



# HEATEXCHANGER CATALOG

[WWW.UKRA.COM.TR](http://WWW.UKRA.COM.TR)



## **ABOUT US**

UKRA has emerged from the strong engineering background and international experience in cooling systems. Our mission is to provide you with the most appropriate cooler, with the motto of Listen, Calculate, Design.

UKRA coolers offer high performance industrious coolers, standard and customized products in high quality standards at competitive prices.

Our standard and customized coolers will be part of your mobile machines with their high performance, long-lasting property, compact dimensions, and their endurance to active and aggressive working conditions.

All machines need special coolers. In order to find out the suitable cooler for your machine, we work together and help you purchase the correct cooler after getting detailed information about your application.

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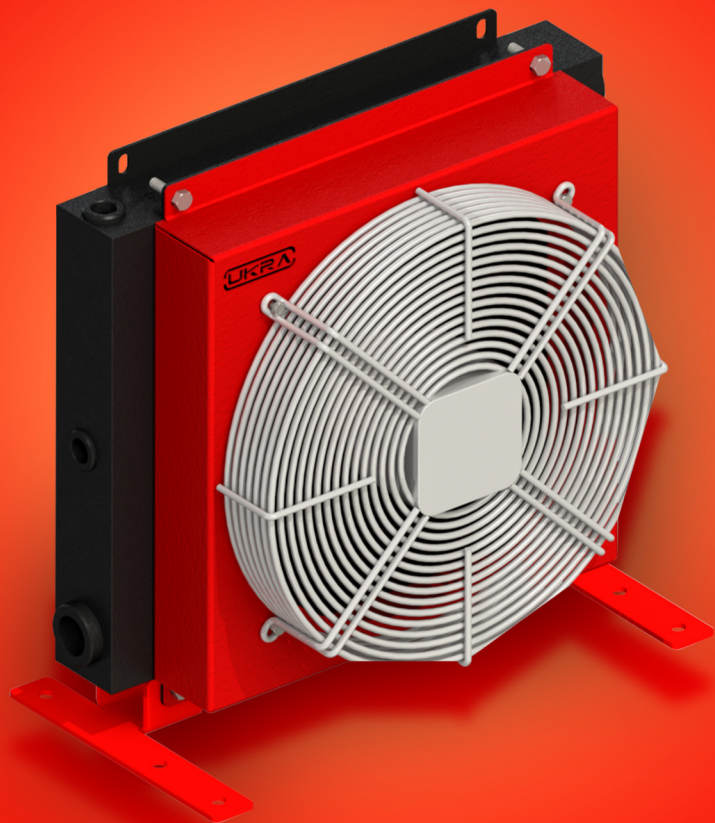
# PURCHASE CODING

UMB	A12	24	S	3
<b>SERIE OF COOLER</b>	<b>SIZE OF COOLER</b>	<b>VOLTAGE</b>	<b>DIRECTION</b>	
UMB	A12 ... A21	01 (230V)	S (SUCKING)	
UPM	A15 ... A20	02 (400V)	B (BLOWING)	
USH	C15 ... C20	12 (12V)		
USS	01 ... 09	24 (24V)		
UPP	01 ... 05	03 (HYDROMOTOR)		
UFS	01 ... 04	04 (30V IP66)		
USC	40 ... 180	05 (400V IP66)		
			<b>THERMOSTAT</b>	
			0 (WITHOUT)	
			1 (40-28 °C)	
			2 (50-38 °C)	
			3 (60-48 °C)	
			4 (70-58 °C)	
			5 (ADJUSTABLE)	



# UMB SERIE

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## INFORMING

Some of the mechanical energy turns into heat in hydraulic systems and the heat in hydraulic systems increases. A heat exchanger is to be set up in order to dissipate the heat generated in the system. Actually, the aim is to reach thermal equilibrium.

UKRA UMB SERIES hydraulic coolers are designed in ten different sizes to adapt to hydraulic machine in terms of dimensions and high performance cooling. UMB series coolers contain a new generation internal by-pass valve, and the valve opens at unexpected high pressures and some of the oil is sent from the by-pass line to the outlet of the cooler.

### RANGE OF APPLICATION

- Hydraulic Power Units
- Agriculture and Forestry Machines
- Construction and Mining Machines
- Loading and Transport Machines
- Used in various areas.

### FLUIDS THAT CAN BE COOLED

- Hydraulic oil
- Engine oil
- Water or water-glycol mixture

### TECHNICAL FEATURES

- COOLER; High strength aluminum.
- FAN; 12 / 24V IP68 certified, Plastic.
- 230 / 380V, Hydro motor; Steel and Plastic fan
- FAN HOOD: Steel
- OPERATING PRESSURE: Max. 15 Bar
- OPERATING TEMPERATURE: Max. 120 °C

### ACCESSORIES

- By-Pass valve
- thermal switch
- Vibration absorbing montage damper

## BİLGİLENDİRME

Hidrolik sistemlerde mekanik enerjinin bir kısmı ısıya dönüşür ve hidrolik sistemde ki yağ sıcaklığı artar. Üretilen ısıyı dağıtmak için sisteme bir ısı eşanjörü kurulmalıdır. Amaç ısıl dengeye ulaşmaktır.

UKRA UMB SERİSİ Hidrolik paket soğutucular, hidrolik makinenize ölçüsel olarak uyum sağlamak ve yüksek performanslı soğutma için 10 farklı ölçüde tasarlanmıştır. UMB serisi soğutucular yeni nesil dahili by-pass valfi içerir, beklenmedik yüksek basınçlarda valf açılır ve yağın bir kısmı by-pass hattından soğutucunun çıkışına gönderilir.

### UYGULAMA ALANLARI

- Hidrolik Güç Üniteleri
- Tarım ve Ormanlık Makinalar
- İş ve Maden Makinaları
- Yükleme ve Taşıma Makinaları
- Vb. Birçok alanda kullanılabilir.

### SOĞUTULABİLECEK AKIŞKANLAR

- Hidrolik Yağ
- Motor yağ
- Su veya Su-Glikol karışımı

### TEKNİK ÖZELLİKLER

- SOĞUTUCU; Yüksek dayanımlı Alüminyum.
- FAN; 12/24V IP68 sertifikalı, Plastik.
- 230/380V, Hidromotor ; Çelik ve Plastik fan
- FAN DAVLUMBAZI: Çelik
- ÇALIŞMA BASINCI: Mak. 15 Bar
- ÇALIŞMA SICAKLIĞI: Mak. 120 °C

### AKSESUARLAR

- By-Pass valfi
- Termal anahtar
- Titreşim emici montaj damper

**COOLER SELECTION:**

The following information is required to choose the right cooler.

- › Q ( Kw ) Required Heat Disposal
- › V ( l / min ) Oil Flow
- › Toil ( °C ) Oil Inlet Temperature
- › Tair ( °C ) Air Inlet Temperature

**SOĞUTUCU SEÇİMİ:**

Doğru soğutucuyu seçebilmek için aşağıda ki bilgiler gerekmektedir.

- › Q ( Kw ) Gereken Isı Atımı
- › V ( l/dak ) Yağ Debisi
- › Toil ( °C ) Yağ Giriş Sıcaklığı
- › Tair ( °C ) Hava Giriş Sıcaklığı

**EXAMPLE CALCULATION**

Q : 12 Kw  
V : 120 lpm  
Toil : 65 °C  
Tair : 30 °C

$$\Delta T : 65-30 = 35^{\circ}\text{C}$$

$$K = 12/35 = 0,34 \text{ KW}/^{\circ}\text{C}$$

The most suitable cooler is selected according to K and V values from the cooling performance chart. Bu UMB-16 coded cooler has been chosen for this calculation.

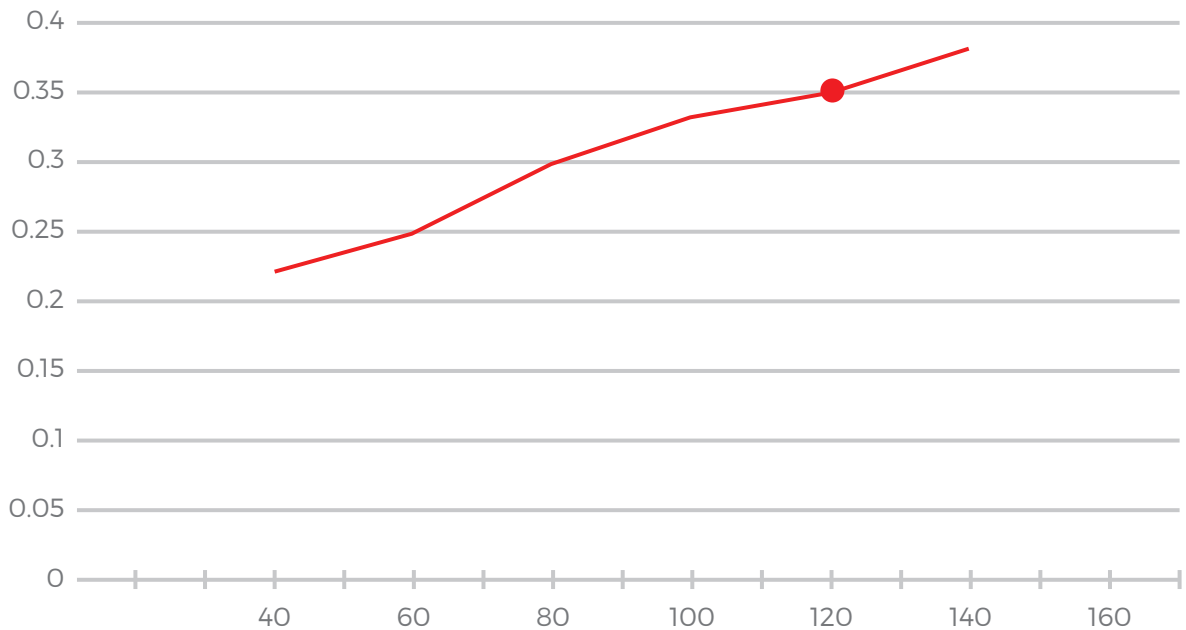
**ÖRNEK HESAPLAMA**

Q : 12 Kw  
V : 120 lpm  
Toil : 65 °C  
Tair : 30 °C

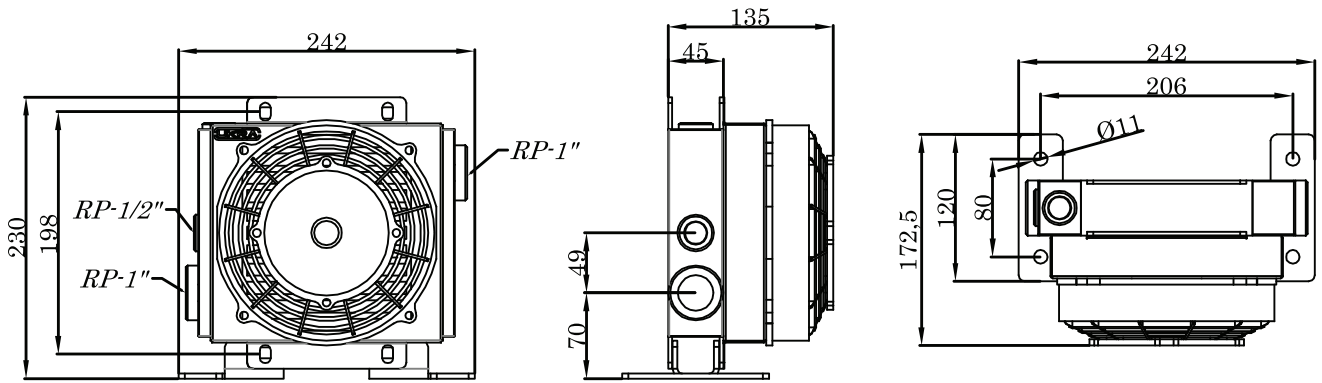
$$\Delta T : 65-30 = 35^{\circ}\text{C}$$

$$K = 12/35 = 0,34 \text{ KW}/^{\circ}\text{C}$$

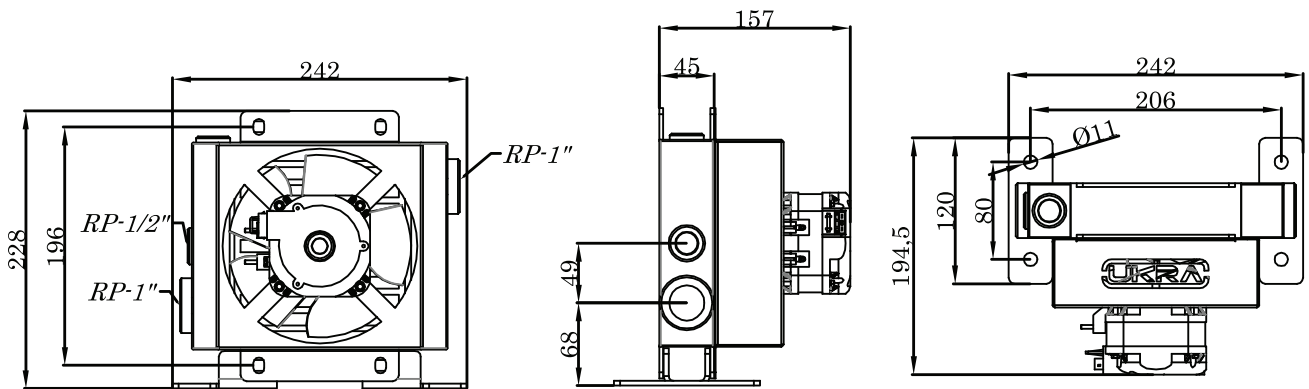
K ve V değerleri ile soğutma performans grafiği üzerinden en uygun soğutucu seçilir. Bu Hesaplama için UMB-16 kodlu soğutucu seçildi.

**UMB-16 PERFORMANCE DIAGRAM**

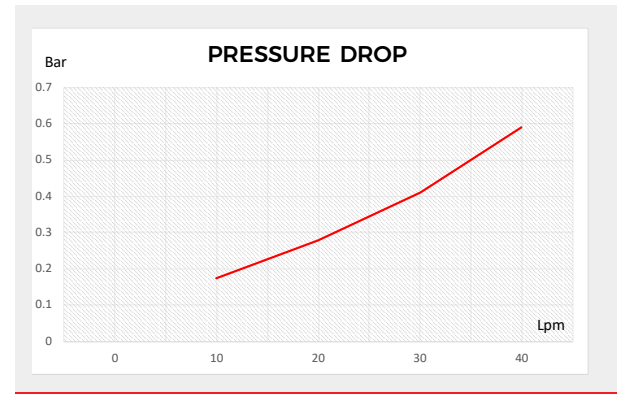
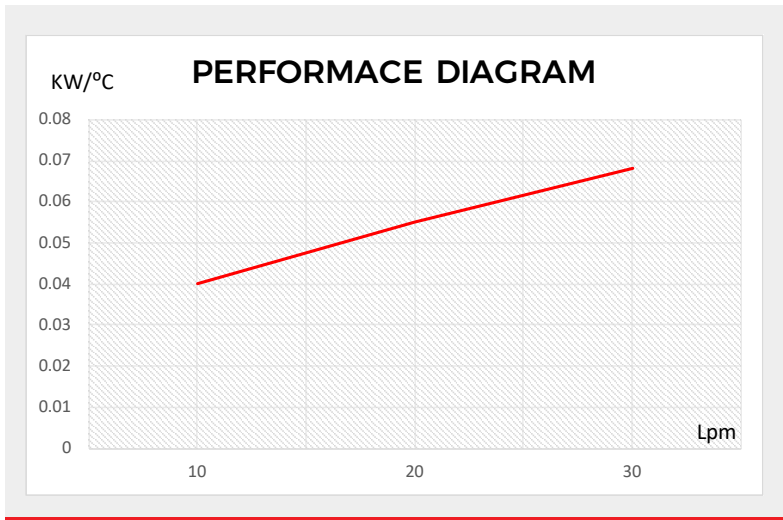
**UMB-A12-12/24**



**UMB-A12-01**

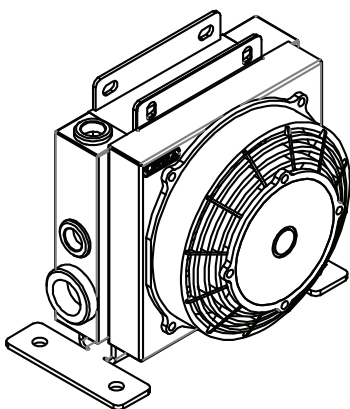


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A12 - 12/24	10 - 40	3	12/24 DC	130	560	ø167	4,400	68	0.7	3.7
UMB - A12 - 01	10 - 40	3	230 AC	25	450	ø160	1,450	44	0.7	3.7

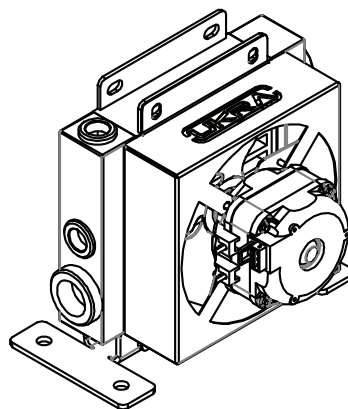


cSt	10	15	20	30	40	50	60	80	100	200	300
Pd	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

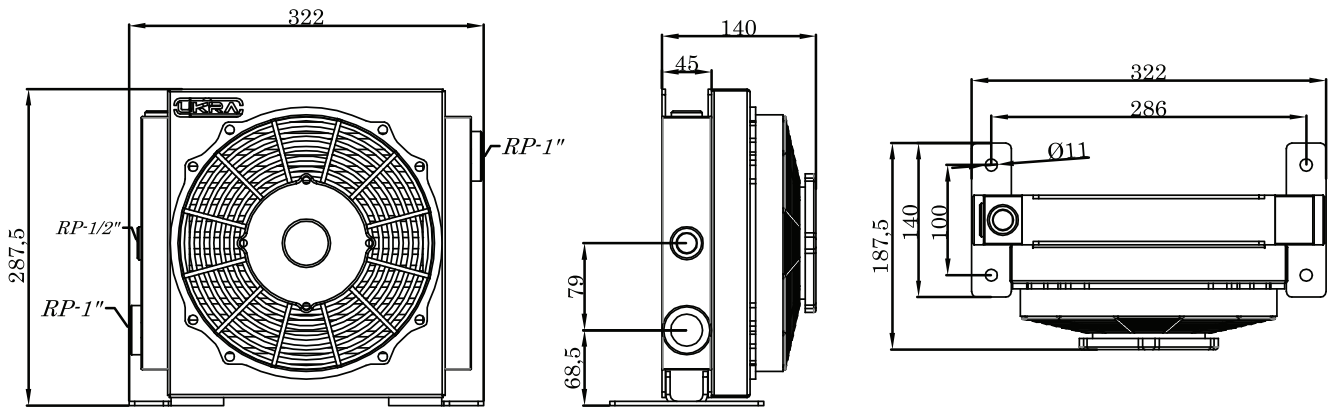
**UMB-A12-12/24**



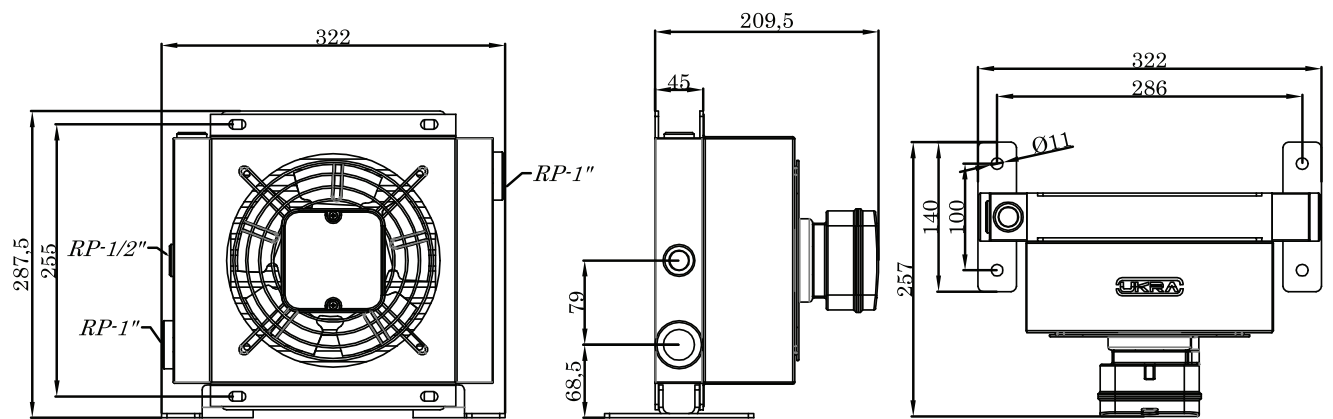
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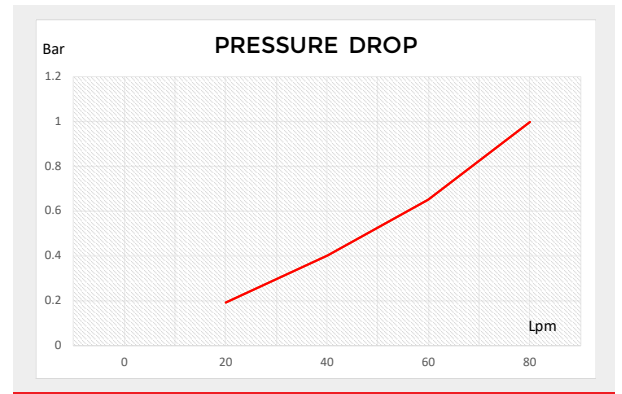
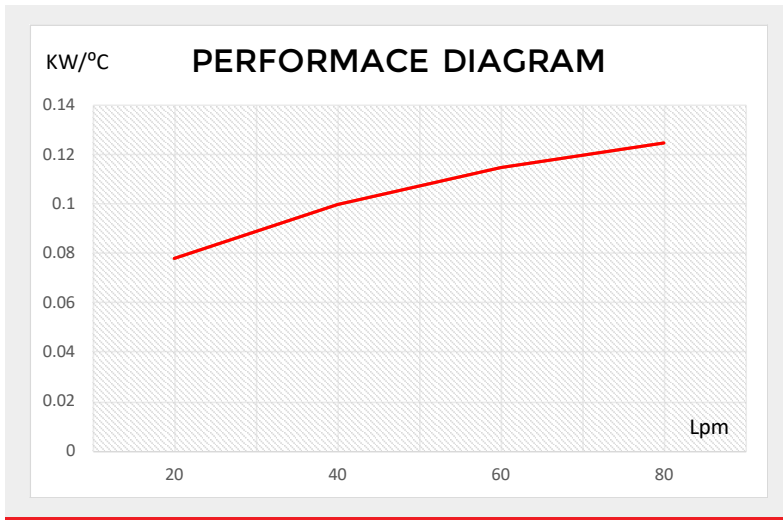
**UMB-A13-12/24**



**UMB-A13-01**

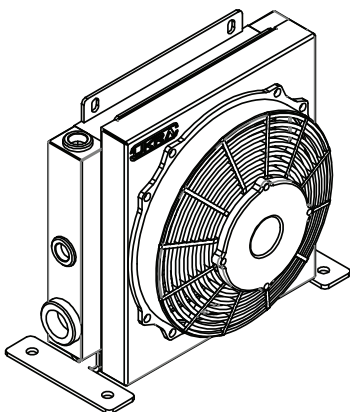


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A13 - 12/24	20 - 80	6,5	12/24 DC	130	1,060	ø225	3,400	68	1.4	5.3
UMB - A13 - 01	20 - 80	6,5	230 AC	63	680	ø200	2,750	44	1.4	5.5

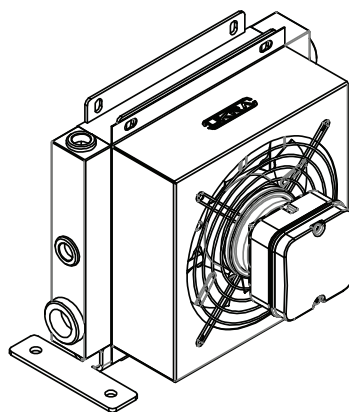


<b>cSt</b>	10	15	20	30	40	50	60	80	100	200	300
<b>Pd</b>	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

