UNIVERSAL HYDRAULIK®

Your Partner for coolers and systems

## Product description

The Hybrid series is a logical further development of a shell & tube heat exchanger for a wide range of industrial applications. Aluminium fins, which are pushed over the tube bundle, connected by force, lead to an increased heat exchange surface. This is why the series is so efficient. The hybrid-design series is able to reach a heat output up to 5000 kW with a smaller footprint than a bare tube cooler.

### Product features

- Aluminium fins ensure a larger heat exchange surface
- Heat output capacity up to 5000 kW
- Tube side (Water): flow rate up to 2200 l/min
- Removable end caps for easy cleaning of the tubes
- Max. pressure: oil 35 bar / water 16 bar (higher pressure on demand)
- High-quality materials
- Tested five times during production

### Options

- Sea water resistant version
- Certifications for marine applications: Bureau Veritas, ABS, DNVGL, Rina, CCS, TL, PRS, NKK and others
- Compressed-air application
- Completely stainless steel version or chemically nickel plated
- 3.1 certification on request
- Hydrotest on request
- ATEX-certification on request
- ASME-certification on request
- Internal bypass
- Titanium parts
- Fail-safe-version

## Materials

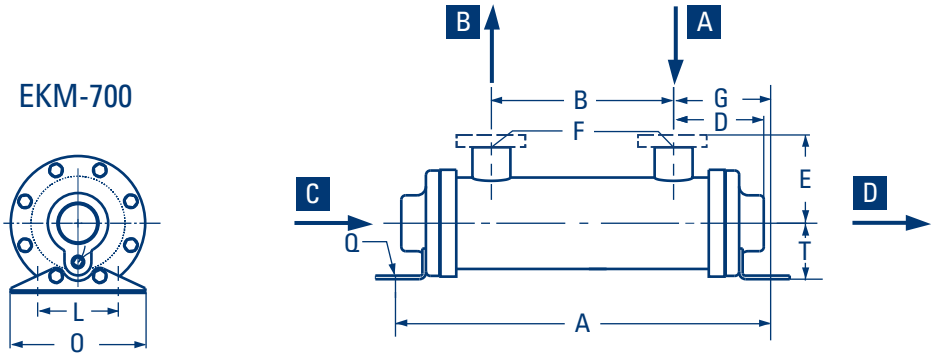
| | **Standard** | **Option** | **Sea water** Standard |
|---|---|---|---|
| Shell<br>Mounting<br>Baffels | Steel | Stainless steel (SS) | |
| Tube sheet | Steel | Stainless steel (SS) | Brass |
| Cooling fins<br>Nameplate | Aluminium | | |
| Tubes | CuNi 90/10 (CN) | Stainless steel (SS)/ Copper (CU) | Titan or copper nickel |
| End caps | Cast iron | Stainless steel (SS) | Cast iron (chemically nickel plated) or gun metal with zinc anode |

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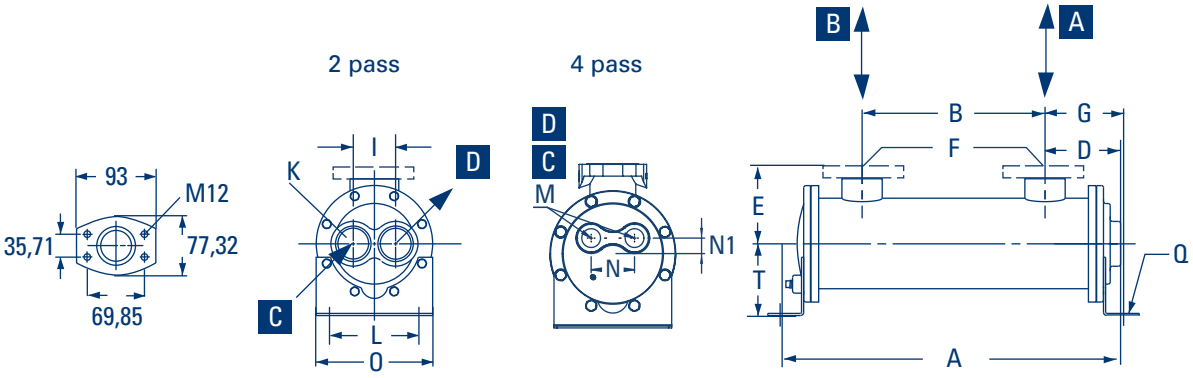
# Unit dimensions EKM-700-Series

