A.R.I. D-040

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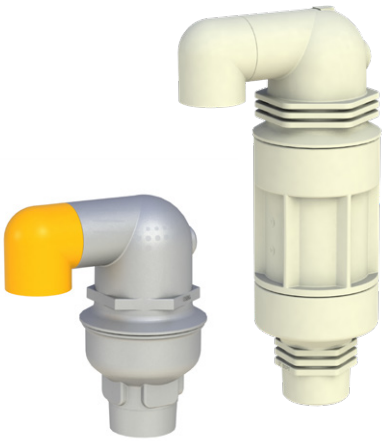
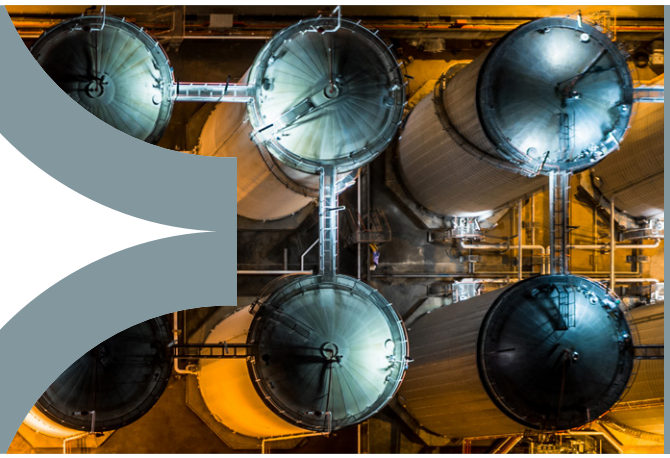




Industry

Combination Air Valve

Description

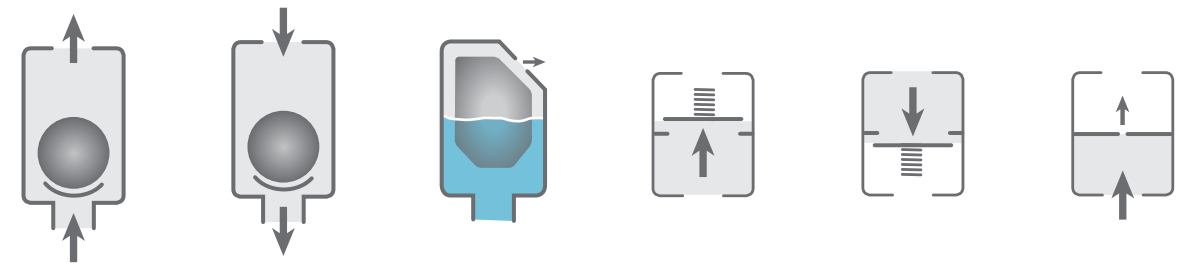
A.R.I. D-040 Series, is a reduced bore Combination Air Valve. Installed on liquid transmission systems, the Air Valve is designed to improve hydraulic operation by protecting the pipeline, increasing pipeline efficiency and reducing energy requirements.

Applicable for: Desalination & Sea Water, Mines, Marine - Ballast Water, Oil & Gas, Food Industry, Power Plant Cooling, CBM, Hydro / Thermal Power.

Installation

- Pump stations: downstream of the pump and the check valve
- Downstream and upstream of shut-off valves
- Downstream of deep-well pumps
- On long constant-sloped pipeline segments
- At peaks along the pipeline and at peaks relative to hydraulic gradient
- At end lines
- Before water meters

Operation



Air Discharge | Air Intake | Automatic Air Release | One Way Out | One Way In | Non Slam

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Features and Benefits

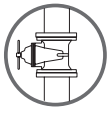
Reliable operation	reduces water hammer impact, saves energy and increases system efficiency
Dynamic design	high capacity air discharge
Installation and maintenance	easy to install and simple to maintain
Unique orifice seat/seal design	long-term maintenance-free operation
Accessible discharge outlet	for connecting a vent pipe
All parts are suitable for corrosive liquid and environment	non-corrosive and durable parts
Rolling seal	leak-free sealing over a wide range of pressure differentials
ATEX certified air valves	certification is conditional on the customer connecting the designated part on the product to a dedicated ground connection point.
Unique body and float design (D-040 L)	seals at very low pressures
Continual air gap (D-040 L)	separates the liquid from the sealing mechanism

