

# Air Compressor System

## DESCRIPTION

This is a complete air compressor system. The main components include: DVK125 rotary screw air compressors, wet air receiver, oil-water separator, in-line air filters and control panel.

## FUNCTION

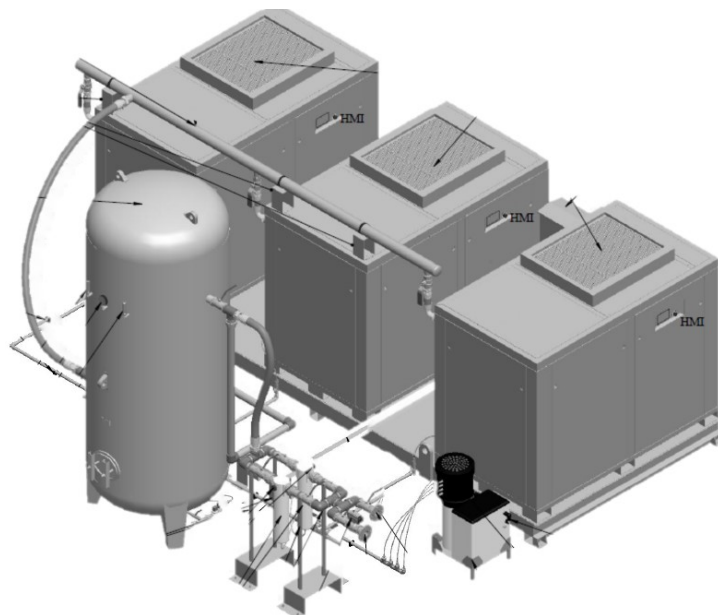
Within the system, there are three DVK125 machines – two in operation and the third in stand-by. “On/off” and “idle” modes are controlled by the LCP controller according to the desired set pressure value inside the wet air receiver via the pressure transmitter located on the collector. The capacity of the machines are 1320 m<sup>3</sup>/h @ 13 bar (g).

The compressed air product flows to the wet air receiver tank and then out via two different routes for continuous use. The route where the compressed air passes through is determined by the operator by means of the ball valves at the entrance of the routes. The compressed air product which is collected in the wet air receiver tank runs through the in-line filter.

During the operation, the oily moisture is collected and flows to the oily water separator where the water is discharged at less than 10 ppm / oil.

**DVK 125 (Quantity=3 ) (660 m<sup>3</sup>/h = 607 Nm<sup>3</sup>/h  
@ 10 bar(g)) x 2 > 1087 Nm<sup>3</sup>/h**

ID	
MODEL #	DVK-125
SN	1012-EL-TUM-02
MFG.	DALGAKIRAN
DATE MFG.	2013
CONDITION	NEVER-USED



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# Air Compressor System

## MAIN COMPONENTS

### AIR COMPRESSORS

- Manufacturer: Dalgakiran
- Model: DVK125
- Type: (3) Oil injected rotary screw compressors (2 running & 1 stand by)
- Flow Rates : 1320 m<sup>3</sup>/h @ 13 bar(g)
- Integrated Air Filter : Mann&Hummel, Europiclon 600
- Integrated Air-Cooling Fan and Compact Heat Exchanger
- Integrated Water Separator: G1200WS (1585 m<sup>3</sup>/h)
- Dimensions: 2500 x 1400 x 2037 mm
- Motor : Leroy Somer 90 kW, 400 V, 3 phases, 50 Hz, 2P
- Air End: Rotorcomp, B260



### OIL / WATER SEPARATORS

- Model : D-Mat 30
- Manufacturer : BEKO-Germany
- Capacity Up to 30 m<sup>3</sup>/min
- Volume of container : 230 Liters
- Discharge: Water contains <10 mg oil / Liter

### HIGH EFFICIENCY AIR LINE FILTER

- PED 97/23 EC
- Model : GO1820MX ( 2220,5 m<sup>3</sup>/h @11bar(g) )
- Manufacturer : MIKROPOR
- Integrated Pressure Indicator
- 1-micron particle removal and 0,5 mg/m<sup>3</sup> oil carryover @21°C

### WET AIR RECEIVER

- Model: DHT 5
- Manufacturer: YAKUT KAZAN
- 5 m<sup>3</sup> Capacity as per PED 97/23 EC with CE stamp
- Design Pressure / Test Pressure : 16 bar / 24 bar
- Actual thickness: 10 mm.

