

- Automatic Gravel Filter System



Code	Capacity	Tank Quantity	Tank Size	Collector Size
A10-G2-0220	24 m ³ /h	2	20"-2"	3"
A10-G3-0220	36 m ³ /h	3	20"-2"	4"
A10-G4-0220	48 m ³ /h	4	20"-2"	4"
A10-G2-0324	40 m ³ /h	2	24"-3"	4"
A10-G3-0324	60 m ³ /h	3	24"-3"	4"
A10-G4-0324	80 m ³ /h	4	24"-3"	5"
A10-G2-0330	60 m ³ /h	2	30"-3"	4"
A10-G3-0330	90 m ³ /h	3	30"-3"	5"
A10-G4-0330	120 m ³ /h	4	30"-3"	6"
A10-G6-0330	180 m ³ /h	6	30"-3"	8"
A10-G8-0330	240 m ³ /h	8	30"-3"	10"
A10-G2-0336	84 m ³ /h	2	36"-3"	5"
A10-G3-0336	126 m ³ /h	3	36"-3"	6"
A10-G4-0336	168 m ³ /h	4	36"-3"	8"
A10-G6-0336	252 m ³ /h	6	36"-3"	10"
A10-G8-0336	336 m ³ /h	8	36"-3"	12"
A10-G2-0436	120 m ³ /h	2	36"-4"	5"
A10-G3-0436	180 m ³ /h	3	36"-4"	6"
A10-G4-0436	240 m ³ /h	4	36"-4"	8"
A10-G6-0436	360 m ³ /h	6	36"-4"	10"
A10-G8-0436	480 m ³ /h	8	36"-4"	12"
A10-G2-0448	144 m ³ /h	2	48"-4"	5"
A10-G3-0448	216 m ³ /h	3	48"-4"	6"
A10-G4-0448	288 m ³ /h	4	48"-4"	8"
A10-G6-0448	432 m ³ /h	6	48"-4"	10"
A10-G8-0448	576 m ³ /h	8	48"-4"	12"

- CONTROL UNIT, BACK-FLUSHING VALVES, CONNECTION EQUIPMENTS, QUARTZ SAND, AIR VALVE, PRESSURE GAUGE ARE INCLUDED IN THE SYSTEM.
- BONNETS ARE GGG40 DUCTILE IRON AND GASKETS ARE MONOLITHIC NATURAL RUBBER.



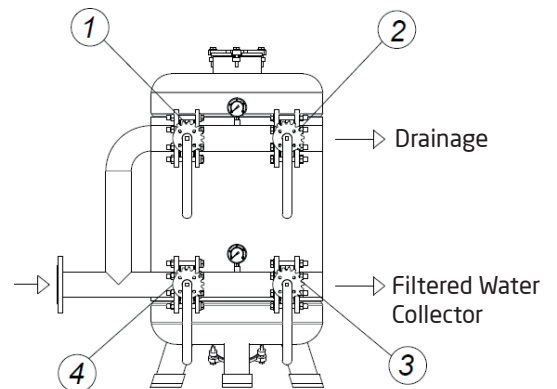
• Description

Gravel Filters can be also used as single unit by-pass modules except manual or automatic systems.

• Operating Principle

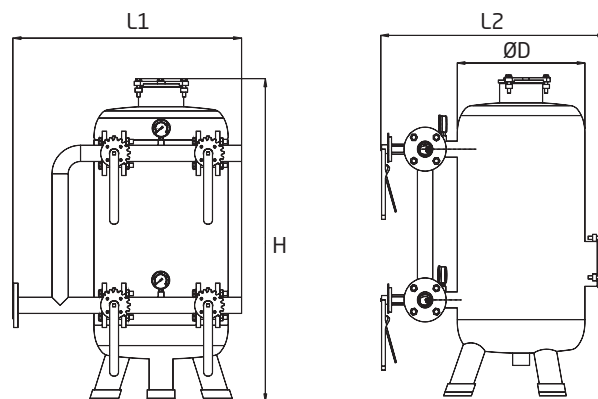
There are two types of flow; filtration and backflushing function. Incoming dirty water from by-pass line is spread to inside of the gravel filter homogeneously. The filtration is completed when the filtered water passed from mushrooms. Accumulated dirt materials in filter will cause pressure loss. It will cause reduce the passing filtered flow. In this case, the filter must switch to the backflushing mode in order to clean the filter. In the backflushing mode, incoming dirty water from second chamber pass to mushroom plate. It act to the accumulated dirt materials and provides to discharge from drain line. At this time, the butterfly valve which is on the drain port of the by-pass line is open, other butterfly valve is close.

