

MEMBRANE HOUSING

DETAILED OVERVIEW FOR TYPE 'MHC-4-40'
MEDIUM PRESSURE - 40 BAR

FOR MF, UF, NF AND RO FILTRATION



In the food and beverage industry membrane housings are often used in systems to reduce or eliminate microbials to make products safe for consumption and to extend their shelf life. We produce membrane housings for membrane filtration in the food industry for liquid-containing products such as juice, beer, soy, whey, milk, milk powder, chocolate etc.

Content

Introduction	3
Regulations and Directives	3
Documentation	3
Group specifications	4
Unit specifications	4
Connections	4
MHC-4-40bar-1-element - Model A	5
MHC-4-40bar-1-element - Model C	5
MHC-4-40bar-2-element - Model A	6
MHC-4-40bar-2-element - Model C	6
MHC-4-40bar-3-element - Model A	7
MHC-4-40bar-3-element - Model C	7
MHC-4-40bar-4-element - Model A	8
MHC-4-40bar-4-element - Model C	8
MHC-4-40bar-5-element - Model A	9
MHC-4-40bar-5-element - Model C	9
MHC-4-40bar-6-element - Model A	10
MHC-4-40bar-6-element - Model C	10

Introduction

This overview is for Membrane Housings with Clamp ferrule connections manufactured by Wila A/S under the category "MHC" hereinafter referred to as "Membrane Housing". A Membrane Housing is a tubular pressure vessel with a single inlet (Feed) on the shell side, an unfiltered outlet (Retentate) on the shell side and a filtered outlet (Permeate) out from one of the end centers.

The membranes and ATD's, that are also required for the filtration process, are not a part of the membrane housing, but Wila's own hygienic, easy to CIP clean, stainless steel ATD's can also be supplied upon request.

The Membrane Housing is made from EN 1.4404 (AISI 316L) stainless steel with a sanitary surface finish. The inside surface roughness is $\leq 0,8 \mu\text{m}$ and the outside surface roughness is $\leq 1,6 \mu\text{m}$.

All fluid media in use with the Membrane housing must be compatible with EN 1.4404 (AISI 316L) Stainless steel.

The Membrane Housing is designed for pressures up to 40 bar and temperatures up to 70°C, but other types, sizes and pressure ratings are also available.

Regulations and Directives

The membrane housing is designed and manufactured in accordance with

- the European Commission regulation No. 2023/2006 (Good Manufacturing Practices)
- the European Parliament directive No. EN 1935/2004 (Food Contact Materials).
- the European Parliament directive No. EN 1907/2006 (Chemical Restrictions (REACH)).
- PED - Article 4.3 (SEP) in the European Parliament directive No. 2014/68/EU (Pressure Equipment Directive). The membrane housing is only designed for fluid group 2 (non-dangerous fluids).

Documentation

1. Customer drawing with description and design data table
2. Declaration of conformity
3. User Manual

As Supplement the following can be provided:

4. 3.1 material certificates according to EN 10204
5. Weld-logs with associated welding certificates according to DS/EN ISO 9601-1.

Group specifications

Group ordering codes and specifications are as listed below. A more detailed group tables with unit codes and main dimensions can be found on the following pages.

MHC-4-40bar-X-element – Model _

MHC	M embrane H ousing with C lamp ferrule connections for Feed and Retentate.	
4	The membrane housing is designed for 3.8" x 38" (3838) membranes.	
40bar	The Membrane Housing is designed for pressures up to 40 bar and temperatures up to 70°C	
X	From 1 to 6 elements	Indicates the number of elements that can be fitted.
_	Either A or C *	Indicates Feed and Retentate connection arrangement.

*Other connection arrangements are available

Unit specifications

MHC-4-40-X-YY-ZZ-_

X	From 1 to 6 elements	Indicates the number of elements that can be fitted.
YY	51 - 38 - 50 - 40**	Indicates Feed and Retentate clamp ferrules connections.
ZZ	25 - 26**	Indicates Permeate end clamp ferrule connection.
_	Either A or C *	Indicates Feed and Retentate connection arrangement.