| Type | A | B | D | E | F | G | I | K | L | M | N | N1 | O | Q | R | T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EKM-708-O | 283 | 76 | 101 | 73 | G1 1/2“ | 103,5 | - | - | 76 | - | - | - | 127 | 11 x 23 | G1 1/4“ | 67 |
| EKM-712-O | 385 | 178 | 101 | 73 | G1 1/2“ | 103,5 | - | - | 76 | - | - | - | 127 | 11 x 23 | G1 1/4“ | 66 |
| EKM-714-O | 436 | 229 | 101 | 73 | G1 1/2“ | 103,5 | - | - | 76 | - | - | - | 127 | 11 x 23 | G1 1/4“ | 67 |
| EKM-718-O | 537 | 330 | 101 | 73 | G1 1/2“ | 103,5 | - | - | 76 | - | - | - | 127 | 11 x 23 | G1 1/4“ | 67 |
| EKM-724-O | 690 | 483 | 101 | 73 | G1 1/2“ | 103,5 | - | - | 76 | - | - | - | 127 | 11 x 23 | G1 1/4“ | 67 |
| EKM-736-O | 994 | 787 | 101 | 73 | G1 1/2“ | 103,5 | - | - | 76 | - | - | - | 127 | 11 x 25 | G1 1/4“ | 67 |
| **Type** | **A** | **B** | **D** | **E** | **F** | **G** | **I** | **K** | **L** | **M** | **N** | **N1** | **O** | **Q** | **R** | **T** |
| EKM-708-T | 283 | 76 | 89 | 73 | G1 1/2“ | 103,5 | 41 | G1“ | 76 | - | - | - | 127 | 11 x 23 | - | 67 |
| EKM-712-T | 385 | 178 | 89 | 73 | G1 1/2“ | 103,5 | 41 | G1“ | 76 | - | - | - | 127 | 11 x 23 | - | 67 |
| EKM-714-T | 436 | 229 | 89 | 73 | G1 1/2“ | 103,5 | 41 | G1“ | 76 | - | - | - | 127 | 11 x 23 | - | 67 |
| EKM-718-T | 537 | 330 | 89 | 73 | G1 1/2“ | 103,5 | 41 | G1“ | 76 | - | - | - | 127 | 11 x 23 | - | 67 |
| EKM-724-T | 690 | 483 | 89 | 73 | G1 1/2“ | 103,5 | 41 | G1“ | 76 | - | - | - | 127 | 11 x 23 | - | 67 |
| EKM-736-T | 994 | 787 | 89 | 73 | G1 1/2“ | 103,5 | 41 | G1“ | 76 | - | - | - | 127 | 11 x 23 | - | 67 |
| **Type** | **A** | **B** | **D** | **E** | **F** | **G** | **I** | **K** | **L** | **M** | **N** | **N1** | **O** | **Q** | **R** | **T** |
| EKM-708-F | 283 | 76 | 90 | 73 | G1 1/2“ | 103,5 | - | - | 76 | G1/2“ | 44 | 18 | 127 | 11 x 23 | - | 67 |
| EKM-712-F | 385 | 178 | 90 | 73 | G1 1/2“ | 103,5 | - | - | 76 | G1/2“ | 44 | 18 | 127 | 11 x 23 | - | 67 |
| EKM-714-F | 436 | 229 | 90 | 73 | G1 1/2“ | 103,5 | - | - | 76 | G1/2“ | 44 | 18 | 127 | 11 x 23 | - | 67 |
| EKM-718-F | 537 | 330 | 90 | 73 | G1 1/2“ | 103,5 | - | - | 76 | G1/2“ | 44 | 18 | 127 | 11 x 23 | - | 67 |
| EKM-724-F | 690 | 483 | 90 | 73 | G1 1/2“ | 103,5 | - | - | 76 | G1/2“ | 44 | 18 | 127 | 11 x 23 | - | 67 |
| EKM-736-F | 994 | 787 | 90 | 73 | G1 1/2“ | 103,5 | - | - | 76 | G1/2“ | 44 | 18 | 127 | 11 x 23 | - | 67 |

*All dimensions in mm*




A - Medium to be cooled  B - Cooled Medium  C - Cooling water „inlet“  D - Cooling water „outlet“




A - Medium to be cooled  B - Cooled Medium  C - Cooling water „inlet“  D - Cooling water „outlet“

## Technical data

**Caution:** Incorrect installation can lead to damage to the cooler.
For the seawater version, zinc anodes should be provided on the waterside.
Exact information for the pressure resistance can be found in the respective component drawings.

