

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.



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地埋系列

POP-UP SPRINKLERS

Available for different pop-up heights. 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

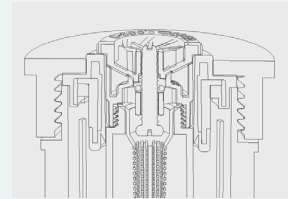
APPLICATIONS	GF	SF
Shrubs	⊙	⊙
Agriculture		⊙
Garden	⊙	⊙
Courtyard		⊙
Municipalities		⊙
Golf Course		⊙

△ Optional check valve available

Our Advantage

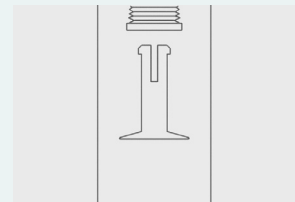
CO-MOLDED WIPER SEAL

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.



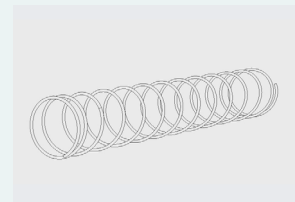
FLOGUARD TECHNOLOGY

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.



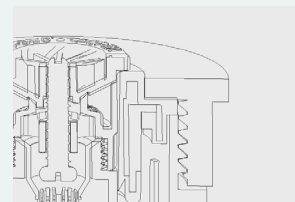
HEAVY-DUTY SPRING

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

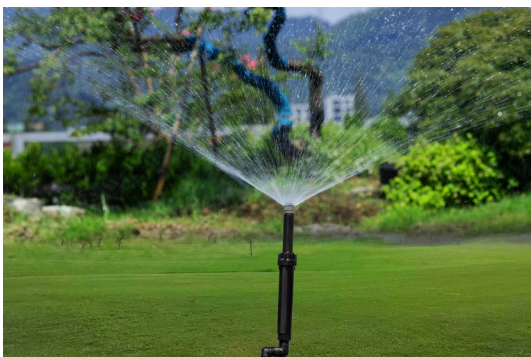
Factory Installed Options

- 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 ³ /hr	l/m	■	▲	m	m ³ /hr	l/m	■	▲	m	m ³ /hr	l/m	■	▲	m	m ³ /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 ³ /hr	l/m	■	▲	m	m ³ /hr	l/m	■	▲	m	m ³ /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


Performance Data		RF LS	RF RS	RF SS
RF NOZZLES		Dark purple	Olive green	Mocha brown
		Pressure bar kPa	Radius m	Flow 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



RF LS
Left Strip
1.5*4.6m




RF RS
Right Strip
1.5*4.6m




RF SS
Side Strip
1.5*9.1m

RF strip pattern

Performance Data		RF	RF	
RF NOZZLES		Corner Blue	Corner Green	
		Pressure bar kPa	Radius m	Flow 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



RF COR1
2.4 ~ 4.5m



RF COR2
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

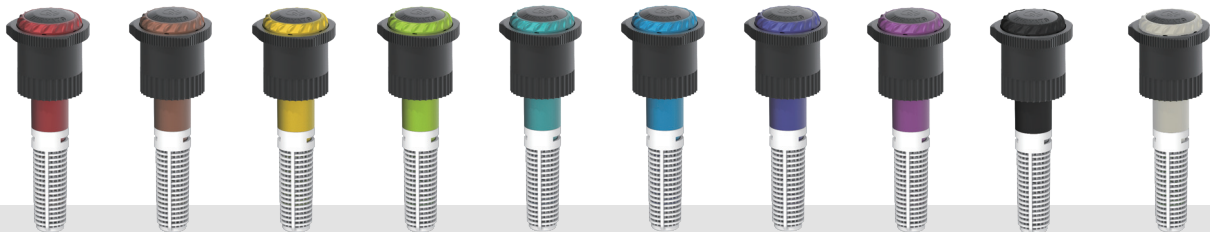
▲ Indicates that the sprinklers are installed in a triangle. Space based on radius

/ 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					Radius Flow					Radius Flow					Radius Flow							
		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	0.06	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	0.05	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° RF303 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 NOZZLES

● RF 61201 Green 90°~210°
● RF 61202 Purple 360°

	maximum radius					minimum radius		
	Pressure bar kPa	Radius m	Flow m³/hr	Flow l/m	Precipmm/h ■ ▲	Radius m	Flow m³/h	Flow 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	



RF61201
90°~210°




RF61202
360°

RF612 Radius: 1.8~3.5m


Performance Data RF NOZZLES

● RF 81601 Pink 90°~210°
● RF 81602 Orange 210°~270°
● RF 81603 Yellow 360°


	Pressure		Radius		Flow		Precipmm/h	
	bar	kPa	m	m³/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		
180°	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		
210°	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		
360°	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		



