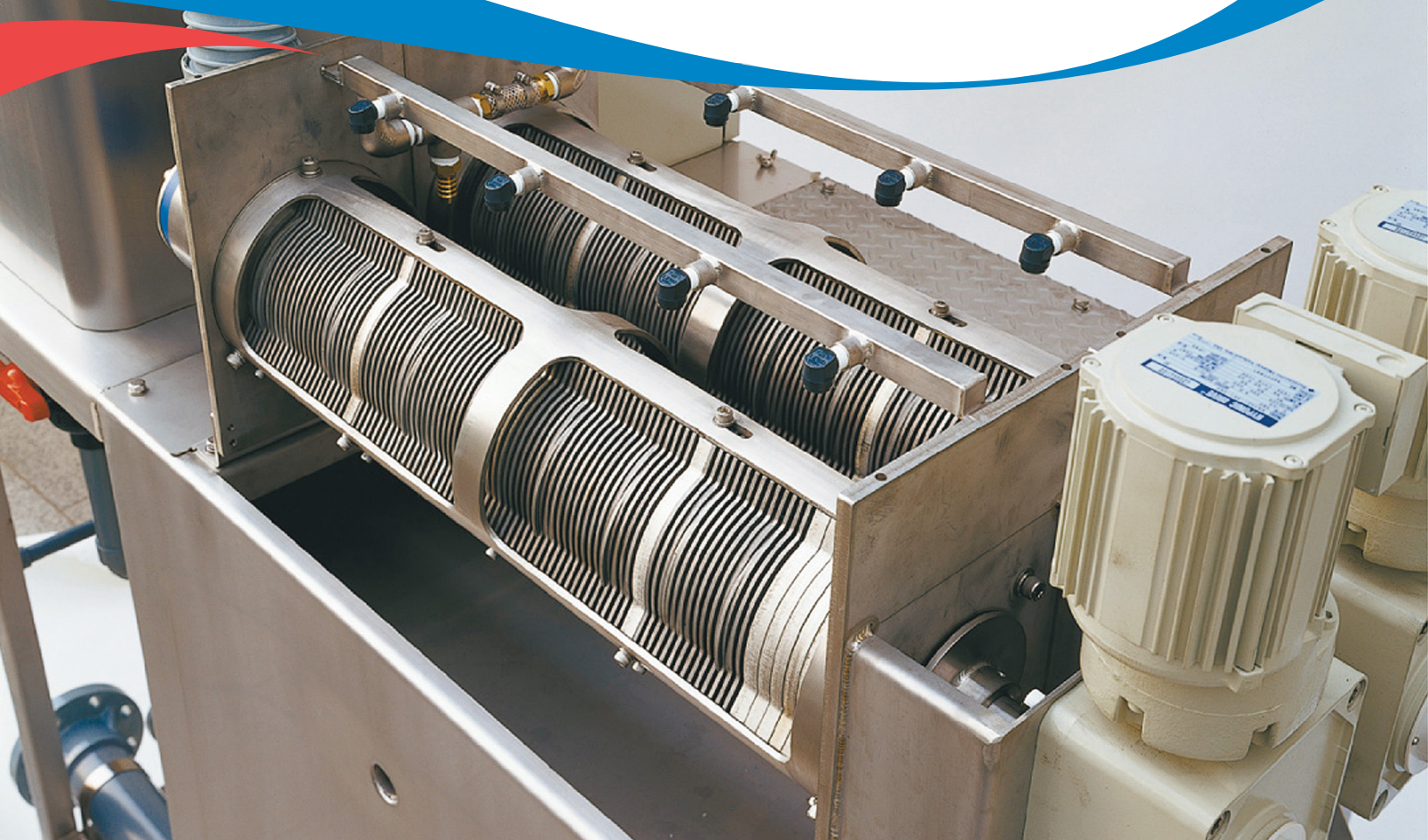




Multi-disc Screw Press Dehydrator

MDQ/MDQ-C series



EKOTON INDUSTRIAL GROUP



EKOTON Industrial Group is a leading manufacturer of equipment for wastewater treatment. EKOTON Industrial Group focuses in development, production and implementation of modern high quality technological equipment dedicated to municipal wastewater treatment as well as industrial applications in food process, cement, chemicals, coal and metal process enterprises.

