• Description

Filtration rates of gravel filters designed to be used in filtration of river, lake, pool water and water resources containing organic materials such as lichen and alga is over 15 m/h implicating that they are rapid filters. The outstanding advantage of the gravel filters against other types of filters is about maximum filtration efficiency due to deep filtration. Armaş 1000 series Gravel filters are designed to provide ease of use, maximum filtration efficiency and less maintenance due to simple structure and thus, they are offered to the users.

Armaş 1000 series Gravel filters are manufactured to contain at least two containers. Upper container located within filter vessel is the container of media ensuring the filtration process. In the media container, various materials including but not limited to sand-gravel, quartz sand, Anthracyte coal, grinded basalt, silica sand are placed in a particular order based on the filtration degree. Lower container is the clean water tank obtained from filtering process. A rubber diffuser plate separating said two containers is present within the filter. Corks assembled on the plate ensure uniform pressure during back flushing procedure of the media filter and thus, they are designed to provide an efficient back flushing process.

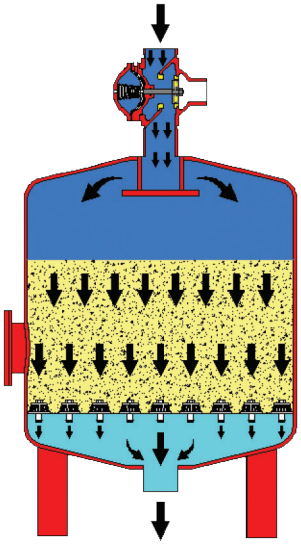
Armaş 1000 series Gravel Filters are projected to operate single or modular and manual or fully automatic back flushing procedure based on the water flow rate to be filtered within scope of the field of use. In order to increase filtration efficiency of gravel filters, it is recommended that modular filter system is selected from a model operating automatic back flushing procedure.

• Operating Principle

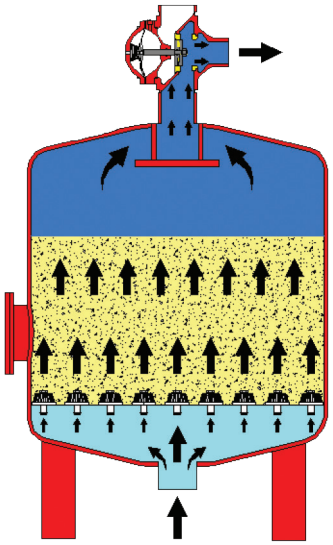
Armaş 1000 series Gravel Filters operates in two different modes including filtration process and back flushing process.
Armaş media filters are back flushing control gates assembled on the filters to be operated in filtration or back flushing procedures.

• Filtration Process

Polluted water entering from inlet manifold of the filter reaches media filter via back flushing control gate. At this position, inlet port of the back flushing control gate is towards the filter's direction and discharge port is closed. Polluted water reaching the media filter slowly progresses through sand layer placed in the filter depending on the desired filtration degree and thus, it is deeply filtered. Particles found in polluted water are trapped by sand later. Water passing through sand layer and filter corks will supplied to the system via outlet (clean water) manifold.



• Back-Flushing Process



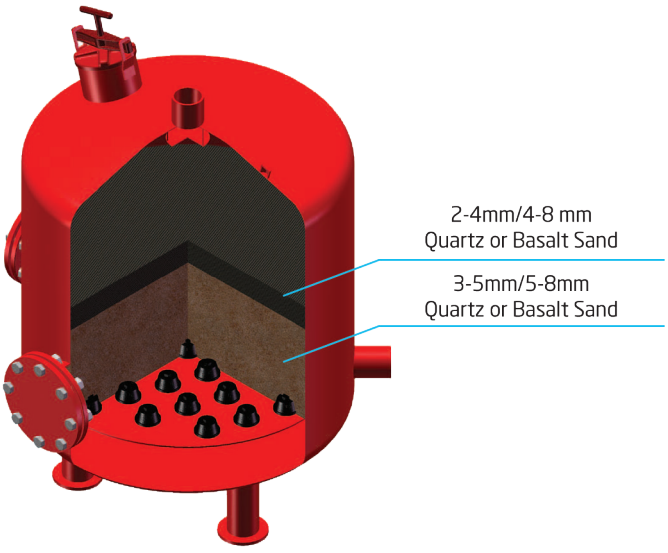
Throughout the filtration process, particles suspended in the sand layer shall later cause obstruction in the filter following a particular operation period. Therefore, pressure loss in the system will increase and media filter is required to be cleaned. Cleaning process of media filters is referred as back flushing. During back flushing process, the issue required to be considered is to wash the filter using clean water. Element ensuring back flushing process is the back flushing control gate assembled on the filter. In this case, inlet port of the back flushing control gate is closed and discharge port is at open position. Pressure clean water supplied from outlet (clean water) manifold progresses to sand layers from filter corks. Particles suspended among sand layers are pushed forward under effect of pressure clean water and they are released to the atmosphere from discharge port of the back flushing control gate. Thus, filter is efficiently cleaned. Duration of back flushing process is adjusted according to obstruction degree of the filter. It is highly recommended that a short-term back flushing process in regular intervals is performed rather than long-term back flushing process.