*Other connection arrangements are available

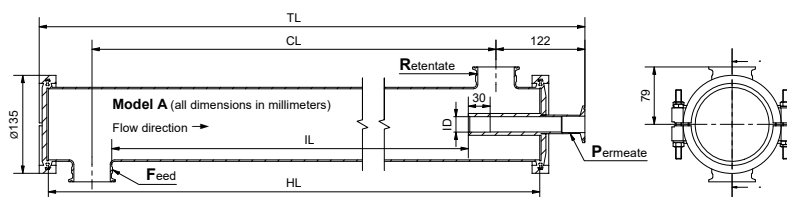
**Clamp ferrule connections sizes - Other types and sizes are available

51 - 38 - 25	translates respectively to Ø51 - Ø38 - Ø25	in accordance with ISO 2852-2
50 - 40 - 26	translates respectively to DN50 - DN40 - DN25	in accordance with DIN 32676-A

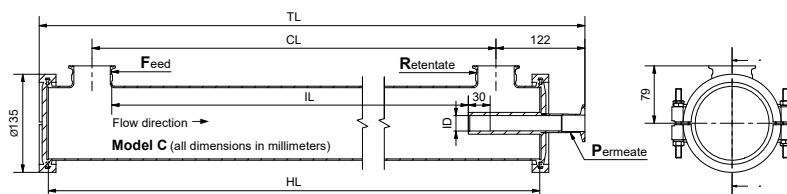
Connections

Tri-clamp connections for Feed, Retentate and Permeate. For 40 bar pressure rating SH or SSH clamps are recommended, but always follow your fitting supplier guidelines and local legislations. The Membrane Housing should be installed with the Retentate outlet at the highest point for better air venting.

Temperature and pressure limits must be respected at all times !

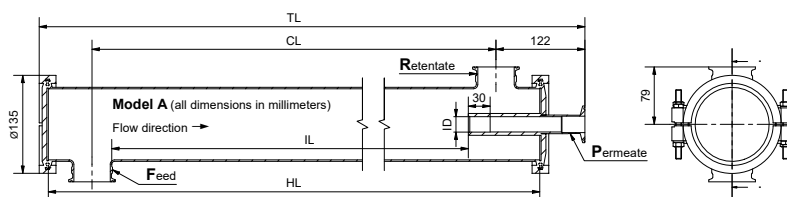


MHC-4-40bar-1-element - Model A		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 9 liters		Dry weight 10 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-1-51-25-A	W-023665	1 x 38"	Ø21.1	Ø51	Ø25	1270	1195	1075	1010
MHC-4-40-1-38-25-A	W-023671	1 x 38"	Ø21.1	Ø38	Ø25	1270	1195	1075	1016
MHC-4-40-1-50-25-A	W-023677	1 x 38"	Ø21.1	DN50	Ø25	1270	1195	1075	1009
MHC-4-40-1-40-25-A	W-023683	1 x 38"	Ø21.1	DN40	Ø25	1270	1195	1075	1015
MHC-4-40-1-51-26-A	W-023689	1 x 38"	Ø21.1	Ø51	DN25	1270	1195	1075	1010
MHC-4-40-1-38-26-A	W-023695	1 x 38"	Ø21.1	Ø38	DN25	1270	1195	1075	1016
MHC-4-40-1-50-26-A	W-023701	1 x 38"	Ø21.1	DN50	DN25	1270	1195	1075	1009
MHC-4-40-1-40-26-A	W-023707	1 x 38"	Ø21.1	DN40	DN25	1270	1195	1075	1015

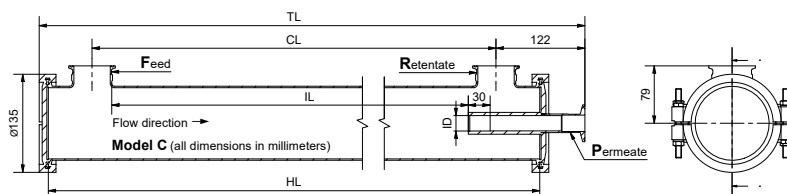


MHC-4-40bar-1-element - Model C		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 9 liters		Dry weight 10 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-1-51-25-C	W-029375	1 x 38"	Ø21.1	Ø51	Ø25	1270	1195	1075	1010
MHC-4-40-1-38-25-C	W-029381	1 x 38"	Ø21.1	Ø38	Ø25	1270	1195	1075	1016
MHC-4-40-1-50-25-C	W-029387	1 x 38"	Ø21.1	DN50	Ø25	1270	1195	1075	1009
MHC-4-40-1-40-25-C	W-029393	1 x 38"	Ø21.1	DN40	Ø25	1270	1195	1075	1015
MHC-4-40-1-51-26-C	W-029399	1 x 38"	Ø21.1	Ø51	DN25	1270	1195	1075	1010
MHC-4-40-1-38-26-C	W-029405	1 x 38"	Ø21.1	Ø38	DN25	1270	1195	1075	1016
MHC-4-40-1-50-26-C	W-029411	1 x 38"	Ø21.1	DN50	DN25	1270	1195	1075	1009
MHC-4-40-1-40-26-C	W-029417	1 x 38"	Ø21.1	DN40	DN25	1270	1195	1075	1015