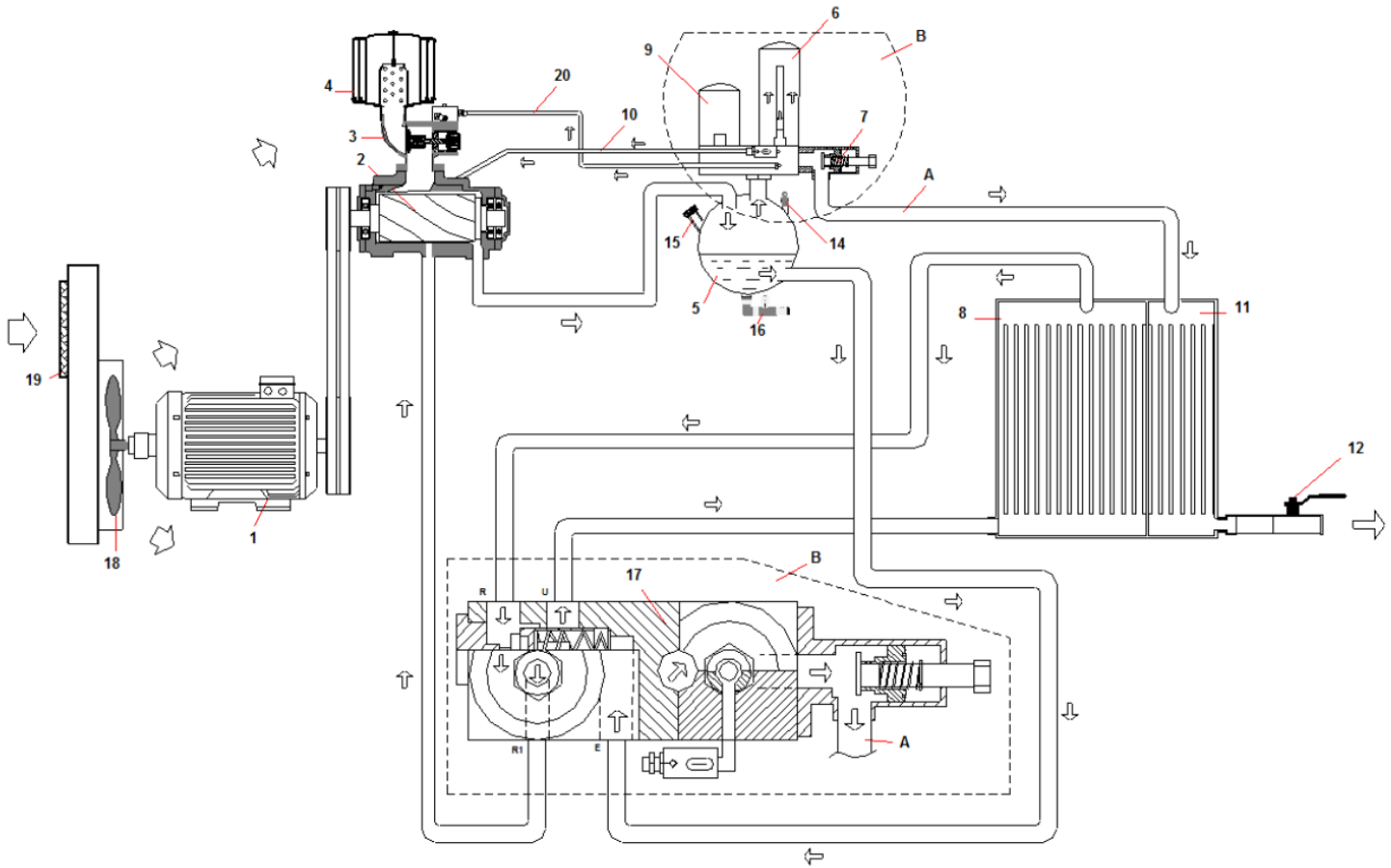


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# Air Compressor System

## PROCESS DESCRIPTION



- The electric motor of compressor (1) rotates air end unit (2).
- DALGAKIRAN compressors draw in atmospheric air through the cyclonic suction filter which is suitable for dusty environment. (4)
- Air end unit absorbs the air passing from pilot intake section of the intake valve (3) and sends it to separator tank (5) after mixing with oil. This way pressure inside separator tank (internal pressure) starts to rise.
- When the internal pressure comes to a reasonable level suction valve fully opens and compressor is loaded (20).
- Minimum pressure valve (7) does not send the internal pressure to use until it becomes to 3 -4 bar, keeps inside separator tank.
- When internal pressure starts to exceed 3,5 - 4 bars, minimum pressure valve cannot overcome the internal pressure and air production is started by opening the way.
- Separator filter (6) atop of the separator tank separates the compressed oil / air mixture from each other.
- The separated air passes through minimum pressure valve and comes to the after cooler side of combi-cooler (air to air / oil to air)(11).



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# Air Compressor System