Our company produces more than 35 different types of equipment for mechanical treatment, biological treatment and sludge dewatering. A wide range of EKOTON brandproducts allows us to offer our customers turn key solutions using equipment we produce.

The manufacturing base of EKOTON consists of three large efficient plants equipped with the latest modern technology capable of manufacturing a series of products and solving almost any production challenge with nonstandard equipment. More than 300 highly qualified specialists of EKOTON Industrial Group work to provide high quality services and equipment.

EKOTON equipment is successfully operated in more than 33 countries of the world.

MDQ/MDQ-C Dehydrators

MDQ/MDQ-C Dehydrators are designed for mechanical dewatering of industrial and municipal wastewater sludge

Applications

- Excess activated sludge from biological reactors.
- DAF sludge from various industries (food processing, meat and poultry slaughterhouse, dairy, chemical, pharmaceutical and etc.)
- Mixture of different types of sludge.



Advantages

- **Energy saving + compact design**

MDQ/MDQ-C series energy savings are achieved by unique construction features. The machine is designed to dewater sludge by gravity filtration and pressure from screw volume reduction. The equipment construction is compact and includes all necessary accessories controlled from a cabinet mounted on the same base. Therefore, it can be installed in a very limited space.

- **Self-cleaning mechanism**

The filtration surface (drum) consists of two types of discs, moving and fixed, which assembled together make a self-cleaning mechanism. Therefore, it seldom clogs and equipment can run continuously.

- **Capable of treating oil-containing sludge**

Equipment can dewater sludge with high oil & grease concentration. It is an optimal solution for treating oily DAF sludge at food processing factories where filter systems and centrifugal separation are not ideal. Thus, the equipment boasts a higher solid capture rate.

- **Minimal secondary pollution and maintenance**

The Dehydrator main unit - dewatering drum, is of semi-enclosed construction and runs at an extremely low speed. Therefore, sludge does not splatter from the equipment. The Dehydrator is of an eco-friendly design that generates low noise and vibrations and emits no odors.

- **Capable of treating low concentration sludge**

The Dehydrator includes both gravity thickening and compression zones. The Dehydrator has been shown to effectively increase sludge concentrations from a 0.3%-0.5% range up to 10% of DS content.

- **Very low rinsing water consumption**

Since the equipment is constructed to avoid clogging, rinsing is not needed in order to restore the original filtration performance. Only rinsing with minor amounts of water is necessary to clear away sludge that might leak from the dehydration zone. Thus, the amount of rinse water is minimal.

- **Unattended continuous automatic operation**

Operators can turn on the automatic operation mode of the Dehydrator and related equipment by simply pushing the button mounted on the control cabinet or via optional remote HMI connection. This will place the dehydrator in automatic operation according to programmed operation algorithms.

- **Wide product range**

Screw Press Dehydrators are available in a wide range of models with treating capacity ranging from 11 to 8,400 lb DS/h with a maximum of 6 dewatering drums. Customers can select from 28 models of equipment according to the size and needs of the specific wastewater treatment plant.

- **Multi-drum construction**

When two or more dewatering drums are present in one machine, any individual drum can be serviced while others are in operation without interruption. There are two types of Screw Press Dehydrators that can be used depending on the type of initial sludge and installation conditions:

- Model MDQ-XXX which is equipped with a technological chamber for initial sludge;
- Model MDQ-XXX C which is not equipped with a technological chamber for initial sludge.

References

1) Industrial wastewater treatment plant (Savannah, GA, USA)

One unit is installed at this industrial WWTP and is designed for dewatering mixture of MBBR excess sludge and DAF sludge. Inlet sludge DS concentration is 2% and outlet cake DS concentration is 19-20%.

2) Municipal wastewater treatment plant (Webster, TX, USA)

One unit is installed at this municipal WWTP and is designed for dewatering aerobically stabilized excess sludge. Inlet sludge DS concentration is 1.3-1.5% and outlet cake DS concentration is 18%. Initial sludge productivity is up to 120 gpm.