Version I.I All new Drawing numbers in Model C tables

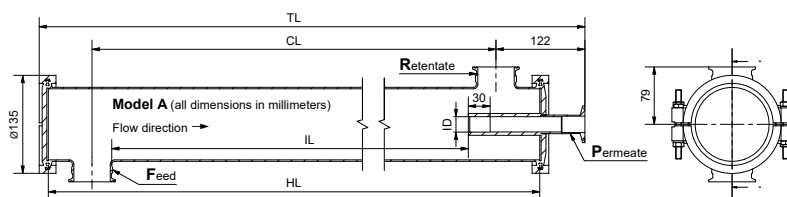


MHC-4-40bar-2-element - Model A		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 16.5 liters		Dry weight 15 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-2-51-25-A	W-023666	2 x 38"	Ø21.1	Ø51	Ø25	2255	2180	2060	1995
MHC-4-40-2-38-25-A	W-023672	2 x 38"	Ø21.1	Ø38	Ø25	2255	2180	2060	2001
MHC-4-40-2-50-25-A	W-023678	2 x 38"	Ø21.1	DN50	Ø25	2255	2180	2060	1994
MHC-4-40-2-40-25-A	W-023684	2 x 38"	Ø21.1	DN40	Ø25	2255	2180	2060	2000
MHC-4-40-2-51-26-A	W-023690	2 x 38"	Ø21.1	Ø51	DN25	2255	2180	2060	1995
MHC-4-40-2-38-26-A	W-023696	2 x 38"	Ø21.1	Ø38	DN25	2255	2180	2060	2001
MHC-4-40-2-50-26-A	W-023702	2 x 38"	Ø21.1	DN50	DN25	2255	2180	2060	1994
MHC-4-40-2-40-26-A	W-023708	2 x 38"	Ø21.1	DN40	DN25	2255	2180	2060	2000

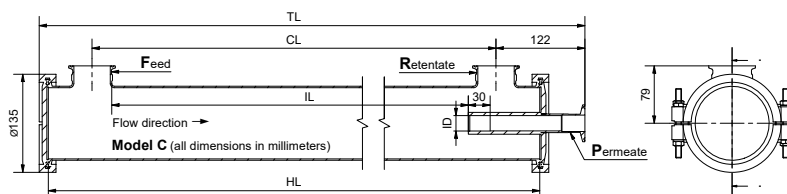


MHC-4-40bar-2-element - Model C		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 16.5 liters		Dry weight 15 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-2-51-25-C	W-029376	2 x 38"	Ø21.1	Ø51	Ø25	2255	2180	2060	1995
MHC-4-40-2-38-25-C	W-029382	2 x 38"	Ø21.1	Ø38	Ø25	2255	2180	2060	2001
MHC-4-40-2-50-25-C	W-029388	2 x 38"	Ø21.1	DN50	Ø25	2255	2180	2060	1994
MHC-4-40-2-40-25-C	W-029394	2 x 38"	Ø21.1	DN40	Ø25	2255	2180	2060	2000
MHC-4-40-2-51-26-C	W-029400	2 x 38"	Ø21.1	Ø51	DN25	2255	2180	2060	1995
MHC-4-40-2-38-26-C	W-029406	2 x 38"	Ø21.1	Ø38	DN25	2255	2180	2060	2001
MHC-4-40-2-50-26-C	W-029412	2 x 38"	Ø21.1	DN50	DN25	2255	2180	2060	1994
MHC-4-40-2-40-26-C	W-029418	2 x 38"	Ø21.1	DN40	DN25	2255	2180	2060	2000