Filtration Mode: 1,3: Open - 2,4: Closed



Back-Flushing Mode: 2,4: Open - 1,3: Closed

• Available Model Dimensions



Model	Inlet/Outlet Sizes	ØD		H		L1		L2		Recommended Flow Rate	
		mm	inch	mm	inch	mm	inch	mm	inch	m³/h	l/s
1020-BP-500	2"	500	20	1204	47,4	852	33,5	884	34,8	10 - 15	2,8 - 4,2
1520-BP-500	2½"	500	20	1204	47,4	852	33,5	884	34,8	15 - 20	4,2 - 5,6
1024-BP-600	3"	600	24	1212	47,7	929	36,6	1022	40,2	20 - 30	5,6 - 8,3
1030-BP-750	3"	750	30	1239	48,8	1054	41,5	1215	47,8	30 - 42	8,3 - 11,6



• Description

Armaş Double Gravel Filters are designed to use for the filtration of the water sources such as lake, dams, canals, creeks, water pools, etc. which has algae and organic matters. It provides easy usage and maintenance thanks to its unique design.

• Operation Principle (Automatic)

Filter tank has two chambers. First chamber is distributor that dirty water entering in it. The section contains quartz sand and mushroom diffusers is named media. The media chamber consists of two regions. There are two separate cleaning chambers. The second chamber, clean water chamber is under the media. The mushroom plate separates 2 chambers from each other. There are two types of flow; filtration and backflushing function. Incoming dirty water from opening to gravel filter ports of backflushing valve is spread to inside of gravel filter homogeneously from distributor. The filtration is completed when the filtered water passed from mushrooms. Materials that accumulated in filter will cause pressure loss. It will cause reduce the passing filtered flow. In this case, filter is necessary to switch to the backflushing mode in order to clean the filter. In the backflushing mode, incoming filtered water from second chamber pass to mushroom diffuser plate. It act to accumulated dirt materials and provides to discharge from drain line of 3 way valve. At this time, connected ball valve section of 3 way valve is open, other port is close. All directions do manually. All of the media chamber don't switch to backflushing mode at the same time. While one side of the gravel is doing backflushing, the other side continue to filtration.

• Filtration Mode



• Back-Flushing Mode

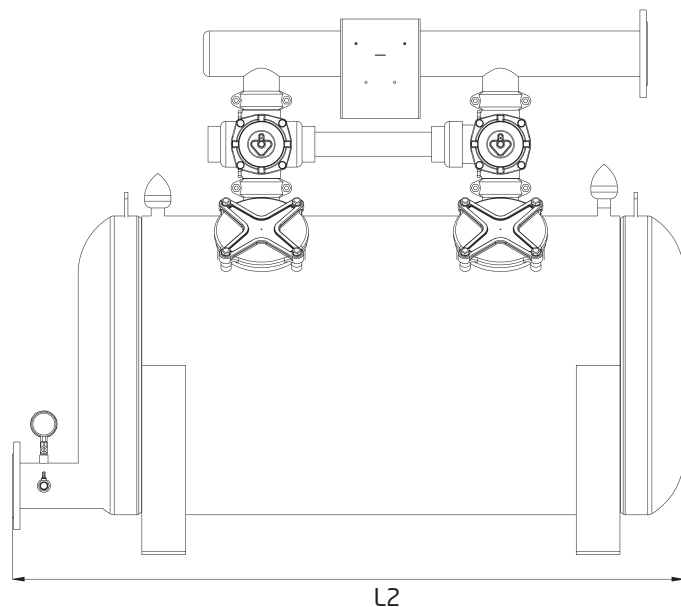
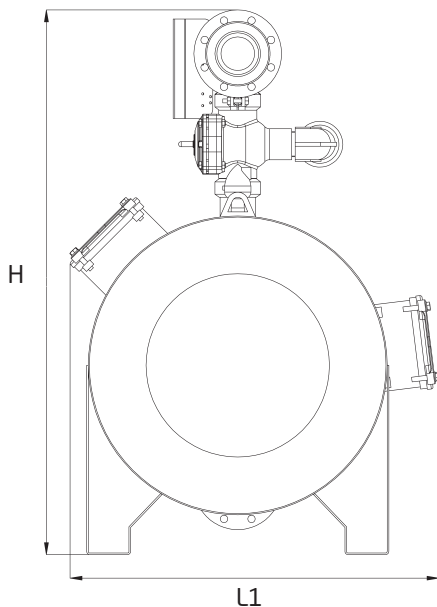


