPT, 长度41	
	Y-FJ-10-DN80	3寸法兰套件,可通用3寸, 3寸超大主体	
	Y-FJ-10-DN100	4寸法兰套件,可通用3寸, 3寸超大主体	
	Y-FJ-10-DN150	6寸法兰套件	
	Y-FJ-11	导阀,减压/持压导阀	
	Y-FJ-12	3寸卡箍接头	
	Y-FJ-12-02	4寸卡箍接头	
	Y-FJ-13	命令管,5*8	
	Y-FJ-14	压力表, 1/4螺纹接头	
	Y-FJ-15	压力表探针	

Y系列 电磁阀产品编号命名

/ INOVATO	
Y系列电磁阀产品编号命名	
功能	编码
手动开关阀	105
手动开关阀 (仅内部)	105-N(仅限2寸)
电磁控制阀	110
减压阀	120
减压阀(无铜四通)	120-N
减压持压阀	123
持压阀	130
快速泄压阀	13Q
尺寸	
2"	DN50
2.5"	DN65
3" (仅法兰盘)	DN80
3" L(仅法兰盘)	DN80L
3.5" (仅法兰盘)	DN80
4" (仅法兰盘)	DN100
5"	DN125
6"	DN150
模式	编码
球阀	G
角度阀2" —4"	A
双腔阀	D
终端连接	编码
BSP螺纹	BP
NPT螺纹	NP
塑料法兰盘	FF
金属法兰盘	CC(仅限4寸)
控制类型	编码
2路	2W
3路	3W
电磁头规格	编码
24VAC/50HZ — 常闭	4AC
24VAC/50HZ — 常开	4AO
24VDC — 常闭	4DC
24VDC — 常开	4DO
12-40VDC — 线圈脉冲	1DC
24VAC — 机械式	1DO
24VDC — 机械式	1DS
12-40VDC — 机械式脉冲	9DS
附加属性	编码
压力表	b

T系列 电磁阀产品编号命名

/ INOVATO		
T系列 电磁阀产品编号命名		
功能		编码
手动开关阀		205
电磁控制阀		210
减压阀	仅限 (1½"、2)	220
减压阀(无铜四通)	仅限 (1½"、2)	220-N
减压阀持压阀	仅限 (1½"、2)	223
持压阀	仅限 (1½"、2)	230
快速泄压阀	仅限 (1½"、2)	230Q
尺寸		
½"		DN15
¾"		DN20
1"		DN25
1½"		DN40
2"		DN50
模式		编码
球阀		G
角度阀	(仅限1.5" -2")	A
材料		编码
尼龙		P
P.V.C	(仅限¾" -1")	J
终端连接		编码
BSP螺纹	(内螺纹)	BP
NPT螺纹	(内螺纹)	NP
PVC焊接		SP
控制类型		编码
2路		2W
3路		3W
电磁头规格		编码
24VAC/50HZ	— 常闭	4AC
24VAC/50HZ	— 常开	4AO
24VDC	— 常闭	4DC
24VDC	— 常开	4DO
12-40VDC	— 线圈脉冲	1DC
24VAC	— 机械式	1DO
24VDC	— 机械式	1DS
12-40VDC	— 机械式脉冲	9DS
附加属性		编码
压力表		b

Y SERIES SOLENOID VALVE

SOLENOID VALVE OEM SERIES

Manual Switch Valve

The valve has basic manual control function and is equipped with a brass three-way switch. Users can manually choose between “on, off, and automatic (add other accessories to achieve remote control)”. Switch on and off quickly and effortlessly, even under high pressure conditions.



Solenoid Control Valve

3-way valve can be controlled by coil solenoid, pulse coil solenoid and pulse mechanical solenoid. It can also be switched on and off by connecting a decoder. The conventional main valve is "normally closed", ("normally open" solenoid valve can also be supplied according to customer's request). It can also be used with other control equipment.

Pressure Relief Valve

The pressure relief valve is a hydraulically driven diaphragm type hydraulic control valve, which can reduce the high pressure to the low pressure and keep the water pressure behind the valve not greater than the set value, and the valve is fully open when the front end pressure is lower than the set value. By matching with different electromagnetic heads and controllers, the automatic control function can be realized.



Pressure Holding Valve

The valve maintains the preset inlet pressure and maintains the inlet not lower than the set value through flow regulation. When the front end pressure exceeds the set value, the overpressure part is discharged through flow adjustment. By matching with different electromagnetic heads and controllers, the automatic control function can be realized.

Y SERIES SOLENOID VALVE

SOLENOID VALVE OEM SERIES

APPLICATION

The Y series solenoid valves have full sizes from 2" to 3", optional connection include flanges or female thread.

Designed for serving on wide range of pressure and flow conditions, from low flow dripping to ultra-high flow system.

FEATURE

- ⦿ Pilot operated diaphragm structure, nylon reinforced.
- ⦿ Double filtration to protect the solenoid core.
- ⦿ Waterproof sealing coil.
- ⦿ Closing slowly to prevent the water hammer.
- ⦿ Flow control handle adjust the flow rate as need
- ⦿ Y shape valve body design support higher flow rate.

- Medium: Water
- Temp: Water temp $\leq 53^{\circ}\text{C}$; Surrounding Temp $\leq 80^{\circ}\text{C}$

SPECIFICATION

- Flow: $200\text{bm} \leq 60.0\text{m}^3/\text{h}$
 $300\text{bm} \leq 70.0\text{m}^3/\text{h}$
- Pressure: 1.0—10.0bar
- Output pressure: 0.8—6.5bar
- Port Size: 2", 3"
- Orifice: DN50, DN80
- Voltage: AC24V, 50—60Hz
DC24V/DC12V/DC9V(customization)
DC Latching
- Material: Valve body—Glass filled Nylon
Sealing—NBR/EPDM
The movable core—430F
The static core—430F
Springs—SUS304
Shading coil—Red Copper



Y SERIES SOLENOID VALVE



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