Version 1.1 All new Drawing numbers in Model C tables

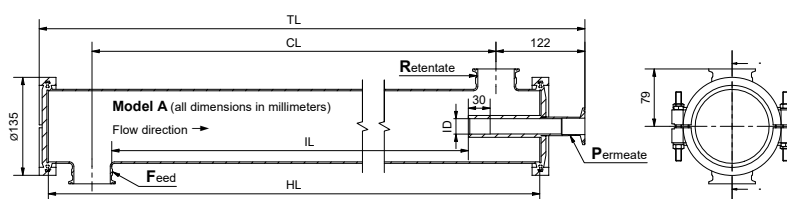


MHC-4-40bar-3-element - Model A		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 24 liters		Dry weight 20 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-3-51-25-A	W-023667	3 x 38"	Ø21.1	Ø51	Ø25	3235	3160	3040	2975
MHC-4-40-3-38-25-A	W-023673	3 x 38"	Ø21.1	Ø38	Ø25	3235	3160	3040	2981
MHC-4-40-3-50-25-A	W-023679	3 x 38"	Ø21.1	DN50	Ø25	3235	3160	3040	2974
MHC-4-40-3-40-25-A	W-023685	3 x 38"	Ø21.1	DN40	Ø25	3235	3160	3040	2980
MHC-4-40-3-51-26-A	W-023691	3 x 38"	Ø21.1	Ø51	DN25	3235	3160	3040	2975
MHC-4-40-3-38-26-A	W-023697	3 x 38"	Ø21.1	Ø38	DN25	3235	3160	3040	2981
MHC-4-40-3-50-26-A	W-023703	3 x 38"	Ø21.1	DN50	DN25	3235	3160	3040	2974
MHC-4-40-3-40-26-A	W-023709	3 x 38"	Ø21.1	DN40	DN25	3235	3160	3040	2980

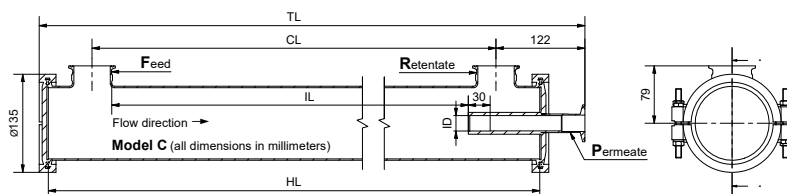


MHC-4-40bar-3-element - Model C		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 24 liters		Dry weight 20 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-3-51-25-C	W-029377	3 x 38"	Ø21.1	Ø51	Ø25	3235	3160	3040	2975
MHC-4-40-3-38-25-C	W-029383	3 x 38"	Ø21.1	Ø38	Ø25	3235	3160	3040	2981
MHC-4-40-3-50-25-C	W-029389	3 x 38"	Ø21.1	DN50	Ø25	3235	3160	3040	2974
MHC-4-40-3-40-25-C	W-029395	3 x 38"	Ø21.1	DN40	Ø25	3235	3160	3040	2980
MHC-4-40-3-51-26-C	W-029401	3 x 38"	Ø21.1	Ø51	DN25	3235	3160	3040	2975
MHC-4-40-3-38-26-C	W-029407	3 x 38"	Ø21.1	Ø38	DN25	3235	3160	3040	2981
MHC-4-40-3-50-26-C	W-029413	3 x 38"	Ø21.1	DN50	DN25	3235	3160	3040	2974
MHC-4-40-3-40-26-C	W-029419	3 x 38"	Ø21.1	DN40	DN25	3235	3160	3040	2980

Version 1.1 All new Drawing numbers in Model C tables

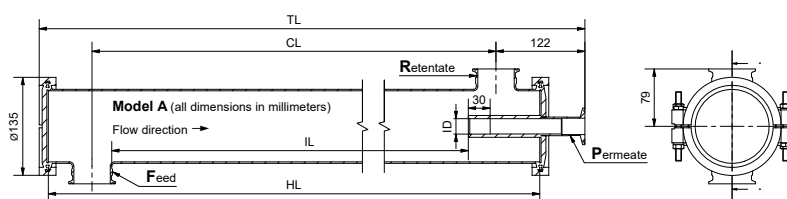


MHC-4-40bar-4-element - Model A		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 31 liters		Dry weight 25 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-4-51-25-A	W-023668	4 x 38"	Ø21.1	Ø51	Ø25	4215	4140	4020	3955
MHC-4-40-4-38-25-A	W-023674	4 x 38"	Ø21.1	Ø38	Ø25	4215	4140	4020	3961
MHC-4-40-4-50-25-A	W-023680	4 x 38"	Ø21.1	DN50	Ø25	4215	4140	4020	3954
MHC-4-40-4-40-25-A	W-023686	4 x 38"	Ø21.1	DN40	Ø25	4215	4140	4020	3960
MHC-4-40-4-51-26-A	W-023692	4 x 38"	Ø21.1	Ø51	DN25	4215	4140	4020	3955
MHC-4-40-4-38-26-A	W-023698	4 x 38"	Ø21.1	Ø38	DN25	4215	4140	4020	3961
MHC-4-40-4-50-26-A	W-023704	4 x 38"	Ø21.1	DN50	DN25	4215	4140	4020	3954
MHC-4-40-4-40-26-A	W-023710	4 x 38"	Ø21.1	DN40	DN25	4215	4140	4020	3960