Technical Specifications

Size range	½" – 2"	
Sealing pressure range	A.R.I. D-040 L A.R.I. D-040 | A.R.I. D-040 L A.R.I. D-040 | A.R.I. D-040 L A.R.I. D-040-C	0.02 - 6 bar (PN6) 0.1 - 10 bar (PN10) 0.2 - 16 bar (PN16) 0.2 - 16 bar (PN16)
Testing pressure	1.5 times maximum working pressure	
Temperature	Maximum working temperature: 60° C. Maximum intermittent temperature: 90° C.	
Valve coating	Fusion bonded epoxy coating in compliance with standard DIN 30677-2 (Model A.R.I. D-040-C)	
Upon ordering, please specify: model, size, working pressure, thread/flange standard and type of liquid		

The valve installed under the air valve must be fully open to prevent damage or malfunction and ensure performance within the specifications of the air valve.

For complete installation instructions, please refer to the IOM document.



A.R.I. D-040

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Valve Selection Options

Models	A.R.I. D-040 A.R.I. D-040 C - Protecting Shell A.R.I. D-040 L - Specifically designed to operate with liquids containing small suspended solids
Valve connection	Threaded male BSPT/NPT Flanged ends to meet various requested standard
Standard materials	Reinforced Nylon, Polypropylene, Stainless Steel 316, Super Duplex grade 5A
Optional add-on components	One-way Out attachment, allows for air discharge only, prevents air intake One-way In attachment, allows air intake only, not allowing air discharge Non-slam, discharge-throttling attachment, allows full air intake, throttles air discharge (2" only)
Pressure rating	PN6 A.R.I. D-040 L PN10 A.R.I. D-040 | A.R.I. D-040 L PN16 A.R.I. D-040 | A.R.I. D-040 L PN16 A.R..I D-040-C

A.R.I. D-040

A.R.I. D-040 C

A.R.I. D-040 L

A.R.I. D-040

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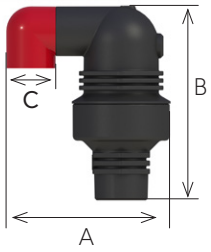

Dimensions and Weight

Size	Dimensions (mm)		Connections	Weight (kg)	Orifice Area (mm^2)	
	max. A	B	C		A / V	Auto.
Composite materials models						
D-040						
1/2" (15mm), 3/4" (20mm), 1" (25mm) TRH	100	143	3/8" BSP Female	0.33	100	7.8
2" (50mm) TRH	183	215	1½" BSP Female	1.1	804	12
2" (50mm) FL	211	222	1½" BSP Female	1.6	804	12
D-040 L						
1/2" (15mm), 3/4" (20mm), 1" (25mm) TRH	100	227	3/8" BSP Female	0.6	100	7.8
2" (50mm) TRH	183	346	1½" BSP Female	2	804	12
2" (50mm) FL	211	354	1½" BSP Female	2.5	804	12
Metal Models						
D-040 C (Protective Shell)						
1/2" (15mm), 3/4" (20mm), 1" (25mm) TRH	119	144	3/8" BSP Female	1.3	100	7.8
2" (50mm) TRH	185	217	1.5" BSP Female	4	804	12
2" (50mm) FL	214	221	1.5" BSP Female	5.9	804	12
D-040 STST						
1/2" (15mm), 3/4" (20mm), 1" (25mm) TRH	100	143	3/8" BSP Female	1.4	100	7.8
2" (50mm) TRH	185	217	1.5" BSP Female	4	804	12
2" (50mm) FL	210	205	1.5" BSP Female	5.7	804	12
D-040 L STST						
1/2" (15mm), 3/4" (20mm), 1" (25mm) TRH	94	216	3/8" BSP Female	1.7	100	7.8
2" (50mm) TRH	183	335	1.5" BSP Female	4.4	804	12
2" (50mm) FL	210	335	1.5" BSP Female	6.6	804	12

NOTE
Dimension A in the picture and in the table shows the maximum product width. All product weights are approximate, due to the differences in flange standards, materials and variable accessories.