## PROCESS DESCRIPTION

The separated air passes through minimum pressure valve and comes to the after cooler side of combi-cooler (air to air / oil to air)(11).

The oil inside the separator tank comes to the thermal valve by the effect of internal pressure. Thermal valve (17) does not let the oil to flow through the cooler until the oil temperature reaches the specific value. In this case; oil goes from separator tank directly to oil filter (9) and from there to air end unit. When the oil temperature reaches the required value (71°C); thermal valve closes the line in between separator tank and oil filter. And it ensures the oil to flow into cooler side of combi-cooler (8). After cooling process, oil sent to oil filter, then, the filtered oil is again sent to screw oil inlet and lubrication cycle continues.

The oil removes approx. 85% of compression heat from screw compressors with oil injected cooling. When using a heat exchanger the heat can be extracted from the oil and used for utility.

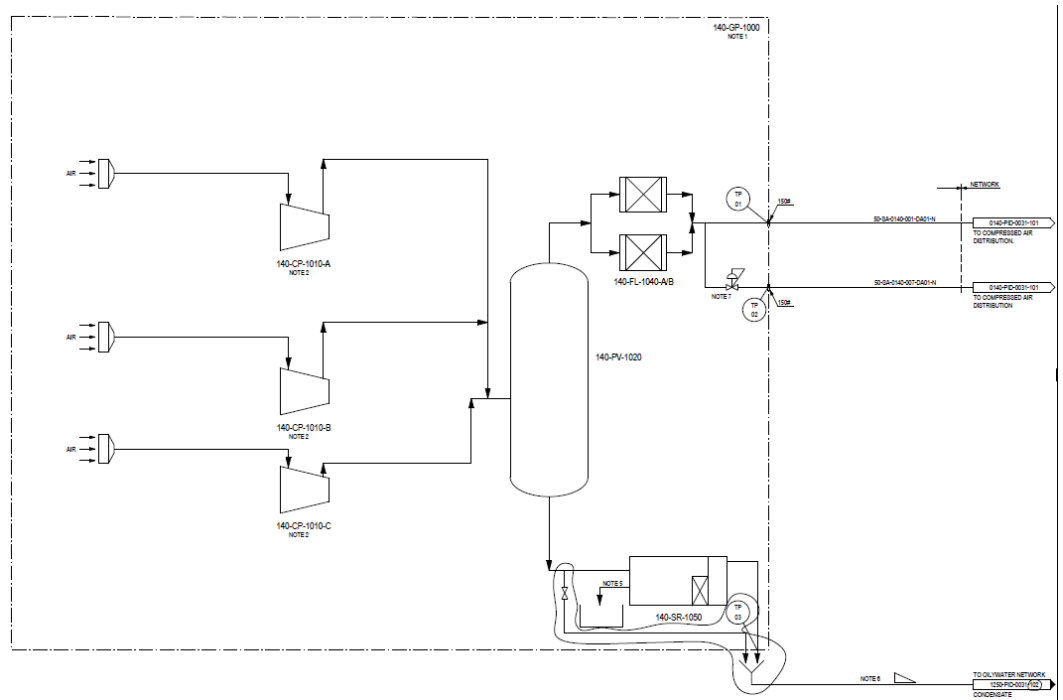
The fan on the compressor (18) ensures the flow of cooling air absorbed from environment to cooler. The cooler is composed of two parts; one for air and one for oil. This way oil and air are separately cooled in respective sections.

