AZUD HELIX AUTOMATIC FT4DCL DLP Filtration Equipment

The filtration equipment is included in **AZUD HELIX AUTOMATIC FT4DCL DLP SERIE**. It integrates 4" self-cleaning disc filters with the AZUD HELIX SYSTEM. The filtration element is easily removable without tools. The housing is made of reinforced technical plastic; it has grooved connections and one 3" three-way hydraulic valve per filter. The equipment are supplied completely assembled through the necessary grooved couplings to the corresponding inlet, outlet and drainage manifolds; all of them made of high density polyethylene (HDPE).

AZUD HELIX AUTOMATIC DLP allows the reduction of the energetic use of the filtration installations, increasing their performance and requiring a minimum consumption of pressure and flow rate on each backflushing cycle in order to keep a maximum efficiency in a wide range of filtration degrees.

Furthermore, with the patented AZUD HELIX SYSTEM, the frequency and intensity of the maintenance labours of the system are minimized. The energetic cost is dramatically reduced per filtered cubic meter within the installation, thus minimizing the environmental impact.

Represented equipment: **AZUD HELIX AUTOMATIC FT4DCL5/8FX DLP**

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Detailed description of the Filtration equipment

The offered Filtration equipment is composed by different elements:

▪ AZUD HELIX AUTOMATIC FT 4S SW DLP Filter characterized by:

- Housing with 4" grooved connection, produced of reinforced technical plastic (Fibreglass reinforced polyamide 6).
- Lock system, composed by a clamp made of stainless steel and NBR sealing gasket, placed in the housing of the filter.
- Two DLP filtration elements, completely independent, easily removable, without tools, to eventual maintenance labours. There is no possibility of mixture or interferences of flows during the backflushing process, due to the lid that makes them completely independent.
- Each filtration element is made by a stack of technical plastic discs, with a wide filtration surface, guaranteeing the in-depth filtration. The filtering surface of each filtration element is 1620 cm^2 / 251 in^2, so the total filtering surface of the filter is of 3240 cm^2 / 502 in^2.
- AZUD HELIX SYSTEM. In the base of each stack of discs there is a device which generates a centrifugal helical movement that moves away the particles from the discs, hence it slows the clogging of the filters. The AZUD HELIX SYSTEM patented by AZUD, optimises the performance and minimizes the frequency and intensity of the maintenance labours of the system.

▪ Manifolds of the FT4DCL DLP filtration equipment:

- Inlet manifold 6" – 12" diameter. Made of High Density Polyethylene (HDPE) PE-100 UNE 53966. Flange connection elements or grooved depending on the model. It incorporates grooved derivations, required to connect the inlet manifold to the three-way valves.
- Outlet manifold 6" – 12" diameter made of High Density Polyethylene (HDPE) PE-100 UNE 53966. Flange connection elements or grooved depending on the model. It incorporates grooved derivations, required to connect the outlet manifold to the AZUD HELIX AUTOMATIC filters.
- Drainage manifold diameter of 4", made of High Density Polyethylene (HDPE) PE-100 UNE 53966. Grooved connection elements and / or solvent socket. It incorporates grooved derivations to connect the three-way valves to the drainage manifold.

Remark: All flange connections are available in DIN 2576 or ANSI B16.5 CLASS 150.

▪ Supports of the equipment characterized by:

- Structure made of carbon steel with epoxy-polyester cover.

▪ Three-way hydraulic valve, characterized by:

- Three-way hydraulic valve per filter, 3" grooved connection, produced with reinforced technical plastic, with internal components of stainless steel. Diaphragm made of reinforced nylon (NR-AL52) and NBR gaskets.

▪ AZUD HELIX SYSTEM FT 2NW 130 micron filter characterized by:

- 2" manual filter with grooved connection. Housing made of reinforced technical plastic and stainless steel clamp. It has a wide filtering surface of 1198 cm^2/186 in^2 made by a filtration element composed by a stack of 130 micron discs piled up on a structure designed with reinforced technical plastic. In the base of each stack of discs there is the device AZUD HELIX SYSTEM which generates a centrifugal helical movement that moves away the particles from the discs, hence it slows the clogging of the filters.

