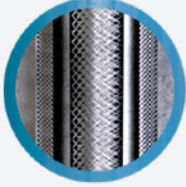


Hermetic Oil Separators

Hermetik Yağ Ayırıcılar



**NO FILTER
REPLACEMENT NEEDED**
high efficiency
demister design
For CO₂ Systems

**FILTRE DEĞİŞİMİNE
GEREK YOK**
yüksek verimlilik
desisleme tasarımı
CO₂ Sistemler için



OS.HR.140B



OS.H.140B



Introduction

The task of CO₂ hermetic oil separator is to separate oil from the discharge refrigerant correctly and ensure oil return to the compressor most effectively. The purpose is to maintain crankcase oil level and increase the efficiency of the system by minimizing the excessive oil circulation. The filtration mesh, with a high coalescence factor, effectively retains oil particles with a diameter of 8 microns.

The use of fully stainless steel material ensures corrosion resistance. Additionally, as there is no need for filter replacement or maintenance, it enhances the system's reliability. CO₂ hermetic oil separators are especially optimized for transcritical CO₂ systems, providing energy efficiency and performance improvements.

CO₂ hermetic oil separators are an excellent choice for ensuring your system's long-lasting and reliable performance, offering various advantages with high performance and durability.

Application Field

CO₂ hermetic oil separators type are designed for using in various systems and multiple compressors for maximum energy-efficiency and low pressure oil management systems. They are suitable for scroll and piston compressors but they are not recommended for screw and rotary compressors.

Selection

CO₂ hermetic oil separator selection is made according to the refrigeration technical rules and oil separator connections must not have smaller diameter than discharge line size.

Technical Specifications

- Thanks to its specialized filter structure, it does not require replacement.
 - ODS solder connection is used for inlet & outlet on standard products.
- It is produced in accordance with CE 2014/68/EU [PED] pressure equipment directive.
- Hermetic oil separators provide 99,6% efficiency.

Warning

- Perform a leak test for the sight glasses to check for leaks and ensure the glass is not damaged. If the oil level is below the sight glass, add oil.

Genel Tanım

CO₂ hermetik yağ ayırıcının görevi, deşarj gazındaki yağı doğru bir şekilde ayırmak ve en etkili şekilde yağın kompresöre geri dönüşünü sağlamaktır. Amaç, karter yağ düzeyini korumak ve oluşabilecek aşırı yağ sirkülasyonunu minimuma indirerek sistemin verimini arttırmaktır. Yüksek koalesans faktörüne sahip filtreleme ağı, 8 mikron çapındaki yağ parçacıklarını etkili bir şekilde tutar.

Tamamen paslanmaz çelik malzeme kullanımı, korozyona karşı dayanıklılık sağlar. Ayrıca, filtre değişimi ve bakım gerektirmediğinden sistemin güvenilirliğini artırır. CO₂ hermetik yağ ayırıcıları, özellikle transkritik CO₂ sistemleri için optimize edilmiştir, bu sayede enerji verimliliği ve performans artışı sağlar.

CO₂ hermetik yağ ayırıcıları, sisteminizin uzun ömürlü ve güvenilir performansını sağlamak için mükemmel bir tercihtir. Yüksek performans ve dayanıklılık ile sisteminize çeşitli avantajlar sunar.

Kullanım Alanı

CO₂ hermetik yağ ayırıcıları, çok çeşitli sistemlerde ve çoklu kompresörlerde, maksimum enerji verimliliği, düşük basınçlı yağ yönetim sistemleri için tasarlanmıştır. Scroll ve pistonlu tip kompresörler için uygundur, vidalı veya rotary kompresörler için tavsiye edilmez.

Seçim

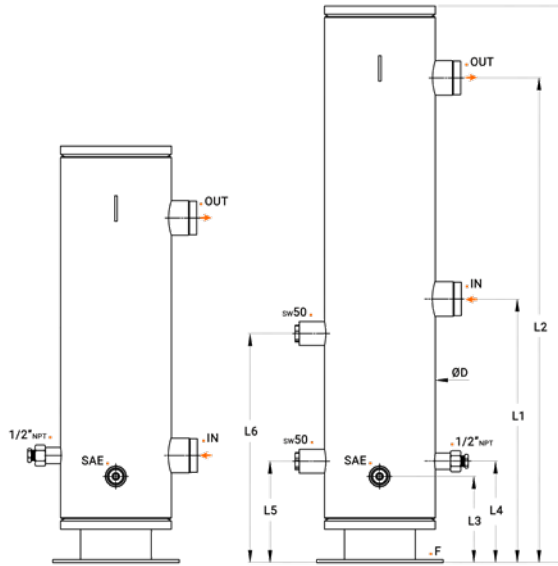
CO₂ hermetik yağ ayırıcı seçimi yapılırken soğutmanın teknik kurallarına göre yapılmalıdır ancak yağ ayırıcı bağlantı ölçüsü deşarj hattı ölçüsünden küçük olmamalıdır.