The air absorbed by compressor is filtered twice. When the fan sends the cooling air into compressor, the absorbed air is cleaned by air panel filter (19). The air absorbed by air end is filtered again while passing through intake filter which is suitable for dusty environment (4).

Small quantity of oil leaks into separator filter during operation. This leakage is sent back to system by oil return line (scavenge) (10).

In order for establishing pressure safety inside separator tank, safety valve (14) provides safety for future failure situations.

The oil is supplied in the compressor by removing the oil tap (15) on compressor chassis. The old oil is discharged by discharge valve (16) under separator tank.



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## PACKAGING DESCRIPTION

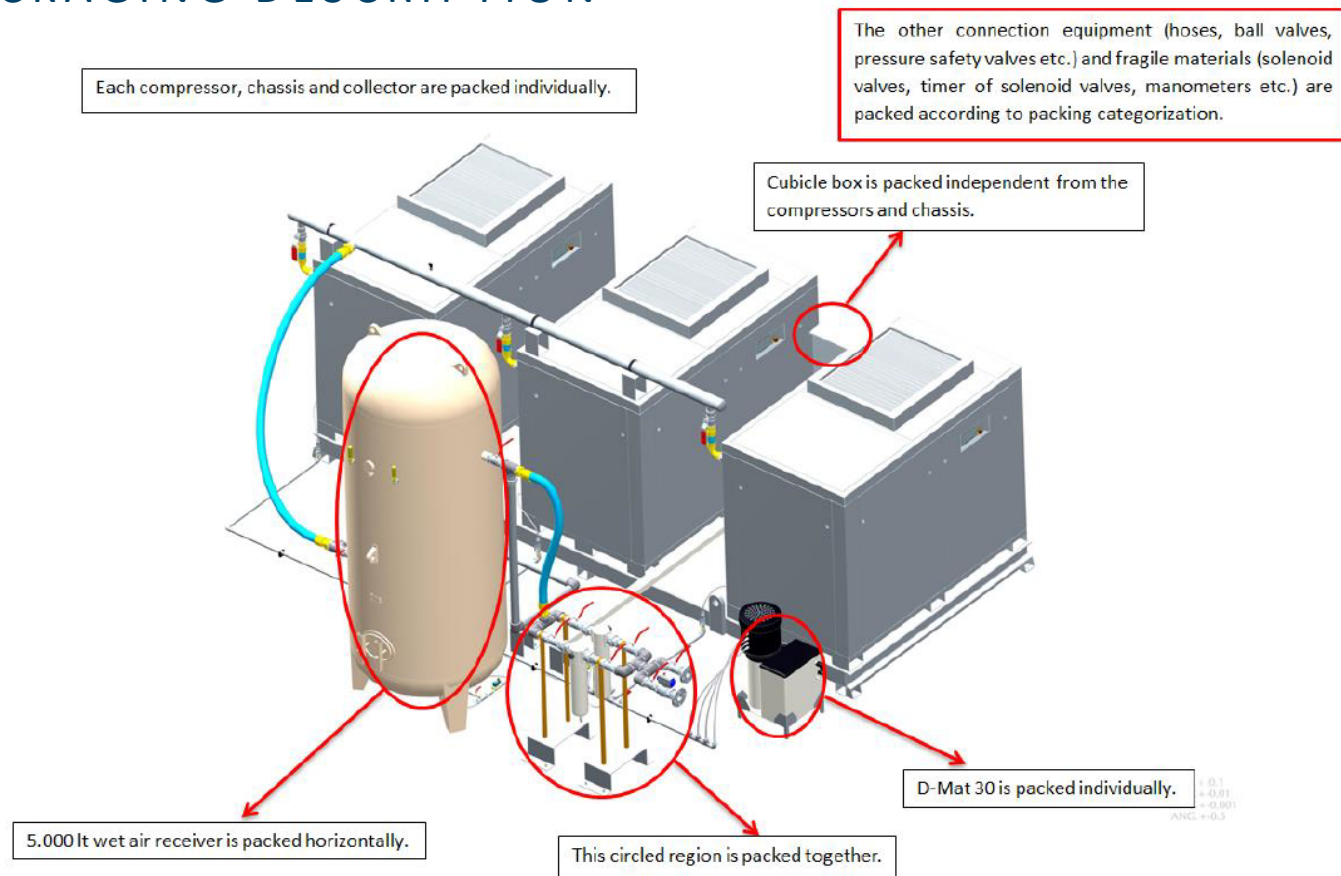
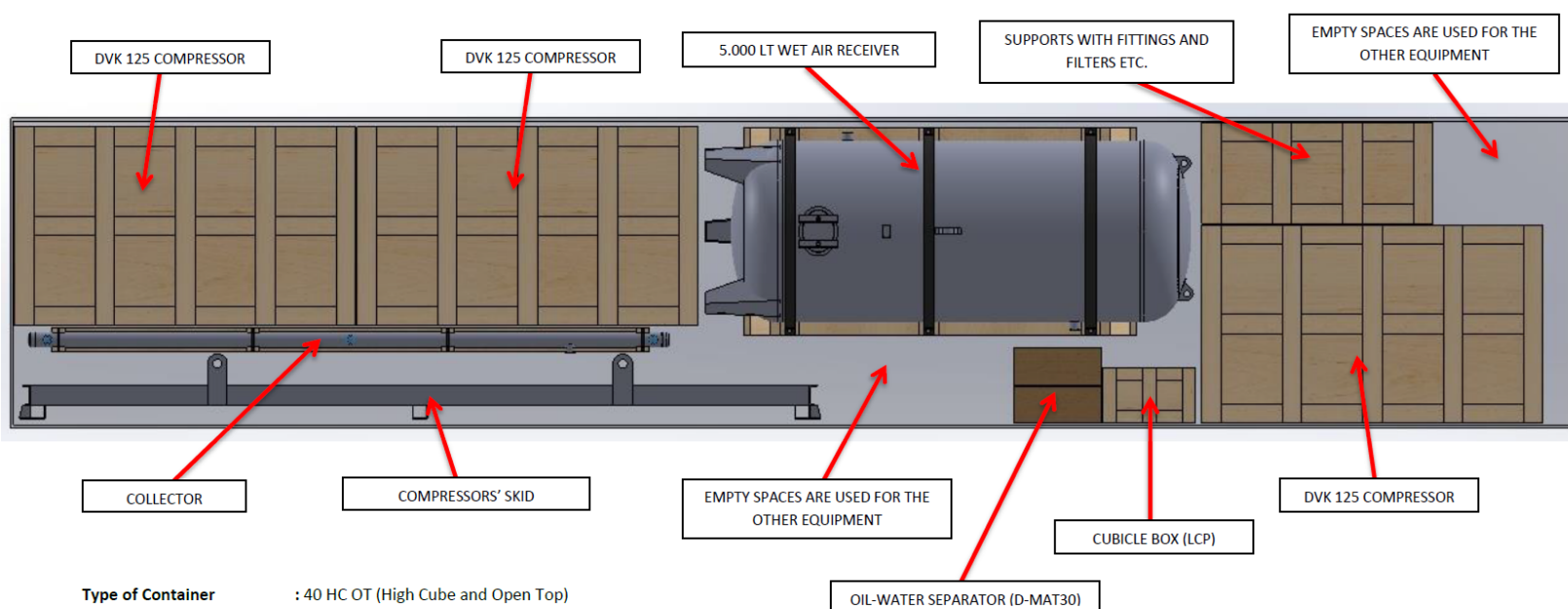