FL - Flanged THR - Threaded

A.R.I. D-040

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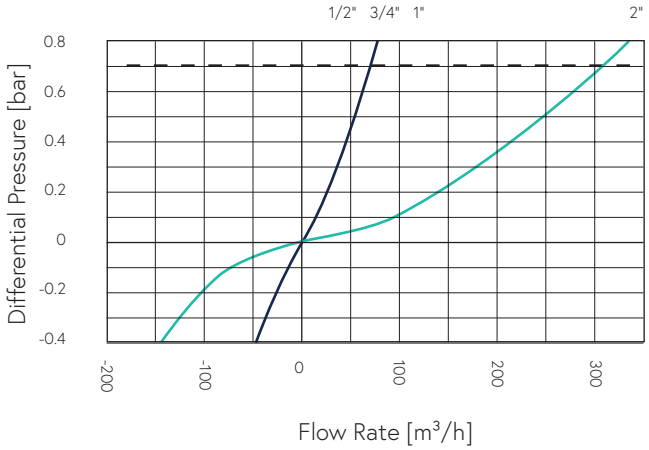
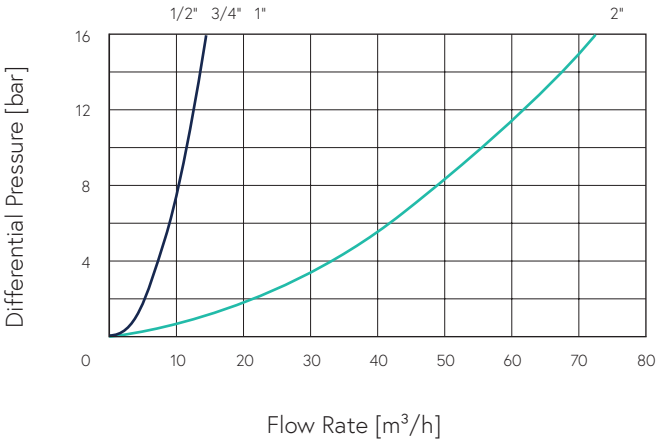
Flow Charts

D-040

Air & Vacuum Flow Rate



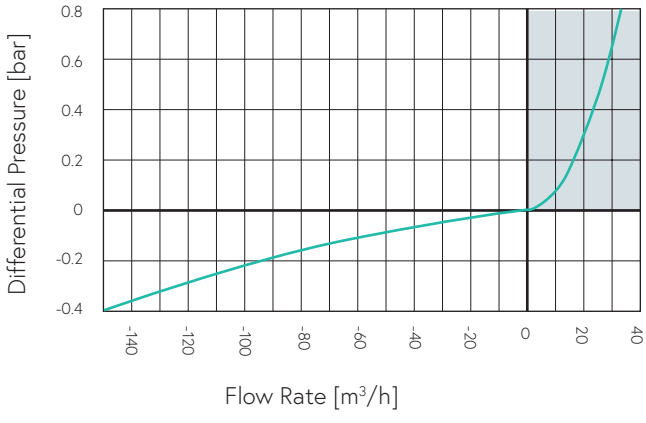
Automatic Air Release Flow Rate



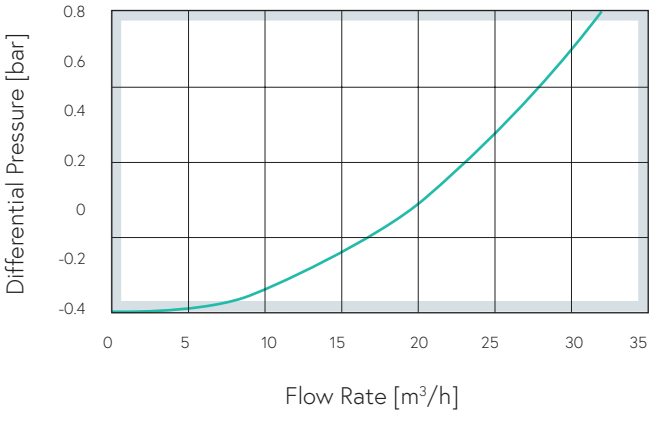
— — — Max. recommended design air discharge

D-040 NS

Air & Vacuum Flow Rate



Air Discharge Flow Rate



A.R.I. D-040 1"

Aquestia
Directing the Flow

Parts List and Specifications | Metal Models

No.	Part	Material
1	Cover	Stainless Steel 316 / Super Duplex Grade 5A
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon / Polypropylene
2b	Float	Foamed Polypropylene
2c	Rolling Seal	EPDM / VITON
3	Base Assembly	
3a	O-ring	EPDM / VITON
3b	Base	Stainless Steel 316 / Super Duplex Grade 5A

Parts List and Specifications | Composite Materials Models

No.	Part	Material
1	Cover Assembly	
1a	Discharge Outlet	Polypropylene
1b	Body	Reinforced Nylon / Polypropylene / PVDF
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon / Polypropylene
2b	Float	Foamed Polypropylene
2c	Rolling Seal	EPDM / VITON
3	Base Assembly	
3a	O-ring	EPDM / VITON
3b	Base	Reinforced Nylon / Polypropylene / PVDF