Teknik Özellikler

- Özel filtre yapısı sayesinde değiştirilmesi gerekmez.
 - Standart ürünlerde giriş ve çıkış için ODS kaynaklı bağlantı kullanılmaktadır.
- CE 2014/68/EU [PED] basınçlı kaplar direktifine uygun olarak imal edilmektedir.
- Hermetik yağ ayırıcılar %99,6 oranında verimlilik sağlar.

Uyarılar

- Gözetleme camları için sızdırmazlık testini yaparak sızıntı ve camın zarar görmediğini kontrol edin. Yağ seviyesi, gözetleme camı seviyesinin altındaysa, ilave yağ ekleyin.



OS.H.140B | OS.HR.140B

PS	[PS1] 140 Bar	[PS2] 105 Bar	[PS3] 130 Bar	[PS4] 120 Bar
TS	- 20 / + 130°C	- 40 / - 20°C	- 20 / + 140°C	- 20 / + 150°C
GAS	R744			

Model	Inlet & Outlet [Inch]	Dimensions [mm]								Volume (L)	First Oil Charge (L)	Sight Glass [SG]	Oil Return Connection [SAE]	Level Sensor Connection [NPT]	Oil Reservoir (Volume)			Category [PED] Group 2
		Ø D	L	L1	L2	L3	L4	L5	L6						[L5]	[L6]	Total	

Hermetic Oil Separators | Hermetik Yağ Ayırıcılar

OS.H.140B.09.01	ODS-3/8"	76	340	115	285	115	115	-	-	1,00	0,25	-	1/4"	1/2"	-	-	-	SEP
OS.H.140B.12.02	ODS-1/2"	89	425	120	364	120	120	-	-	1,90	0,40	-	1/4"	1/2"	-	-	-	CAT II
OS.H.140B.22.03	ODS-7/8"	102	545	145	481	145	145	-	-	3,20	0,65	-	1/4"	1/2"	-	-	-	CAT II
OS.H.140B.28.05	ODS-1 1/8"	114	615	155	535	145	155	-	-	4,70	0,90	-	1/4"	1/2"	-	-	-	CAT II
OS.H.140B.35.09	ODS-1 3/8"	140	740	160	650	150	160	-	-	8,70	1,40	-	1/4"	1/2"	-	-	-	CAT III
OS.H.140B.42.13	ODS 42	168	765	200	660	190	200	-	-	12,50	2,20	-	3/8"	1/2"	-	-	-	CAT III
OS.H.140B.42.22	ODS 42	219	800	215	683	190	215	-	-	22,00	4,00	-	3/8"	1/2"	-	-	-	CAT IV
OS.H.140B.54.25	ODS-2 1/8"		915	215	790	190	215	-	-	25,00	4,00	-	3/8"	1/2"	-	-	-	CAT IV
OS.H.140B.54.32	ODS-2 1/8"		1140	215	1015	190	215	-	-	32,00	4,00	-	3/8"	1/2"	-	-	-	CAT IV