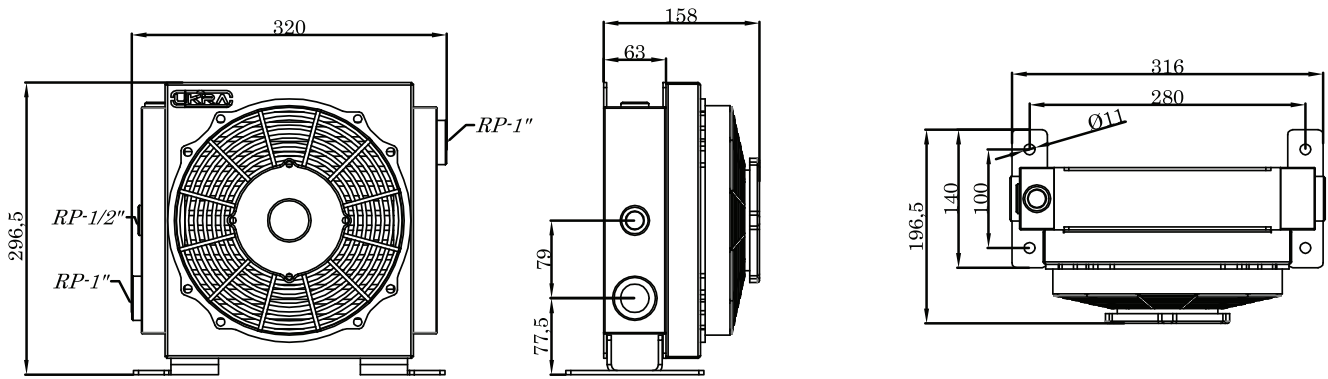
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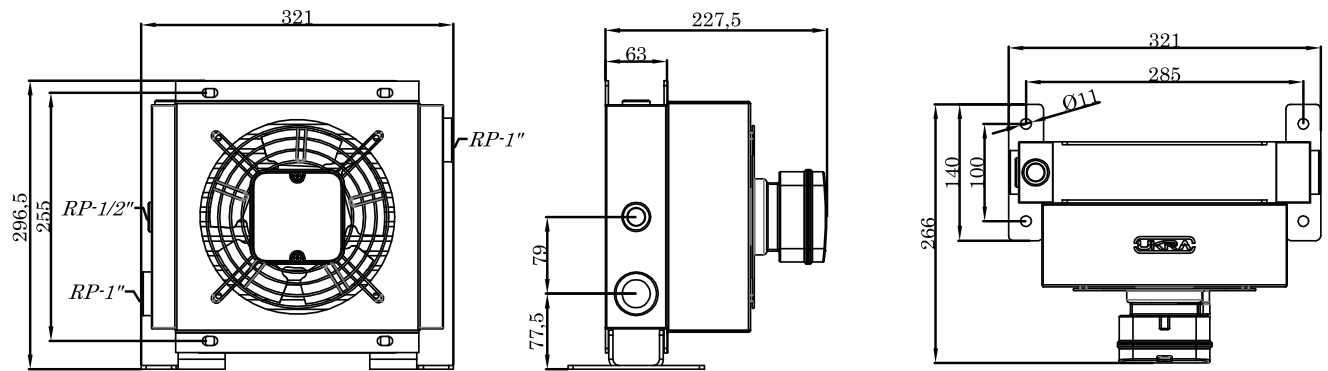
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**UMB-A14-12/24**

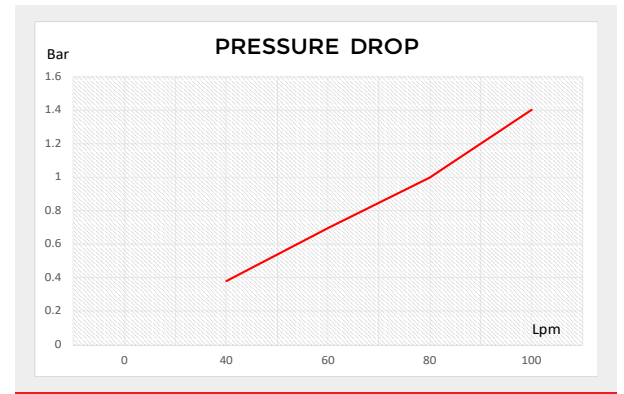
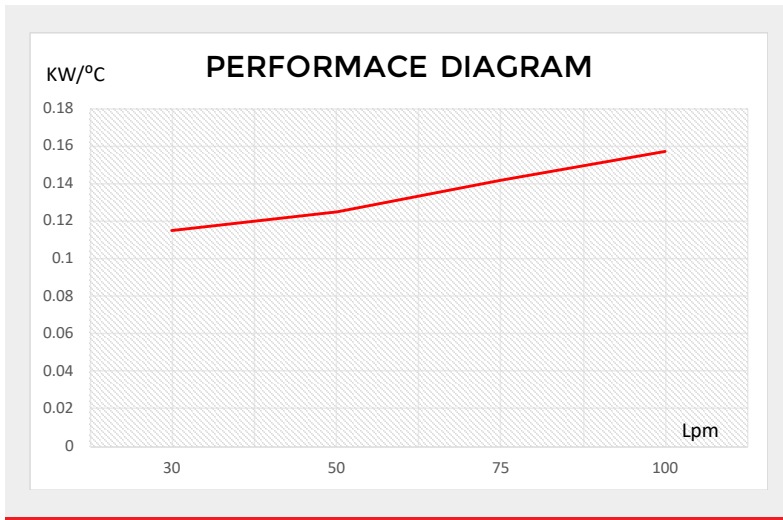


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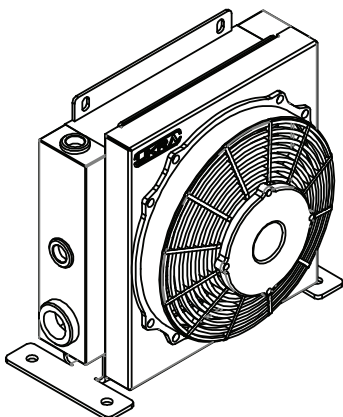


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A14 - 12/24	40 - 100	10	12/24 DC	130	1,060	ø225	3,400	68	1.7	6.3
UMB - A14 - 01	40 - 100	10	230 AC	63	680	ø200	2,750	44	1.7	6.5

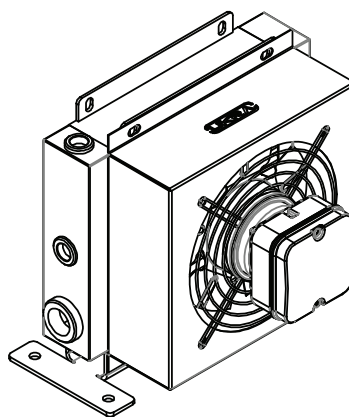


<b>cSt</b>	10	15	20	30	40	50	60	80	100	200	300
<b>Pd</b>	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

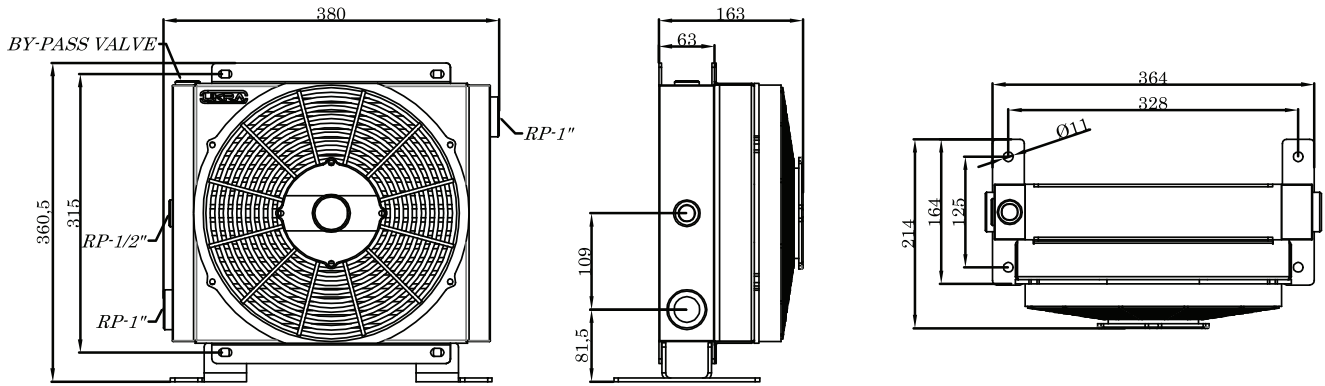
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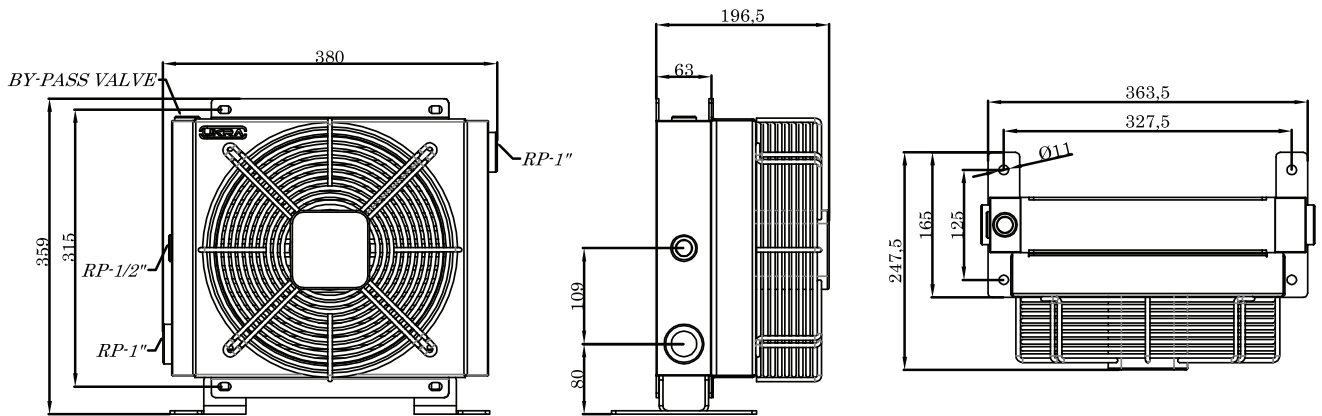
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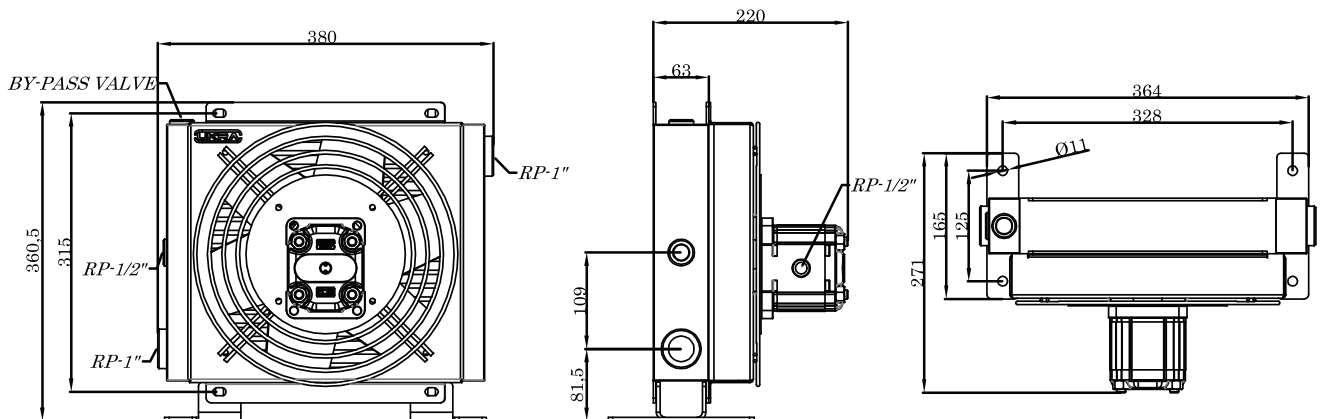
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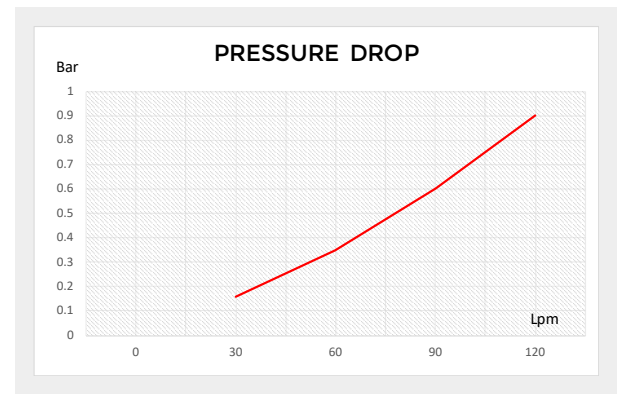
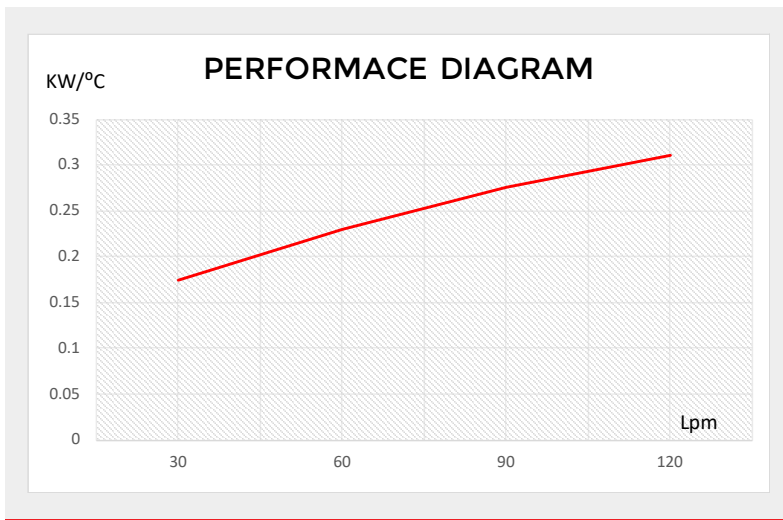
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**UMB-A15-03**

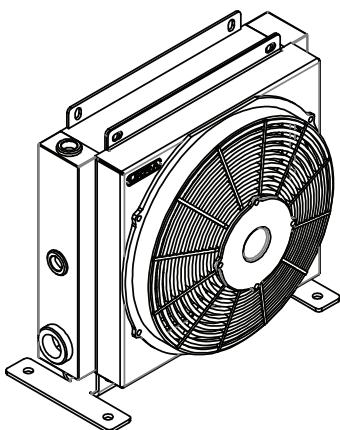


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A15 - 12/24	60 - 120	14	12/24 DC	130	1400	ø280	2640	68	2.3	8
UMB - A15 - 01/02	60 - 120	14	230/400 AC	50	1,000	ø250	1,380	54	2.3	10
UMB - A15 - 03	60 - 120	14	-	-	1,480	ø250	1,500	-	2.3	10

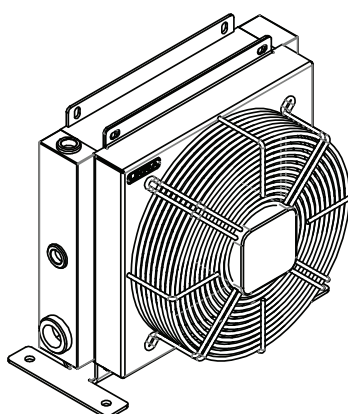


<b>cSt</b>	10	15	20	30	40	50	60	80	100	200	300
<b>Pd</b>	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

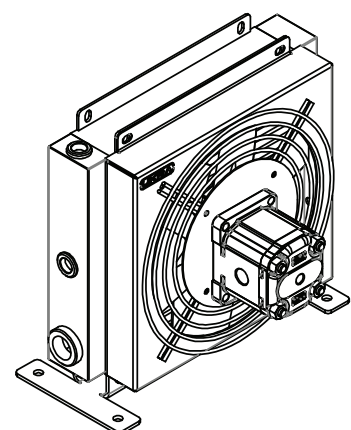
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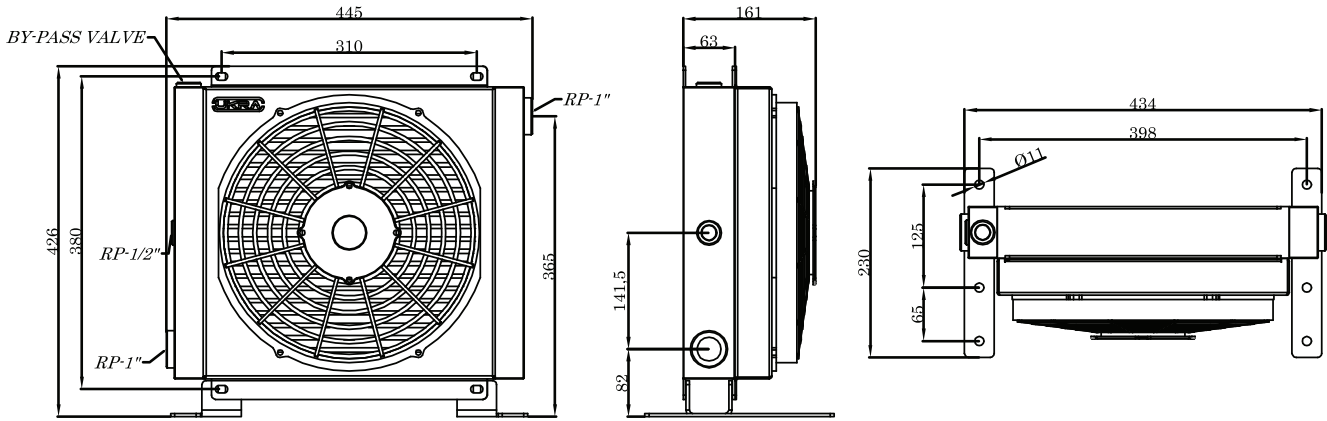
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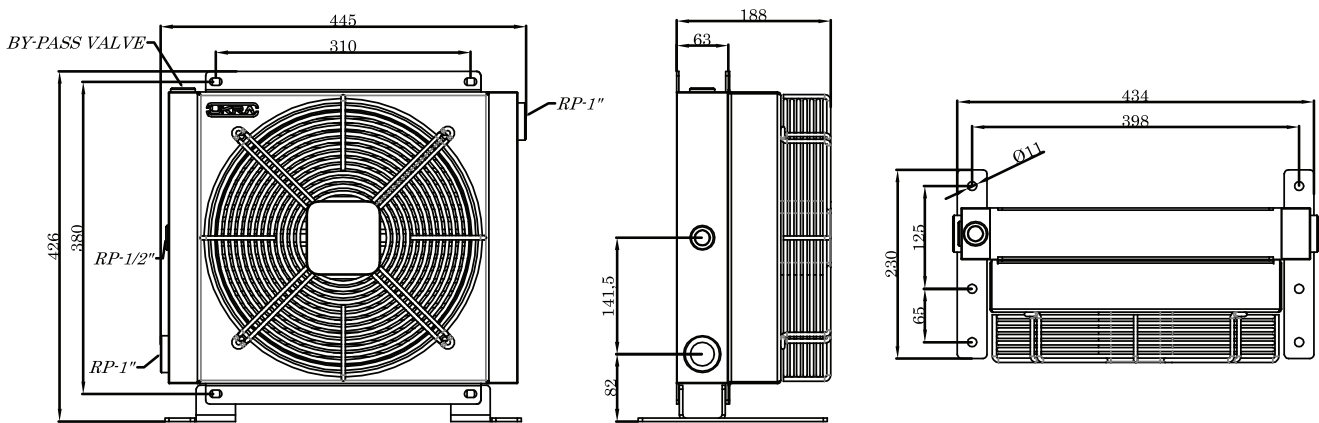
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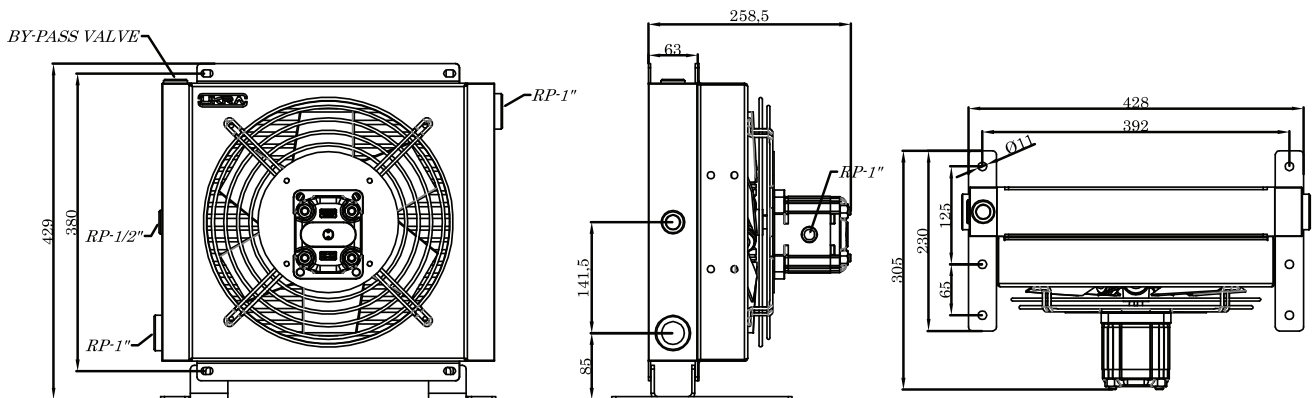
**UMB-A16-12/24**



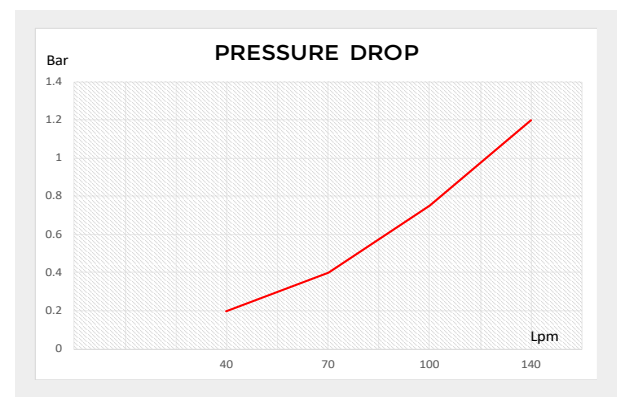
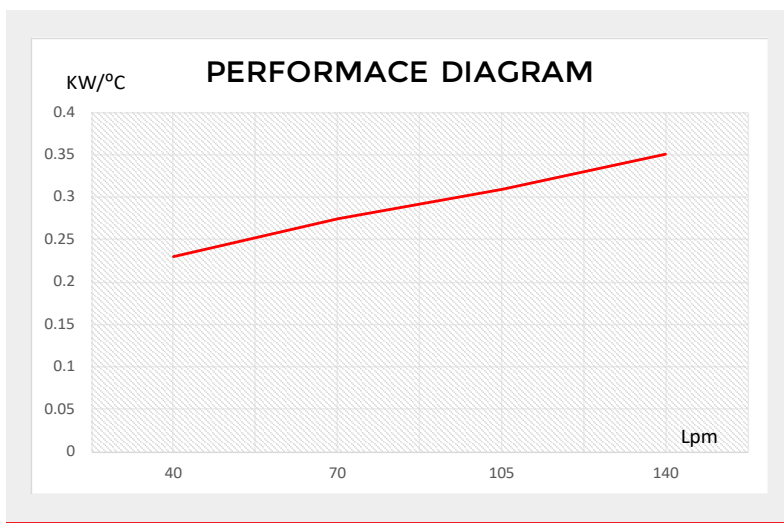
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**UMB-A16-03**

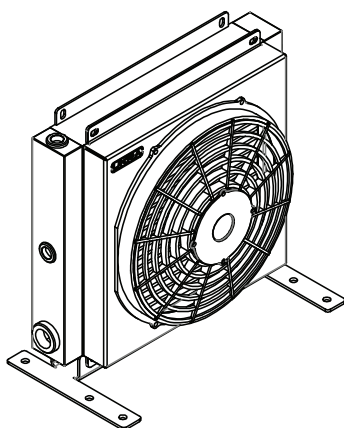


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A16 - 12/24	80 - 140	25	12/24 DC	130	1,710	ø305	2,570	68	4	12.5
UMB - A16 - 01/02	80 - 140	25	230/400 AC	72	1,700	ø300	1,380	54	4	14
UMB - A16 - 03	80 - 140	25	-	-	2,390	ø300	1,500	-	4	14

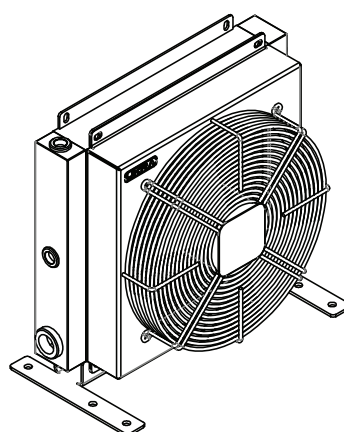


<b>cSt</b>	10	15	20	30	40	50	60	80	100	200	300
<b>Pd</b>	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

