

# Quick-detachable Standard Flat Spray Nozzles

Plastic

INVV

Flat Spray



### [Features]

- Flat spray pattern with a mountain-shaped spray distribution having gradually tapered edges.
- Made of high chemical and heat resistant PP (polypropylene).
- Quick-detachable design helps to significantly reduce maintenance time.
- Nozzle tips are color-coded by spray capacity for easy identification.

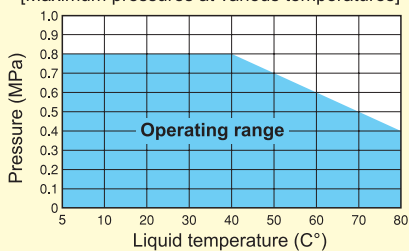
### [Standard pressure]

0.3 MPa

### [Applications]

- Cleaning
- Etching
- Stripping
- Chemical treatment
- For periodic maintenance or for the applications where precise spray alignment is required

[Maximum pressures at various temperatures]

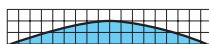


Use within the operating range.

[Spray pattern]



[Spray distribution]



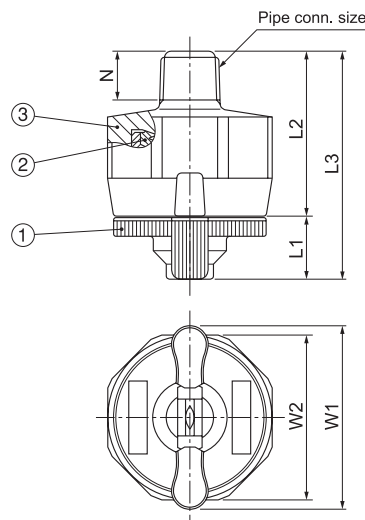
## INVV series

INVV series	
Structure	<ul style="list-style-type: none"> <li>• Two-piece structure comprising a nozzle tip (with packing) and an adaptor.</li> <li>• Easy installation and removal of the nozzle tip just by turning 60°.</li> </ul>
Material	<ul style="list-style-type: none"> <li>• Nozzle tip: PP</li> <li>• Adaptor: PP or PPS</li> <li>• Packing: FEPM</li> </ul>

Pipe conn. size	Dimensions (mm)						Mass (g)	
	L1	L2	L3	W1	W2	N	PP	PPS
R1/8	10	27	37	30	27	8	9.0	12
R1/4	10	30	40	30	27	11.5	9.4	12
R3/8	10	30	40	30	27	12	10.3	14

[Note]

- **INVV series nozzles are not compatible with the discontinued ISVV series.**
- Appearance and dimensions may differ slightly depending on materials and nozzle codes.
- Tab line conforms with the flat spray spread direction.



① Nozzle tip ② Packing (FEPM) ③ Adaptor

Spray angle code	Spray capacity code	Pipe connection size			Spray angle (°)			Spray capacity (ℓ/min)							Mean drop. dia. (μm)	Free pass. dia. (mm)	Color of nozzle tip
		R1/8	R1/4	R3/8	0.15 MPa	0.3 MPa	0.7 MPa	0.05 MPa	0.1 MPa	0.15 MPa	0.2 MPa	0.3 MPa	0.5 MPa	0.7 MPa			
115	05	○	○	○	102	115	124	—	0.29	0.35	0.41	0.50	0.65	0.76	}	0.3	Green
	07	○	○	○	103	115	124	—	0.40	0.49	0.57	0.70	0.90	1.07		0.3	Brown
	10	○	○	○	103	115	124	0.41	0.58	0.71	0.82	1.00	1.29	1.53		0.4	Red
	15	○	○	○	104	115	123	0.61	0.87	1.06	1.23	1.50	1.94	2.29		0.5	Grey
	20	○	○	○	104	115	123	0.82	1.15	1.41	1.63	2.00	2.58	3.06		0.6	Black
	30	○	○	○	105	115	122	1.23	1.73	2.12	2.45	3.00	3.88	4.58		0.8	Blue
	40	○	○	○	106	115	122	1.63	2.31	2.83	3.27	4.00	5.16	6.11		0.8	Orange
90	05	○	○	○	77	90	100	—	0.29	0.35	0.41	0.50	0.65	0.76	}	0.3	Green
	07	○	○	○	78	90	100	—	0.40	0.49	0.57	0.70	0.90	1.07		0.4	Brown
	10	○	○	○	78	90	99	0.41	0.58	0.71	0.82	1.00	1.29	1.53		0.5	Red
	15	○	○	○	79	90	99	0.61	0.87	1.06	1.23	1.50	1.94	2.29		0.6	Grey
	20	○	○	○	79	90	98	0.82	1.15	1.41	1.63	2.00	2.58	3.06		0.7	Black
	30	○	○	○	80	90	97	1.23	1.73	2.12	2.45	3.00	3.88	4.58		0.9	Blue
	40	○	○	○	81	90	97	1.63	2.31	2.83	3.27	4.00	5.16	6.11		1.1	Orange
65	05	○	○	○	52	65	74	—	0.29	0.35	0.41	0.50	0.65	0.76	}	0.4	Green
	07	○	○	○	53	65	74	—	0.40	0.49	0.57	0.70	0.90	1.07		0.5	Brown
	10	○	○	○	54	65	73	0.41	0.58	0.71	0.82	1.00	1.29	1.53		0.6	Red
	15	○	○	○	54	65	73	0.61	0.87	1.06	1.23	1.50	1.94	2.29		0.8	Grey
	20	○	○	○	55	65	72	0.82	1.15	1.41	1.63	2.00	2.58	3.06		0.9	Black
	30	○	○	○	56	65	72	1.23	1.73	2.12	2.45	3.00	3.88	4.58		1.1	Blue