• Filtering Degrees of Media Filters

Media Sand Number	Material	Sand Size		Filtration Degree	
		mm	inch	micron	mesh
16	Grinded Silica	0,66	0,026	70 - 100	140 - 200
20	Grinded Silica	0,46	0,018	65 - 80	200- 230
12	Quartz Sand	1,2 - 2,4	0,047 - 0,094	80 - 110	130 - 140
-	Quartz Sand*	0,8 - 1,2	0,047 - 0,031	80 - 120	130 - 200
-	Quartz Sand*	1,2 - 1,5	0,047 - 0,059	100 - 150	100 - 150

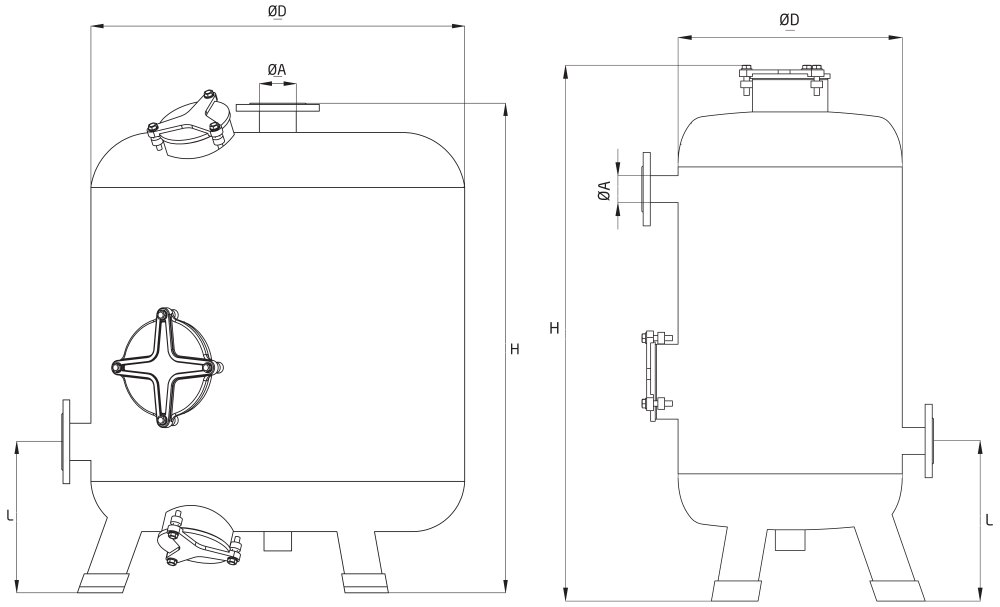
** Quartz sand is standard on agricultural irrigation systems.*

• Sand Distribution Diagram of Gravel Filters



Model	Recommended Sand Volume	
	kg	lbs
1020	100	220,5
1520	100	220,5
1024	150	330,7
1030	225	496,0
1036	250	551,2
1536	250	551,2
1048	500	1102,3