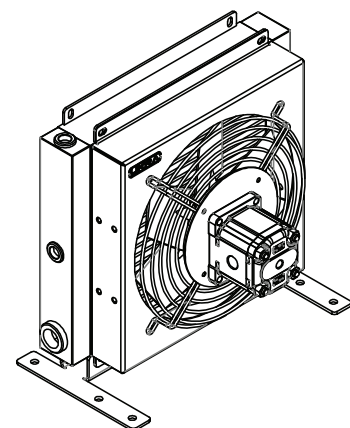
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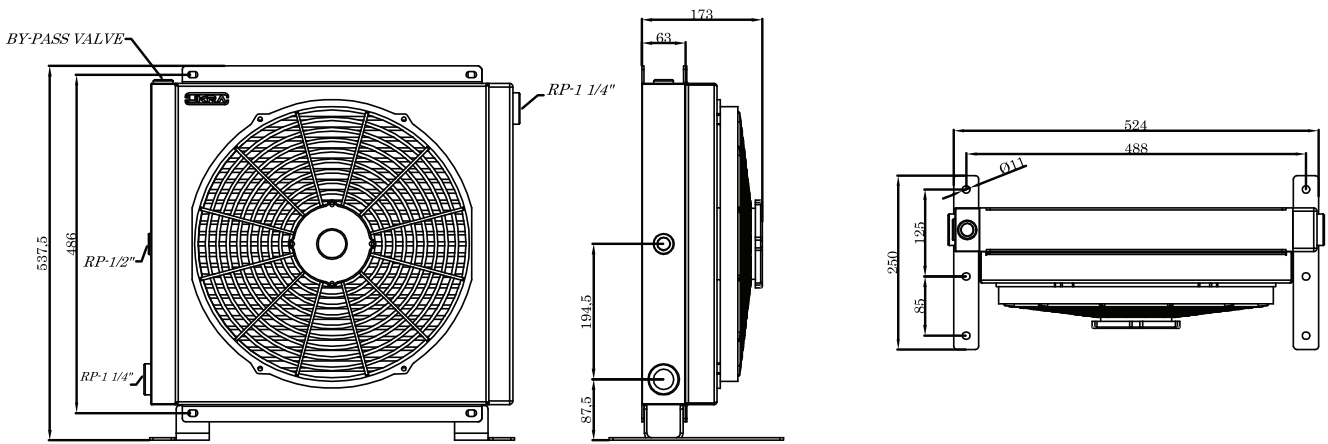
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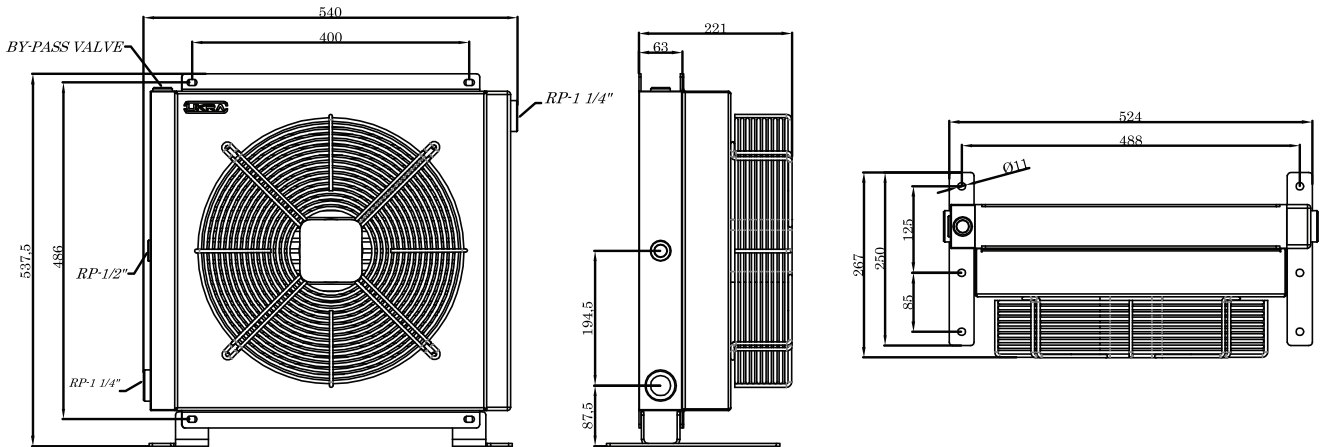
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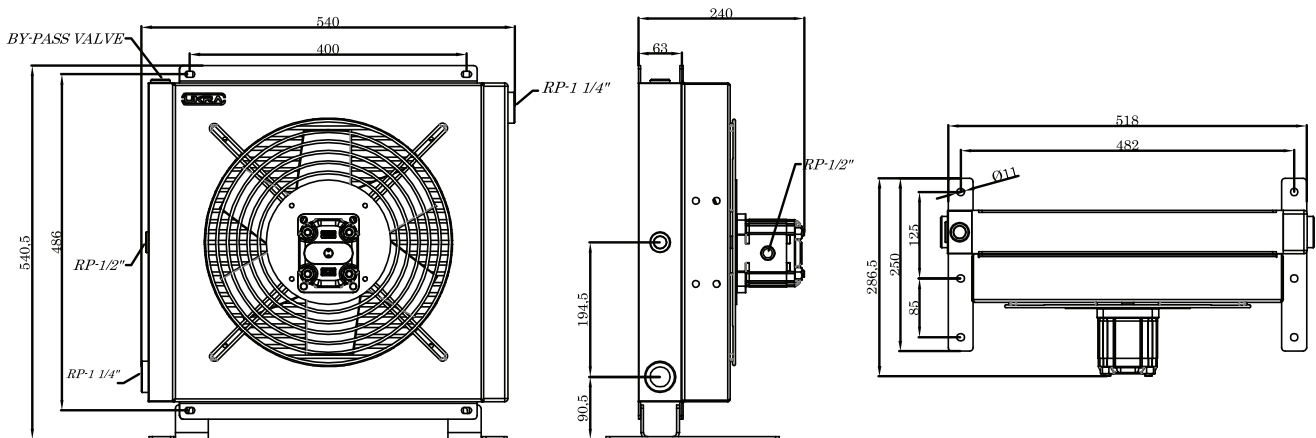
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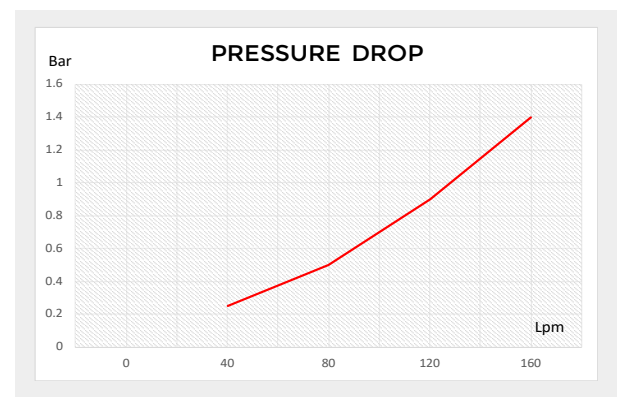
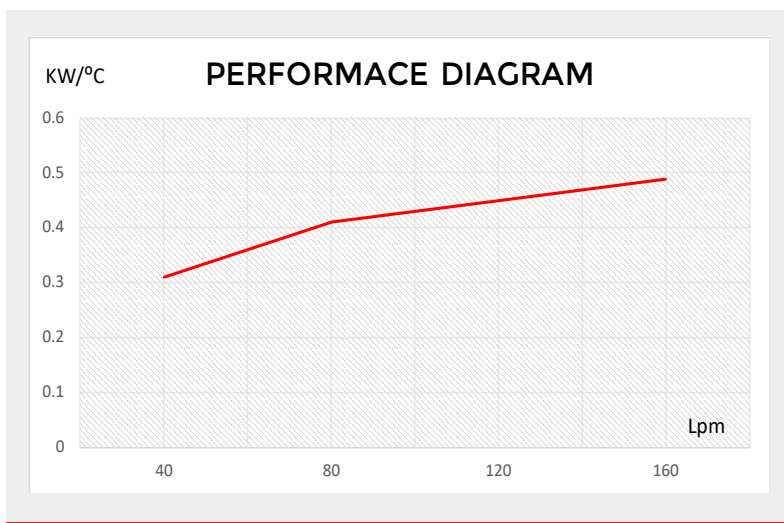
**UMB-A17-01/02**



**UMB-A17-03**



PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A17 - 12/24	100 - 160	30	12/24 DC	130	2,630	ø385	2,900	68	5.7	18
UMB - A17 - 01/02	100 - 160	30	230/400 AC	165	2,900	ø350	1,380	54	5.7	20
UMB - A17 - 03	100 - 160	30	-	-	4,080	ø300	1,500	-	5.7	20

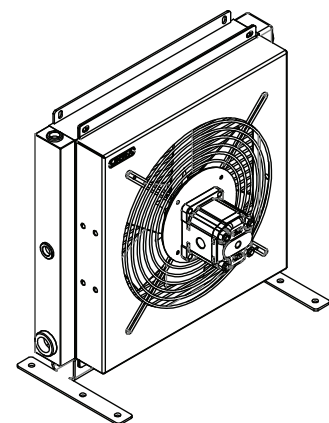
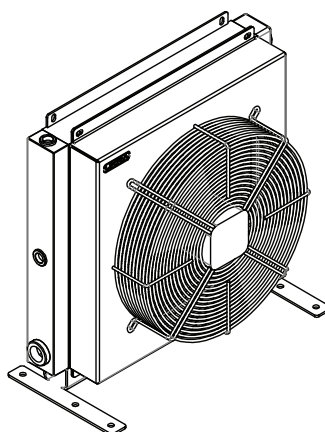
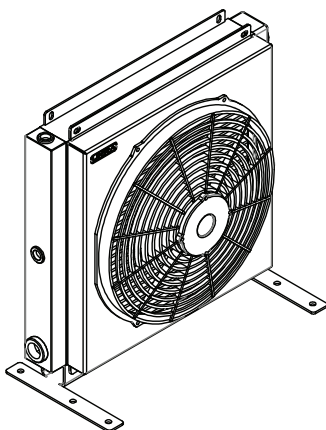


<b>cSt</b>	10	15	20	30	40	50	60	80	100	200	300
<b>Pd</b>	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

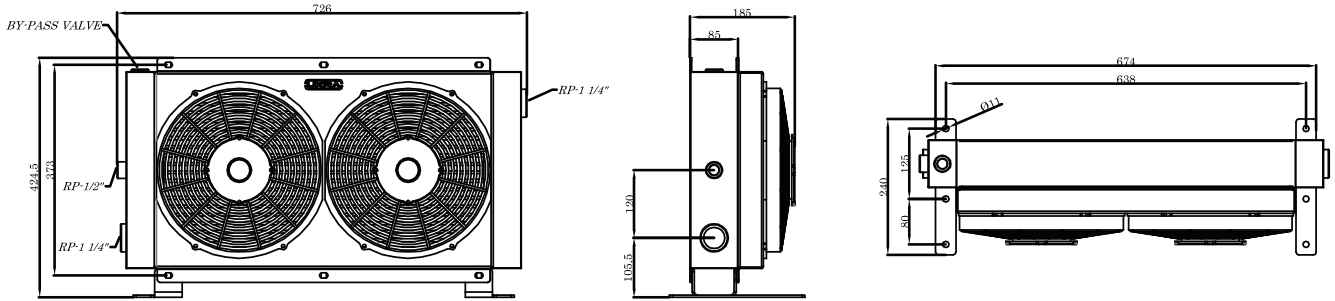
**UMB-A17-12/24**

**UMB-A17-01/02**

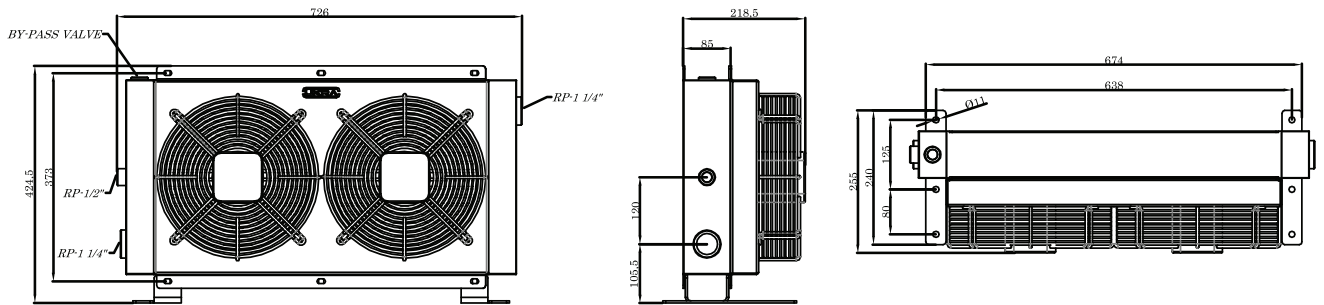
**UMB-A17-03**



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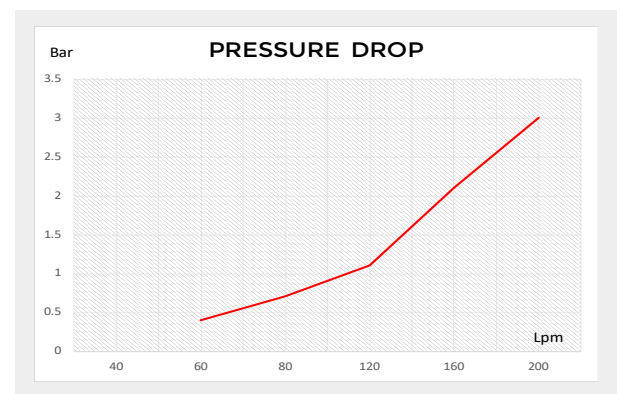
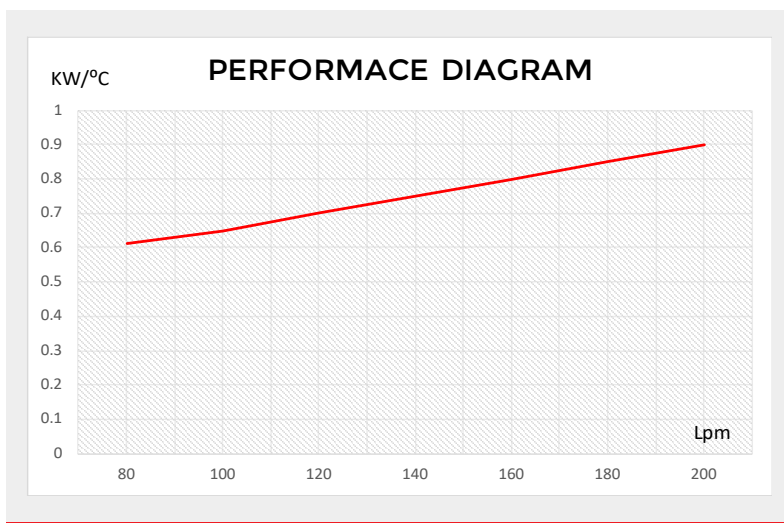


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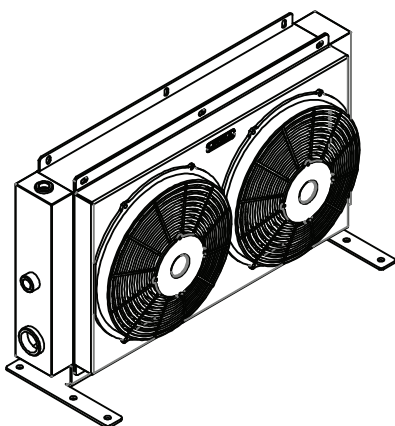


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A18 - 12/24	120 - 200	35	12/24 DC	260	2,800	ø280 x 2	2,680	68	7.5	23
UMB - A18 - 01/02	120 - 200	35	230/400 AC	100	2,000	ø250x2	1,380	54	7.5	25

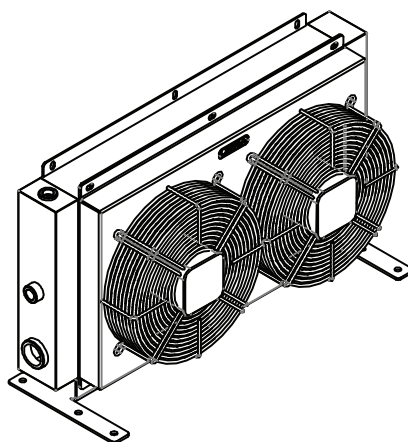


<b>cSt</b>	10	15	20	30	40	50	60	80	100	200	300
<b>Pd</b>	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

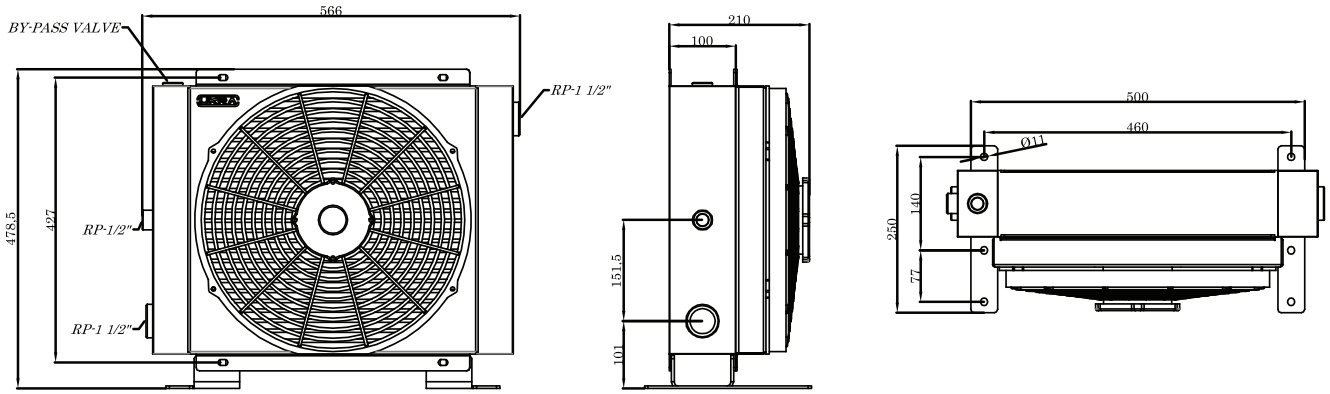
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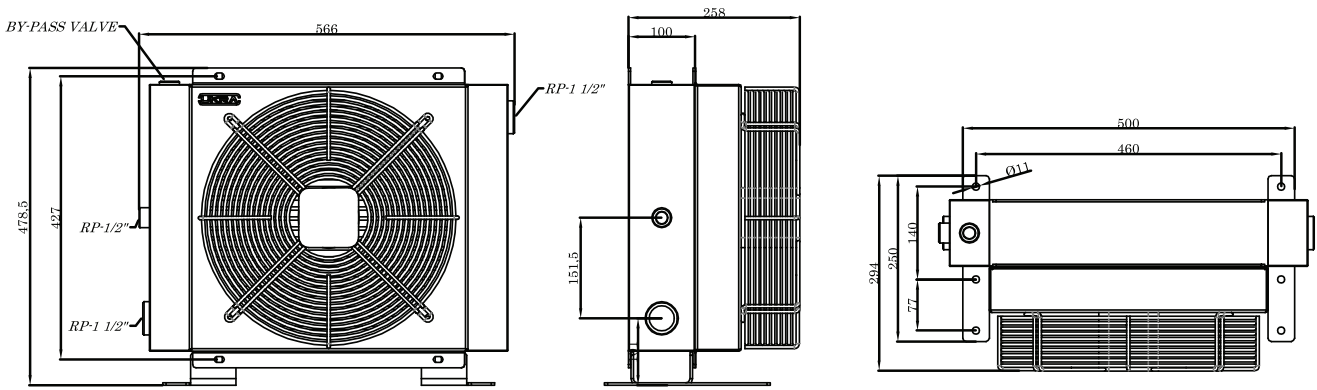
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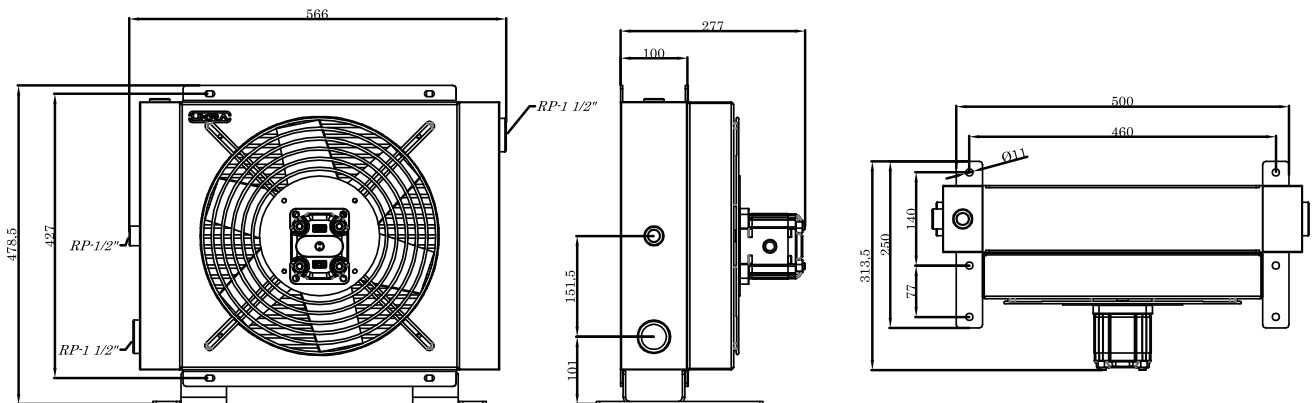
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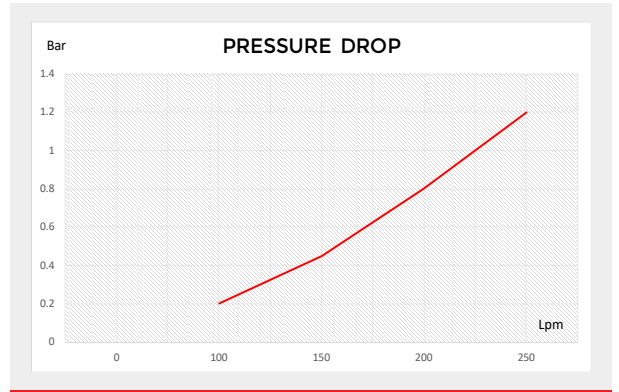
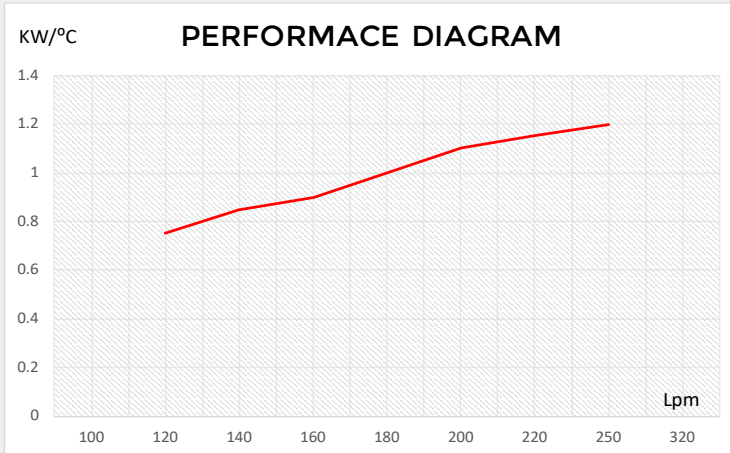
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### UMB-A19-03

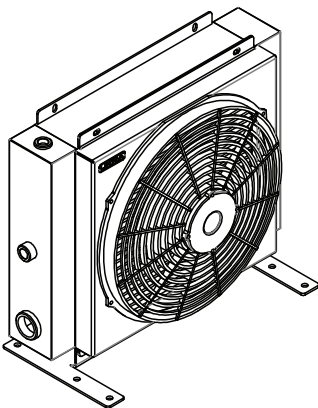


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A19 - 12/24	150 - 250	40	12/24 DC	130	2,630	ø385	2,900	68	9	26
UMB - A19 - 01/02	150 - 250	40	230/400 AC	165	2,900	ø350	1,380	54	9	28
UMB - A19 - 03	150 - 250	40	-	-	4,080	ø350	1,500	-	9	28

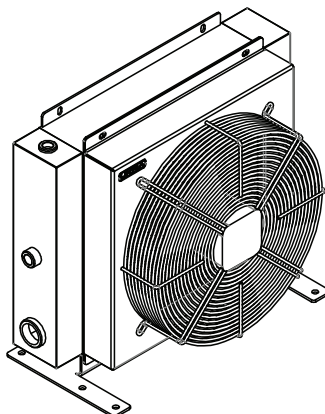


cSt	10	15	20	30	40	50	60	80	100	200	300
Pd	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