**Maximum operating Pressure**
Shell = up to 35 bar
Tubes = up to 16 bar
**Operating temperature** = 5 - 95 °C

**Maximum flow rate (in l/min):**

| | **Oil** Shell | **Water** Tubes CuNi 90/10 (CN)/Stainless steel (SS) | | |
|---|---|---|---|---|
| **Type** | | **O** | **T** | **F** |
| **EKM - 500** | 75 | 60 | 30 | - |
| **EKM - 700** | 225 | 120 | 60 | 30 |
| **EKM - 1000** | 330 | 280 | 140 | 70 |
| **EKM - 1200** | 650 | 560 | 280 | 140 |
| **EKM - 1400** | 850 | 520 | 260 | 130 |
| **EKM - 1700** | 1200 | 980 | 490 | 245 |

| | **Oil** Shell | **Water** Tubes Copper (CU) | | | **Water** Tubes CuNi 90/10 (CN)/ Stainless steel (SS) | | | **Sea water** Tubes CuNi 90/10 (CN) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Type** | | **O** | **T** | **F** | **O** | **T** | **F** | **O** | **T** | **F** |
| **SCM - 1000** | 330 | 225 | 110 | 55 | 340 | 170 | 85 | 285 | 140 | 70 |
| **SCM - 1200** | 650 | 500 | 250 | 125 | 750 | 375 | 185 | 600 | 300 | 150 |
| **SCM - 1700** | 1200 | 850 | 425 | 213 | 1300 | 650 | 325 | 1050 | 530 | 265 |
| **SCM - 2400** | 1800 | 1600 | 800 | 400 | 2400 | 1200 | 600 | 2000 | 1000 | 500 |
| **SCM - 4000** | 3000 | 2400 | 1200 | 600 | 3500 | 1750 | 875 | 2800 | 1400 | 700 |

| | **Oil** Shell | **Water** Tubes Copper (CU) | | **Water** Tubes CuNi 90/10 (CN)/ Stainless steel (SS) | | **Sea water** Tubes CuNi 90/10 (CN) | |
|---|---|---|---|---|---|---|---|
| **Type** | **O** | **T** | **F** | **T** | **F** | **T** | **F** |
| **UKTM/UKM - 500** | 75 | 17 | - | 26 | - | 22 | - |
| **UKTM/UKM - 700** | 225 | 34 | 16 | 52 | 24 | 43 | 21 |
| **UKTM/UKM - 1000** | 400 | 82 | 40 | 122 | 58 | 102 | 51 |
| **UKTM/UKM - 1200** | 650 | 182 | 91 | 227 | 136 | 227 | 114 |

*The technical data of this sheet is depending on the described operational conditions and individual cases.*
*At different operational conditions and differing individual cases contact UniversalHydraulik.*
*Technical modifications reserved. Please also pay attention to our operation manuals and maintenance documentations.*
*In case of an order, binding dimensions can be found in the associated component drawing.*

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*customized designs*
*made in europe and usa*

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## Ordering code

**SS - EKM - 1036 - 6 - O - CN - R - W - SW (S:G112 - T:G114)**

**Complete cooler Stainless steel**
incl. Aluminium Fins

**Series abbreviation**
EKM-Series
SCM-Series
UKM-Series
UKTM-Series

R = removabel cartridge

**Unit size**

**Guide segment distance**

**Cooling water connection system**
O= 1-pass
T= 2-pass
F= 4-pass

**Tube material**
CN= Copper nickel
CU= Copper
SS= Stainless steel

**Bypass version**
R/R2 = partly opened (depends on the mountening)
RS/RS2 = fully opened (depends on the mountening)

**Material of the tube sheet**
W = Brass
SS = Stainless steel
Without data = Steel

**Material of end caps**
SW = Cast iron (nickel coating treatment)
SWBZ = Sea water resistant gun metal end caps + zinc anode
SS = Stainless steel
Without data = Cast iron or steel