NOTE: Polypropylene body for PN10 models only

A.R.I. D-040 2"

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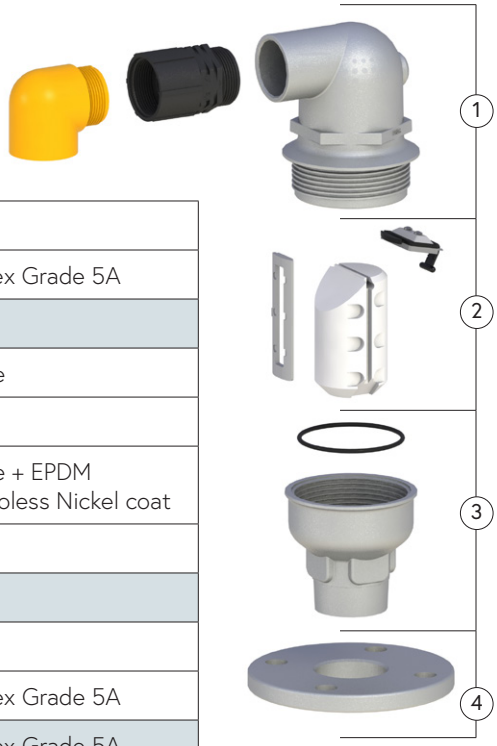
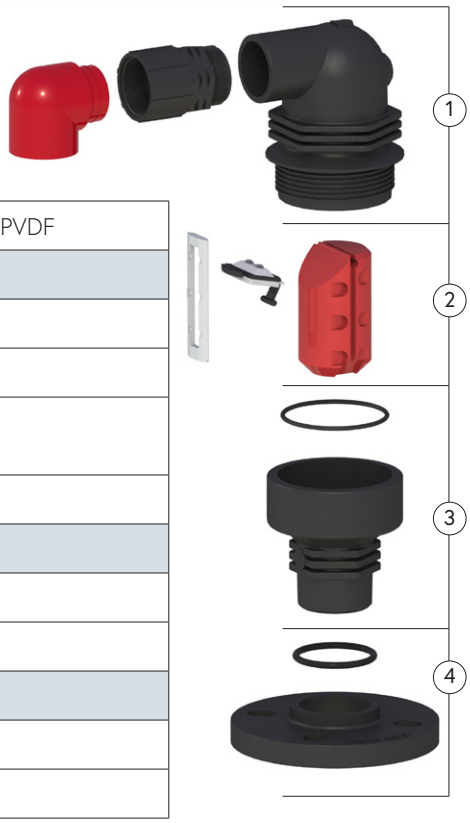
Parts List and Specifications | Metal Models

No.	Part	Material
1	Cover Assembly	
1a	Discharge Outlet	Polypropylene
1b	One-way or NS Check Valve (Optional)	Polypropylene
1c	Body	Stainless Steel 316 / Super Duplex Grade 5A
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon / Polypropylene
2b	Float	Foamed Polypropylene
2c	Rolling Seal Assembly	Reinforced Nylon / Polypropylene + EPDM + Stainless Steel, Optional Electroless Nickel coat
2d	O-ring	EPDM / VITON
3	Base Assembly	
3a	O-ring	EPDM / VITON
3b	Base	Stainless Steel 316 / Super Duplex Grade 5A
4	Optional Flange	Stainless Steel 316 / Super Duplex Grade 5A



Parts List and Specifications | Composite Materials Models

No.	Part	Material
1	Cover Assembly	
1a	Discharge Outlet	Polypropylene
1b	One-way or NS Check Valve (Optional)	Polypropylene
1c	Body	Reinforced Nylon / Polypropylene / PVDF
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon / Polypropylene
2b	Float	Foamed Polypropylene
2c	Seal Assembly	Stainless Steel + EPDM / VITON + Reinforced Nylon / Polypropylene
2d	O-ring	EPDM / VITON
3	Base Assembly	
3a	O-ring	EPDM / VITON
3b	Base	Reinforced Nylon / Polypropylene
4	Optional Flange Assembly	
4a	O-ring	EPDM / VITON
4b	Flange	Reinforced Nylon



NOTE: Polypropylene body for PN10 models only

A.R.I. D-040 L 1"