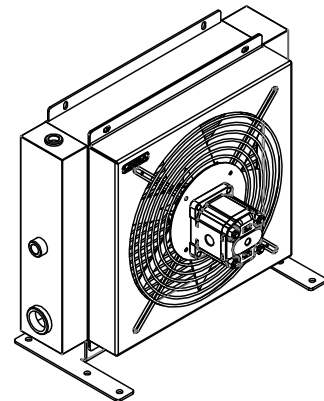
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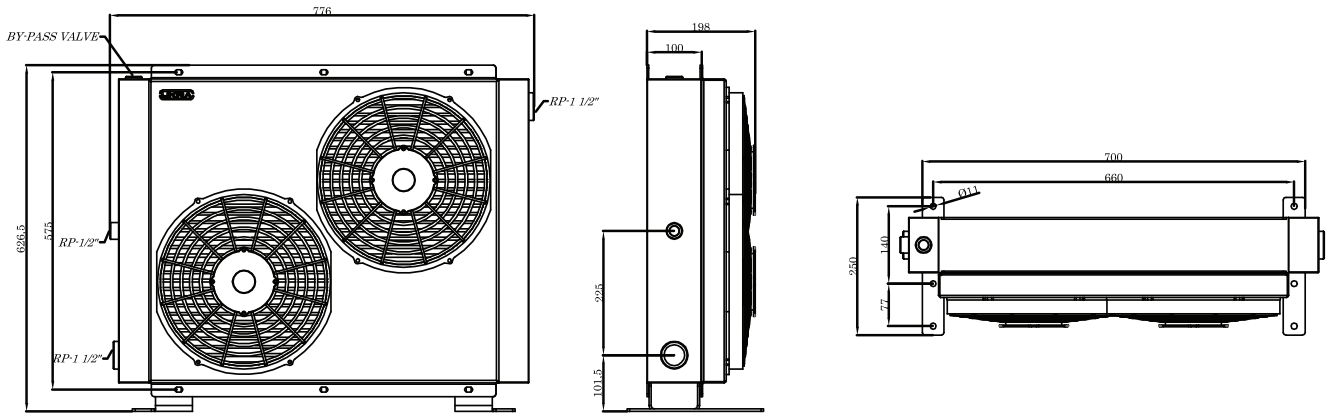
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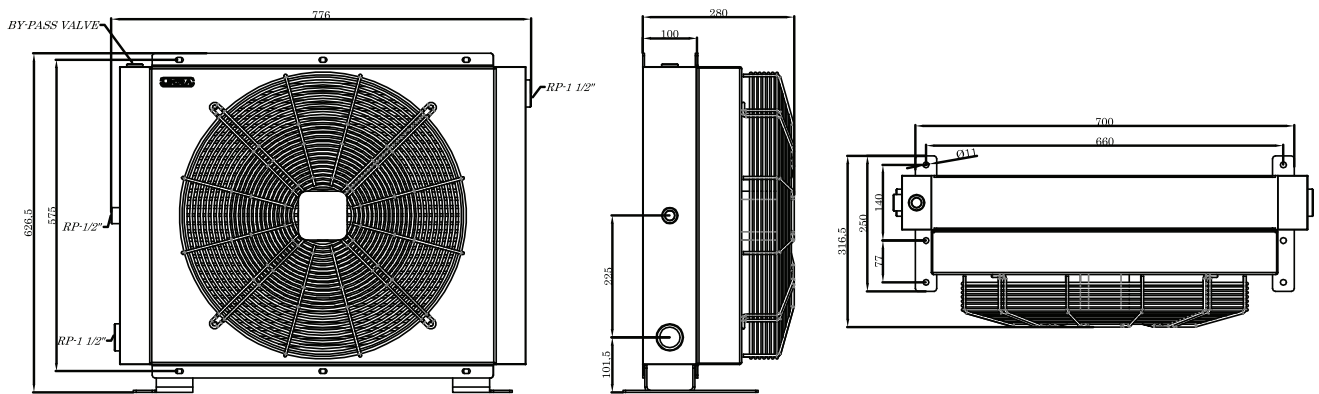
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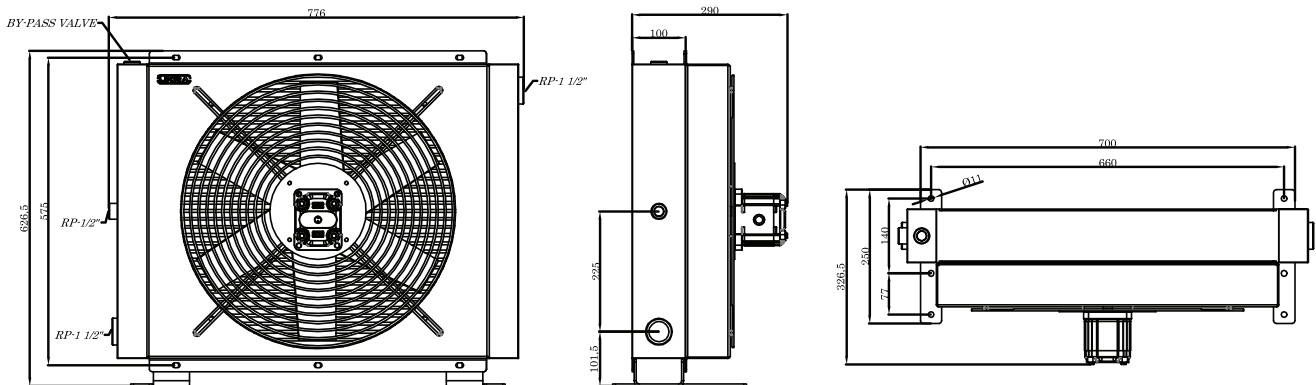
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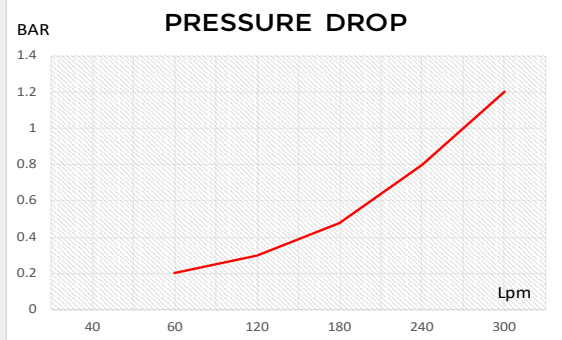
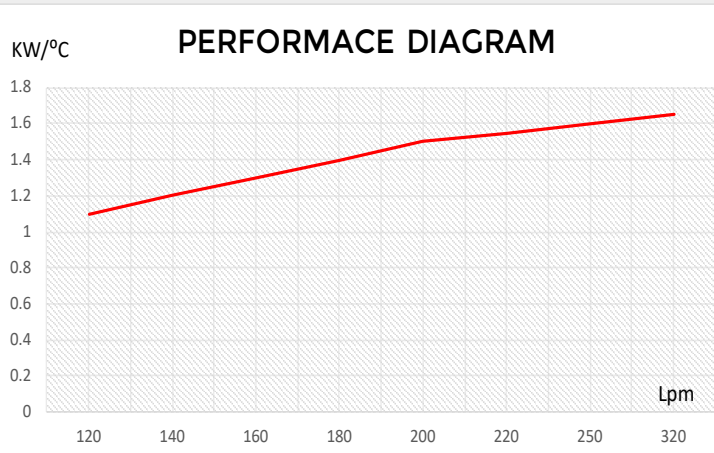
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### UMB-A20-03

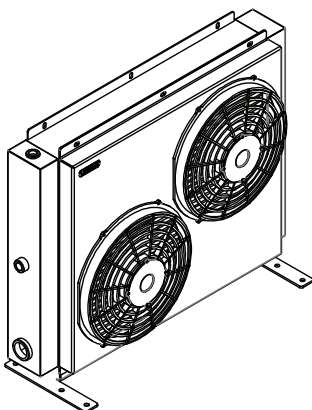


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m³/h	mm	RPM	IP	L	Kg
UMB - A20 - 12/24	180 - 300	50	12/24 DC	260	3,420	ø305 x 2	2,570	68	14	39
UMB - A20 - 01/02	180 - 300	50	230/400 AC	450	6,900	ø500	1,320	54	14	46
UMB - A20 - 03	180 - 300	50	-	-	4,080	ø350	1,500	-	14	46

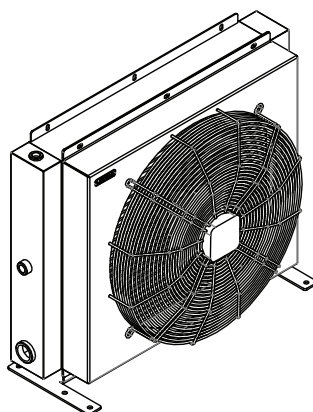


<b>cSt</b>	10	15	20	30	40	50	60	80	100	200	300
<b>Pd</b>	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

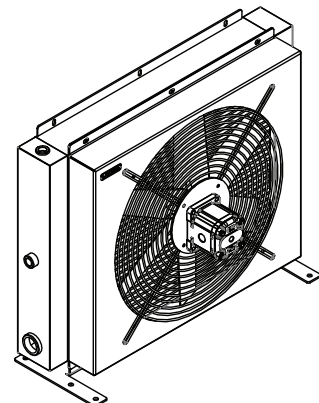
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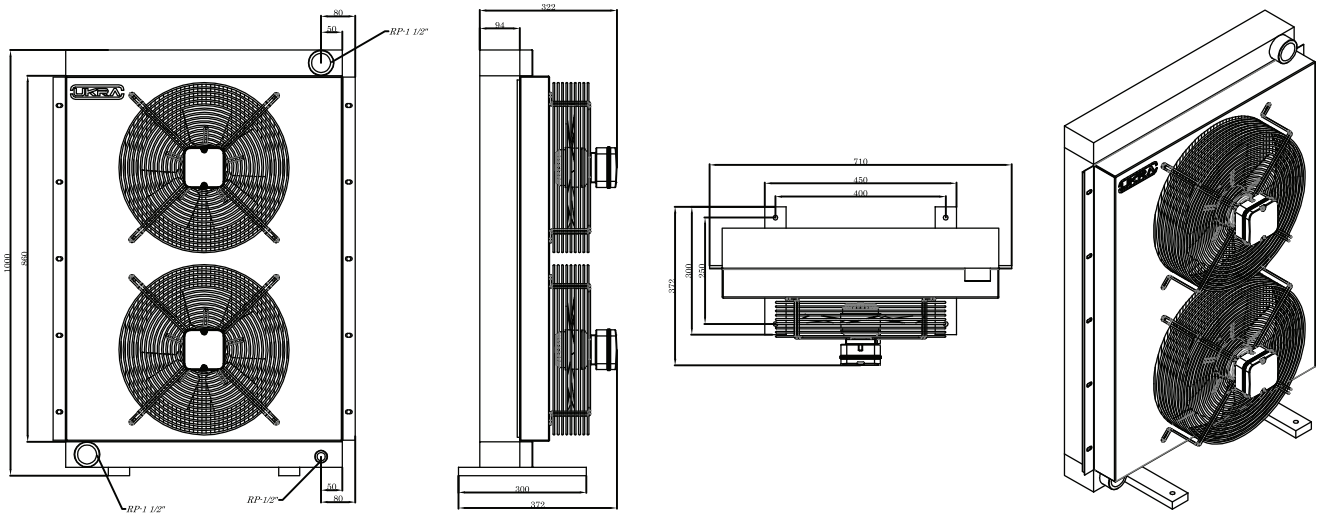
**UMB-A20-01/02**



**UMB-A20-03**

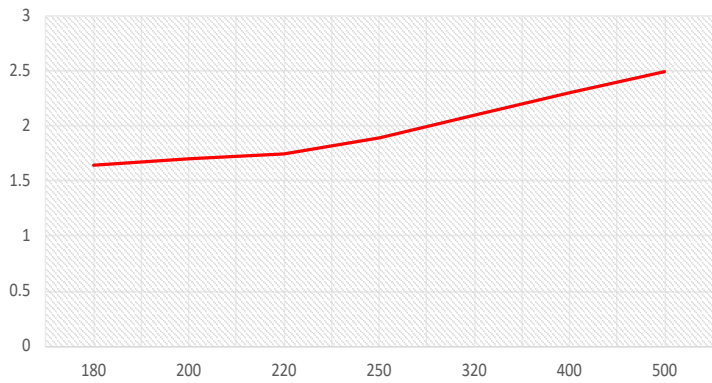


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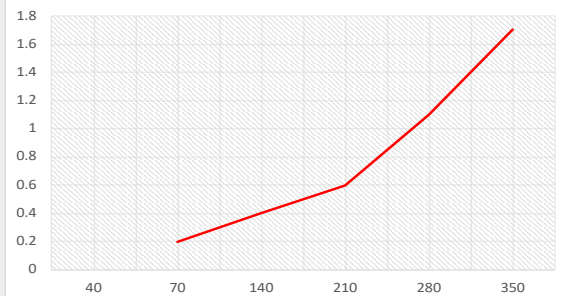


PRODUCT	OIL FLOW MIN-MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	W	m <sup>3</sup> /h	mm	RPM	IP	L	Kg
UMB - A21 - 01	250 - 500	75	230/400 AC	490	8,000	ø400 x 2	1,400	54	18	67

**PERFORMANCE DIAGRAM**



**PRESSURE DROP**



<b>cSt</b>	10	15	20	30	40	50	60	80	100	200	300
<b>Pd</b>	0.5	0.65	0.77	1	1.2	1.4	1.6	1.9	2.1	3.3	4.3

# UPM SERIE





## INFORMING

Some of the mechanical energy turns into heat in hydraulic systems and the heat in hydraulic systems increases. A heat exchanger is to be set up in order to dissipate the heat generated in the system. Actually, the aim is to reach thermal equilibrium.

In some systems, it is not possible to connect the heat exchanger directly to the main circuit due to high oil flow, high operating pressure and irregular pressure changes.

Therefore, UKRA has newly developed an offline-cooler. UPM series coolers suck the oil from the tank, cool it and send it back to the tank. The system consists of a gear pump, an electric motor, a fan and a cooler.

## BİLGİLENDİRME

Hidrolik sistemlerde mekanik enerjinin bir kısmı ısıya dönüşür ve hidrolik sistemde ki yağ sıcaklığı artar. Üretilen ısıyı dağıtmak için sisteme bir ısı eşanjörü kurulmalıdır. Amaç ısı dengeye ulaşmaktır.

Bazı sistemlerde yüksek yağ debisi, yüksek çalışma basıncı ve düzensiz basınç değişimleri nedeni ile ısı değiştiriciyi doğrudan ana devreye bağlamak mümkün değildir.

UKRA bunun için kapalı çevrim bir soğutucu geliştirdi. UPM serisi soğutucular, yağı depodan emip, soğutup depoya geri gönderiyor. Sistem, Dişli pompa, elektrik motoru, fan ve soğutucudan oluşmaktadır.

### RANGE OF APPLICATION

- Lubrication Systems
- Forging and Stamping Presses
- Gearboxes
- Hydraulic Lifts
- Used in various areas.

### FLUIDS THAT CAN BE COOLED

- Hydraulic oil
- Engine oil
- Central lubricating oil

### TECHNICAL FEATURES

- COOLER: High strength aluminum.
- FAN: 220-380V IP66 Protection class.
- FAN HOOD: Steel
- OPERATING PRESSURE: Max. 6 Bar
- OIL FLOW: 55 l / min
- OPERATING TEMPERATURE: Max. 120 °C

### UYGULAMA ALANLARI

- Yağlama Sistemleri
- Dövme ve Şekillendirme Presleri
- Şanzıman dişli kutuları
- Hidrolik Asansörler
- Vb. Birçok alanda kullanılabilir.

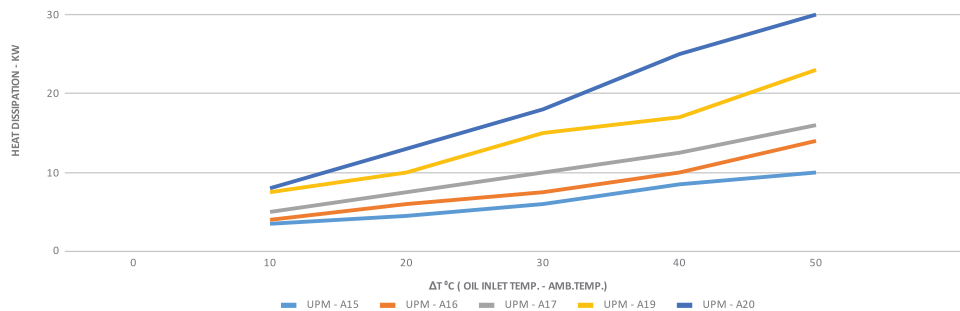
### SOĞUTULABİLECEK AKIŞKANLAR

- Hidrolik Yağ
- Motor yağ
- Merkezi yağlama yağı

### TEKNİK ÖZELLİKLER

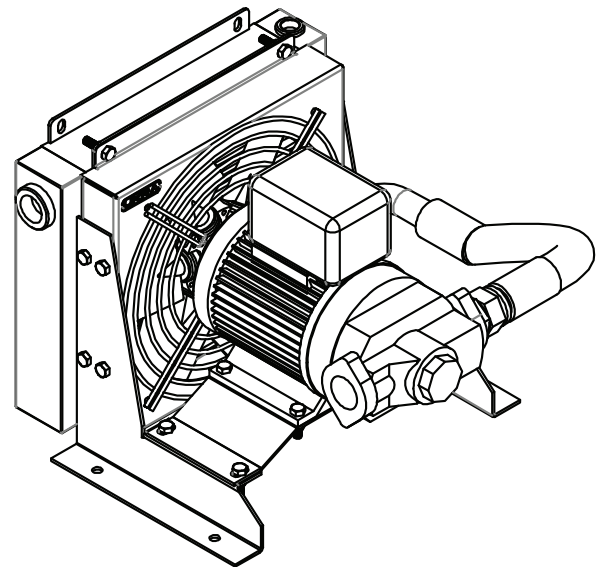
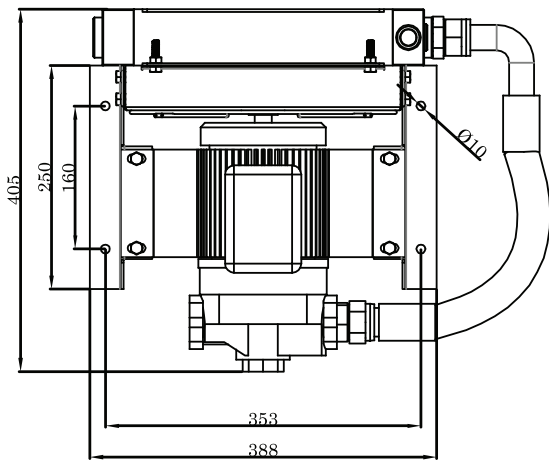
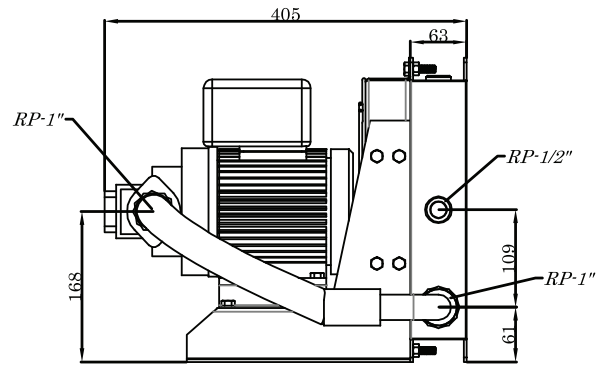
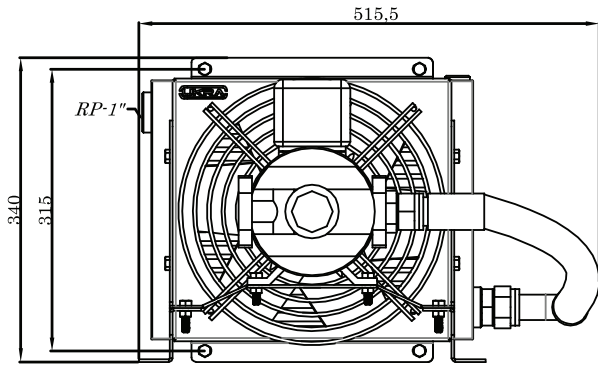
- SOĞUTUCU: Yüksek dayanımlı Alüminyum.
- FAN: 220-380V IP66 Koruma sınıfı.
- FAN DAVLUMBAZI: Çelik
- ÇALIŞMA BASINCI: Mak. 6 Bar
- YAĞ AKIŞ DEBİSİ: 55 l/dk
- ÇALIŞMA SICAKLIĞI: Mak. 120 °C

UMB-16 PERFORMANCE DIAGRAM



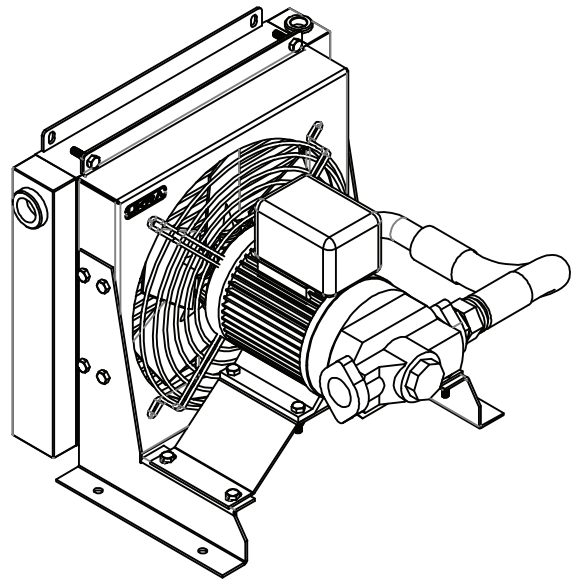
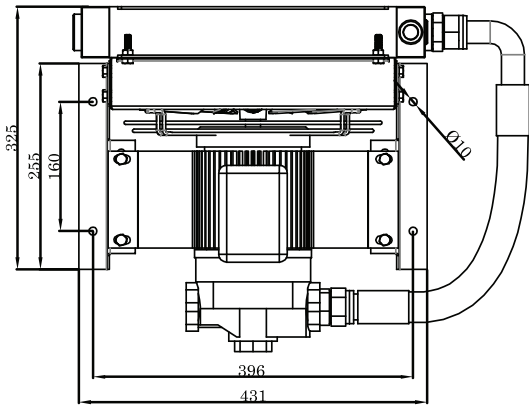
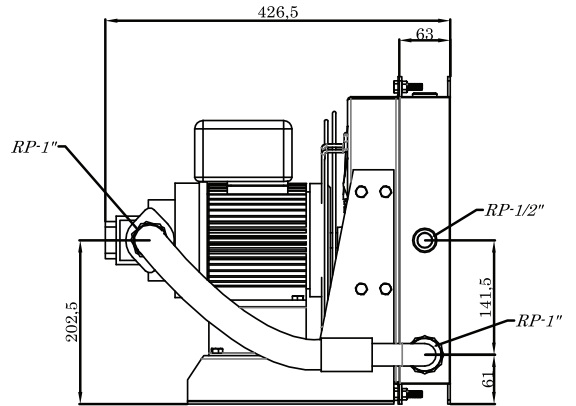
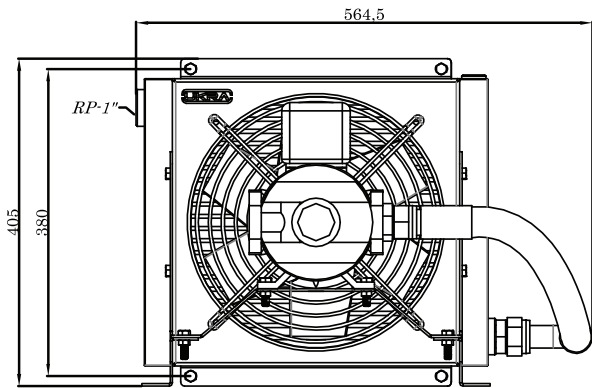


