Ion eXchange Unit
IXU 1/4 Series

Description

The IXU series of easy-to-service ion exchange units is designed to condition non-flam hydraulic and lubrication fluids based on phosphate esters (HFD-R).

They are effective in removing the acidic products of degradation resulting from hydrolysis and/or oxidation of the fluid as well as metal soaps present in the fluid.

The units are used offline with flow rates of up to ≈ 9 l/min on hydraulic and lubrication oil tanks.

Mobile and stationary versions of the IXU are available.

The IXU uses HYDAC's own Ion eXchange Elements (IXE) filled with ion exchange resin.

Special features

- Effective removal of acids and metal soaps.
- Free of extractable metals or particles, in contrast to fuller's earth or activated aluminium oxide.
- Units are easy to service.
- Available as a complete unit for oil service work, and as a modular system for retrofitting in existing offline circuits or for OEMs.

In addition we recommend that dewatering is carried out continuously using, for example, a FluidAqua Mobile FAM.

Advantages

- Reduction in functional problems, e.g. on servo valves
- Extended service life of the operating fluid
- Increased machine and system availability

Technical specifications

Hydraulic data *	
Neutralization number achievable	< 0.1 mg KOH / g
Typically, possible to use up to	max. TAN 1 mg KOH / g oil
Flow rate	IXU 1 ≈ 2.2 l/min IXU 4 ≈ 8.9 l/min
Fluid temperature range	+30 ... +60 °C
Operating pressure max.	8 bar
Permitted pressure at suction port N	-0.2 ... 1 bar
Viscosity range	15 ... 80 mm²/s
Permitted operating fluids	HFD-R Non-flam hydraulic fluids based on phosphate ester
Connections IN / OUT	½"
Pump type	Gear pump / without pump
Electrical data *	
Supply voltage	See model code
Electrical power consumption	0.25 ... 0.6 kW
External fuse required	16 A
Protection class to DIN 40050	IP 55
Ambient conditions	
Operating temperature range	0 ... +40 °C
Storage temperature range	0 ... +60 °C
Relative humidity	0 ... 80%, non-condensing
General data *	
Length of power cable	10 m (for versions PKZ, FA1, FA2)
Length of suction / pressure hose	5 m (for versions S5D5, SKDK)
Sealing material	FPM
Noise level at 1m	< 80 dB(A)
Weight (empty)	IXU 1 ≈ 70 kg IXU 4 ≈ 300 kg
Required fluid cleanliness	ISO 19/17/14 (ISO 4406:1999) 9A/9B/9C (SAE AS4059) We recommend that the IXU is only operated with the pre-filter available as an option, to guarantee the required fluid cleanliness.

* others on request

Model code

IXU - 4 - M - G - A - 1 - BM - Z /-S5D5-PKZ

Basic type
IXU = Ion eXchange Unit

Size
1 = 1 Ion eXchange element
IXE2xx ≈ 2.2 l/min
4 = 4 Ion eXchange elements
IXE2xx ≈ 8.9 l/min

Mechanical design
M = mobile
S = stationary

Pump type
G = gear pump with motor
Z = without pump

Voltage, frequency, power supply
A = 400 V, 50 Hz, 3 Ph
B = 415 V, 50 Hz, 3 Ph
C = 200 V, 50 Hz, 3 Ph
D = 200 V, 60 Hz, 3 Ph
E = 220 V, 60 Hz, 3 Ph
F = 230 V, 60 Hz, 3 Ph
G = 380 V, 60 Hz, 3 Ph
H = 440 V, 60 Hz, 3 Ph
I = 500 V, 50 Hz, 3 Ph
K = 480 V, 60 Hz, 3 Ph
L = 220 V, 50 Hz, 3 Ph
M = 230 V, 50 Hz, 1 Ph
N = 575 V, 60 Hz, 3 Ph
O = 460 V, 60 Hz, 3 Ph
X = other voltage (please specify)
Z = without

Pre-filter
1 = with pre-filter (OLF5 Toploader)
Z = without pre-filter

Clogging indicator
BM = differential pressure indicator – visual (VM2BM.1)
C = differential pressure indicator – electrical, required for versions FA1 and FA2 (VM2C.0)