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**INVV series**

Spray angle code	Spray capacity code	Pipe connection size			Spray angle (°)			Spray capacity (ℓ/min)							Mean drop. dia. (μm)	Free pass. dia. (mm)	Color of nozzle tip		
		R1/8	R1/4	R3/8	0.15 MPa	0.3 MPa	0.7 MPa	0.05 MPa	0.1 MPa	0.15 MPa	0.2 MPa	0.3 MPa	0.5 MPa	0.7 MPa					
65	40	○	○	○	56	65	71	1.63	2.31	2.83	3.27	4.00	5.16	6.11	350	1.3	Orange		
	50	○	○	○	57	65	71	2.04	2.89	3.54	4.08	5.00	6.46	7.64				1.5	Pink
50	05	○	○	○	38	50	59	—	0.29	0.35	0.41	0.50	0.65	0.76	210	0.4	Green		
	07	○	○	○	38	50	58	—	0.40	0.49	0.57	0.70	0.90	1.07				0.5	Brown
	10	○	○	○	40	50	58	0.41	0.58	0.71	0.82	1.00	1.29	1.53				0.6	Red
	15	○	○	○	40	50	57	0.61	0.87	1.06	1.23	1.50	1.94	2.29				0.8	Grey
	20	○	○	○	41	50	57	0.82	1.15	1.41	1.63	2.00	2.58	3.06				1.0	Black
	30	○	○	○	42	50	56	1.23	1.73	2.12	2.45	3.00	3.88	4.58				1.2	Blue
	40	○	○	○	42	50	56	1.63	2.31	2.83	3.27	4.00	5.16	6.11				1.4	Orange
	50	○	○	○	43	50	55	2.04	2.89	3.54	4.08	5.00	6.46	7.64				1.6	Pink

Flat Spray

**How to order**

Please inquire or order for a specific nozzle using this coding system.

① Complete assemblies

〈Example〉 1/8M INVV 9030 PP (FEPM) + PP

1/8M INVV 90 30 PP (FEPM) + PP

Pipe conn. size*	Spray angle code	Spray capacity code	Adaptor material
■ 1/8M	■ 115	■ 05	■ PP
■ 1/4M	■ }	■ }	■ PPS
■ 3/8M	■ 50	■ 50	

② Nozzle tip only (with packing)

〈Example〉 INVV 9030 PP (FEPM)

INVV 90 30 PP (FEPM)

Spray angle code	Spray capacity code
■ 115	■ 05
■ }	■ }
■ 50	■ 50

\*\*M" indicates male thread ("R" of the ISO standard) and "F" indicates female thread ("Rc" of the ISO standard), e.g. 1/8M = R1/8.

**ALSO AVAILABLE!**

Quick-detachable  
Off-center Even Flat  
Spray Nozzles

**INOVE series**

See p.41 of this catalog.

Quick-detachable  
Full Cone  
Spray Nozzles

**INJXX series**

See p.69 of this catalog.

**Quick-detachable Nozzle Connector**

**INCO**



Photo is INCO with a wide-angle flat spray nozzle YYP series.

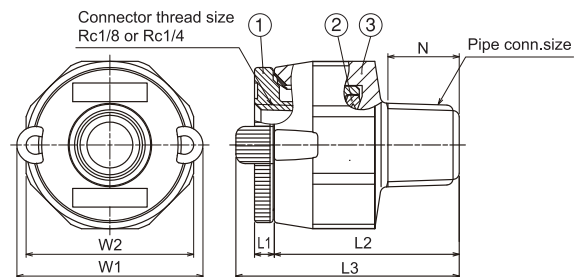
**[Features]**

- Easy installation and removal just by attaching a nozzle to this connector.
- Made of high chemical and heat resistant plastic.
- R1/4 or R1/8 threaded nozzles are attachable.

**INCO series**

INCO series	
Structure	<ul style="list-style-type: none"> <li>• Two-piece structure including a connector and an adaptor.</li> <li>• Easy installation and removal of the connector just by turning 60°.</li> </ul>
Material	<ul style="list-style-type: none"> <li>• Connector: PP</li> <li>• Adaptor: PP or PPS</li> <li>• Packing: FEPM</li> </ul>

Pipe conn. size	Dimensions (mm)						Mass (g)	
	L1	L2	L3	W1	W2	N	PP	PPS
R1/8	3	27	33	30	27	8	9	12
R1/4	3	30	36	30	27	11.5	10	13
R3/8	3	30	36	30	27	12	11	14



① Nozzle connector ② Packing (FEPM) ③ Adaptor

[Note] Appearance and dimensions may differ slightly depending on materials and connector codes.

**How to order**

Please inquire or order for a specific nozzle connector using this coding system.

① Complete assemblies

〈Example〉 INCO 1/4M × 1/8F PP (FEPM) + PP

INCO 1/4M × 1/8F PP (FEPM) + PP

Pipe conn. size*	Connector thread size*	Adaptor material
■ 1/8M	■ 1/8F	■ PP
■ 1/4M	■ 1/4F	■ PPS
■ 3/8M		

② Nozzle connector only (with packing)

〈Example〉 INCO 1/8F PP (FEPM)

INCO 1/8F PP (FEPM)

Connector thread size*
■ 1/8F
■ 1/4F

\*\*M" indicates male thread ("R" of the ISO standard) and "F" indicates female thread ("Rc" of the ISO standard).