**UPM-A15-01/02**



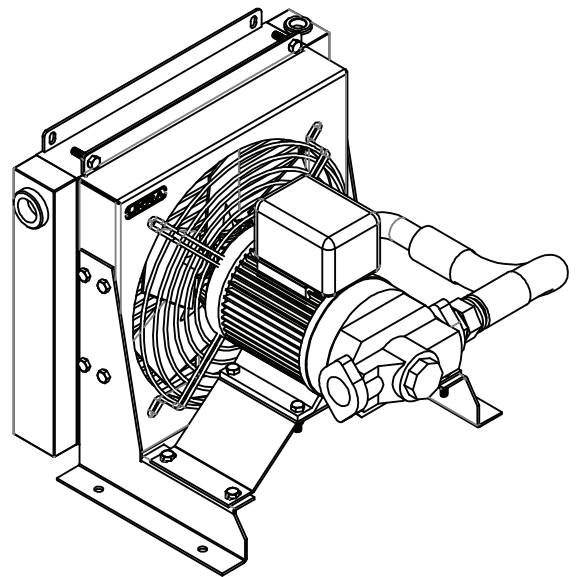
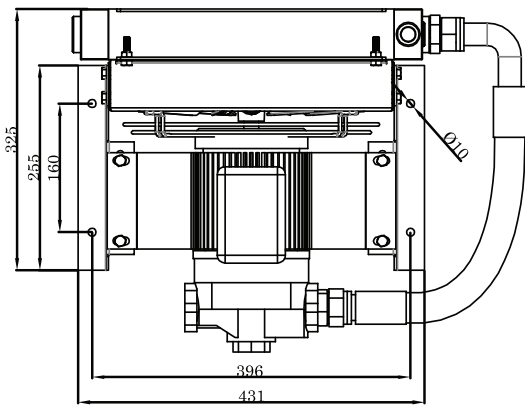
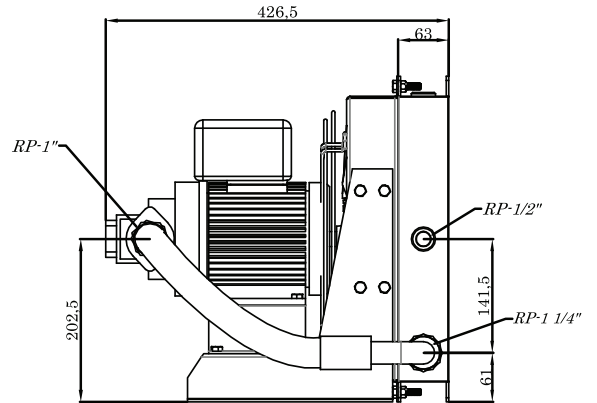
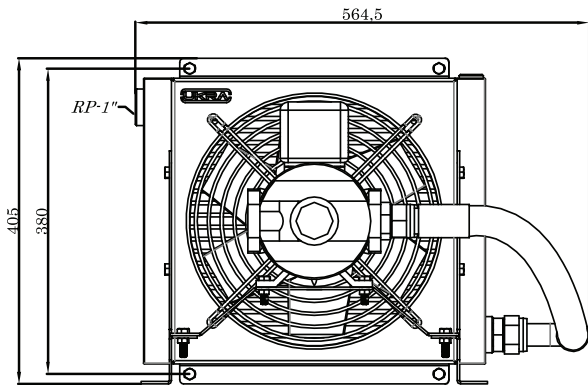
PRODUCT	OIL FLOW	MAX COOLING AT ΔT=40°C	VOLTAGE	POWER	AIR FLOW	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	KW	m³/h	mm	RPM	IP	L	Kg
UPM - A15	55	8,5	230 - 400	1,5	1.500	250	1.500	55	2,3	24

**UPM-A16-01/02**



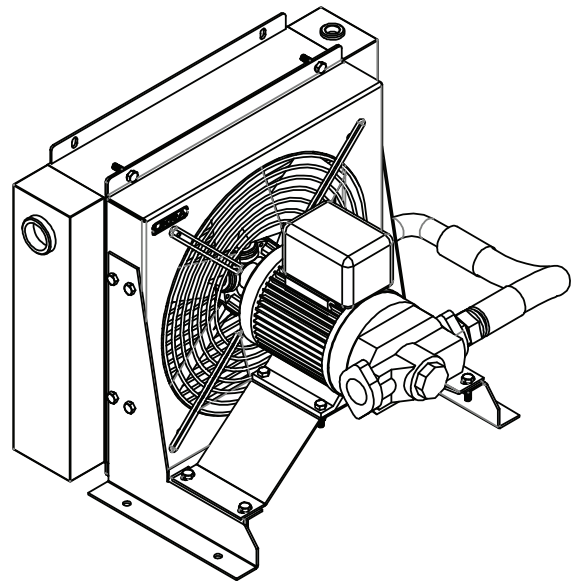
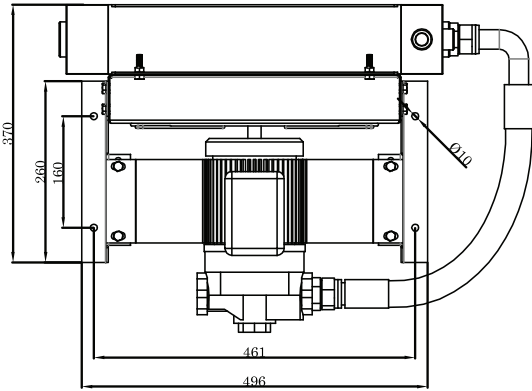
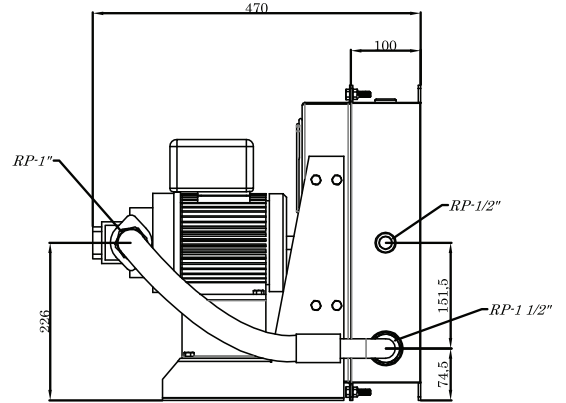
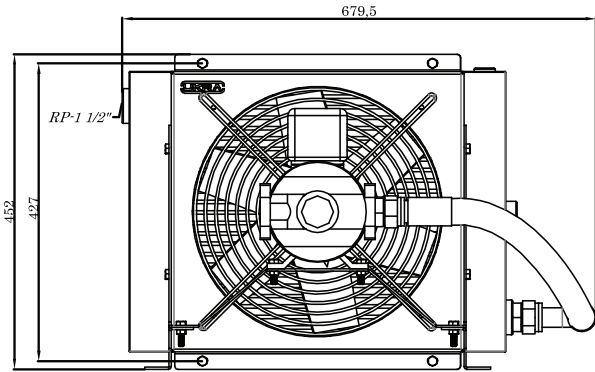
PRODUCT	OIL FLOW	MAX COOLING AT ΔT=40°C	VOLTAGE	POWER	AIR FLOW	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	KW	m³/h	mm	RPM	IP	L	Kg
UPM - A16	55	10	230 - 400	1,5	2.390	300	1.500	55	4	28

**UPM-A17-01/02**



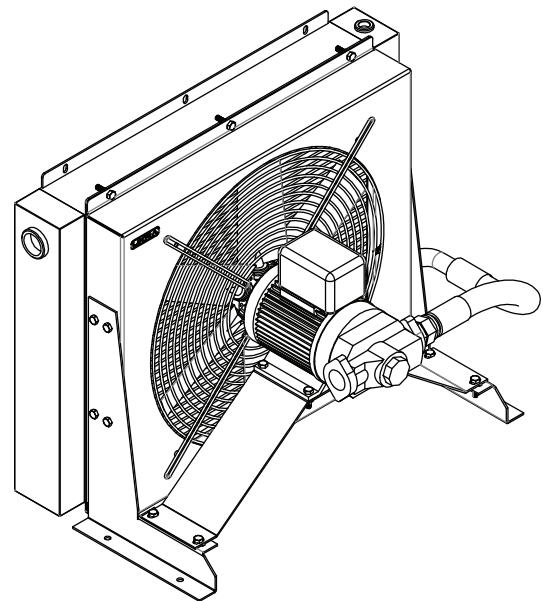
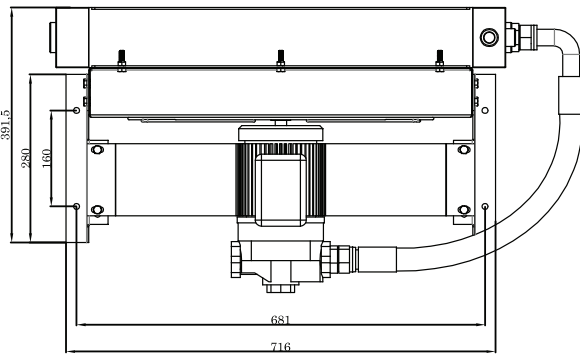
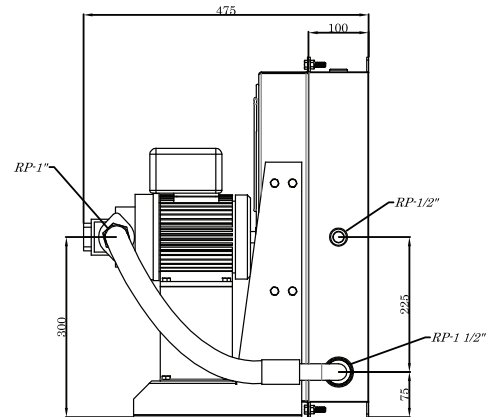
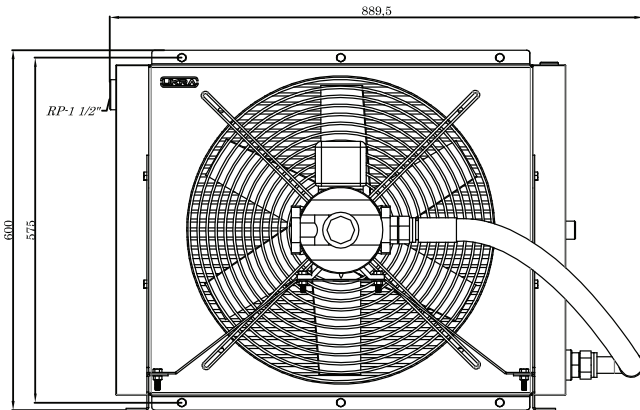
PRODUCT	OIL FLOW	MAX COOLING AT ΔT=40°C	VOLTAGE	POWER	AIR FLOW	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	KW	m <sup>3</sup> /h	mm	RPM	IP	L	Kg
UPM - A17	55	12,5	230 - 400	1,5	4.080	350	1.500	55	5,7	34

**UPM-A19-01/02**

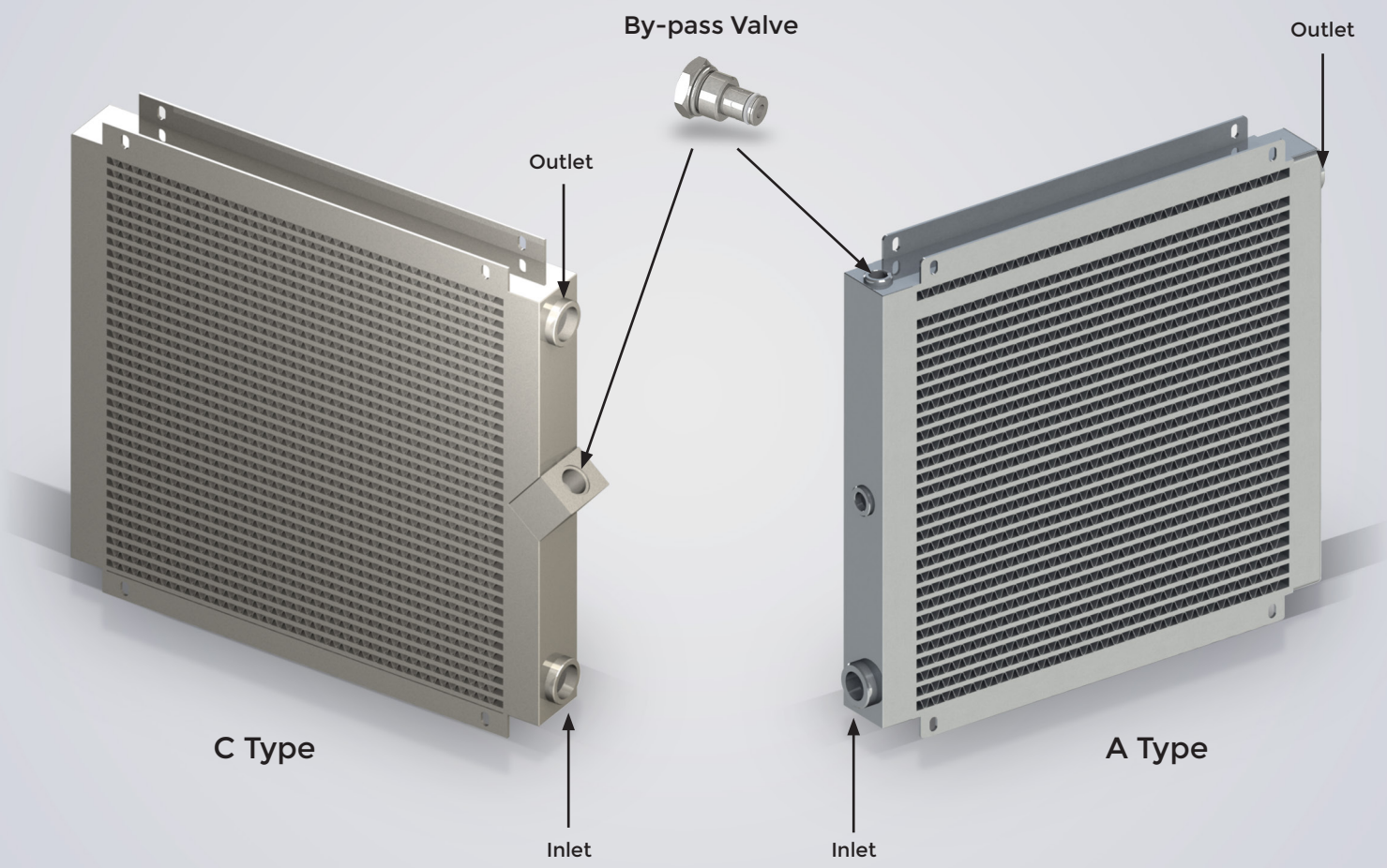


PRODUCT	OIL FLOW	MAX COOLING AT ΔT=40°C	VOLTAGE	POWER	AIR FLOW	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	KW	m <sup>3</sup> /h	mm	RPM	IP	L	Kg
UPM - A19	55	17	230 - 400	1,5	4.080	350	1.500	55	9	42

**UPM-A20-1/02**



PRODUCT	OIL FLOW	MAX COOLING AT $\Delta T=40^{\circ}C$	VOLTAGE	POWER	AIR FLOW	$\varnothing$ FAN	FAN SPEED	ELECTRIC PROTECTION	CAPACITY	WEIGHT
	L/min	KW	V	KW	m <sup>3</sup> /h	mm	RPM	IP	L	Kg
UPM - A20	55	25	230 - 400	1,5	7.200	500	1.500	55	14	60



By-pass Valve

Outlet

Outlet

C Type

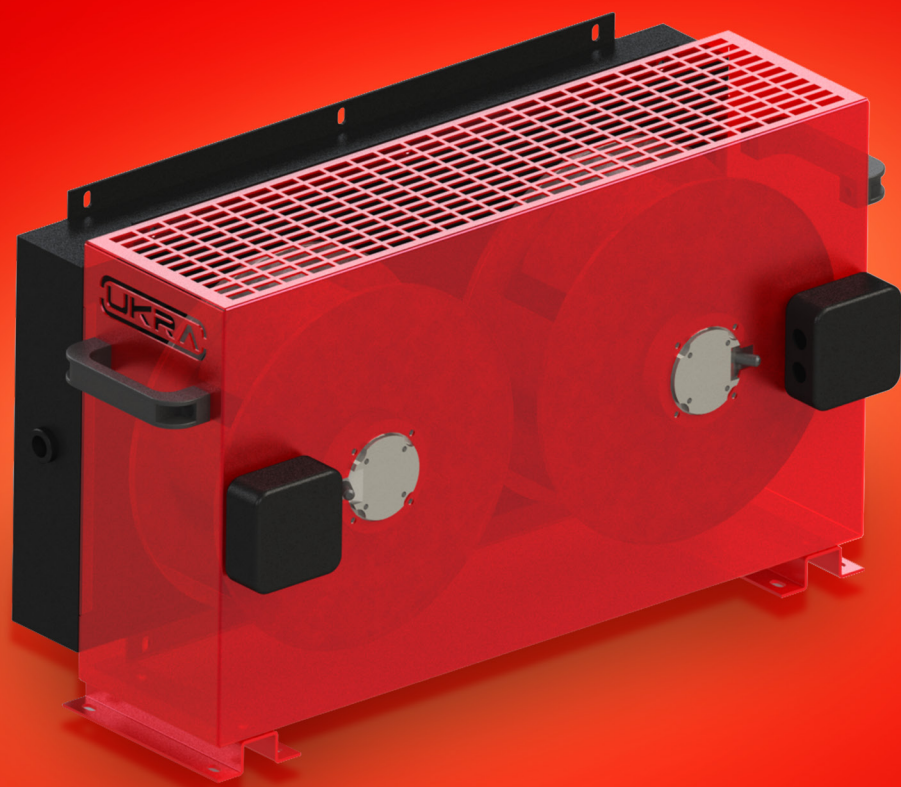
Inlet

A Type

Inlet



# USH SERIE



## INFORMING

Some of the mechanical energy turns into heat in hydraulic systems and the heat in hydraulic systems increases. A heat exchanger is to be set up in order to dissipate the heat generated in the system. Actually, the aim is to reach thermal equilibrium.

UKRA USH SERIES hydraulic standard coolers are designed to work silently and with high performance. C series double pass aluminium coolers are produced in UKRA production facilities. The oil gets circulated for a longer period of time in the cooler; therefore, it provides maximum heat transfer within a smaller cooler.

## BİLGİLENDİRME

Hidrolik sistemlerde mekanik enerjinin bir kısmı ısıya dönüşür ve hidrolik sistemde ki yağ sıcaklığı artar. Üretilen ısıyı dağıtmak için sisteme bir ısı eşanjörü kurulmalıdır. Amaç ısıl dengeye ulaşmaktır.

UKRA USH SERİSİ Hidrolik paket soğutucular, Sessiz ve yüksek performansla çalışmak için tasarlanmıştır. C serisi çift geçişli alüminyum soğutucular üretilmektedir. Yağ soğutucu içerisinde daha uzun süre dolaşarak minimal ölçülerde maksimum ısı transferi sağlanır.

### RANGE OF APPLICATION

- Hydraulic Power Units
- Agriculture and Forestry Vehicles
- Engineering and Mining Vehicles
- Loading and Transport Vehicles

### FLUIDS THAT CAN BE COOLED

- Hydraulic oil
- Engine oil
- Water or water-glycol mixture

### TECHNICAL FEATURES

- COOLER: High strength aluminum.
- FAN: Radial 230V
- FAN HOOD: Steel
- OPERATING PRESSURE: Max. 15 Bar
- OPERATING TEMPERATURE: Max. 120 °C

### ACCESSORIES

- By-Pass valve
- Carrying handles
- Thermal switch
- Vibration absorbing montage damper

### UYGULAMA ALANLARI

- Hidrolik Güç Üniteleri
- Tarım ve Ormanlık Makinalar
- İş ve Maden Makinaları
- Yükleme ve Taşıma Makinaları
- Vb. Birçok alanda kullanılabilir.

### SOĞUTULABİLECEK AKIŞKANLAR

- Hidrolik yağ
- Motor yağ
- Su veya Su-Glikol karışımı

### TEKNİK ÖZELLİKLER

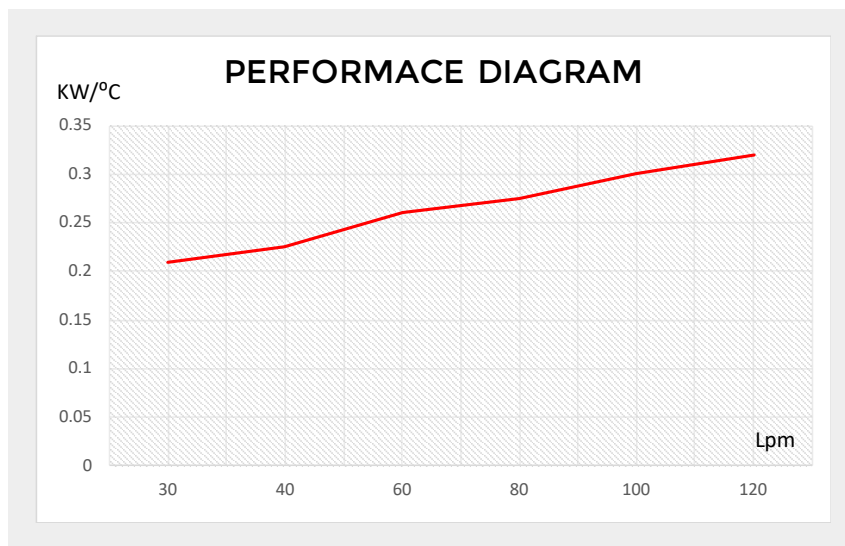
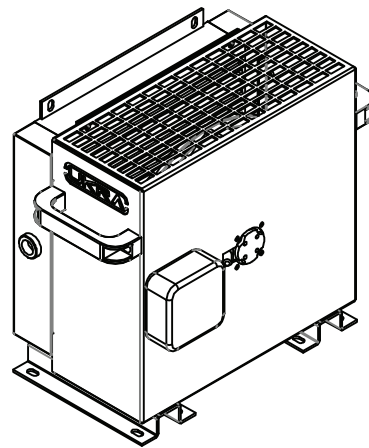
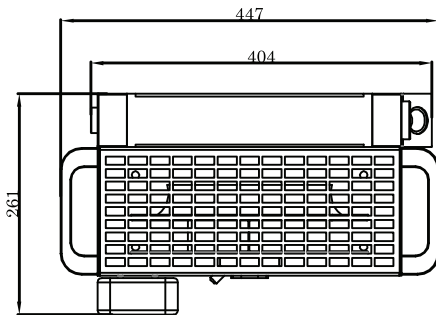
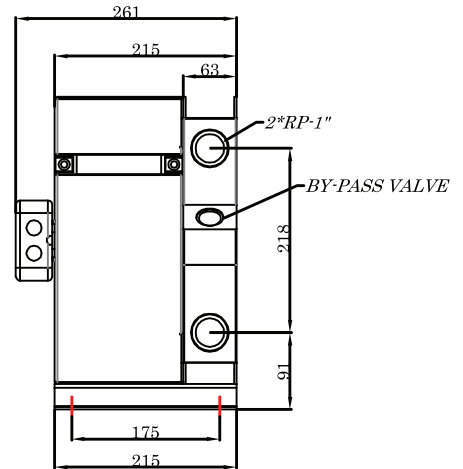
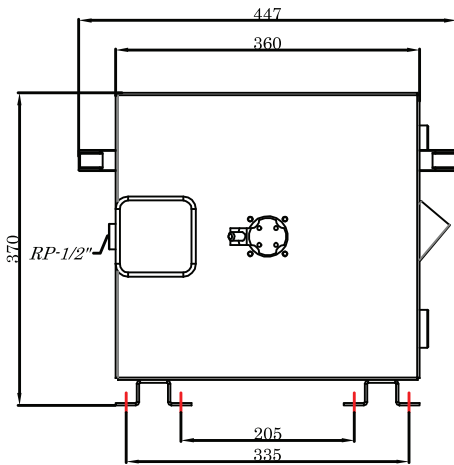
- SOĞUTUCU: Yüksek dayanımlı Alüminyum.
- FAN: Radyal 230V
- FAN DAVLUMBAZI: Çelik
- ÇALIŞMA BASINCI: Mak. 15 Bar
- ÇALIŞMA SICAKLIĞI: Mak. 120 °C

### AKSESUARLAR

- By-Pass valfi
- Taşıma Kulpları
- Termal anahtar
- Titreşim emici montaj damper

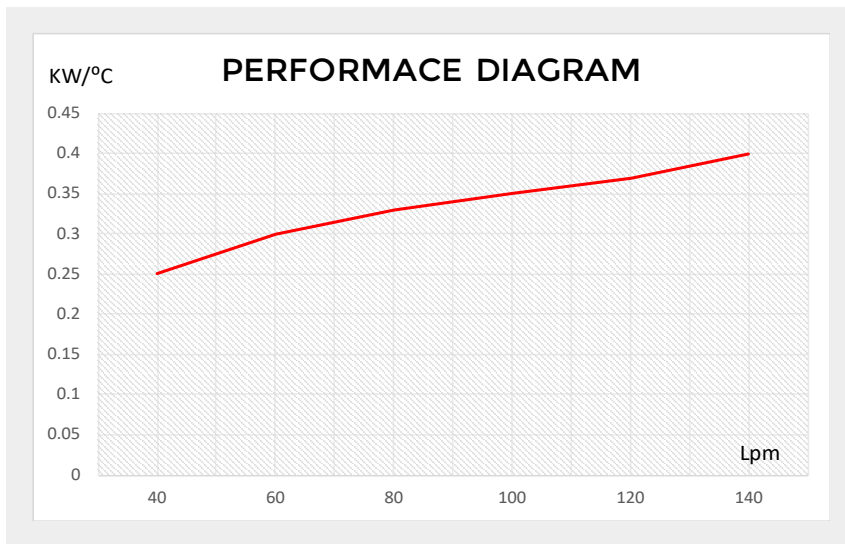
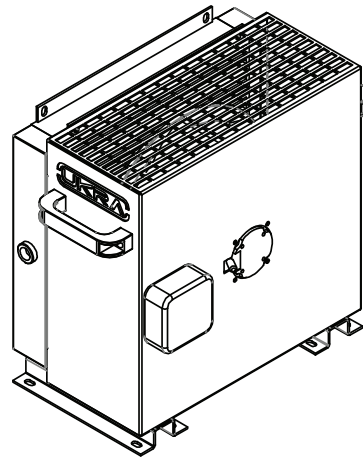
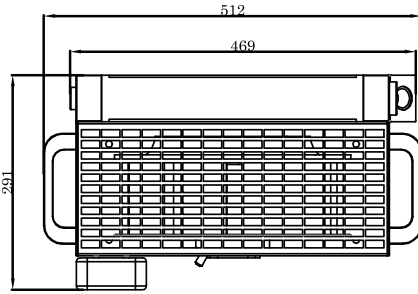
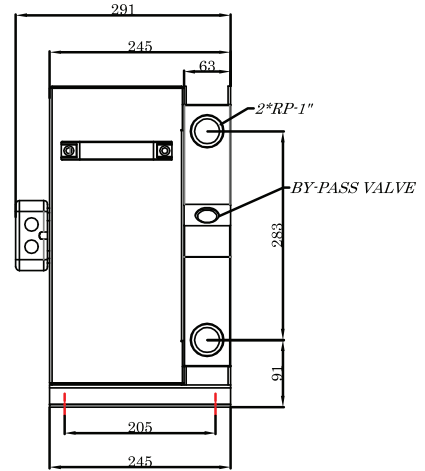
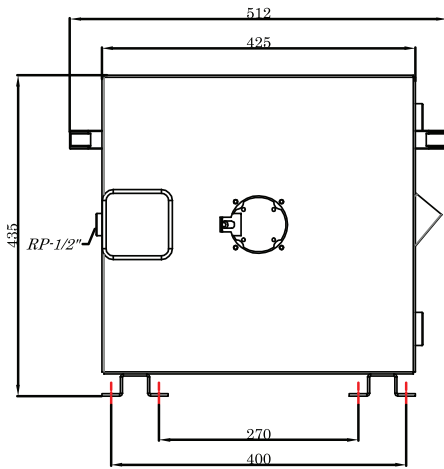