• **Operation Principle (Manual)**

Unlike automatic double gravel filtration, butterfly and ball valves are used instead of control panel and back-flushing valves. For this reason, the filter can be manually switched to the filtering or back-flushing mode when required.

• **Available Model Dimensions**

	Model	Inlet/Outlet Sizes	Tank Size	H		L1		L2		Recommended Flow Rate	
				mm	inch	mm	inch	mm	inch	m ³ /h	l/s
Automatic	ADG-500	2"	20"	1034	40,7	639	25,2	1098	43,2	11-21	3,1-5,8
	ADG-550	3"	22"	1074	42,3	674	26,5	1081	42,6	27-54	7,5-15
	ADG-750	4"	30"	1367	53,8	921	36,3	1685	66,3	42-85	11,7-23,6
	ADG-900	5"	36"	1542	60,7	1045	41,1	1771	69,7	66-132	18,3-36,7
Manual	MDG-500	2"	20"	1061	41,8	639	25,2	1098	43,2	11-21	3,1-5,8
	MDG-550	3"	22"	1102	43,4	671	26,4	1015	40,0	27-54	7,5-15
	MDG-750	4"	30"	1297	51,1	921	36,3	1685	66,3	42-85	11,7-23,6
	MDG-900	5"	36"	1476	58,1	1045	41,1	1771	69,7	66-132	18,3-36,7





• Description

Armaş 2000 series hydrocyclones are designed in simple structure to be used in the filtration of well water or other water sources containing sand, gravel or particles heavier than the water. Due to simple structure, it is more economic and easy to use relative to other sand separators. Armaş hydrocyclones causes minimum pressure loss in filtration systems and therefore, they operate at maximum efficiency. Armaş 2000 series hydrocyclones, used as primary filtering element in filtration systems, are provided in single or modular forms which ensure manual or fully automatic cleaning process.

• Operating Principle



Armaş 2000 series hydrocyclones is a separator removing particles heavier than the water before they enter into the system. It is consisted of two main parts including the body and collection container. Water containing particles heavier than the water enters into cylindrical wall found on the body of the hydrocyclone in tangential manner. Water reaches a particular speed in the cylindrical wall and thus, it creates centrifugal force. Due to this centrifugal power, solid particles heavier than water fall down from narrowing conic part of the hydrocyclone and trapped in the collection container. While solid particles heavier than water fall down to collection container due to centrifugal force, clean water free from particles is supplied to the system via outlet pipe. Water reaches desired speed on cylindrical wall due to perfect cylindrical wall and conical body design of the Armaş 2000 series hydrocyclone and thus, water increases efficiency of the filtration as it creates a cycloid orbit.



In order to get a regular filtration in Armaş 2000 series hydrocyclones, collection container should be regularly monitored and cleaned depending on the water quality. Based on the application type, hydrocyclones are provided in to forms, including manual and automatic, to the users. It is recommended that users prefer automatic model ensuring regular monitoring and cleaning of collection container.

• Applications

- Filtration of reserve water such as deep well
- Filtration of water containing sand, gravel or particles heavier than water
- Preliminary filtration of gravel, Disc and mesh filters
- Agricultural drip and micro-irrigation systems
- Separation of solid particles larger than mesh diameter of 200.