**Connection shell side**
see following page

**Connection tube side**
see following page

| | |
|---|---|
| **EKM-Serie:** | Heat exchanger with straight water tubes inside. Available in sizes 500-1700. |
| **SCM-Serie:** | Heat exchanger with straight water tubes and increased tube diameters inside. Available in sizes 1000-4000. |
| **UKM-Serie:** | Heat exchanger with U-formed water tubes inside. Available in sizes 500-1200. |
| **UKTM-Serie:** | Heat exchanger with U-formed water tubes inside for mounting in tanks. Available in sizes 500-1200. |

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## Connection designation

**EKM - 1036 - O - CN (S:G112 - T:G114)**

**Type code acc. UH-data sheet**
(see previous page)

**Connection type and connection size, shell side**

**Connection type and connection size, tube side**

## Connection table

| G<br>BSPP thread: | N<br>NPT thread: | #<br>SAE-Port with UNF: | S<br>SAE flange: |
|---|---|---|---|
| G1/8" = G18 | 1/8"NPT = N18 | 7/16-20 UNF = #4 | 3/4"-3000psi = S34 |
| G1/4" = G14 | 1/4"NPT = N14 | 1/2-20 UNF = #5 | 1"-3000psi = S1 |
| G3/8" = G38 | 3/8"NPT = N38 | 9/16-18 UNF = #6 | 1 1/4"-3000psi = S114 |
| G1/2" = G12 | 1/2"NPT = N12 | 3/4-16 UNF = #8 | 1 1/2"-3000psi = S112 |
| G3/4" = G34 | 3/4"NPT = N34 | 7/8-14 UNF = #10 | 2"-3000psi = S2 |
| G1" = G1 | 1"NPT = N1 | 1-1/16-12 UN = #12 | 2 1/2"-3000psi = S212 |
| G1 1/4" = G114 | 1 1/4"NPT = N114 | 1-3/16-12 UN = #14 | 3"-3000psi = S3 |
| G1 1/2" = G112 | 1 1/2"NPT = N112 | 1-5/16-12 UN = #16 | 4"-3000psi = S4 |
| G2" = G2 | 2"NPT = N2 | 1-5/8-12 UN = #20 | 5"-3000psi = S5 |
| | | 1-7/8-12 UN = #24 | |
| | | 2-1/2-12 UN = #32 | |

| D<br>DIN flange: | D<br>DIN flange: | A<br>ANSI flange: | A<br>ANSI flange: |
|---|---|---|---|
| DN20/PN16 = D20/16 | DN20/PN40 = D20/40 | 1/2"-150lbs = A12/15 | 1/2"-300lbs = A12/3 |
| DN25/PN16 = D25/16 | DN25/PN40 = D25/40 | 3/4"-150lbs = A34/15 | 3/4"-300lbs = A34/3 |
| DN32/PN16 = D32/16 | DN32/PN40 = D32/40 | 1"-150lbs = A1/15 | 1"-300lbs = A1/3 |
| DN40/PN16 = D40/16 | DN40/PN40 = D40/40 | 1 1/4"-150lbs = A114/15 | 1 1/4"-300lbs = A114/3 |
| DN50/PN16 = D50/16 | DN50/PN40 = D50/40 | 1 1/2"-150lbs = A112/15 | 1 1/2"-300lbs = A112/3 |
| DN65/PN16 = D65/16 | DN65/PN40 = D65/40 | 2"-150lbs = A2/15 | 2"-300lbs = A2/3 |
| DN80/PN16 = D80/16 | DN80/PN40 = D80/40 | 2 1/2"-150lbs = A212/15 | 2 1/2"-300lbs = A212/3 |
| DN100/PN16 = D100/16 | DN100/PN40 = D100/40 | 3"-150lbs = A3/15 | 3"-300lbs = A3/3 |
| DN125/PN16 = D125/16 | DN125/PN40 = D125/40 | 4"-150lbs = A4/15 | 4"-300lbs = A4/3 |
| DN150/PN16 = D150/16 | DN150/PN40 = D150/40 | 5"-150lbs = A5/15 | 5"-300lbs = A5/3 |
| DN200/PN16 = D200/16 | DN200/PN40 = D200/40 | | |

## Sales

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