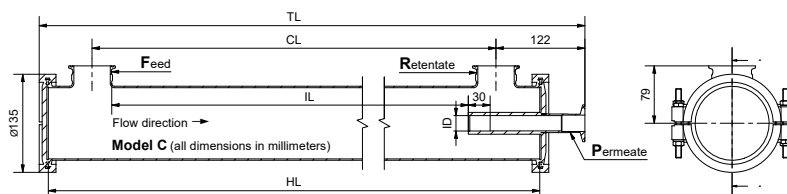


MHC-4-40bar-4-element - Model C		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 31 liters		Dry weight 25 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-4-51-25-C	W-029378	4 x 38"	Ø21.1	Ø51	Ø25	4215	4140	4020	3955
MHC-4-40-4-38-25-C	W-029384	4 x 38"	Ø21.1	Ø38	Ø25	4215	4140	4020	3961
MHC-4-40-4-50-25-C	W-029390	4 x 38"	Ø21.1	DN50	Ø25	4215	4140	4020	3954
MHC-4-40-4-40-25-C	W-029396	4 x 38"	Ø21.1	DN40	Ø25	4215	4140	4020	3960
MHC-4-40-4-51-26-C	W-029402	4 x 38"	Ø21.1	Ø51	DN25	4215	4140	4020	3955
MHC-4-40-4-38-26-C	W-029408	4 x 38"	Ø21.1	Ø38	DN25	4215	4140	4020	3961
MHC-4-40-4-50-26-C	W-029414	4 x 38"	Ø21.1	DN50	DN25	4215	4140	4020	3954
MHC-4-40-4-40-26-C	W-029420	4 x 38"	Ø21.1	DN40	DN25	4215	4140	4020	3960

Version 1.1 All new Drawing numbers in Model C tables

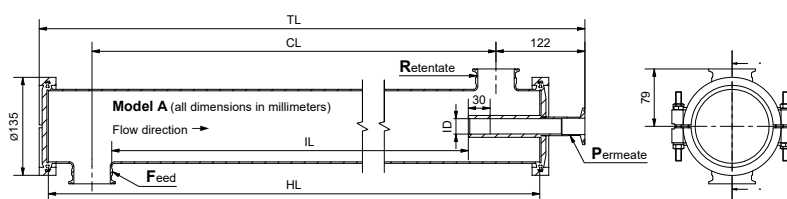


MHC-4-40bar-5-element - Model A		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 38.5 liters		Dry weight 29 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-5-51-25-A	W-023669	5 x 38"	Ø21.1	Ø51	Ø25	5195	5120	5000	4935
MHC-4-40-5-38-25-A	W-023675	5 x 38"	Ø21.1	Ø38	Ø25	5195	5120	5000	4941
MHC-4-40-5-50-25-A	W-023681	5 x 38"	Ø21.1	DN50	Ø25	5195	5120	5000	4934
MHC-4-40-5-40-25-A	W-023687	5 x 38"	Ø21.1	DN40	Ø25	5195	5120	5000	4940
MHC-4-40-5-51-26-A	W-023693	5 x 38"	Ø21.1	Ø51	DN25	5195	5120	5000	4935
MHC-4-40-5-38-26-A	W-023699	5 x 38"	Ø21.1	Ø38	DN25	5195	5120	5000	4941
MHC-4-40-5-50-26-A	W-023705	5 x 38"	Ø21.1	DN50	DN25	5195	5120	5000	4934
MHC-4-40-5-40-26-A	W-023711	5 x 38"	Ø21.1	DN40	DN25	5195	5120	5000	4940