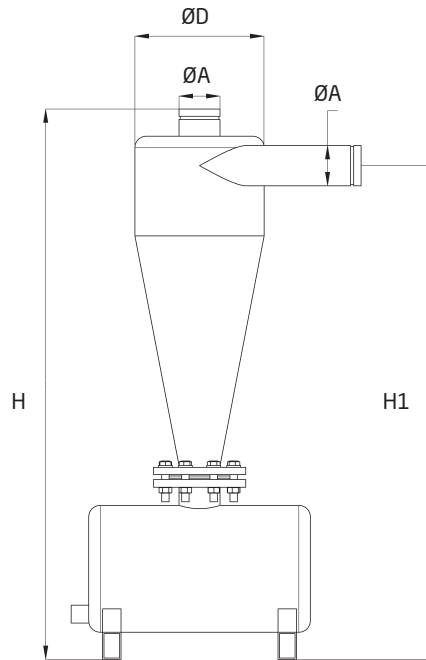
• Specifications

- It provides ease of use and of maintenance due to simple structure.
- Pre-painting phosphorization is performed for maximum resistance against corrosion.
- It has long economic life based on Epoxy - Polyester coating.
- It operates completely based on cyclone principle.
- It performs filtration (separation) process with minimum pressure loss.
- Single or modular systems can be used for various application fields with different diameters.
- Two different models are available including manual and automatic.
- Automatic models can perform self-cleaning process without any disruption in water supply.

• Technical Specifications

Recommended Operating Pressure Range	Max. Operating Pressure	Test Pressure	Temperature	Connection	Coating
0.3 - 8 (bar) 4 - 120 (psi)	8 (bar) 120 (psi)	12 (bar) 175 (psi)	- 10 °C - 80 °C (14 °F - 176 °F) DIN 2401 /2	Flanged ISO 7005-2, ANSI Threaded BSPT-NPT Grooved End	1. Phase: Phosphorization 2. Phase: Electrostatic Powdering Polyester - Epoxy)