**USH-C15-01**



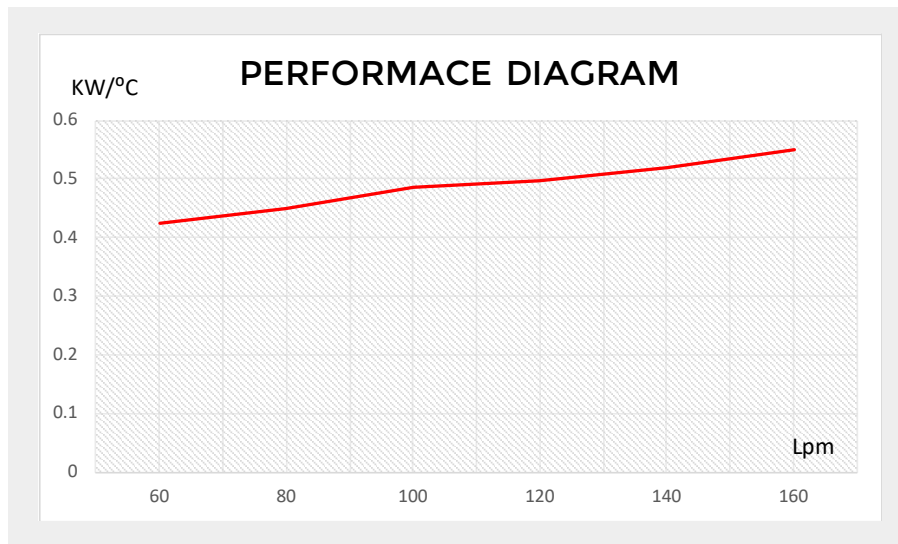
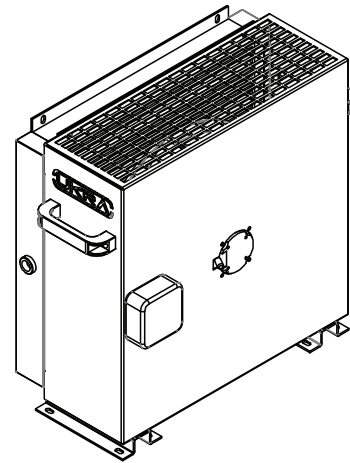
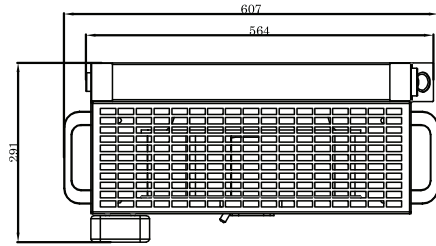
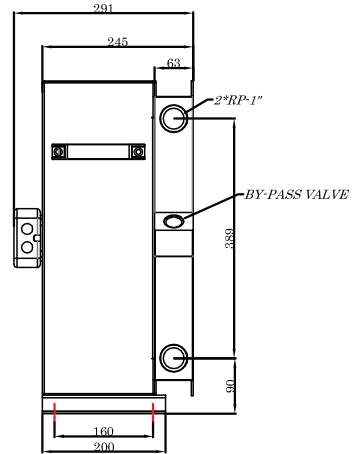
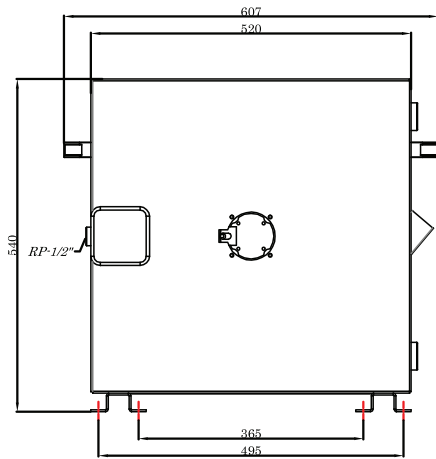
PRODUCT	OIL FLOW MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	NOISE LEVEL	CAPACITY	WEIGHT
	L/min	KW	V	W	m <sup>3</sup> /h	mm	RPM	IP	dB	L	Kg
USH - C15	60 - 120	17,5	230 AC	200	1.850	ø280	2.600	44	52	2,3	13

**USH-C16-01**



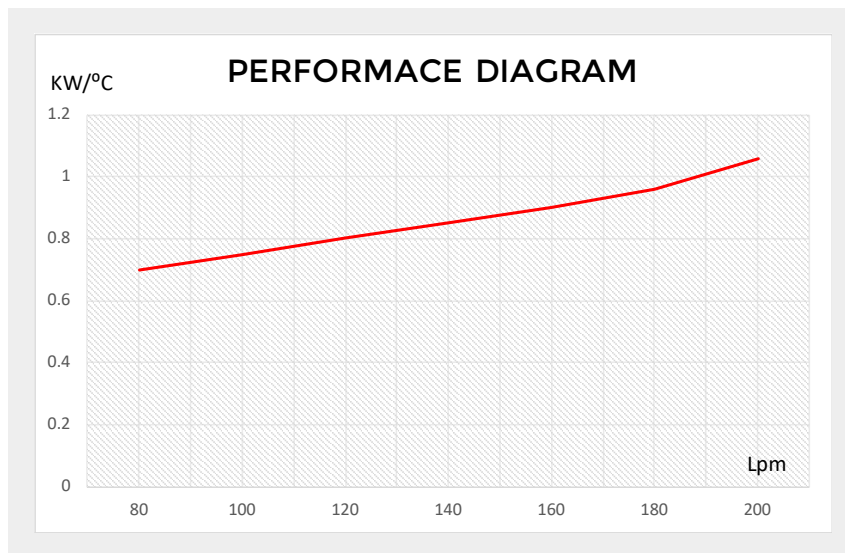
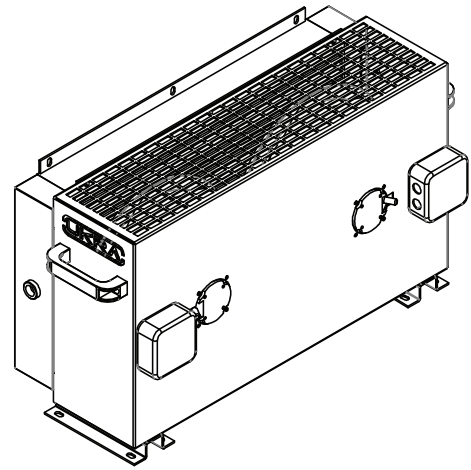
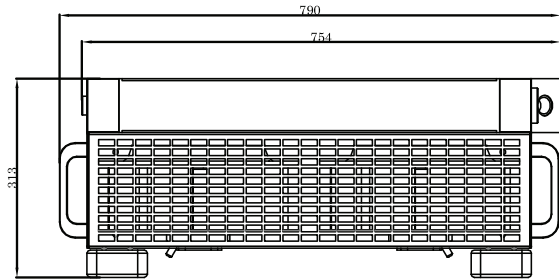
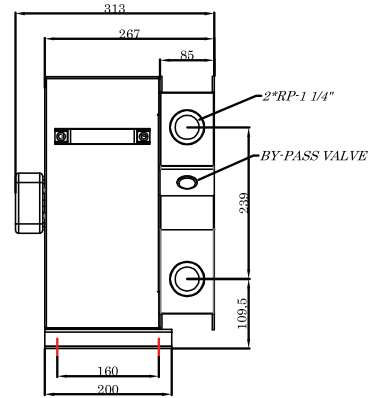
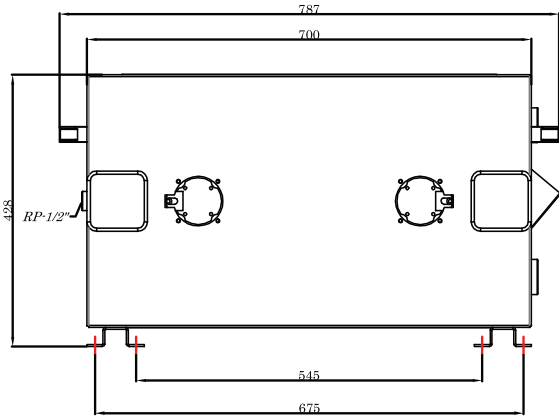
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	L/min	KW	V	W	m <sup>3</sup> /h	mm	RPM	IP	dB	L	Kg
USH - C16	80 - 140	30	230 AC	175	2,200	ø315	1,450	44	52	4	18

**USH-C17-01**



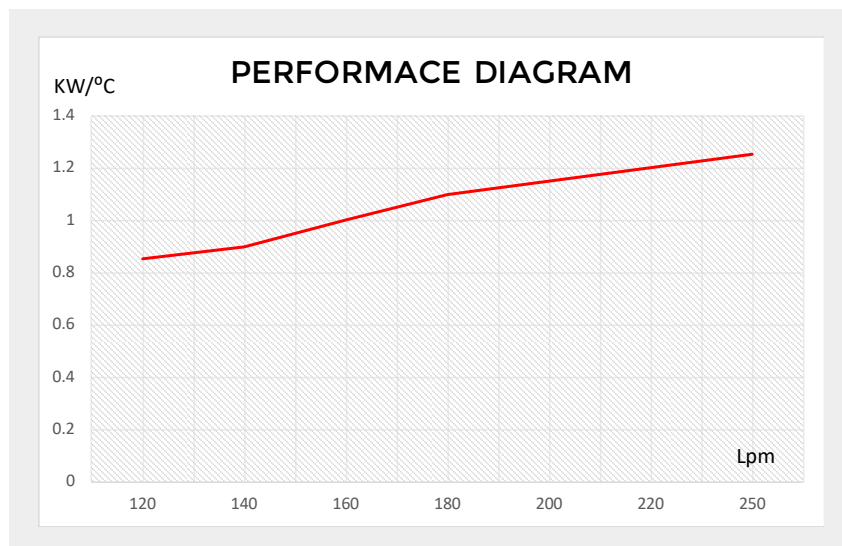
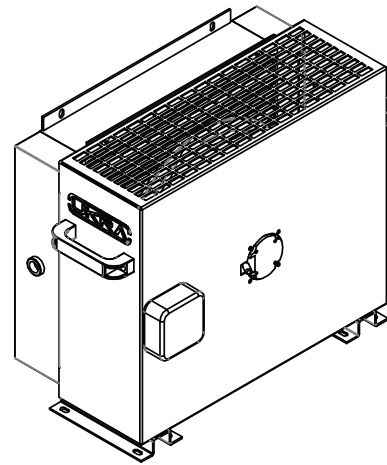
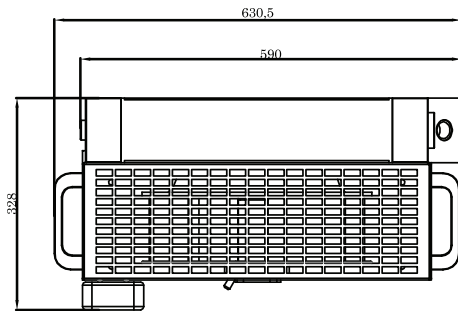
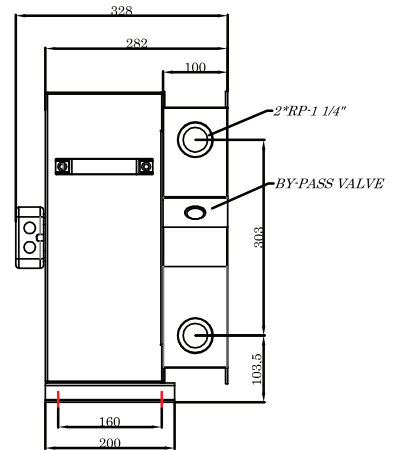
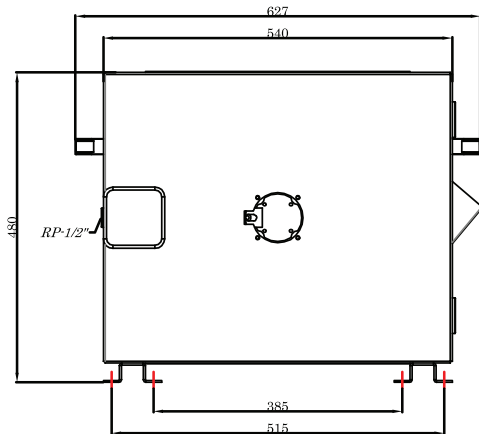
PRODUCT	OIL FLOW MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	NOISE LEVEL	CAPACITY	WEIGHT
	L/min	KW	V	W	m <sup>3</sup> /h	mm	RPM	IP	dB	L	Kg
USH - C17	100 - 160	37,5	230 AC	200	3,100	ø355	1,400	44	51	5.7	24

**USH-C18-01**



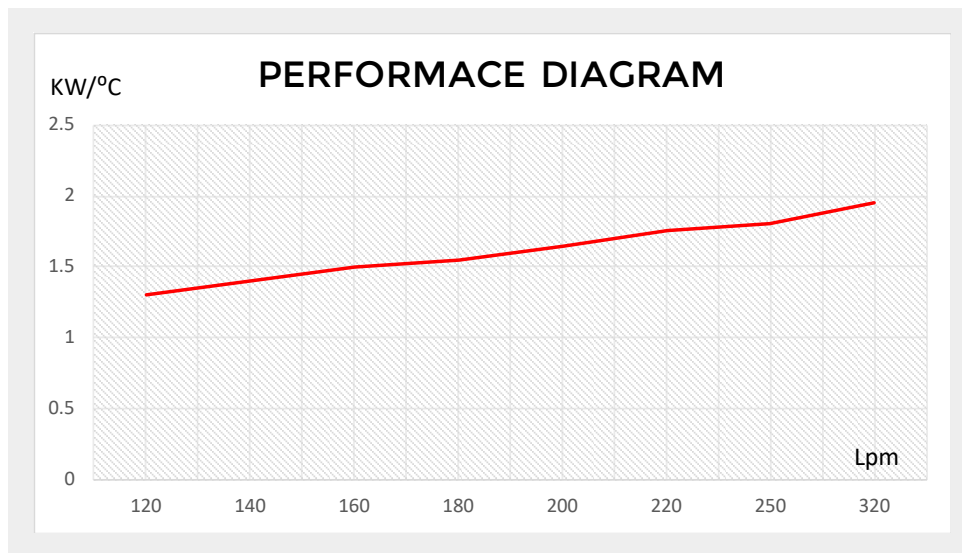
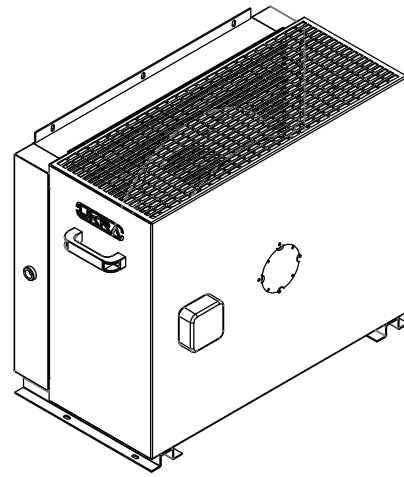
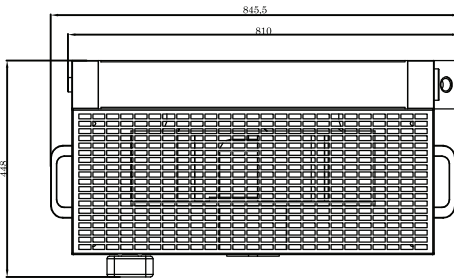
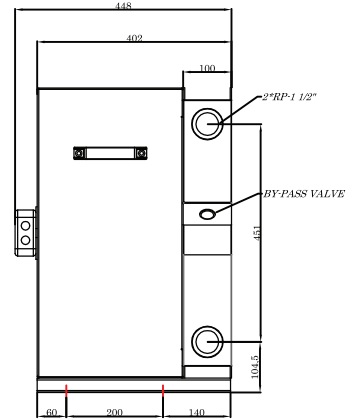
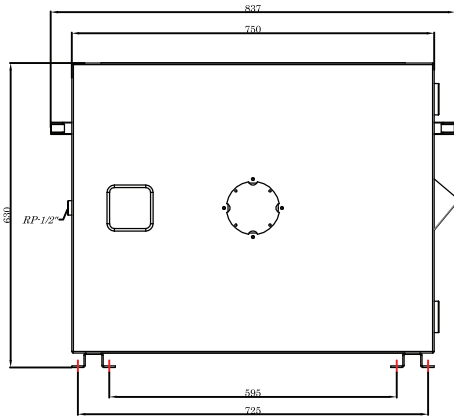
PRODUCT	OIL FLOW MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	NOISE LEVEL	CAPACITY	WEIGHT
	L/min	KW	V	W	m <sup>3</sup> /h	mm	RPM	IP	dB	L	Kg
USH - C18	120 - 200	45	230 AC	350	4,400	ø315x2	2,600	44	52	7.5	30

**USH-C19-01**



PRODUCT	OIL FLOW MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	NOISE LEVEL	CAPACITY	WEIGHT
	L/min	KW	V	W	m <sup>3</sup> /h	mm	RPM	IP	dB	L	Kg
USH - C19	150 - 250	50	230 AC	200	3,100	ø355	1,400	44	51	9	34

**USH-C20-01**



PRODUCT	OIL FLOW MAX	MAX COOLING CAPACITY	VOLTAGE	POWER	AIR	Ø FAN	FAN SPEED	ELECTRIC PROTECTION	NOISE LEVEL	CAPACITY	WEIGHT
	L/min	KW	V	W	m <sup>3</sup> /h	mm	RPM	IP	dB	L	Kg
USH - C20	180 - 300	65	230 AC	780	7,600	ø500	1,280	44	62	14	56

# USS SERIE

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## BASIC KNOWLEDGE

They are designed to provide heat transfer between two fluids. The heat transfer surface is increased by combining brass pipes with aluminum fin with bounding technology. They have much higher heat transfer capacity than similar sized water coolers.

## FEATURES

They are produced with nickel alloyed copper pipes and aluminum fins. Pipes may be easily cleaned thanks to the removable lids. Wide input and output connectors are used for minimum flow resistance.

- Hydraulic Oil / Water
- Water / Water

## TEMEL BİLGİLER

İki akışkan arasında ısı transferi sağlamak için tasarlanmışlardır. Prinç borular şişirme teknolojisi ile alüminyum kanatçıklara birleştirilerek ısı transfer yüzeyi artırılmıştır. Benzer ölçülerdeki sulu soğutuculara göre çok daha yüksek ısı transfer kapasitesine sahiptirler.

## ÖZELLİKLER

Nikel alaşımlı bakır borular ve alüminyum kanatçıklardan üretilmiştir. Sökülebilir kapaklar sayesinde borular kolayca temizlenebilir. Minimum akış direnci için geniş giriş çıkış konnektörleri kullanılmıştır.

- Hidrolik Yağ / Su
- Su / Su

## TECHNICAL INFORMATION

Outer Pipe and Fittings	: Steel
Tube Pipes	: Copper / Nickel
Cooling Fins	: Aluminum
Covers	: Cast-Iron
Seals	: Nitrile Rubber

## TEKNİK BİLGİLER

Dış Boru ve Bağlantı Parçaları	: Çelik
Tüp Borular	: Bakır/Nikel
Soğutma Kanatçıkları	: Alüminyum
Kapaklar	: Dökme Demir
Contalar	: Nitril Kauçuk



## GUIDE FOR USS COOLER SELECTION

The calculation for deviation in oil outlet temperatures, water inlet temperatures and viscosities must be done as follows.

- Q (Kw) Required Heat Disposal
- V (l / min) Oil Flow
- Toil (°C) Oil Outlet Temperature
- Tw (°C) Water Inlet Temperature

## EXAMPLE CALCULATION

Q : 17 Kw  
V : 80 lpm  
Toil : 45 °C  
Tw : 25 °C

1. **Temperature Difference T (°C) =  $Q \times 34,1 / V = 7,24$**   
Average oil temperature (°C) =  $t_{\text{çıkış}} + \Delta t + t_{\text{çıkış}} / 2 = 49$  °C
2. **Oil Production Info ISO 68 : Viscosity 49 °C de = 38 cSt**
3. **Viscosity from the chart B :**  
**38 cSt = 1,11**  
**Q eff. =**

From the Chart A, of 80 L/min oil flow and 23.6 kW , Result : Cooler USS04-T

## USS SOĞUTUCU SEÇİM KILAVUZU

Yağ çıkış sıcaklıklarında, su giriş sıcaklıklarında ve viskozitelerde sapma için hesaplama aşağıdaki şekilde yapılmalıdır.