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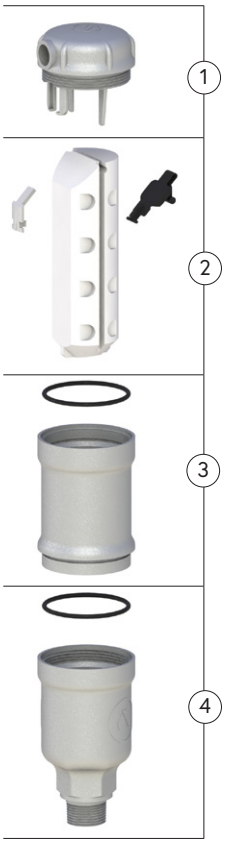
Parts List and Specifications | Metal Models

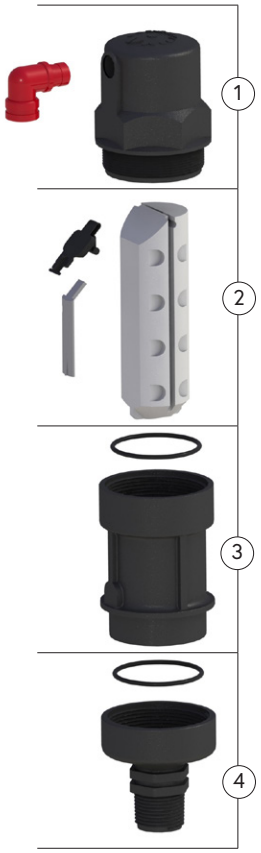
No.	Part	Material
1	Cover Assembly	Stainless Steel 316 / Super Duplex Grade 5A
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon / Polypropylene / PVDF
2b	Float	Foamed Polypropylene
2c	Rolling Seal	EPDM / VITON
3	Extension Assembly	
3a	Extension	Stainless Steel 316 / Super Duplex Grade 5A
3b	O-ring	EPDM / VITON
4	Base Assembly	
4a	O-ring	EPDM / VITON
4b	Base	Stainless Steel 316 / Super Duplex Grade 5A



Parts List and Specifications | Composite Materials Models

No.	Part	Material
1	Cover Assembly	
1a	Discharge Outlet	Polypropylene
1b	Body	Reinforced Nylon / Polypropylene / PVDF
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon / Polypropylene
2b	Float	Foamed Polypropylene
2c	Rolling Seal	EPDM / VITON
3	Extension Assembly	
3a	Extension	Reinforced Nylon / Polypropylene / PVDF
3b	O-ring	NBR / VITON
4	Base Assembly	
4a	O-ring	EPDM / VITON
4b	Base	Reinforced Nylon / Polypropylene / PVDF

NOTE: Polypropylene body for PN10 models only



A.R.I. D-040 L 2"

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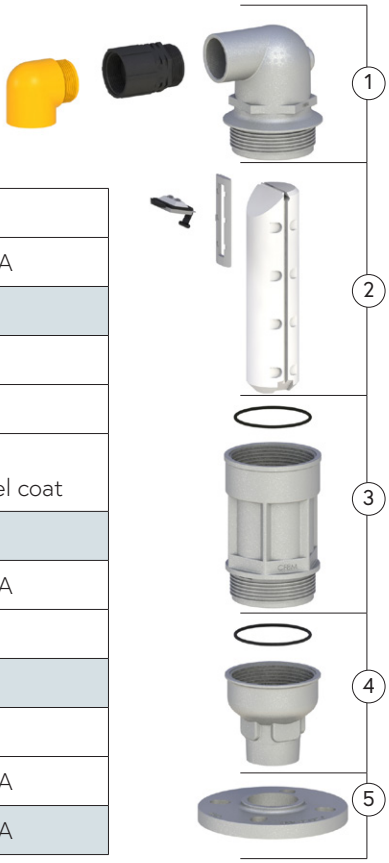
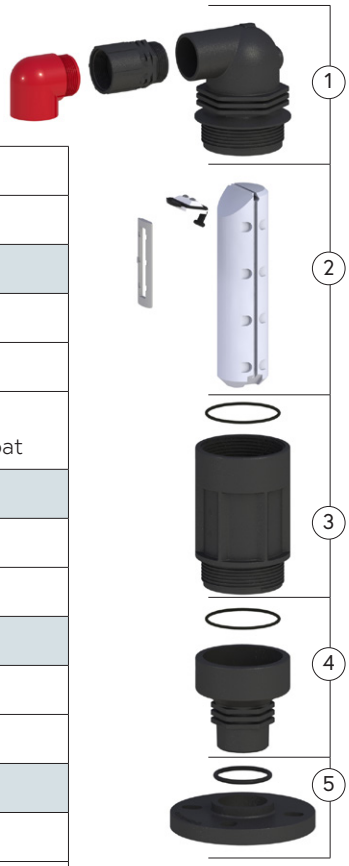
Parts List and Specifications | Metal Models