3) Municipal wastewater treatment plant (Argentina, Newfoundland, Canada)

One unit is installed at this municipal WWTP as a part of a containerized wastewater treatment system and is designed for dewatering MBR excess sludge. Inlet sludge DS concentration is 0.5-1.0% and outlet cake DS concentration is 15-17%.

4) Municipal wastewater treatment plant (Bridge City, TX, USA)

One unit is installed at this municipal WWTP and is designed for dewatering aerobically digested excess sludge. Inlet sludge DS concentration is 3.5% and outlet cake DS concentration is 22-23%.

5) Industrial wastewater treatment plant (Sugar Creek, OH, USA)

One unit is installed at the industrial WWTP treating wastewater from the cheese factory. The unit is designed for dewatering aerobically stabilized MBR sludge. Inlet sludge DS concentration is 2% and outlet cake DS concentration is 18-20%.

6) Industrial wastewater treatment plant (Verona, VA, USA)

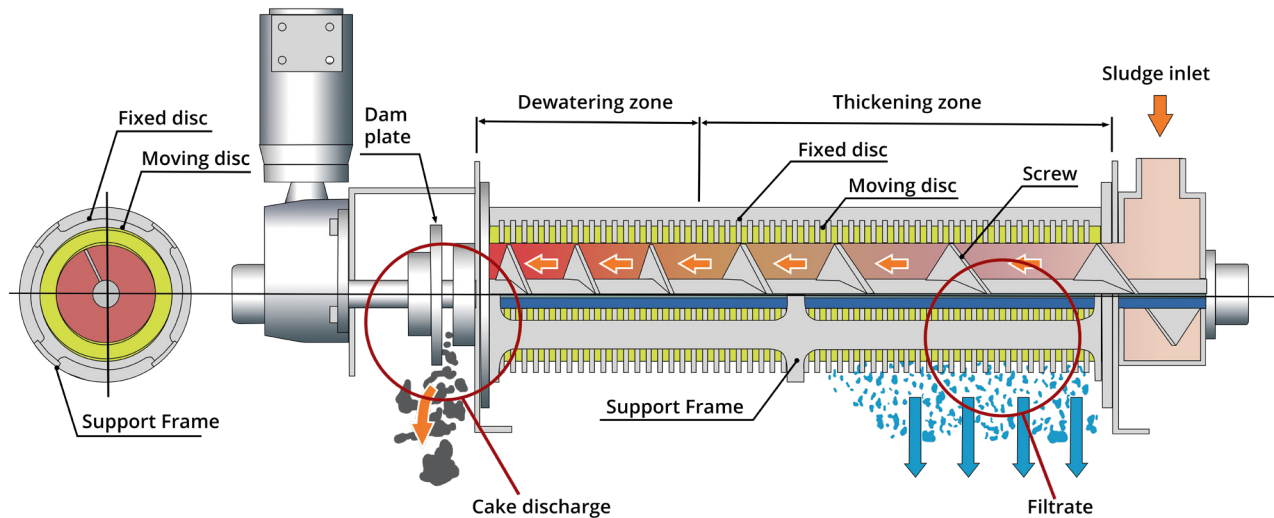
One unit is installed at the industrial WWTP treating dairy wastewater. The unit is designed for dewatering DAF sludge. Inlet sludge DS concentration is 4% and outlet cake DS concentration is 19%.

More than 1500 Multi-disc Screw Press Dehydrators MDQ/MDQ-C are installed and operates all over the world