- Q ( Kw ) Gereken Isı Atımı
- V ( l/dak) Yağ Debisi
- Toil ( °C ) Yağ Çıkış Sıcaklığı
- Tw ( °C ) Su Giriş Sıcaklığı

## ÖRNEK HESAPLAMA

Q : 17 Kw  
V : 80 lpm  
Toil : 45 °C  
Tw : 25 °C

1. **Sıcaklık Farkı T (°C) =  $Q \times 34,1 / V = 7,24$**   
Ortalama Yağ Sıcaklığı (°C) =  $t_{\text{çıkış}} + \Delta t + t_{\text{çıkış}} / 2 = 49$  °C
2. **Yağ üretici bilgilerinden ISO 68 : Viskosite 49 °C de = 38 cSt**
3. **Viskosite tablo B den :**  
**38 cSt = 1,11**  
**Q eff. =**

Tablo A dan, of 80 L/min yağ debisinde ve 23.6 kW da, Sonuç : Soğutucu USS04-T

Table A

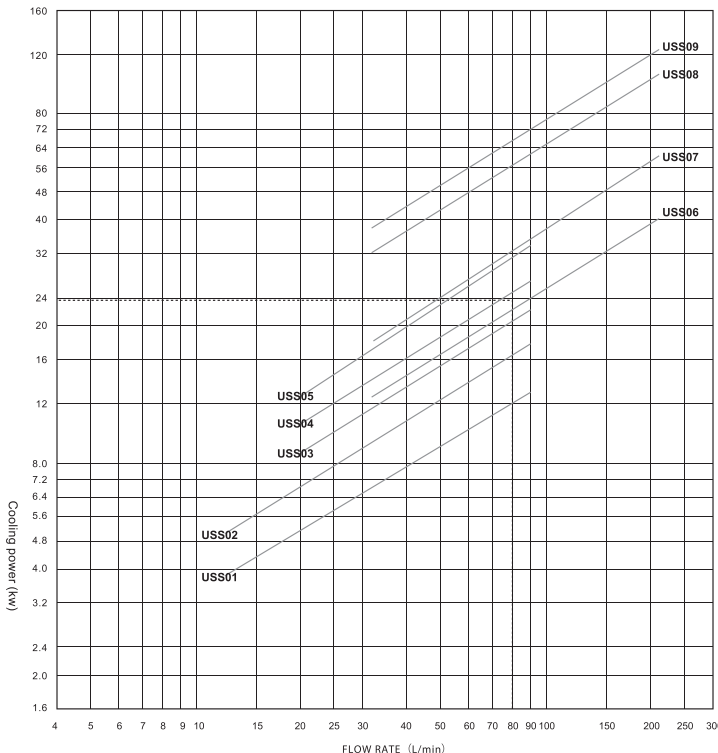
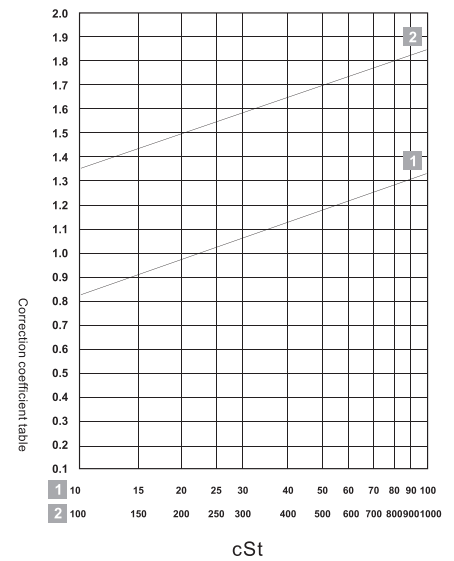


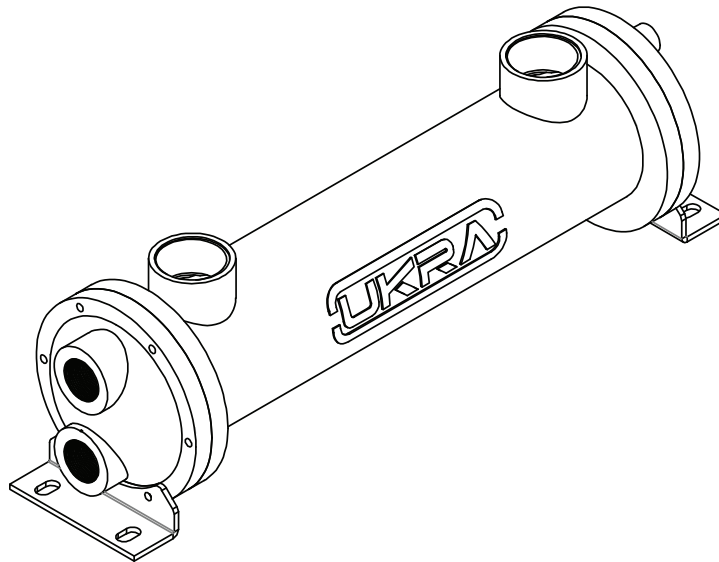
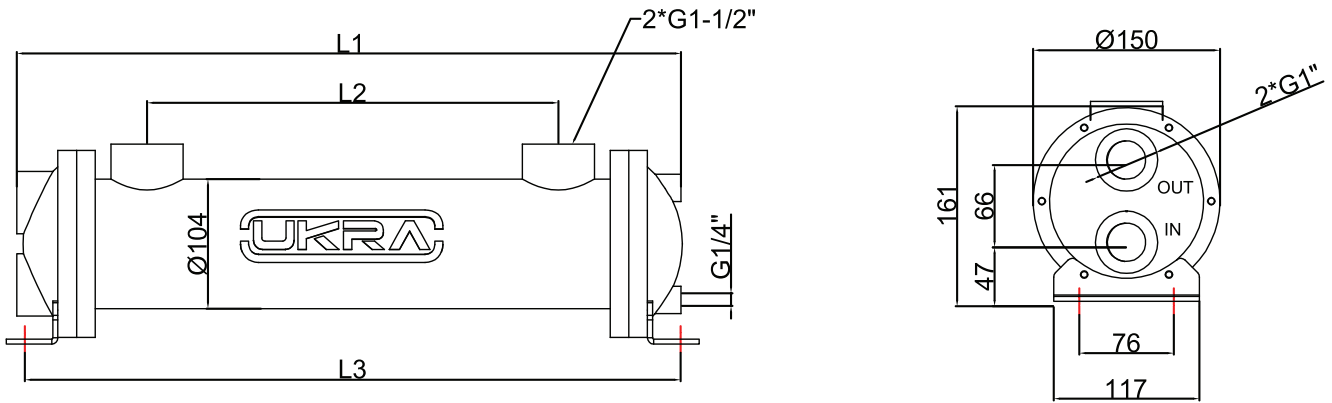
Table B



### Choice of Cooler

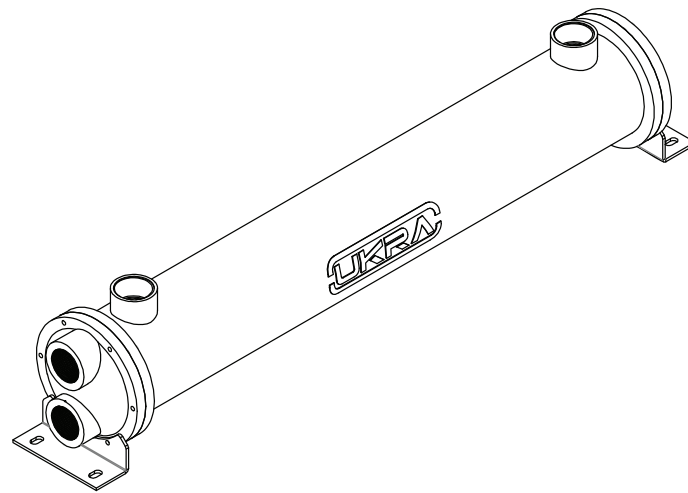
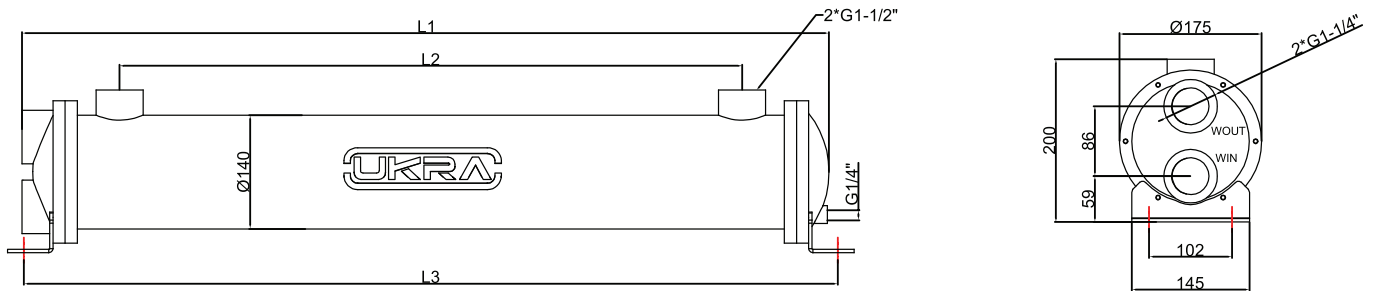
The performance data shown is based on a water inlet temperature of 25°C and an oil outlet temperature of 50°C, together with an oil viscosity of 20.6 cSt. For different viscosities, the correction parameter can be read off from the performance curve below.

**USS-01/05**



PRODUCT	OIL FLOW	MAX COOLING CAPACITY	PRESSURE OIL	PRESSURE WATER	COOLING SURFACE	L1	L2	L3
	L/min	KW	Bar	Bar	m <sup>2</sup>	mm	mm	mm
USS01-T	80	12	16	10	1,3 m <sup>2</sup>	275	76	272
USS02-T	80	16	16	10	2,1 m <sup>2</sup>	376	177	373
USS03-T	80	22	16	10	2,5 m <sup>2</sup>	427	228	424
USS04-T	80	26	16	10	3,1 m <sup>2</sup>	529	330	526
USS05-T	80	30	16	10	4,3 m <sup>2</sup>	681	482	678

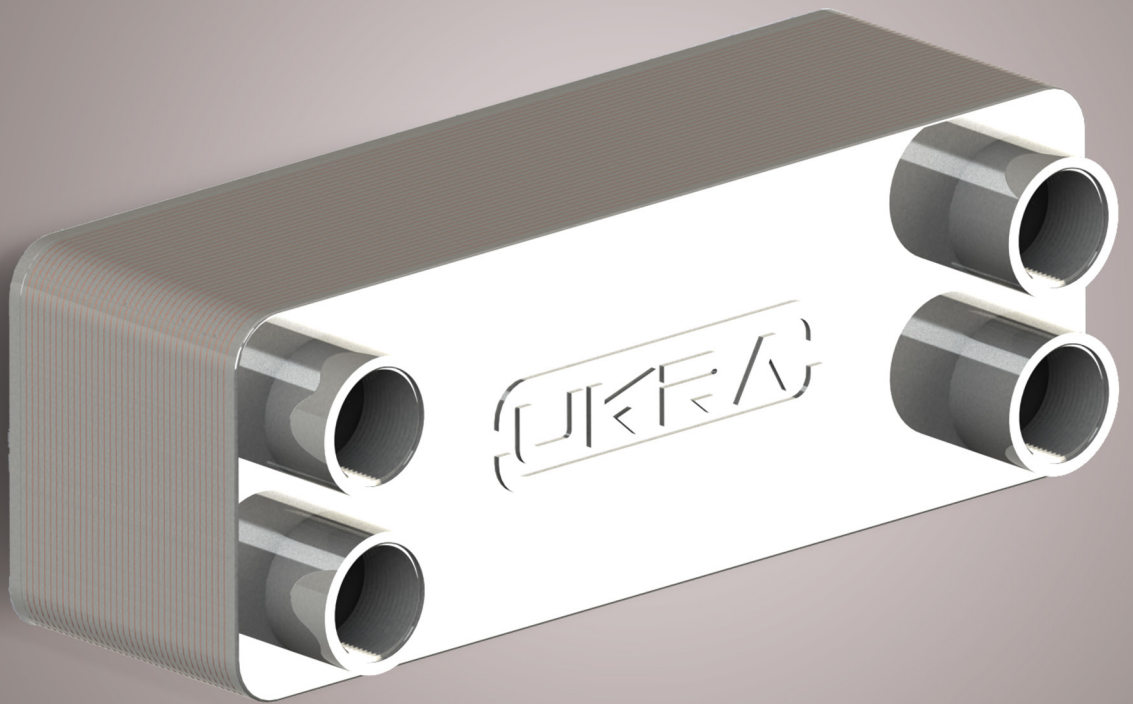
**USS-06/09**



PRODUCT	OIL FLOW	MAX COOLING CAPACITY	PRESSURE OIL	PRESSURE WATER	COOLING SURFACE	L1	L2	L3
	L/min	KW	Bar	Bar	m <sup>2</sup>	mm	mm	mm
USS06-T	200	40	16	10	4,4 m <sup>2</sup>	383	157	392
USS07-T	200	60	16	10	6,7 m <sup>2</sup>	536	309	544
USS08-T	200	100	16	10	13,7 m <sup>2</sup>	993	766	1002
USS09-T	200	120	16	10	15,0 m <sup>2</sup>	1093	875	1102

# UPP SERIE

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## BASIC KNOWLEDGE

They are designed to provide heat transfer between two fluids. It is produced from stainless steel plates in small dimensions and in a lightweight way to provide high heat transfer performance. Thanks to its high performance, it requires less cooling water and thus it reduces the operation cost.

## FEATURES

Plates are made of AISI 316 stainless steel and combined with copper in vacuum furnaces. Turbulence channels on the plates provide effective heat transfer and mechanical strength.

- Hydraulic Oil
- Water or Water-Glycol mixture

## TEMEL BİLGİLER

İki akışkan arasında ısı transferi sağlamak için tasarlanmışlardır. Paslanmaz çelik plakalardan, yüksek ısı geçiş performansı sağlamak için küçük ölçülerde ve hafif olarak üretilir. Yüksek performansı sayesinde, daha az soğutma suyu gerektirerek operasyon maliyetini düşürür.

## ÖZELLİKLER

Plakalar AISI 316 paslanmaz çelikten üretilir ve vakum fırınlarda bakır ile birleştirilir. Plakalar üzerinde ki türbülans kanalları etkin ısı geçişi ve mekanik mukavemet sağlar.

- Hidrolik Yağ
- Su veya Su-Glikol karışımı

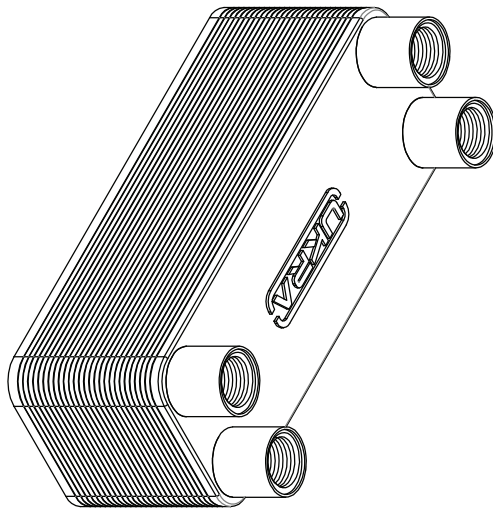
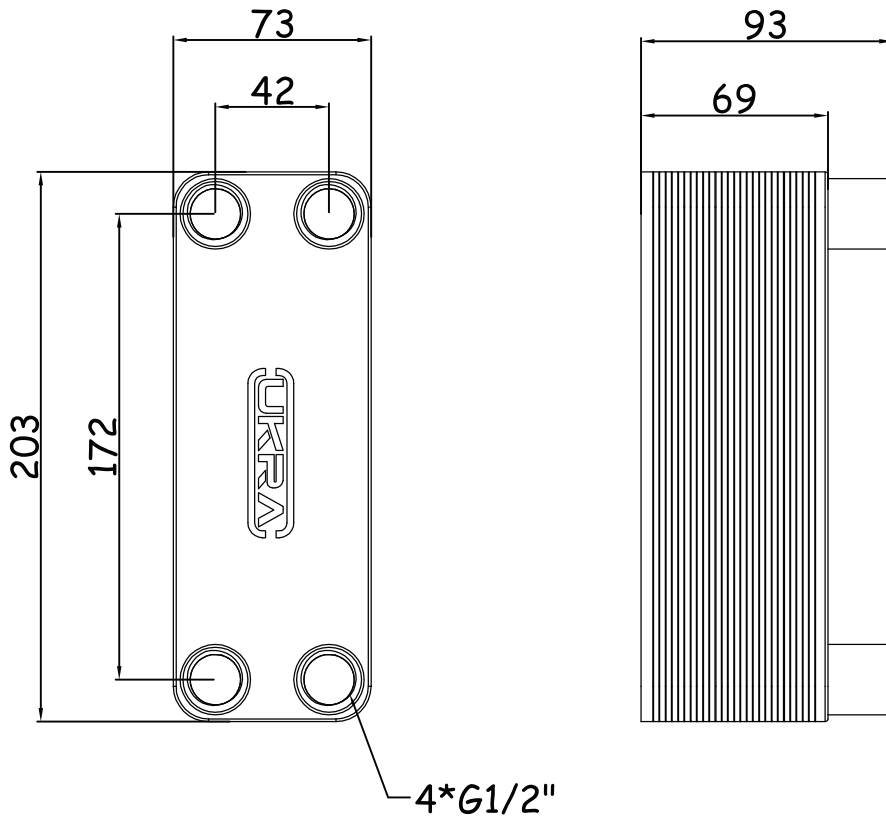
## TECHNICAL INFORMATION

- Operating Temperature: 10° - 225°C (Freezing and boiling temperature of the fluid must be taken into consideration.)
- Operating Pressure: Maximum 30 Bar (static)
- The amount of particles in the fluid must be less than 10mg / L. Particle size  $\leq$  0,5mm

## TEKNİK BİLGİLER

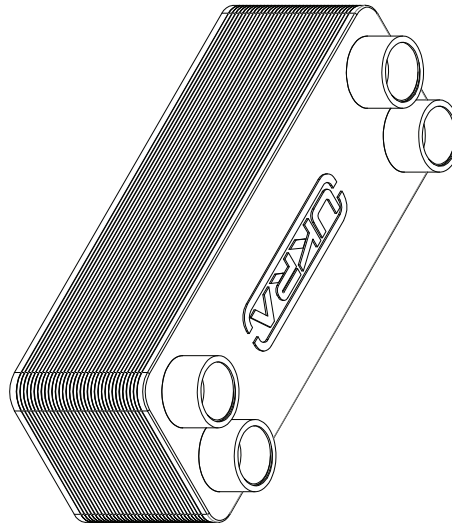
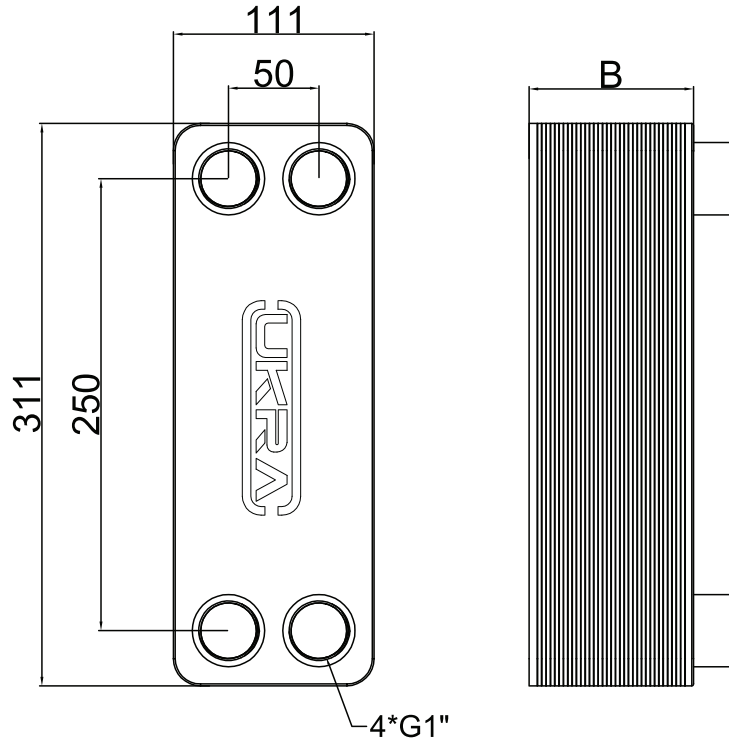
- Çalışma Sıcaklığı: 10° - 225°C (Kullanılan akışkanın donma ve kaynama sıcaklığı dikkate alınmalıdır.)
- Çalışma Basıncı: Maksimum 30 Bar (statik)
- Akışkan içerisinde ki partikül miktarı 10mg/L den az olmalıdır. Partikül büyüklüğü  $\leq$  0,5mm

**UPP-01**



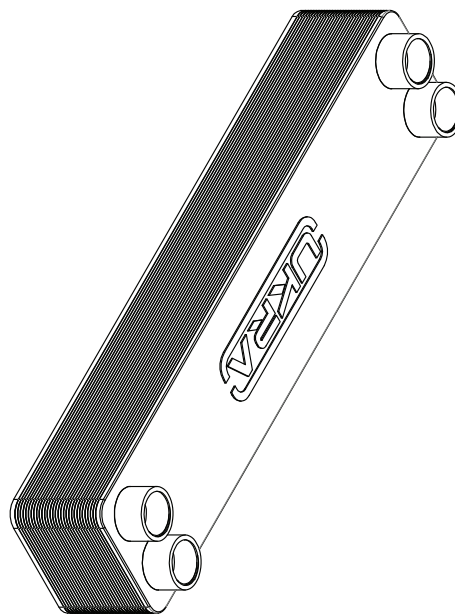
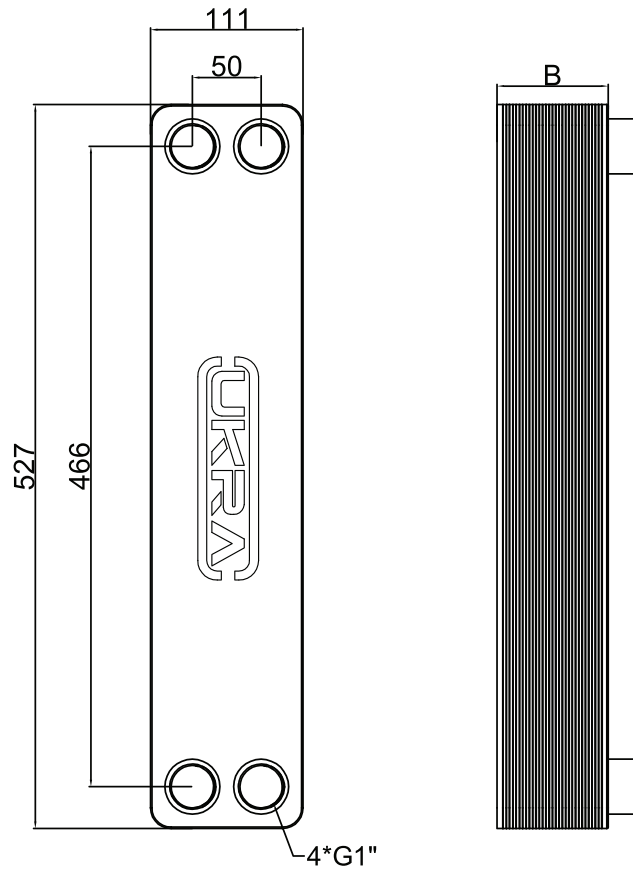
PRODUCT	OIL FLOW	MAX COOLING CAPACITY	NUMBER OF PLATE	PRESSURE	SIZES	B	CONNECTORS	CAPACITY	WEIGHT
	L/min	KW	QTY	Bar	mm	mm	-	L	Kg
UPP01-26A	80	20	26	30	233X73X69	69	G 1/2"	0,5	1,75

**UPP-02**



PRODUCT	OIL FLOW	MAX COOLING CAPACITY	NUMBER OF PLATE	PRESSURE	SIZES	B	CONNECTORS	CAPACITY	WEIGHT
	L/min	KW	QTY	Bar	mm	mm	-	L	Kg
UPP02-24A	130	35	24	30	311X111X67	67	G 1"	1,2	4,5
UPP02-34A	180	40	34	30	311X111X91	91	G 1"	1,75	5,75
UPP02-40A	220	48	40	30	311X111X105	105	G 1"	2	6,5
UPP02-50A	250	70	50	30	311X111X129	129	G 1"	2,5	7,75

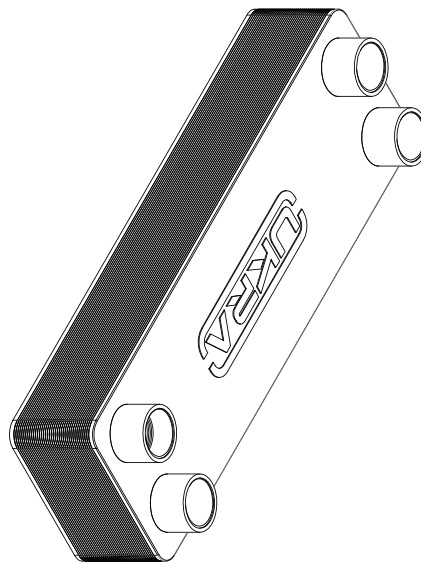
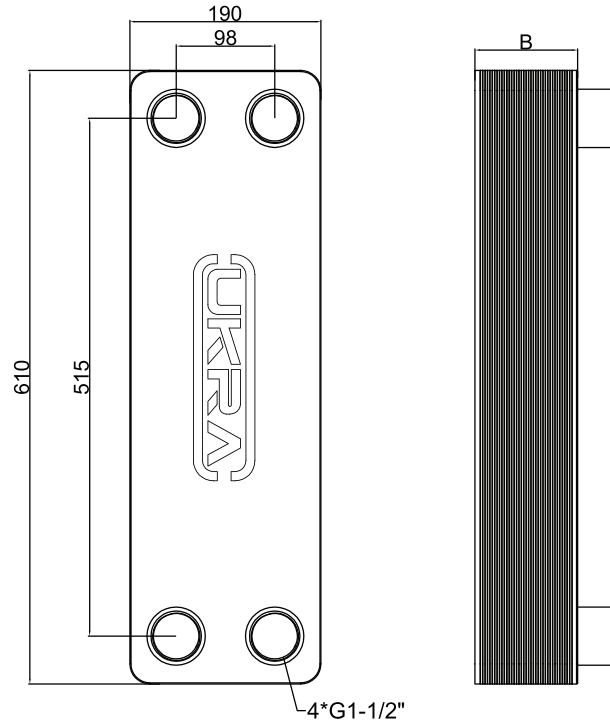
**UPP-03**



PRODUCT	OIL FLOW	MAX COOLING CAPACITY	NUMBER OF PLATE	PRESSURE	SIZES	B	CONNECTORS	CAPACITY	WEIGHT
	L/min	KW	QTY	Bar	mm	mm	-	L	Kg
UPP03-30A	280	90	30	30	527X111X81	81	G 1"	3	9
UPP03-60A	300	120	60	30	527X111X153	153	G 1"	5,75	16