Measuring equipment
AS = AquaSensor AS1000. Hydraulic connection only.
Additional equipment such as HYDAC HMG3000 or HMG500 is required for display and data storage.
Z = without measuring equipment

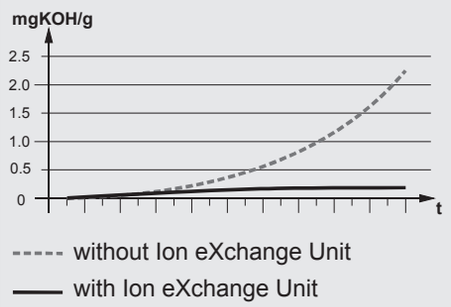
Additional details
S5D5 = suction/return line hose with lance, length = 5 metres
SKDK = suction/return line hose with threaded connection, length = 5 metres
PKZ = On/ Off switch with motor circuit breaker
FA1 = On/ Off switch with motor circuit breaker and cut-off when filter is clogged. Requires neutral wire. For voltages up to max. 240V, 1Ph, or max. 415V, 3Ph. Clogging indicator C or D3 is required.
FA2 = On/ Off switch with motor circuit breaker and cut-off when filter is clogged. Does not require neutral line. All voltages. Clogging indicator C required.

Sizing

Tank volume		Ion eXchange Unit
< 3,500 litres	=	IXU-1
3,500 – 15,000 litres	=	IXU-4
> 15,000 litres	=	2x IXU-4

Graph

Example of acidification in HFD fluids with and without Ion eXchange Unit:



Items supplied

– IXU with protective filter and additional equipment as per model code
– Operating Manual

Ion eXchange elements and filter elements for pre-filter and protective filter must be ordered separately.

Ion eXchange elements and filter elements

Ion eXchange element

IXE200:
removes acids and metal soaps - Part No. 3348961

IXE210:
removes metal soaps - Part No. 3416370

IXE220:
removes acids - Part No. 3464744

Filter elements for pre-filter and protective filter

N5DM005 (5µm) - Part No. 3068101
N5DM010 (10µm) - Part No. 3102924

One filter element per filter required.

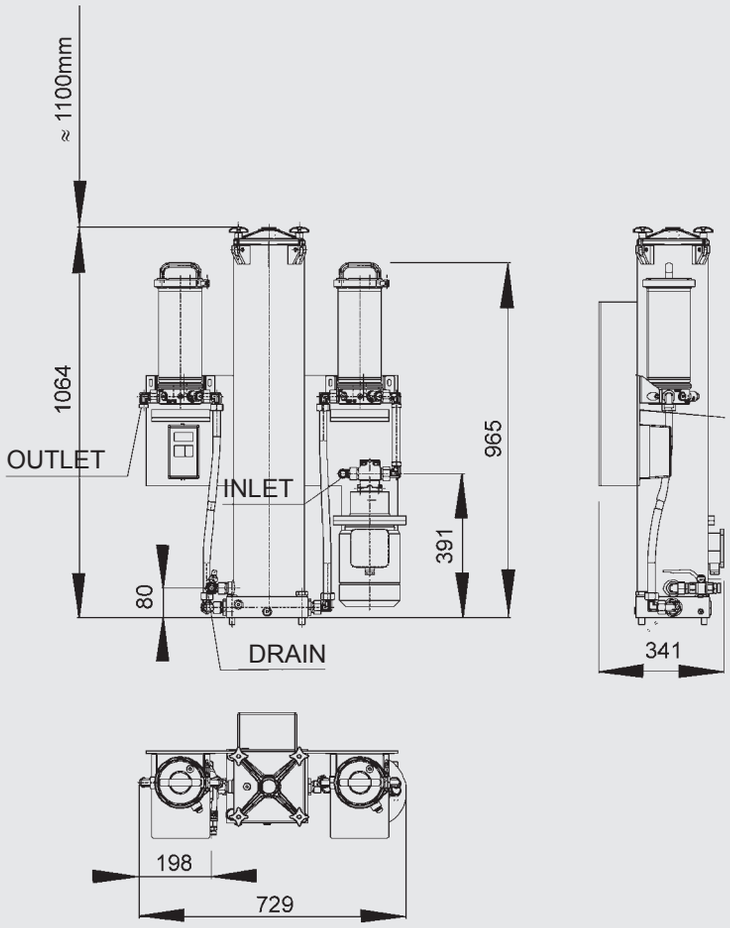
Example of required order quantity:

IXU- 4 -M-G-A -1-BM-Z /-S5D5-PKZ
4 x IXE200 element
2 x N5DM010
(for pre-filter and protective filter)

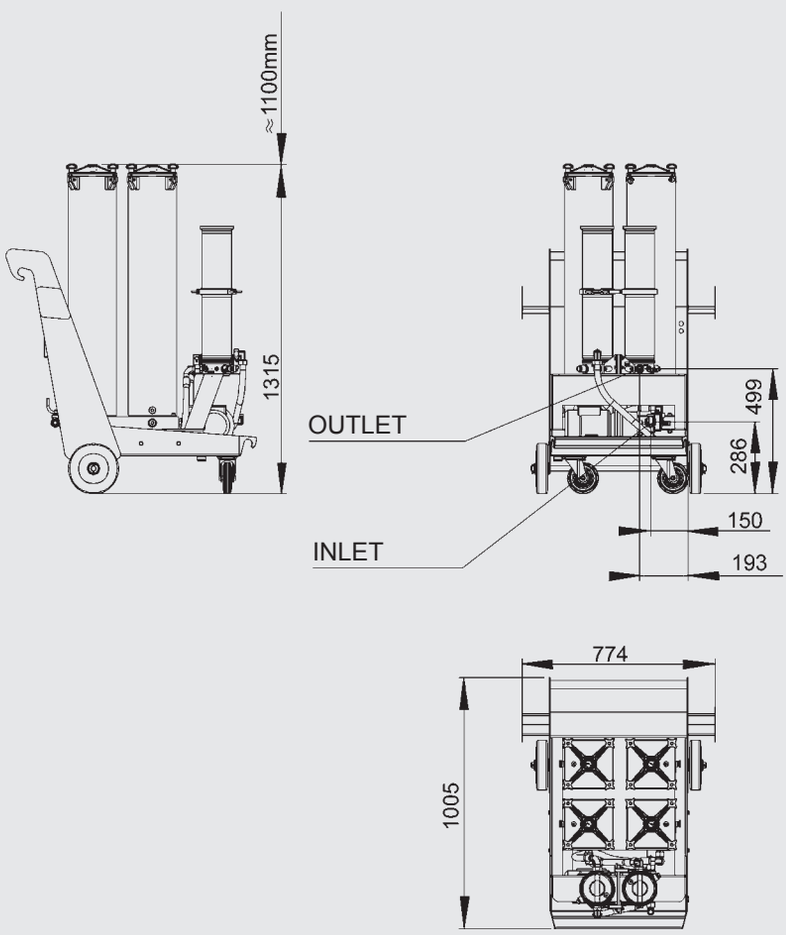
IXU- **4** -M-G-A -**Z**-BM-Z /-S5D5-PKZ
4 x IXE200 element
1 x N5DM010
(for protective filter only)

IXU- 1 -M-G-A -1-BM-Z /-S5D5-PKZ
1 x IXE200 element
2 x N5DM010
(for pre-filter and protective filter)

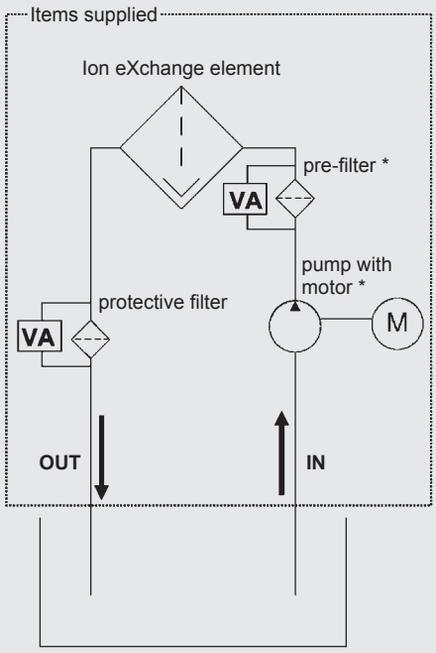
Dimensions of IXU1



Dimensions of IXU4



Hydraulic circuit diagram



VA = clogging indicator
* = optional, see model code

Note

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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