Technical Features of MDQ/MDQ-C Multi-disc Screw Press Dehydrators

Dewatering drum construction



Capacity of MDQ and MDQ-C

Models	Maximum capacities, up to		Sludge of Municipal WWTP						Industrial	
			Aerobically stabilized			Anaerobic			DAF*	
			1 %		3 %		7 %		5 %	
	lbDS/h	gpm	lbDS/h	gpm	lbDS/h	gpm	lbDS/h	gpm	lbDS/h	gpm
MDQ-101 / MDQ-101 C	40	8	11	2.2	13	0.9	40	1.1	39	1.6
MDQ-102 / MDQ-102 C	80	16	22	4.4	26	1.7	80	2.3	78	3.1
MDQ-103 / MDQ-103 C	120	24	33	6.6	39	2.6	120	3.4	117	4.7
MDQ-104 / MDQ-104 C	160	32	44	8.8	52	3.5	160	4.6	156	6.2
MDQ-105 / MDQ-105 C	200	40	55	11	65	4.3	200	5.7	195	7.8
MDQ-201 / MDQ-201 C	125	15	33	6.6	40	2.7	125	3.6	120	4.8
MDQ-202 / MDQ-202 C	250	30	66	13.2	80	5.3	250	7.1	240	9.6
MDQ-203 / MDQ-203 C	375	45	99	19.8	120	8	375	10.7	360	14.4
MDQ-204 / MDQ-204 C	500	60	132	26.3	160	10.6	500	14.3	480	19.2
MDQ-205 / MDQ-205 C	625	75	165	32.9	200	13.3	625	17.8	600	24
MDQ-351 C	600	54	150	30	180	12	565	16	540	22
MDQ-352 C	1,200	108	300	60	360	24	1,130	32	1,080	43
MDQ-353 C	1,800	162	450	90	540	36	1,695	48	1,620	65
MDQ-354 C	2,400	216	600	120	720	48	2,260	64	2,160	86
MDQ-355 C	3,000	270	750	150	900	60	2,825	81	2,700	108
MDQ-356 C	3,600	324	900	180	1,080	72	3,390	97	3,240	129
MDQ-351 CL	700	65	183	37	220	15	695	20	660	26
MDQ-352 CL	1,400	130	366	73	440	29	1,390	40	1,320	53
MDQ-353 CL	2,100	200	549	110	660	44	2,085	59	1,980	79
MDQ-354 CL	2,800	265	732	146	880	59	2,780	79	2,640	105
MDQ-355 CL	3,500	330	915	183	1,100	73	3,475	99	3,300	132
MDQ-356 CL	4,200	400	1,098	219	1,320	88	4,170	119	3,960	158
MDQ-451 C	1,400	130	367	73	440	29	1,390	40	1,320	53
MDQ-452 C	2,800	260	734	147	880	59	2,780	79	2,640	105
MDQ-453 C	4,200	390	1,101	220	1,320	88	4,170	119	3,960	158
MDQ-454 C	5,600	520	1,468	293	1,760	117	5,560	159	5,280	211
MDQ-455 C	7,000	650	1,835	366	2,200	146	6,950	198	6,600	263
MDQ-456 C	8,400	780	2,202	440	2,640	176	8,340	238	7,920	316

*- information is based on experience of dewatering DAF-sludge with relatively high O&G concentration (40-60%) from meat processing plants (slaughter, poultry) and milk processing plants, etc.

MDQ/MDQ-C Dehydrators

There are two main designs of the Multi-disc Screw Press Dehydrators which can be purchased by customers according to sludge features - model MDQ (dewatering drums are installed above the technological chamber with internal feed and mixing pumps) and model MDQ-C (more simple model without technological chamber and internal pumps).

Dimensions and features of MDQ models

Model	Drum diameter, in x number of drums, pcs.	Nominal rinsing water consumption, gpm	Total rinsing water consumption*, gph	Nominal rinsing water pressure, psi	Installed power, HP	Dimensions (L x W x H), in	Weight dry/ in operation, lb
MDQ-101	4 x 1	4.2	4.2	22 - 44	0.99	73 x 35 x 79	1,000 / 2,310
MDQ-102	4 x 2	8.4	8.4		1.15		1,210 / 2,650
MDQ-103	4 x 3	12.6	12.6		1.4	74 x 43 x 79	1,430 / 3,420
MDQ-104	4 x 4	8.4	16.8		1.76	83 x 59 x 80	1,990 / 4,300
MDQ-105	4 x 5	12.6	21		1.92		2,200 / 4,630
MDQ-201	8 x 1	8.7	8.7	30 - 50	1.45	104 x 47 x 80	1,540 / 3,530
MDQ-202	8 x 2	17.4	17.4		1.78		1,770 / 3,970
MDQ-203	8 x 3	26.1	26.1		2.57	105 x 59 x 80	2,200 / 5,180
MDQ-204	8 x 4	17.4	34.8		3.38	111 x 83 x 83	2,670 / 6,950
MDQ-205	8 x 5	26.1	43.5		3.71		3,000 / 7,520