RF81601
90°~210°



RF81602
210°~270°



RF81603
360°

RF816 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 Flow		Flow		Precipmm/h	
		m	m ³ /hr	l/m	■	▲	
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 Flow		Flow		Precipmm/h	
		m	m ³ /hr	l/m	■	▲	
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

SOLENOID VALVE

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

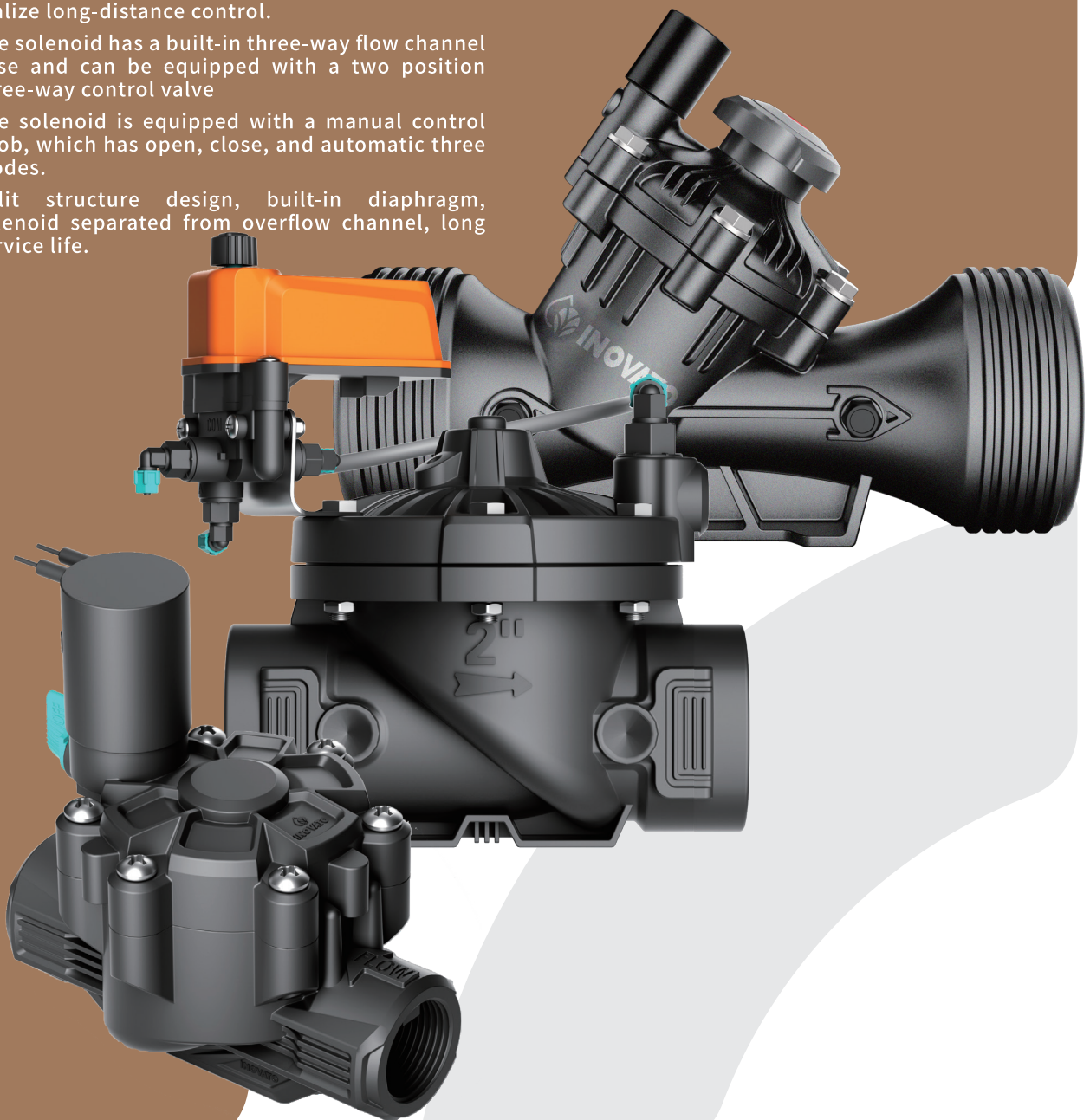
The outer flow channel of the solenoid is increased and the anti blocking ability is stronger.