▪ Manometer, characterized by:

- ¼" BSP glycerine manometer male thread. Bar/psi double scaled (0 – 10 bar / 0 – 145 psi). The equipment includes one manometer per filter, plus one more installed on the outlet manifold.

▪ Triple- effect air release, characterized by:

- Housing made of technical plastic, drainage and inclusion of large volumes of air systems. 2" BSP connection male thread.

▪ Grooved couplings characterized by:

- Technical plastic grooved couplings which allow the connection of all the components of the filter.

The equipment is supplied completely ready to its later automation.

AZUD equipment are made fulfilling the requirements of our Quality and Environmental System (**SICMA**), focused to keep the highest quality level according to **ISO 9001** Standard specifications and keeping its Environmental compromise according to **ISO 14001** standard.

SICMA (Quality & Environmental System) is audited and certified by the Spanish Association for Standardization & Certification (**AENOR**).

General Technical Data

WORKING CONDITIONS	
Max. Working pressure	10 bar / 145 psi
Max. recommended pressure	8 bar / 116 psi
Min. Working pressure	0.8 bar / 11.6 psi
Max. Temperature	60 °C / 140 °F
pH range	4 – 11

BACKFLUSHING PROCESS		
Min. Backflushing pressure	MG*	1.5 bar 22 psi
	WS*	1.5 bar 22 psi
Backflushing flow rate per filter	MG	5 l/s 80 gpm
	WS	5 l/s 80 gpm

*MG filtration degrees: 400- 200- 130- 100 micron. WS filtration degrees: 130- 100- 50- 20- 10- 5 micron.

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AZUD HELIX AUTOMATIC FT4DCL DLP Filtration degree 5– 10– 20– 50– 100 – 130 – 200 – 400 micron					
Model*	**Type of connection**	**Number of filters**	**Manifold Ø inlet/outlet**	**Filtering surface**	**Control Unit AZUD FBC***
FT4DCL3/6FX DLP	DIN/ANSI Flange	3	6" – 160 mm	9720 cm² 1507 in²	103/3
FT4DCL4/6FX DLP	DIN/ANSI Flange	4	6" – 160 mm	12960 cm² 2009 in²	112/4
FT4DCL4/8FX DLP	DIN/ANSI Flange	4	8" – 200 mm	12960 cm² 2009 in²	112/4
FT4DCL5/6FX DLP	DIN/ANSI Flange	5	6" – 160 mm	16200 cm² 2511 in²	112/5
FT4DCL5/8FX DLP	DIN/ANSI Flange	5	8" – 200 mm	16200 cm² 2511 in²	112/5
FT4DCL6/8FX DLP	DIN/ANSI Flange	6	8" – 200 mm	19440 cm² 3013 in²	112/6
FT4DCL6/10FX DLP	DIN Flange	6	10" – 250 mm	19440 cm² 3013 in²	112/6
FT4DCL6/10FA DLP	ANSI Flange				
FT4DCL7/8FX DLP	DIN/ANSI Flange	7	8" – 200 mm	22680 cm² 3515 in²	112/7
FT4DCL7/10FX DLP	DIN Flange	7	10" – 250 mm	22680 cm² 3515 in²	112/7
FT4DCL7/10FA DLP	ANSI Flange				
FT4DCL8/8FX DLP	DIN/ANSI Flange	8	8" – 200 mm	25920 cm² 4018 in²	112/8
FT4DCL8/10FX DLP	DIN Flange	8	10" – 250 mm	25920 cm² 4018 in²	112/8
FT4DCL8/10FA DLP	ANSI Flange				
FT4DCL9/10FX DLP	DIN Flange	9	10" – 250 mm	29160 cm² 4520 in²	112/9
FT4DCL9/10FA DLP	ANSI Flange				
FT4DCL9/12FX DLP	DIN Flange	9	12" – 300 mm	29160 cm² 4520 in²	112/9
FT4DCL9/12FA DLP	ANSI Flange				