*- information is based on a typical cyclical rinsing once per 10 minutes for 10 seconds

Dimensions and features of MDQ-C models

Model	Drum diameter, in x number of drums, pcs.	Nominal rinsing water consumption, gpm	Total rinsing water consumption*, gph	Nominal rinsing water pressure, psi	Installed power, HP	Dimensions (L x W x H), in	Weight dry/ in operation, lb
MDQ-101 C	4 x 1	4.2	4.2	22 - 44	0.32	75 x 32 x 57	680 / 1,120
MDQ-102 C	4 x 2	8.4	8.4		0.48		880 / 1,350
MDQ-103 C	4 x 3	12.6	12.6		0.73	76 x 40 x 57	1,100 / 1,650
MDQ-104 C	4 x 4	8.4	16.8		0.89	84 x 56 x 57	1,430 / 2,200
MDQ-105 C	4 x 5	12.6	21		1.05		1,650 / 2,540
MDQ-201 C	8 x 1	8.7	8.7	30 - 50	0.58	104 x 40 x 65	1,100 / 2,200
MDQ-202 C	8 x 2	17.4	17.4		0.91		1,320 / 2,430
MDQ-203 C	8 x 3	26.1	26.1		1.5	104 x 52 x 65	1,650 / 2,870
MDQ-204 C	8 x 4	17.4	34.8		1.84	110 x 75 x 65	2,200 / 3,310
MDQ-205 C	8 x 5	26.1	43.5		2.18		2,430 / 3,530
MDQ-351 C	14 x 1	8.7	8.7	30-60	1.5	149 x 54 x 79	2,800 / 4,520
MDQ-352 C	14 x 2		17.4		2.75	156 x 59 x 82	5,020 / 8,380
MDQ-353 C	14 x 3		26.1		4.5	165 x 72 x 83	7,450 / 12,460
MDQ-354 C	14 x 4	17.4	34.8		6.0	177 x 90 x 88	9,700 / 17,640
MDQ-355 C	14 x 5		43.5		7.0	186 x 115 x 88	11,680 / 20,720
MDQ-356 C	14 x 6		52.2	8.0	194 x 135 x 88	13,000 / 23,150	
MDQ-351 CL	14 x 1	11.6	11.6	30-60	1.5	164 x 53 x 79	3,040 / 5,110
MDQ-352 CL	14 x 2		23.2		2.75	171 x 59 x 82	5,620 / 9,700
MDQ-353 CL	14 x 3		34.8		4.5	180 x 72 x 83	8,380 / 14,330
MDQ-354 CL	14 x 4	23.1	46.2		6.0	202 x 90 x 88	11,020 / 20,280
MDQ-355 CL	14 x 5		57.8		7.0	202 x 115 x 88	13,670 / 24,700
MDQ-356 CL	14 x 6		69.3	8.0	210 x 135 x 88	15,650 / 28,000	
MDQ-451 C	18 x 1	29	29	30-60	3.75	183 x 59 x 91	4,410 / 8,600
MDQ-452 C	18 x 2		58		7.5	193 x 70 x 92	8,160 / 15,430
MDQ-453 C	18 x 3		87		11	205 x 82 x 93	11,900 / 23,370
MDQ-454 C	18 x 4		116		14	213 x 100 x 93	15,640 / 30,420
MDQ-455 C	18 x 5		145		18	227 x 130 x 93	19,400 / 36,810
MDQ-456 C	18 x 6		174		21	232 x 153 x 93	23,150 / 43,430

*- information is based on a typical cyclical rinsing once per 10 minutes for 10 seconds for each rinsing valve (from 1 to 6 valves).



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