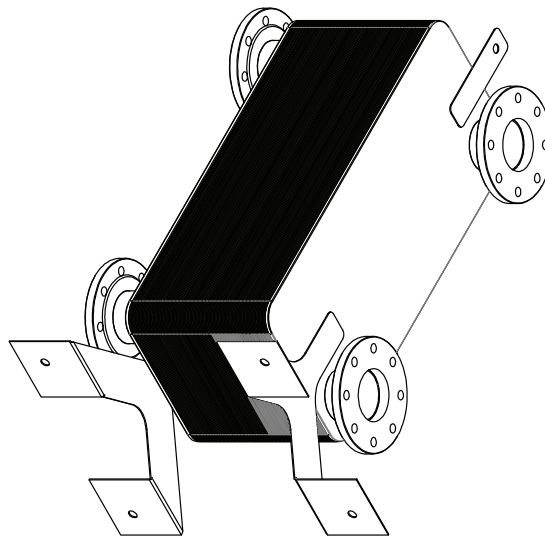
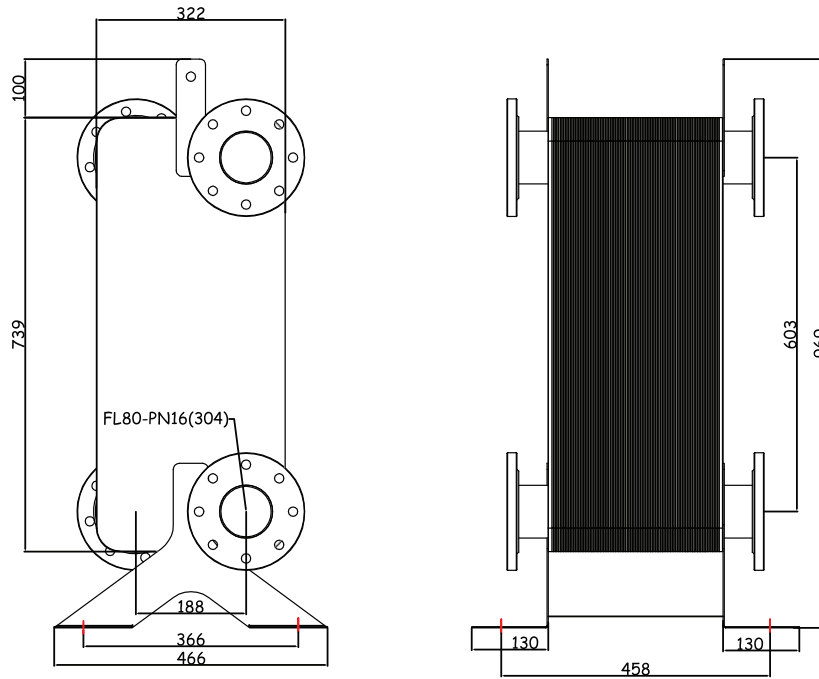


**UPP-04**



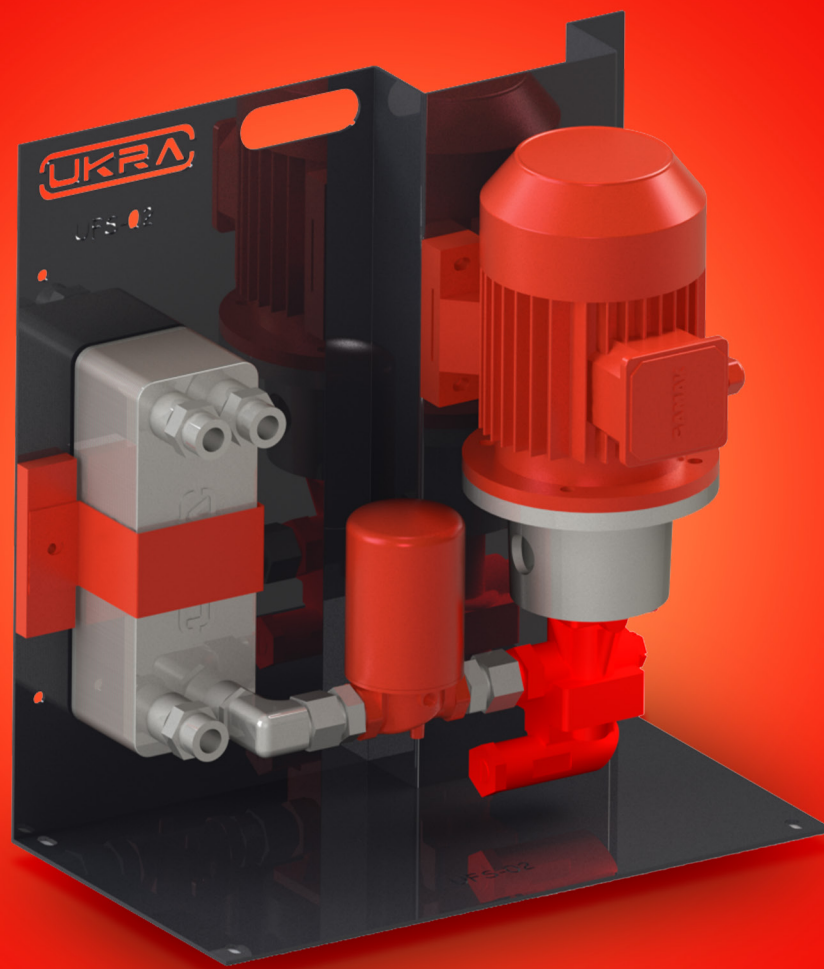
PRODUCT	OIL FLOW	MAX COOLING CAPACITY	NUMBER OF PLATE	PRESSURE	SIZES	B	CONNECTORS	CAPACITY	WEIGHT
	L/min	KW	QTY	Bar	mm	mm	-	L	Kg
UPP04-16A	320	85	16	30	671X190X50	50	G 1-1/2"	3,5	12
UPP04-24A	500	110	24	30	671X190X69	69	G 1-1/2"	5	15,5
UPP04-30A	600	150	30	30	671X190X83	83	G 1-1/2"	6,5	18
UPP04-38A	700	200	38	30	671X190X102	102	G 1-1/2"	8	21,5
UPP04-46A	800	250	46	30	671X190X121	121	G 1-1/2"	9,75	25

**UPP-05**



PRODUCT	OIL FLOW	MAX COOLING CAPACITY	NUMBER OF PLATE	PRESSURE	SIZES	B	CONNECTORS	CAPACITY	WEIGHT
	L/min	KW	QTY	Bar	mm	mm	-	L	Kg
UPP05-100A	1200	400	100	30	739X322X298	298	FL80-PN16	40	95

# UFS SERIE



## INFORMING

Some of the mechanical energy turns into heat in hydraulic systems and the heat in hydraulic systems increases. A heat exchanger is to be set up in order to dissipate the heat generated in the system. Actually, the aim is to reach thermal equilibrium.

UKRA has developed UFS series coolers generating offline which are suitable for in-cabin use in hydraulic and lubrication systems operating at high temperatures. The system consists of a gear pump, an electric motor, filter and a cooler.

## BİLGİLENDİRME

Hidrolik sistemlerde mekanik enerjinin bir kısmı ısıya dönüşür ve hidrolik sistemde ki yağ sıcaklığı artar. Üretilen ısıyı dağıtmak için sisteme bir ısı eşanjörü kurulmalıdır. Amaç ısı dengeye ulaşmaktır.

UKRA kapalı çevrim çalışan UFS serisi soğutucuları yüksek sıcaklıklarda çalışan hidrolik ve yağlama sistemlerinde, kabin içi kullanıma uygun olarak geliştirdi. Sistem, Dişli pompa, elektrik motoru, basınç filtresi ve soğutucu.

### RANGE OF APPLICATION

- Lubrication Systems
- Oil Chillers
- Gearboxes

### FLUIDS THAT CAN BE COOLED

- Hydraulic Oil
- Lubrication Oil

### TECHNICAL FEATURES

- COOLER: Stainless plate heat exchanger
- ENGINE: 220-380V IP56 Protection class
- PUMP: Casting body, Gear pump
- OPERATING PRESSURE: Max. 6 Bar
- OPERATING TEMPERATURE: Max. 120°C

### UYGULAMA ALANLARI

- Yağlama Sistemleri
- Oil Chillers
- Şanzıman dişli kutuları

### SOĞUTULABİLECEK AKIŞKANLAR

- Hidrolik Yağ
- Yağlama Yağı

### TEKNİK ÖZELLİKLER

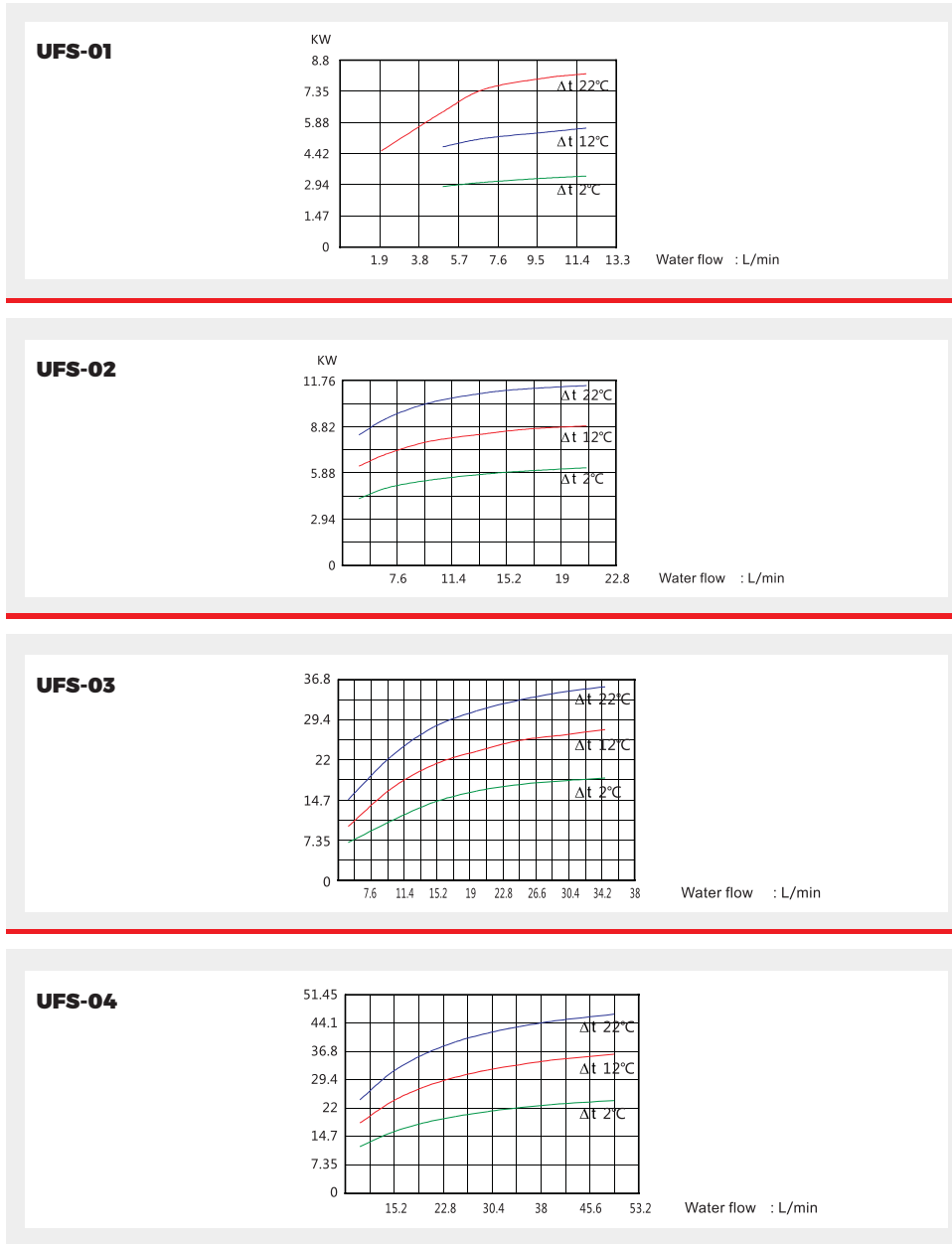
- SOĞUTUCU: Paslanmaz plakalı ısı değiştirici
- MOTOR: 220-380V IP56 Koruma sınıfı
- POMPA: Döküm gövdeli, Dişli pompa
- ÇALIŞMA BASINCI: Mak. 6 Bar
- ÇALIŞMA SICAKLIĞI: Mak. 120°C

## Performance Diagrams

Input parameter of performance curve

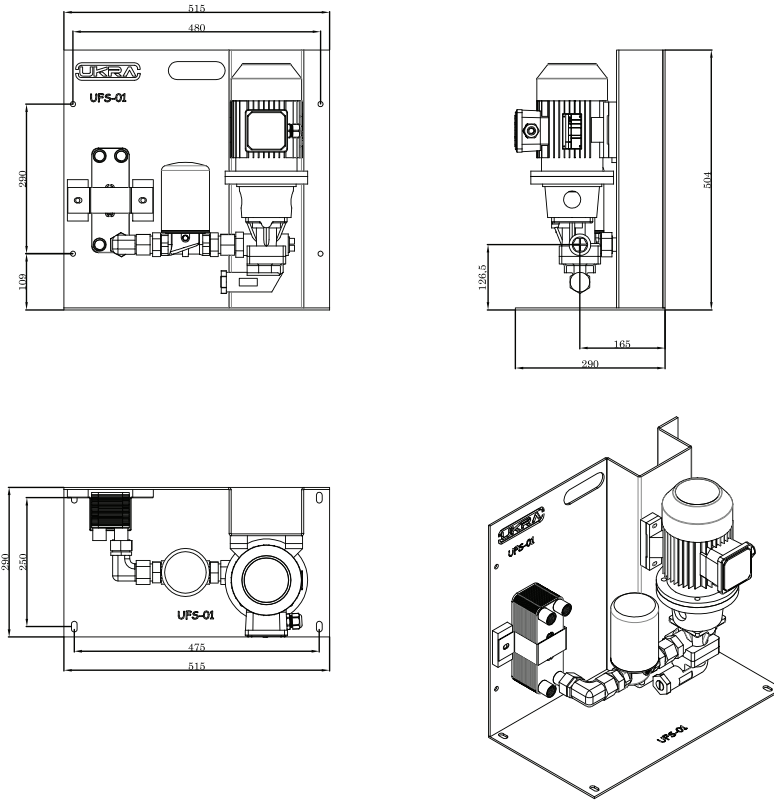
Quality of oil: ISO VG46

Temperature of inpouring: 60 °C

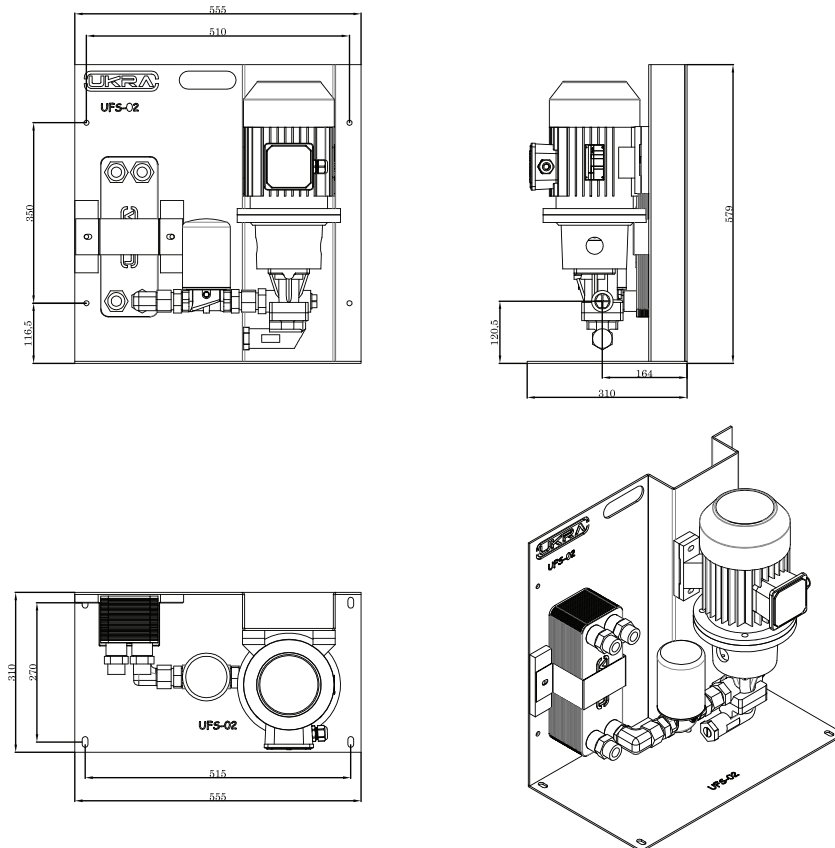


PRODUCT	VOLTAGE	POWER	OIL FLOW	ELECTRIC PROTECTION	NOISE LEVEL	WORKING PRESSURE
	V	KW	L/min	IP	Db	Bar
UFS - 01	230 - 400	0,37	17	56	65	6 Bar
UFS - 02	230 - 400	1,1	34	56	65	6 Bar
UFS - 03	230 - 400	1,5	69	56	65	6 Bar
UFS - 04	230 - 400	2,2	90	56	65	6 Bar

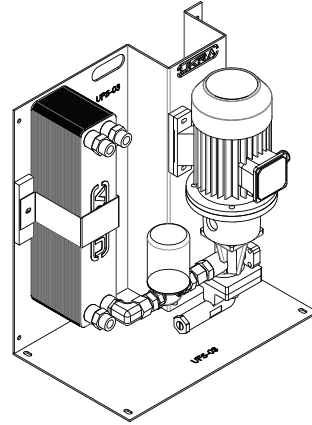
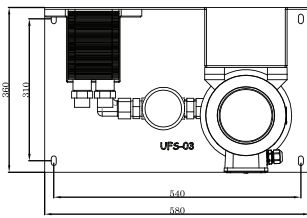
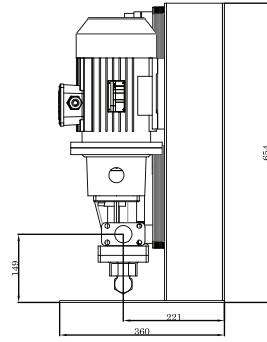
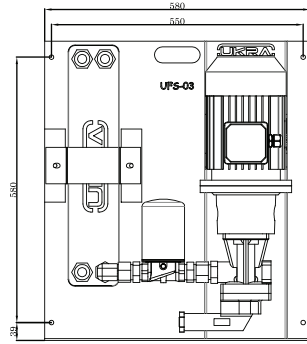
**UFS-01**



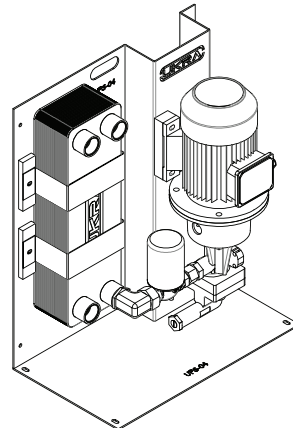
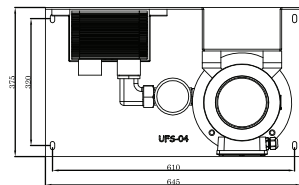
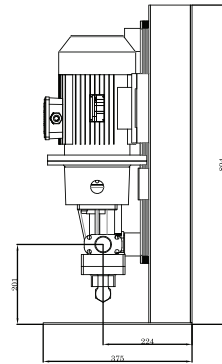
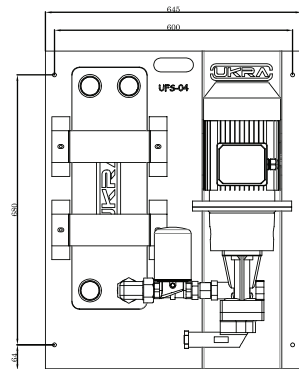
**UFS-02**



**UFS-03**



**UFS-04**



# USC SERIE

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**INFORMING**

High Efficiency Spindle Cooler.

**APPLICATIONS**

- Spindle
- Ballscrew
- Hydraulic System
- CNC Machining Center
- CNC High Speed Lathe
- CNC Woodworking Machine
- CNC Surface Grinder

**FEATURES**

- Cool down the oil of machine tools, prevent oil from oxidation and vibration, keep better viscosity and stabilize oil pressure.
- Keep Spindle system at optimize temperature for helping the accuracy of workpiece.
- Extend working life of machines

**BİLGİLENDİRME**

Yüksek performanslı iş mili soğutucusu.

**UYGULAMA ALANLARI**

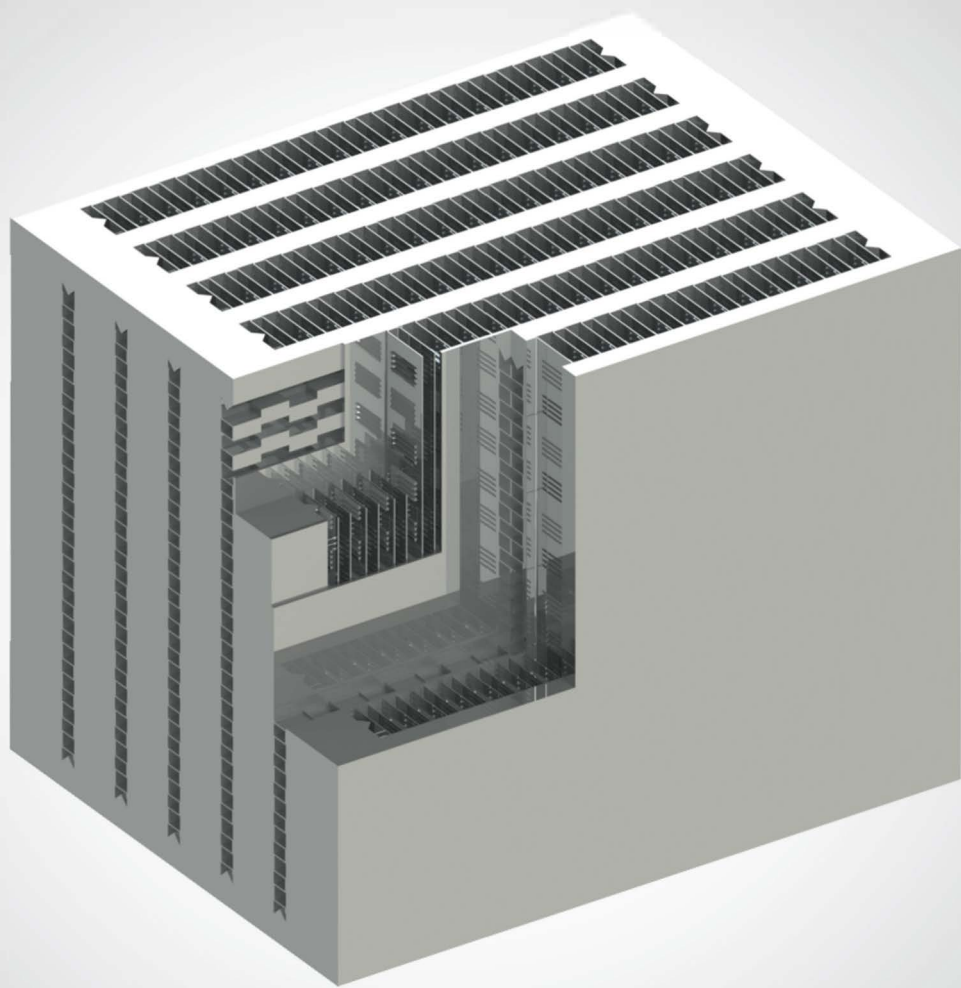
- İş Mili
- Hidrolik Sistemler
- CNC İşleme Merkezleri
- CNC Yüksek Hızlı Tornalar
- CNC Ağaç İşleme Makinaları
- CNC Taşmala Tezgahları

**ÖZELLİKLER**

- Takım tezgahlarında yağı soğuturken, yağın oksitlenmesini ve titreşimi önleyip, viskositeyi ve basıncı dengeler.
- İş milini optimum sıcaklıkta tutarak iş parçasının doğruluğuna yardımcı olur.
- Makinaların ömrünü uzatır.

Item / Mode		EDC-40	EDC-80	EDC-120	EDC-180
Cooling Capacity (50/60 Hz)	KCAL/hr	833/1000	1667/2000	2500/3000	3750/4500
	W/hr	696/1163	1939/2326	2908/3489	4362/5234
	BTU/hr	3333/4000	67/8000	10000/12000	15000/18000
Voltage	Ph/V/Hz	3Ø AC 220V 50/60Hz (3Ø AC 380V 50/60Hz - option)			
Temp. Control	1	Fixed Temp. Control: Set Value Range 10°C ~ 40°C			
	2	Tracking Ambient Temp./Machine Body Temp.: Set Value Range - 10°C ~ +10°C			
Working Range	Ambient Temp.	10°C ~ 38°C			
	Water Temp.	10°C ~ 40°C			
Pump Horse Power	HP	1/2	1/2	3/4	3/4
On-load Current	A	5.8	7	8	10
Pump Flow Rate	50 Hz L/min	17	17	33	42
	60 Hz L/min	20	20	40	50
Tank Volume	L	14	21	21	27
Fluid Connections	IN	1/2" PT	3/4" PT	3/4" PT	3/4" PT
	OUT	1/2" PT	3/4" PT	3/4" PT	3/4" PT
Refrigerant		R-134a	R-407c	R-407c	R-407c







# UKRA

## UKRA TEKNİK MÜHENDİSLİK SAN. TİC. LTD. ŞTİ.



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