Hermetic Oil Separators & Reservoir | Hermetik Yağ Ayırıcılar & Depolu

OS.HR.140B.09.02	ODS-3/8"	76	520	295	465	115	115	115	-	1,60	0,25	1xSW50	1/4"	1/2"	0,25	-	0,80	CAT II
OS.HR.140B.12.03	ODS-1/2"	89	555	250	494	120	120	120	-	2,55	0,40	1xSW50	1/4"	1/2"	0,40	-	0,95	CAT II
OS.HR.140B.22.04	ODS-7/8"	102	645	245	581	145	145	145	-	3,90	0,65	1xSW50	1/4"	1/2"	0,65	-	1,15	CAT II
OS.HR.140B.28.08	ODS-1 1/8"	114	925	465	845	145	155	155	475	7,40	3,70	2xSW50	1/4"	1/2"	0,90	3,70	3,90	CAT III
OS.HR.140B.35.12	ODS-1 3/8"	140	1025	445	935	150	160	160	455	12,50	5,50	2xSW50	1/4"	1/2"	1,65	5,50	5,80	CAT III
OS.HR.140B.42.18	ODS 42	168	1055	490	950	190	200	200	500	17,90	7,80	2xSW50	3/8"	1/2"	2,20	7,80	8,20	CAT III
OS.HR.140B.42.34	ODS 42	219	1150	565	1033	190	215	215	575	32,40	15,10	2xSW50	3/8"	1/2"	3,90	15,10	15,90	CAT IV
OS.HR.140B.54.40	ODS-2 1/8"		1320	620	1195	190	215	215	630	37,70	16,80	2xSW50	3/8"	1/2"	3,90	16,80	17,60	CAT IV
OS.HR.140B.54.50	ODS-2 1/8"		1680	755	1555	190	215	215	765	48,90	21,00	2xSW50	3/8"	1/2"	3,90	21,00	21,80	CAT IV



REFRIGERATING CAPACITY - MASS FLOW RATE - SEPARATED OIL FLOW RATE								
Model	Selection Table	Evaporating Temperature						
		+5°C	0°C	-5°C	-10°C	-15°C	-20°C	-25°C
OS.H.140B.09.01 OS.HR.140B.09.02	Capacity (kW)	28,4	25,5	24,7	22,8	20,8	17,7	14,9
	Mass Flow Rate	651	584	554	514	480	448	432
	Oil Volume Separated (Lt/h)	11,72	10,51	9,98	9,26	8,64	8,07	7,77
OS.H.140B.12.02 OS.HR.140B.12.03	Capacity (kW)	46,9	42,2	40,7	37,5	34,4	29,2	24,5
	Mass Flow Rate	1074	963	915	847	792	740	712
	Oil Volume Separated (Lt/h)	19,34	17,35	16,47	15,27	14,27	13,32	12,82
OS.H.140B.22.03 OS.HR.140B.22.04	Capacity (kW)	75,6	68,0	65,6	60,5	55,3	47,0	39,4
	Mass Flow Rate	1733	1554	1475	1366	1277	1193	1148
	Oil Volume Separated (Lt/h)	31,21	28,00	26,57	24,61	23,01	21,49	20,69
OS.H.140B.28.05 OS.HR.140B.28.08	Capacity (kW)	142,1	135,9	130,2	125,6	122,0	114,2	101,8
	Mass Flow Rate	2911	2802	2725	2649	2573	2497	2421
	Oil Volume Separated (Lt/h)	52,45	50,49	49,11	47,74	46,38	44,99	43,61
OS.H.140B.35.09 OS.HR.140B.35.12	Capacity (kW)	191,5	182,9	174,2	162,9	157,3	151,8	146,2
	Mass Flow Rate	4336	4089	3920	3722	3524	3341	3109
	Oil Volume Separated (Lt/h)	68,78	65,49	62,19	58,91	55,61	52,32	49,02
OS.H.140B.42.13 OS.HR.140B.42.18	Capacity (kW)	281,1	268,7	253,1	239,1	222,1	205,0	188,0
	Mass Flow Rate	6366	6118	5663	5306	5000	4693	4386
	Oil Volume Separated (Lt/h)	97,55	92,86	88,07	83,27	78,47	73,67	69,85
OS.H.140B.42.22 OS.HR.140B.42.34	Capacity (kW)	411,2	396,6	386,3	368,1	351,8	334,3	317,1
	Mass Flow Rate	9317	8897	8478	8080	7917	7754	7590
	Oil Volume Separated (Lt/h)	139,69	134,93	130,26	125,62	120,97	116,31	111,65
OS.H.140B.54.25 OS.HR.140B.54.40	Capacity (kW)	538,1	523,4	501,1	484,0	465,5	447,1	428,7
	Mass Flow Rate	12148	11758	11369	10980	10590	10201	9812
	Oil Volume Separated (Lt/h)	186,33	180,34	174,35	168,37	162,38	156,41	150,42
OS.H.140B.54.33 OS.HR.140B.54.50	Capacity (kW)	618,8	601,9	576,4	556,6	535,4	514,1	492,9
	Mass Flow Rate	13970	13522	13074	12626	12179	11732	11283
	Oil Volume Separated (Lt/h)	214,28	207,39	200,50	193,62	186,74	179,87	172,98