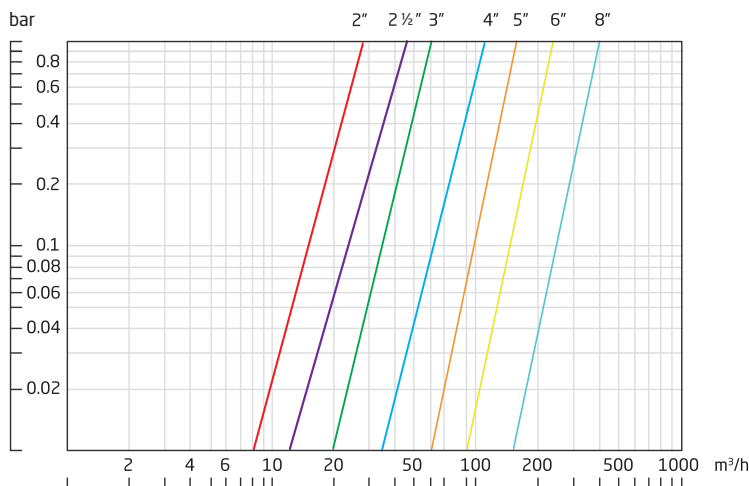
• Dimension



• Available Models and Recommended Flow Rates

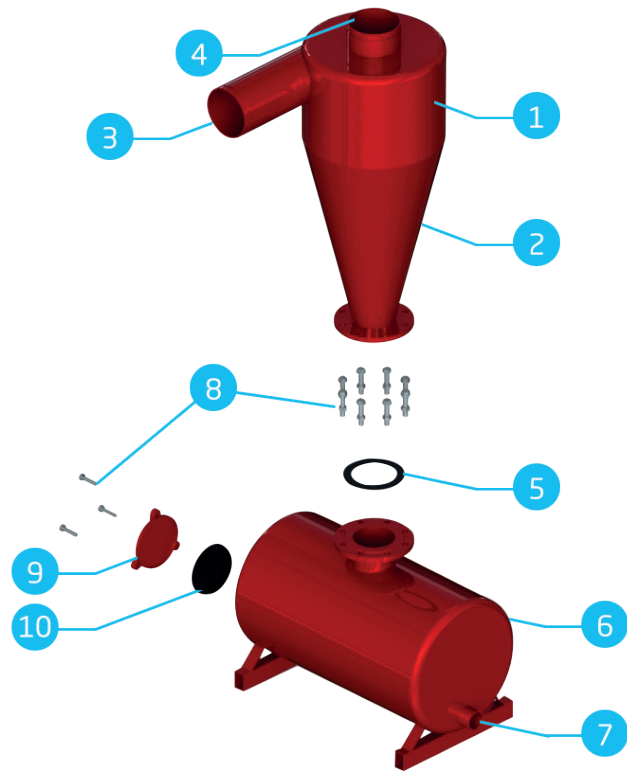
Model	ØA		Connection Types			ØD		H		H1		Recommended Flow Rate			
	mm	inch	Grooved End	Flanged	Threaded	mm	inch	mm	inch	mm	inch	m ³ /h	l/s		
2050	50	2"	✓	✓	✓	219	8,6	1045	41,1	955	37,6	10,5	17	2,9	4,7
2065	65	2½"	✓	✓	✓	280	11,0	1215	47,8	1090	42,9	16	26,5	4,4	7,4
2080	80	3"	✓	✓	✓	280	11,0	1215	47,8	1090	42,9	25	42	6,9	11,7
2100	100	4"	✓	✓	✓	350	13,8	1425	56,1	1290	50,8	44	73,5	12,2	20,4
2125	125	5"	✓	✓		450	17,7	1675	65,9	1505	59,3	69,5	116	19,3	32,2
2150	150	6"	✓	✓		450	17,7	1675	65,9	1495	58,9	101	169	28,1	46,9
2200	200	8"	✓	✓		600	23,6	2200	86,6	1980	78,0	176	293	48,9	81,4

• Head Loss Chart



• Material List

Part No	Part Name	Material/Equipment
1	Cylindrical Wall	St37-2
2	Conical Body	St37-2
3	Inlet Pipe	St37-2
4	Outlet Pipe	St37-2
5	Bolts and Nuts	Natural Rubber / EPDM
6	Storage Chamber	St37-2
7	Drainage	Ball Valve/Control Valve
8	Bolt/Nut	Stainless Steel
9	Bonnet	GGG40/50 Ductile Iron
10	Gasket for Bonnet	Natural Rubber / EPDM



• Sample Order Form

Model	Inlet Diameter	Connection	Control Feature
2050	2"	Grooved End (GRO) Threaded (TH) Flanged (F)	Manual (M) Power Controlled (EL) Batter Controlled (BT)
2065	2½"		
2080	3"		
2100	4"		
2125	5"		
2150	6"		

2150	6	GRO	EL
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• Description

Suction filter is designed to protect the pumps from debris and foreign matters. It is generally used in water sources containing algae, debris, and other heavy wastes. It is connected to pump suction and submerged into water (river, lake, reservoir, etc.)

• Operation Principle

Water sucked by the pump passes through the strainer and debris is kept outside by the stainless steel screen. Rotating nozzles are fed with water taken from the pump outlet. Water jets sprayed from the nozzles blow away the debris collected on the outer surface of the screen and thus the filter is cleaned.

Thus the pump is protected against clogging and failures. Pump efficiency increases and maintenance costs decrease.