No.	Part	Material
1	Cover Assembly	
1a	Discharge Outlet	Polypropylene
1b	One-way or NS Check Valve (Optional)	Polypropylene
1c	Body	Stainless Steel 316 / Super Duplex Grade 5A
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon / Polypropylene
2b	Float	Foamed Polypropylene
2c	Rolling Seal Assembly	Reinforced Nylon / Polypropylene + EPDM + Stainless Steel, Optional Electroless Nickel coat
3	Extension Assembly	
3a	Extension	Stainless Steel 316 / Super Duplex Grade 5A
3b	O-ring	EPDM / VITON
4	Base Assembly	
4a	O-ring	EPDM / VITON
4b	Base	Stainless Steel 316 / Super Duplex Grade 5A
5	Optional Flange	Stainless Steel 316 / Super Duplex Grade 5A



Parts List and Specifications | Composite Materials Models

No.	Part	Material
1	Cover Assembly	
1a	Discharge Outlet	Polypropylene
1b	One-way or NS Check Valve (Optional)	Polypropylene
1c	Body	Reinforced Nylon / Polypropylene / PVDF
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon / Polypropylene
2b	Float	Foamed Polypropylene
2c	Rolling Seal Assembly	Reinforced Nylon / Polypropylene + EPDM + Stainless Steel, Optional Electroless Nickel coat
3	Extension Assembly	
3a	Extension	Reinforced Nylon / Polypropylene / PVDF
3b	O-ring	EPDM / VITON
4	Base Assembly	
4a	O-ring	EPDM / VITON
4b	Base	Reinforced Nylon / Polypropylene
5	Optional Flange Assembly	
5a	O-ring	EPDM / VITON
5b	Flange	Reinforced Nylon / Polypropylene / PVDF



NOTE: Polypropylene body for PN10 models only

A.R.I. D-040 C

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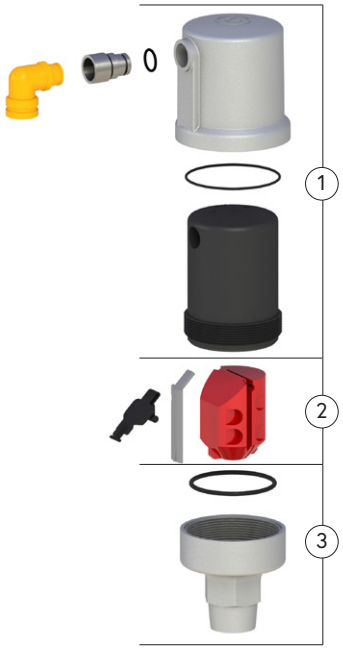
Parts List and Specifications | 1" Shell Models

No.	Part	Material
1	Cover Assembly	
1a	Discharge Outlet	Polypropylene
1b	O-ring	NBR
1c	Pin	Stainless Steel 316
1d	O-ring	NBR
1e	Shell	Stainless Steel 316
1f	O-ring	NBR
1g	Body	Reinforced Nylon
2	Air Release / Air & Vacuum Assembly	
2a	Clamping Stem	Reinforced Nylon
2b	Rolling Seal	EPDM
2c	Float	Foamed Polypropylene
3	Base	
3a	O-ring	NBR
3b	Base	Stainless Steel 316



Parts List and Specifications | 2" Shell Models

No.	Part	Material
1	Cover Assembly	
1a	Discharge Outlet	Polypropylene
1b	One Way / NS (Optional)	Polypropylene
1c	Shell	Stainless Steel 316
1d	Body	Reinforced Nylon
2	Air Release / Air & Vacuum Assembly	
2a	O-ring	NBR
2b	Clamping Stem	Reinforced Nylon
2c	Rolling Seal Assembly	Reinforced Nylon / Polypropylene + EPDM + Stainless Steel, Optional Electroless Nickel Coat
2d	Float	Foamed Polypropylene
3	Base	
3a	O-ring	NBR
3b	Base	Stainless Steel 316
3c	Flang	Stainless Steel 316

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