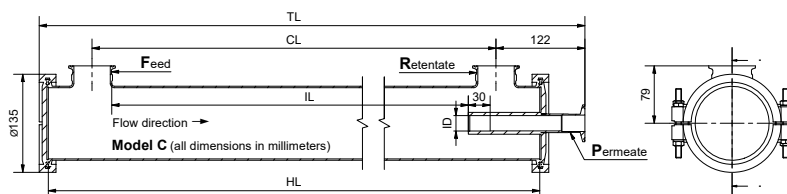


MHC-4-40bar-5-element - Model C		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 38.5 liters		Dry weight 29 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-5-51-25-C	W-029379	5 x 38"	Ø21.1	Ø51	Ø25	5195	5120	5000	4935
MHC-4-40-5-38-25-C	W-029385	5 x 38"	Ø21.1	Ø38	Ø25	5195	5120	5000	4941
MHC-4-40-5-50-25-C	W-029391	5 x 38"	Ø21.1	DN50	Ø25	5195	5120	5000	4934
MHC-4-40-5-40-25-C	W-029397	5 x 38"	Ø21.1	DN40	Ø25	5195	5120	5000	4940
MHC-4-40-5-51-26-C	W-029403	5 x 38"	Ø21.1	Ø51	DN25	5195	5120	5000	4935
MHC-4-40-5-38-26-C	W-029409	5 x 38"	Ø21.1	Ø38	DN25	5195	5120	5000	4941
MHC-4-40-5-50-26-C	W-029415	5 x 38"	Ø21.1	DN50	DN25	5195	5120	5000	4934
MHC-4-40-5-40-26-C	W-029421	5 x 38"	Ø21.1	DN40	DN25	5195	5120	5000	4940

Version 1.1 All new Drawing numbers in Model C tables



MHC-4-40bar-6-element - Model A		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 46 liters		Dry weight 34 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-6-51-25-A	W-023670	6 x 38"	Ø21.1	Ø51	Ø25	6175	6100	5980	5915
MHC-4-40-6-38-25-A	W-023676	6 x 38"	Ø21.1	Ø38	Ø25	6175	6100	5980	5921
MHC-4-40-6-50-25-A	W-023682	6 x 38"	Ø21.1	DN50	Ø25	6175	6100	5980	5914
MHC-4-40-6-40-25-A	W-023688	6 x 38"	Ø21.1	DN40	Ø25	6175	6100	5980	5920
MHC-4-40-6-51-26-A	W-023694	6 x 38"	Ø21.1	Ø51	DN25	6175	6100	5980	5915
MHC-4-40-6-38-26-A	W-023700	6 x 38"	Ø21.1	Ø38	DN25	6175	6100	5980	5921
MHC-4-40-6-50-26-A	W-023706	6 x 38"	Ø21.1	DN50	DN25	6175	6100	5980	5914
MHC-4-40-6-40-26-A	W-023712	6 x 38"	Ø21.1	DN40	DN25	6175	6100	5980	5920



MHC-4-40bar-6-element - Model C		Element type 3838		Maximum pressure / Maximum temperature					
		Quantity	Permeate	40 barg / 70°C		Volume 46 liters		Dry weight 34 kg	
Stock number	Drawing number	3.8" dia.	ID	F&R	P	TL	HL	CL	IL
MHC-4-40-6-51-25-C	W-029380	6 x 38"	Ø21.1	Ø51	Ø25	6175	6100	5980	5915
MHC-4-40-6-38-25-C	W-029386	6 x 38"	Ø21.1	Ø38	Ø25	6175	6100	5980	5921
MHC-4-40-6-50-25-C	W-029392	6 x 38"	Ø21.1	DN50	Ø25	6175	6100	5980	5914
MHC-4-40-6-40-25-C	W-029398	6 x 38"	Ø21.1	DN40	Ø25	6175	6100	5980	5920
MHC-4-40-6-51-26-C	W-029404	6 x 38"	Ø21.1	Ø51	DN25	6175	6100	5980	5915
MHC-4-40-6-38-26-C	W-029410	6 x 38"	Ø21.1	Ø38	DN25	6175	6100	5980	5921
MHC-4-40-6-50-26-C	W-029416	6 x 38"	Ø21.1	DN50	DN25	6175	6100	5980	5914
MHC-4-40-6-40-26-C	W-029422	6 x 38"	Ø21.1	DN40	DN25	6175	6100	5980	5920

Version 1.1 All new Drawing numbers in Model C tables

LENNTECH
WATER TREATMENT SOLUTIONS

info@lenntech.com Tel. +31-152-610-900
www.lenntech.com Fax. +31-152-616-289

INNOVATION - DRIVEN BY PEOPLE