Note:

Working Pressure : 100 Bar
Gas Cooler Outlet : 35°C
Total Superheat : 20°C
Discharge Temp : 90°C < Discharge < 115°C
Inlet/Outlet Velocity : 9,5 M/S
Values Tolerance : +/-3%

Not:

Çalışma Basıncı : 100 Bar
Gaz Çıkışı Soğutma Sıcaklığı : 35°C
Toplam Aşırı Isınma : 20°C
Deşarj Sıcaklığı : 90°C < Deşarj < 115°C
Giriş/Çıkış Hızı : 9,5 m/s
Değer Toleransı : ±%3

Rotalock Valves | Rotalok Vanaları

Order No	Model	Rotalock Connection	Inlet Connection	Service Connection	Body [mm]	Working Pressure
C1	RV.45B-1/4	Rot. 1"	1/4" ODS	2x 1/4" SAE	20	45 Bar
C2	RV.45B-3/8		3/8" ODS	2x 1/4" SAE	20	
C3	RV.45B-1/2		1/2" ODS	2x 1/4" SAE	20	
C4	RV.45B-5/8		5/8" ODS	2x 1/4" SAE	20	
C17	RV.45B-5/8X	Rot. 1 1/4"	5/8" ODS	2x 1/4" SAE	22	
C5	RV.45B-3/4		3/4" ODS	2x 1/4" SAE	22	
C6	RV.45B-7/8		7/8" ODS	2x 1/4" SAE	22	
C16	RV.45B-1 1/8X		1 1/8" ODS	2x 1/4" SAE	22	
C7	RV.45B-1 1/8	Rot. 1 3/4"	1 1/8" ODS	2x 1/4" SAE	30	
C8	RV.45B-1 3/8		1 3/8" ODS	2x 1/4" SAE	30	
C11	RV.45B-1 5/8X		42 ODS	2x 1/4" SAE	30	
C9	RV.45B-1 5/8	Rot. 2 1/4"	42 ODS	2x 1/4" SAE	50	
C10	RV.45B-2 1/8		2 1/8" ODS	2x 1/4" SAE	50	
C15	RV.45B-1/4S	Rot. 1"	1/4" SAE	2x 1/4" SAE	20	
C12	RV.45B-3/8S		3/8" SAE	2x 1/4" SAE	20	
C13	RV.45B-1/2S		1/2" SAE	2x 1/4" SAE	20	
C14	RV.45B-5/8S		5/8" SAE	2x 1/4" SAE	20	



Cast Iron Stop Valves | Dökme Demir Stop Vanaları

Order No	Model	Length [mm]	Inlet Connection	Service Connection	Working Pressure
D1	CV.45B-54	292	2 1/8" ODS	2x 1/4" NPT	45 Bar
D2	CV.45B-66	292	2 5/8" ODS		
D3	CV.45B-66x	380	2 5/8" ODS		
D4	CV.45B-80	380	3 1/8" ODS		
D5	CV.45B-92	380	3 5/8" ODS		
D6	CV.45B-102	412	4" ODS		



Flange Connections | Flanş Bağlantıları

Order No	Model	Flange Diameter [Ø]	Screw Connection	Inlet Connection	Klinger Gasget	Working Pressure
E1	FLC.033B.101	115,0	6xM12	2 1/8" ODS	108.071.059.000.K01	33 Bar
E2	FLC.033B.102	131,5	6xM12	2 5/8" ODS	108.084.072.000.K01	
E3	FLC.033B.103	166,5	6xM14	3" ODS	108.105.085.000.K01	
E4	FLC.033B.104	166,5	6xM14	3 1/8" ODS	108.105.085.000.K01	
E5	FLC.033B.105	195,0	6xM16	3 5/8" ODS	108.117.098.000.K01	
E6	FLC.033B.106	200,0	8xM16	4" ODS	108.125.108.000.K01	
E7	FLC.033B.107	230,0	8xM16	4 1/2" ODS	108.142.123.000.K01	