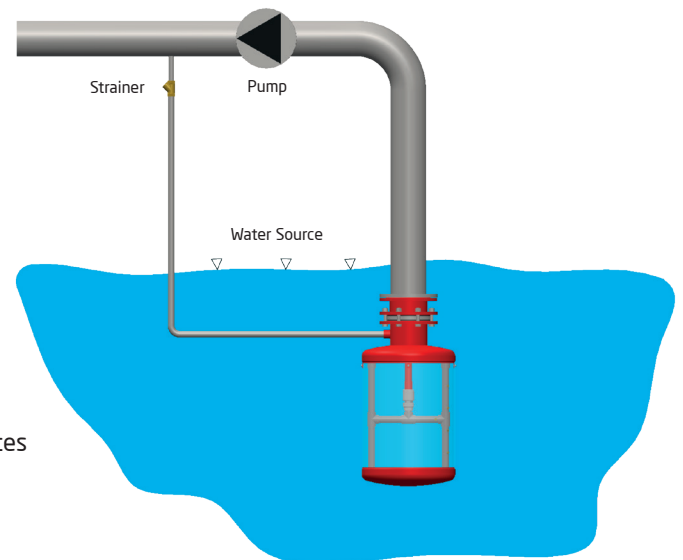
- Minimum working pressure: 1.5 bar (22 psi)
- Suggested working pressure: 3-4 bar
- Electrostatic coated body
- Rotating Nozzles
- Flange type Connection
- Electrostatic applied and oven-cured zinc-phosphate coating for anti-corrosion protection
- Available models: 4", 6", 8", 10", 12"

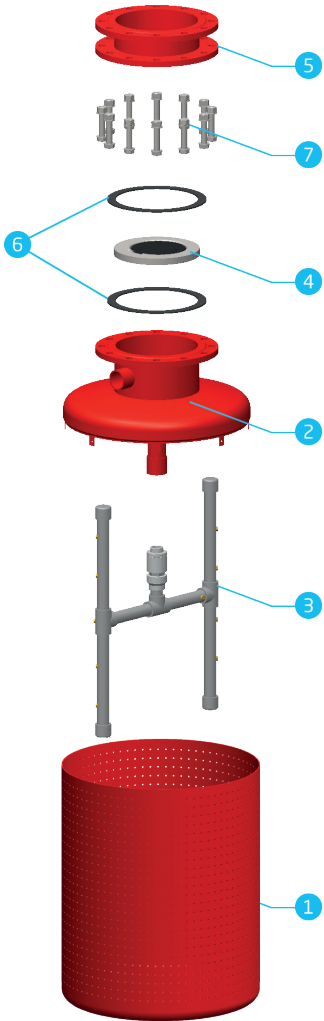
• Specifications

- Protection of pumps
- Low head loss
- Automatic self-cleaning system
- Uninterrupted filtration during automatic self-cleaning
- Low maintenance costs

• Applications

- Agricultural applications
- The water source which has Alga, Trash, Sand and the other heavy wastes (Creek, lake, reservoir and etc.)





• Material List

Part No	Part Name	Material
1	Body/Screen	St37-2
2	Upper Bonnet	St37-2
3	Turbine Mechanism	PVC
4	Check Valve	GG25+AISI304
5	Connection Bonnet	St37-2
6	Gasket for Flange	Natural Rubber
7	Bolts and Nuts	Stainless Steel

• Technical Specifications

Model No	SF-4	SF-6	SF-8	SF-10	SF-12
Maximum Flow Rate	80 m ³ /h	180 m ³ /h	315 m ³ /h	495 m ³ /h	710 m ³ /h
Connection Size	4"	6"	8"	10"	12"
Standard Filtration Degree	5000* micron	5000* micron	5000* micron	5000* micron	5000* micron
Min. Operation Pressure	1,5 bar	1,5 bar	1,5 bar	1,5 bar	1,5 bar
Max. Operation Pressure	10 bar	10 bar	10 bar	10 bar	10 bar
Max. Operation Temperature	60°C	60°C	60°C	60°C	60°C

* Please consult to Armas Team for different filtration degrees.

• Dimensions

Model	ØA	ØB	ØD		H	
			mm	inch	mm	inch
SF-4	4"	1 ¼"	380	15,0	814	32,0
SF-6	6"	1 ¼"	450	17,7	934	36,8
SF-8	8"	1 ¼"	550	21,7	1111	43,7
SF-10	10"	2"	600	23,6	1236	48,7
SF-12	12"	2"	640	25,2	1321	52,0

• Sample Order Form

Model	Connection Size	Connection Type
SF-4	4"	Flanged (F)
SF-6	6"	Flanged (F)