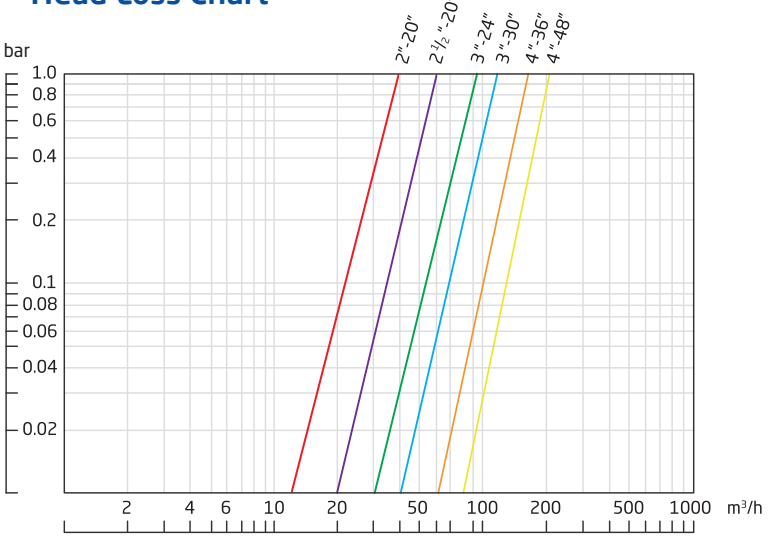
• Dimension



• Available Models and Recommended Flow Rates

Model	ØA	ØD		H		L		Recommended Flow Rate	
		mm	inch	mm	inch	mm	inch	m³/h	l/s
1020	2"	500	20	1200	47,2	360	14,2	10 - 15	2,8 - 4,2
1520	2½"	500	20	1200	47,2	360	14,2	15 - 20	4,2 - 5,6
1024	3"	600	24	1170	46,1	360	14,2	20 - 30	5,6 - 8,3
1030	3"	750	30	1170	46,1	360	14,2	30 - 42	8,3 - 11,6
1036	3"	900	36	1170	46,1	360	14,2	42 - 60	11,6 - 16,7
1536	4"	900	36	1170	46,1	360	14,2	60 - 75	16,7 - 20,8
1048	4"	1200	48	1170	46,1	360	14,2	80 - 100	22,2 - 27,8

• Head Loss Chart



MEDIA (GRAVEL) FILTER 1000 SERIES

• 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 designed for homogenous distribution of raw water and highly efficiency filtration.
•It performs efficient back flushing process when minimum pressure loss occurs.
•Single or modular systems can be used for various application fields with different diameters.
•Options of manual or automatic back flushing are available.

• Fields of Use

•Filtration of reserve waters such as river, lake and pool water
•Filtration of waters containing organic material
•Agricultural drip and micro-irrigation systems
•Filtration of industrial cooling water
•Preliminary filtration of reverse osmosis systems

• Material List

Part No	Part Name	Material
1	Body	ST37-2 Polyester Coating
2	Mushroom Filter	Nylon 6
3	Bonnet Gasket-Monolithic	Natural Rubber / EPDM
4	Bonnet	GGG40 - Ductile Iron
5	Bolts and Nuts	SST

• Technical Specifications

Recommended Operating Pressure Range	Max. Operating Pressure	Min. Back-Flushing Pressure	Test Pressure	Temperature	Connection	Coating
1 - 8 (bar) 14 - 120 (psi)	8 (bar) 120 (psi)	2 (bar) 30 (psi)	12 (bar) 175 (psi)	0 °C - 80 °C (32 °F - 176 °F) DIN 2401 /2	Flanged ISO 7005-2, ANSI Threaded BSPT-NPT Grooved End	1. Phase:Phosphorization 2. Phase:Electrostatic Powding Polyester - Epoxy)

• Sample Order Form

Model	Inlet Diameter	Tank Diameter	Connection	Control Feature	Additional Features
1020	2"	20"	Grooved End (GRO) Threaded (TH) Flanged (F)	Manual (M) Power Controlled (EL) Battery Controlled (BT)	Pressure Sustaining Valve (PS) Flow Rate Control Valve (FR) Quick Pressure Relief Valve (QR)
1520	2½"	20"			
1024	3"	24"			
1030	3"	30"			
1036	3"	36"			
1536	4"	36"			
1048	4"	48"			
1030	**3**	**30**	**GRO**	**EL**	**PS**

• Automatic Gravel Filter System

Code	Capacity	Tank Quantity	Tank Size	Collector Size
A10-G2-0220	24 m³/h	2	20"-2"	3"
A10-G3-0220	36 m³/h	3	20"-2"	4"
A10-G4-0220	48 m³/h	4	20"-2"	4"
A10-G2-0324	40 m³/h	2	24"-3"	4"
A10-G3-0324	60 m³/h	3	24"-3"	4"
A10-G4-0324	80 m³/h	4	24"-3"	5"
A10-G2-0330	60 m³/h	2	30"-3"	4"
A10-G3-0330	90 m³/h	3	30"-3"	5"
A10-G4-0330	120 m³/h	4	30"-3"	6"
A10-G6-0330	180 m³/h	6	30"-3"	8"
A10-G8-0330	240 m³/h	8	30"-3"	10"
A10-G2-0336	84 m³/h	2	36"-3"	5"
A10-G3-0336	126 m³/h	3	36"-3"	6"
A10-G4-0336	168 m³/h	4	36"-3"	8"
A10-G6-0336	252 m³/h	6	36"-3"	10"
A10-G8-0336	336 m³/h	8	36"-3"	12"
A10-G2-0436	120 m³/h	2	36"-4"	5"
A10-G3-0436	180 m³/h	3	36"-4"	6"
A10-G4-0436	240 m³/h	4	36"-4"	8"
A10-G6-0436	360 m³/h	6	36"-4"	10"
A10-G8-0436	480 m³/h	8	36"-4"	12"
A10-G2-0448	144 m³/h	2	48"-4"	5"
A10-G3-0448	216 m³/h	3	48"-4"	6"
A10-G4-0448	288 m³/h	4	48"-4"	8"
A10-G6-0448	432 m³/h	6	48"-4"	10"
A10-G8-0448	576 m³/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.