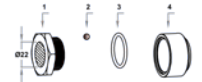
Sight Glasses | Gözetleme Camları

Order No	Quantity x Model	Connection	Maximum Allowable Pressure [PS]	Allowable Temperature [TS]
H20	1x SW36	1 1/8"-18 UNEF	50 bar	-20°C / 130°C
H21	2x SW36			
H22	3x SW36			
H30	1x SW38	1 1/8"-18 UNEF	130 bar 97,5 bar	-20°C / 130°C -40°C / -20°C
H31	2x SW38			
H32	3x SW38			
H50	1x SW50	M26x1,5	140 bar 105 bar	-20°C / 150°C -40°C / -20°C
H51	2x SW50			
H52	3x SW40			
Order No	Quantity x Model	Connection	Maximum Allowable Pressure [PS]	Allowable Temperature [TS]
H4	1x SG134	Rot. 1 3/4"	45 bar 33 bar	-20°C / 130°C -40°C / -20°C
H5	2x SG134			
H6	3x SG134			



- [1] Sight Glass
- [2] Float Ball
- [3] HNBR O-Ring
- [4] Welding Conn.

Gözetleme Camı
Top
HNBR O-Ring
Kaynak Bağlantısı



- [1] Prism Sight Glass
- [2] Metal O-Ring
- [3] Welding Conn.

Prizma Gözetleme Camı
Metal O-Ring
Kaynak Bağlantısı



- [1] Rotalock Conn.
- [2] Sight Glass
- [3] Float Ball
- [4] Teflon Gasket
- [5] Cage
- [6] Rot. Connection

Rotalok Bağlantı
Gözetleme Camı
Top
Teflon Conta
Kafes
Rot. Bağlantısı





Oil Pressure Valves | Yağ Basınç Valfleri

OLAB

Order No	Model	Pressure Setting (barg)	Kv Factor [m³/h]	PS [bar]	TS [°C]	Inlet Connection	Outlet Connection
S1	33002-FM-02-D-2	1,5 Fixed	1,5	45	-40 / +150	3/8" SAE Female	3/8" SAE Male
S2	33003-FM-02-D-2	3,0 Fixed					



Oil Pressure Valves | Yağ Basınç Valfleri

CASTEL

Order No	Model	Pressure Setting (barg)	Kv Factor [m³/h]	PS [bar]	TS [°C]	Inlet Connection	Outlet Connection
S02	3150W/X02	1,4 Fixed	1,6	80	-40 / +150	3/8" SAE Female	3/8" SAE Male
S03	3150W/X03	3,0 Fixed					

Safety Valves | Emniyet Ventilleri

OLAB

Order No	Code	Inlet Male [NPT]	Outlet Male [SAE]	Orifice Ø [mm]	Discharge Coefficient	PS [bar]	TS [°C]	Set Press. Range	Over Pressure	Blowdown
G1	40070-K2N2-0-280	1/4"	3/8"	7	0,6	28	-50 / +150	28 / 45 bar	10% of set pressure	10% of set pressure
G2	40070-K3N2-0-280	3/8"	3/8"	7	0,6	28				
G3	40095-K4N4-0-280	1/2"	5/8"	9,5	0,45	28				
G5	40095-K4N4-0-300	1/2"	5/8"	9,5	0,45	30				
G6	40095-K4N4-0-450	1/2"	5/8"	9,5	0,45	45				



Safety Valves | Emniyet Ventilleri

CASTEL

Order No	Code	Inlet Male [NPT]	Outlet Male [SAE]	Orifice Ø [mm]	Discharge Coefficient	PS [bar]	TS [°C]	Set Press. Range	Over Pressure	Blowdown
G28	3060/45C-28	1/2"	5/8"	9,5	0,45	28	-50 / +120	9 / 50 bar	10% of set pressure	10% of set pressure
G30	3060/45C-30	1/2"	5/8"	9,5	0,45	30				
G45	3060/45C-45	1/2"	5/8"	9,5	0,45	45				



Shut-Off Valve For Safety Valves | Emniyet Ventili İçin Kapama Vanası

Order No	Code	Inlet Male [NPT]	Outlet Male [SAE]	DN Ø [mm]	PS [bar]
G50	37000-FM-03-03-13-2	1/2"	1/2"	13	80



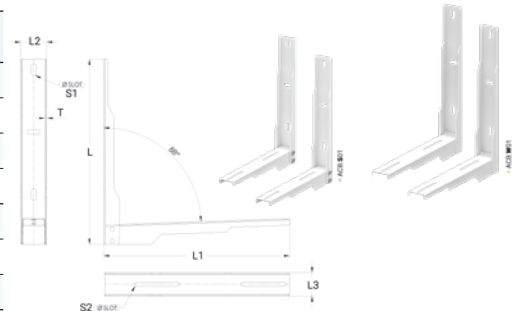
Changeover Valves | Değişim Vanaları

Order No	Code	Inlet Male [NPT]	Outlet Female [NPT]	Orifice Ø [mm]	PS [bar]	TS [°C]	Over Pressure	Blowdown
G22	3032/44	1/2"	1/2"	13	80	-35 / +105	10% of set pressure	10% of set pressure