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AZUD HELIX AUTOMATIC FT4DCL DLP Filtration degree 5– 10– 20– 50– 100 – 130 – 200 – 400 micron					
Model*	Type of connection	Number of filters	Manifold Ø inlet/outlet	Filtering surface	Control Unit AZUD FBC*
FT4DCL10/10FX DLP	DIN Flange	10	10" – 250 mm	32400 cm² 5022 in²	112/10
FT4DCL10/10FA DLP	ANSI Flange				
FT4DCL10/12FX DLP	DIN Flange	10	12" – 300 mm	32400 cm² 5022 in²	112/10
FT4DCL10/12FA DLP	ANSI Flange				
FT4DCL11/10FX DLP	DIN Flange	11	10" – 250 mm	35640 cm² 5524 in²	112/11
FT4DCL11/10FA DLP	ANSI Flange				
FT4DCL11/12FX DLP	DIN Flange	11	12" – 300 mm	35640 cm² 5524 in²	112/11
FT4DCL11/12FA DLP	ANSI Flange				
FT4DCL12/10FX DLP	DIN Flange	12	10" – 250 mm	38880 cm² 6026 in²	112/12
FT4DCL12/10FA DLP	ANSI Flange				
FT4DCL12/12FX DLP	DIN Flange	12	12" – 300 mm	38880 cm² 6026 in²	112/12
FT4DCL12/12FA DLP	ANSI Flange				

Diameter of 4" – 110 mm for drainage manifold with grooved connection and/or solvent socket.
***Control Unit is not included with the filtration equipment.**
* Certain filtration equipment are not available in low filtration degrees.
- FT4DCL3: are not available in 20- 10- 5.
- FT4DCL4: are not available in 10- 5.

Each filter belonging to AZUD HELIX AUTOMATIC FT4DCL DLP SERIE contains two filtration elements.
DIN Flange: DIN 2576, ANSI Flange: ANSI B16.5 CLASS 150.

The designed flow rate per filtration element (Each filter belonging to **AZUD HELIX AUTOMATIC FT4DCL DLP SERIE** contains two filtration elements) depends on the **filtration degree** and **the quality of the water** to be treated (See following table). In that case, the maximum flow rate for good water quality in each model is indicated depending on the filtration degree.

FLOW RATE OF THE EQUIPMENT AZUD HELIX AUTOMATIC 4DCL DLP [m³/h]*								
MODEL	Filtration degree of the equipment MICRON							
	5	10	20	50	100	130	200	400
FT4DCL3/6 DLP	-	-	-	84	144	156	156	156
FT4DCL4/6 DLP	-	-	64	112	160	160	160	160
FT4DCL4/8 DLP	-	-	64	112	192	208	208	208
FT4DCL5/6 DLP	50	60	80	140	160	160	160	160
FT4DCL5/8 DLP	50	60	80	140	240	240	240	240
FT4DCL6/8 DLP	60	72	96	168	240	240	240	240
FT4DCL6/10 DLP	60	72	96	168	288	312	312	312
FT4DCL7/8 DLP	70	84	112	196	240	240	240	240
FT4DCL7/10 DLP	70	84	112	196	336	364	364	364

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FLOW RATE OF THE EQUIPMENT AZUD HELIX AUTOMATIC 4DCL DLP [m3/h]*								
MODEL	Filtration degree of the equipment MICRON							
	5	10	20	50	100	130	200	400
FT4DCL8/8 DLP	80	96	128	224	240	240	240	240
FT4DCL8/10 DLP	80	96	128	224	380	380	380	380
FT4DCL9/10 DLP	90	108	144	252	380	380	380	380
FT4DCL9/12 DLP	90	108	144	252	432	468	468	468
FT4DCL10/10 DLP	100	120	160	280	380	380	380	380
FT4DCL10/12 DLP	100	120	160	280	480	520	520	520
FT4DCL11/10 DLP	110	132	176	308	380	380	380	380
FT4DCL11/12 DLP	110	132	176	308	528	572	572	572
FT4DCL12/10 DLP	120	144	192	336	380	380	380	380
FT4DCL12/12 DLP	120	144	192	336	576	624	624	624

*Max. Flow rate varies with the filtration degree and water quality. Consult AZUD nominal flow rates for each case.

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