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" $\leq 70.0\text{m}^3/\text{h}$, 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", 3½", 4", 5", 6"
- Orifice: DN50, DN65, DN80, 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

SOLENOID VALVE ACCESSORIES

ACCESSORIES

	Product number	Product introduction	
	Y-FJ-01-18	Coupling,1/8",BSPT	
	Y-FJ-02-18	Elbow,1/8",BSPT	
	Y-FJ-02-14	Elbow,1/4",NPT	
	Y-FJ-03-14	Plug,1/4",NPT	
	Y-FJ-03-38	Plug,3/8",BSPT	
	Y-FJ-04-18	Reducing tee,1/8",BSPT	
	Y-FJ-05-18	Cap,1/8",BSPT	
	Y-FJ-06-18	Copper cross	
	Y-FJ-06-14	Copper cross	
	Y-FJ-07-14	Pressure tapping,1/4",NPT	
	Y-FJ-08	Tape	
	Y-FJ-09-L59	Strainer,1/4",NPT,L59	

SOLENOID VALVE ACCESSORIES

ACCESSORIES

	Product number	Product introduction	
	Y-FJ-09-L41	Strainer,1/4",NPT,L41	
	Y-FJ-10-DN80	Flange, 3"	
	Y-FJ-10-DN100	Flange, 4"	
	Y-FJ-10-DN150	Flange, 6"	
	Y-FJ-11	Pressure Reduce Pilot Valve	
	Y-FJ-12	Clamp connector,3"	
	Y-FJ-12-02	Clamp connector,4"	
	Y-FJ-13	PA,5*8	
	Y-FJ-14	Pressure gauge	
	Y-FJ-15	Pressure gauge probe	

Y Series SOLENOID VALVE PRODUCT NUMBER DESIGNATION

/ INOVATO			
Y Series Solenoid Valve Product Number Designation			
Function		Code	
Manual Switch Valve		105	
Solenoid Control Valve		110	
Pressure Relief Valve		120	
Pressure Relief and Holding Valve		123	
Pressure Holding Valve		130	
Quick Relief Valve		13Q	
Size		Code	
2"		DN50	
2.5"		DN65	
3"		DN80	
3.5"		DN80	
4"		DN100	
5"		DN125	
6"		DN150	
Pattern		Code	
Globe		G	
Angle2" —4"		A	
End Connections		Code	
BSP Thread		BP	
NPT Thread		NP	
Plastic Flange Plate		FF	
Metal Flange Plate		CC	
Control Type		Code	
2-Way		2W	
3-Way		3W	
Electromagnetic Head Specification		Code	
24VAC/50HZ	—	Coil Solenoid	4AC
9VDC	—	Coil Solenoid	4AS
12VDC	—	Coil Solenoid	4AO
24VDC	—	Coil Solenoid	4DC
9-30VDC	—	Coil Pulse Solenoid	4DO
24VAC/24VDC (Use in common)	—	Mechanical	8DS
24VAC	—	Mechanical	1DO
24VDC	—	Mechanical	1DS
12-40VDC	—	Mechanical Pulse	9DS
Additional Attributes Unlimited Selectio		Code	
Pressure gauge		b	

T Series SOLENOID VALVE PRODUCT NUMBER DESIGNATION

/ INOVATO			
T Series Solenoid Valve Product Number Designation			
Function		Code	
Manual Switch Valve		205	
Solenoid Control Valve		210	
Pressure Relief Valve (1½"、2)		220	
Pressure Relief and Holding Valve (1½"、2)		223	
Pressure Holding Valve (1½"、2)		230	
Quick Relief Valve (1½"、2)		230Q	
Size		Code	
½"		DN15	
¾"		DN20	
1"		DN25	
1½"		DN40	
2"		DN50	
Pattern		Code	
Globe		G	
Angle (1.5" -2" only)		A	
Construction Materials		Code	
Black Nylon		P	
Gray P.V.C. (¾" -1" only)		J	
End Connections		Code	
Threaded BSP (Female)		BP	
Threaded NPT (Female)		NP	
PVC Welding Socket		SP	
Plastic Flange Plate		FF	
Metal Flange Plate		CC	
Control Type		Code	
2-Way		2W	
3-Way		3W	
Electromagnetic Head Specification		Code	
24VAC/50HZ	—	Coil Solenoid	4AC
9VDC	—	Coil Solenoid	4AS
12VDC	—	Coil Solenoid	4AO
24VDC	—	Coil Solenoid	4DC
9-30VDC	—	Coil Pulse Solenoid	4DO
24VAC/24VDC (Use in common)	—	Mechanical	8DS
24VAC	—	Mechanical	1DO
24VDC	—	Mechanical	1DS
12-40VDC	—	Mechanical Pulse	9DS
Additional Attributes Unlimited Selectio		Code	
Pressure gauge		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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