Air Conditioner Brackets | Klima Montaj Konsolları

Type	Model	BTU	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Thickness [T]	Slot [S1]	Slot [S2]
Welded type Kaynaklı tip	ACB.W01.400	9000-12000	395	396	55	50	2	Ø8x95	Ø10x25
	ACB.W01.500	18000-24000	490	492	65	60	2	Ø8x95	Ø10x25
	ACB.W01.600	30000-60000	566	568	65	60	2	Ø8x130	Ø10x25
	ACB.W01.700	-	595	691	93	70	2	Ø10x130	Ø10x25
Screw type Vidalı tip	ACB.S01.400	9000-12000	395	396	55	50	2	Ø8x95	Ø10x25
	ACB.S01.500	18000-24000	490	492	65	60	2	Ø8x95	Ø10x25
	ACB.S01.600	30000-60000	566	568	65	60	2	Ø8x130	Ø10x25



Model	33-45 Bar [L] [mm]	Teflon Gasket for Rotalock Conn.	Outside Diameter Ø D [mm]	Thickness [mm]	Connection [Inch]	Picture of Product
A1	21	108.015.011.015.T01	14,5	1,5	ROT 3/4"	Rotalock Connections Rotalok Bağlantı Manşonları
A2	25	108.019.016.015.T01	19,0	1,5	ROT 1"	
A3	25	108.026.022.015.T01	25,5	1,5	ROT 1 1/4"	
A4	32	108.039.035.015.T01	38,5	1,5	ROT 1 3/4"	
A5	35	108.051.047.015.T01	51,0	1,5	ROT 2 1/4"	

Model	33-45 Bar [L] [mm]	Model	90-140 Bar [L] [mm]	Dimension [D1] [mm]	Connection [Inch]	Picture of Product
B1	30	BH1	40	6,60	ODS 1/4"	Solder Connections Kaynaklı Bağlantı Manşonları
B2	30	BH2	40	9,70	ODS 3/8"	
B3	30	BH3	40	12,90	ODS 1/2"	
B4	33	BH4	40	16,10	ODS 5/8"	
B5	37	BH5	50	19,25	ODS 3/4"	
B6	40	BH6	50	22,40	ODS 7/8"	
B7	40	BH7	50	28,80	ODS 1 1/8"	
B8	40	BH8	50	35,20	ODS 1 3/8"	
B9	40	BH9	50	42,20	ODS 42	
B10	40	BH10	50	54,30	ODS 2 1/8"	
B11	50	BH11	60	63,80	ODS 2 1/2"	
B12	50	BH12	60	67,00	ODS 2 5/8"	
B13	60	BH13	70	76,60	ODS 3"	
B14	60	BH14	70	80,00	ODS 3 1/8"	
B15	60	BH15	70	92,60	ODS 3 5/8"	
B16	80	BH16	90	102,00	ODS 4"	
B17	80	BH17	90	105,30	ODS 4 1/8"	
B18	80	BH18	90	108,50	ODS 4 1/4"	
B19	80	BH19	90	114,80	ODS 4 1/2"	
B20	80	BH20	90	140,00	ODS 5 1/2"	

Model	33-45 Bar [L] [mm]	Model	90-140 Bar [L] [mm]	Dimension [D1] [mm]	Connection [Inch]	Picture of Product
Y1	28	YH1	50	-	SAE 1/4"	SAE Connections SAE Bağlantı Manşonları
Y2	28	YH2	50	-	SAE 3/8"	
Y3	29	YH3	50	-	SAE 1/2"	
Y4	30	YH4	50	-	SAE 5/8"	

Model	33-45 Bar [L] [mm]	Model	60-140 Bar [L] [mm]	Dimension [D1] [mm]	Connection [Inch]	Picture of Product
F1	16	FH1	40	-	NPT 1/8"	NPT & M20 Connections NPT & M20 Bağlantı Manşonları
F2	16	FH2	40	-	NPT 1/4"	
F3	16	FH3	40	-	NPT 3/8"	
F4	18	FH4	40	-	NPT 1/2"	
F5	18	FH5	40	-	M20X1,5	
F6	35	FH6	40	-	NPT 3/4"	
F7	40	FH7	40	-	NPT 1"	

Connection Parts

- Connection parts are fully produced in our plant by CNC machines.
- All raw materials are certified.
- Special connection parts are available.

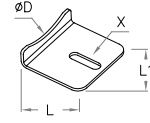
Bağlantı Manşonları

- Bağlantı aparatlarının tamamı fabrikamızda CNC makineler ile üretilmektedir.
- Hammaddelerin tamamı sertifikalı ürünlerdir.
- Özel bağlantı elemanları yapılmaktadır.

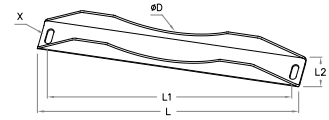


Model	Ø (D) [mm]	Ø (D1) [mm]	L [mm]	L1	L2	L3	X	Type
A.H089.03	89	-	80	80	-	-	11*35	A
A.H114.03	114	-	80	80	-	-	11*35	A
A.H120.03	120	-	80	80	-	-	11*35	A
A.H140.03	140	-	80	80	-	-	11*35	A
A.H160.03	160	-	80	80	-	-	11*35	A
A.H168.03	168	-	120	80	-	-	11*35	A
A.H180.03	180	-	80	80	-	-	11*35	A
A.H219.03	219	-	100	100	-	-	11*35	A
B.H140.03	140	-	170	145	40	-	10*20	B
B.H168.03	168	-	195	170	40	-	10*20	B
B.H219.03	219	-	260	235	40	-	10*20	B
B.H273.03	273	-	350	325	50	-	10*25	B
B.H324.03	324	-	400	375	50	-	10*25	B
B.H406.03	406	-	480	440	60	-	14*35	B
B.H450.05	450	-	550	510	100	-	14*45	B
B.H508.06	508	-	600	560	110	-	14*60	B
B.H600.08	600	-	700	660	120	-	14*60	B
B.H750.08	750	-	850	810	150	-	16*80	B
B.H850.08	850	-	950	910	150	-	16*80	B
C.VHF1.04	-	-	143	50	80	50	11*20	C
C.VHF1.06	-	-	228	50	100	55	11*25	C
C.VHF2.06	-	-	248	50	120	70	11*25	C
D.V085.02	85	-	-	-	-	-	M10	D
E.V136.03	136	111	-	-	-	-	8,5*30	E
E.V162.03	162	142	-	-	-	-	8,5*30	E
E.V187.03	187	168	-	-	-	-	8,5*30	E
E.V205.03	205	168	-	-	-	-	8,5*30	E
E.V247.03	247	210	-	-	-	-	13*60	E
E.V320.03	320	280	-	-	-	-	13*80	E
F.V135.05	135	115	-	-	-	-	8,5*30	F
F.V170.05	170	140	-	-	-	-	8,5*30	F
F.V190.05	190	160	-	-	-	-	8,5*30	F
F.V250.05	250	205	-	-	-	-	13*60	F
F.V310.05	310	265	-	-	-	-	13*60	F
F.V360.08	360	320	-	-	-	-	15*80	F
F.V415.05	415	380	-	-	-	-	15*80	F
F.V415.08	415	380	-	-	-	-	15*80	F
F.V480.06	480	430	-	-	-	-	15*80	F
F.V480.08	480	430	-	-	-	-	15*80	F
F.V550.08	550	500	-	-	-	-	15*80	F
F.V550.10	550	500	-	-	-	-	15*80	F
F.V650.08	650	600	-	-	-	-	15*80	F
F.V650.10	650	600	-	-	-	-	15*80	F
F.V750.08	750	700	-	-	-	-	15*80	F
F.V750.10	750	700	-	-	-	-	15*80	F
F.V850.08	850	800	-	-	-	-	15*80	F
F.V850.10	850	800	-	-	-	-	15*80	F

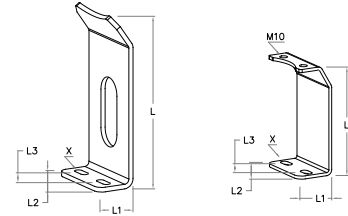
Type A



Type B



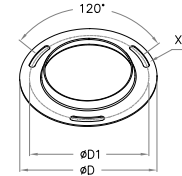
Type C



Type D



Type E



Type F