Figure 1. Packing explanation for 140-GP-1000



Type of Container : 40 HC OT (High Cube and Open Top)  
 Dimensions of Container : 12000 X 2340 X 2680 (L X W X H)



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# Air Compressor System

## DATA SHEET

19-Nov-2012		DVK 125		<div>DALGAKIRAN</div> <div>dalgakiran.com</div>				
Rev. No: 03								
CAPACITY & POWER CONSUMPTION KAPASİTE & GÜÇ TÜKETİMİ		Maximum Working Pressure Maksimum Çalışma Basıncı		bar	10	13		
		Capacity at Nominal Working Pressure (FAD / ISO 1217-AnnexC) Nominal Çalışma Basıncında Kapasite		m <sup>3</sup> /min m <sup>3</sup> /dak	13.50	11.00		
		Shaft Power at Nominal Working Pressure Nominal Çalışma Basıncında Şaft Gücü		kW	87.1	86.9		
		Idling Shaft Power Rölantide Şaft Gücü		kW	22.7	22.6		
		Nominal Working Pressure Nominal Çalışma Basıncı		bar	9.5	12.5		
		Minimum Working Pressure Minimum Çalışma Basıncı		bar	5.0	5.0		
		Air-End Male Rotor Speed Vida Devri		rpm	2400	1900		
		Maximum Package Power at Nominal Working Pressure		With Fan (IE2 Motor) ISO1217-AnnexC [Fanlı]		kW	95.0	94.8
				Without Fan (IE2 Motor) [Fansız]			92.1	91.9
		Specific Energy Consumption		With Fan (IE2 Motor) ISO1217-AnnexC [Fanlı]		kW/m3/min	7.04	8.62
Without Fan (IE2 Motor) [Fansız]				6.82	8.35			
Drive System Tahrik Sistemi				Belt / Pulley Kayış / Kasnak				
COOLING SOĞUTMA	GENERAL GENEL	Minimum Allowed Ambient Temp. Minimum Ortam Sıcaklığı		°C	+ 5	+ 5		
		Maximum Allowed Ambient Temp. Maksimum Ortam Sıcaklığı		°C	+ 47	+ 47		
		Compressed Air Temp. Rise Over Suction Temp. Emiş Sıcaklığına Bağlı Hava Çıkış Sıcaklık Artışı		°C	10	10		
		Heat Rejection to the Oil Cooler (ΔT) Yağ Soğutucudaki Güç		kW	74.06	73.87		
		Heat Rejection to the After Cooler (ΔT) Hava Soğutucudaki Güç		kW	13.07	13.04		
	AIR-COOLED HAVA-SOĞUTMALI	Cooling Air Flow Rate (All Fans) [Q <sub>a</sub> ] Soğutma Havaşı Debisi (Tüm Fanlar)		m <sup>3</sup> /h m <sup>3</sup> /saat	25000	25000		
		Dimension of Air Outlet(s) Radyatör Hava Çıkış Kesit(ler)i		mm	1000x1122	1000x1122		
		Max.Cooling Air Pressure Drop Soğutma Havaşının Maksimum Basınç Kaybı		Pa	150	150		
		Cooling Air Temp Rise Over Ambient Temp. Ortam Sıcaklığına Bağlı Soğutma Havaşı Sıcaklık Artışı		°C	10 - 15	10 - 15		
MAIN & FAN MOTORS DATA ANA & FAN MOTOR VERİLERİ	MAIN MOTOR ANA MOTOR	Main Motor Rated Output Power Ana Motor Çıkış Gücü		kW	90	90		
		Main Motor Efficiency (IE3) Ana Motor Verimliliği		%	95	95		
		Main Motor Efficiency (IE2) Ana Motor Verimliliği		%	94.6	94.6		
		Main Motor Mounting Ana Motor Montajı		IMB	B3	B3		
		Main Motor Frame Size Ana Motor Gövde			315 M	315 M		
		Main Motor Degree of Protection Ana Motor Muhafaza Derecesi		IP	IP55	IP55		
		Main Motor Pole Number Ana Motor Kutup Sayısı		#P	2	2		
		Main Motor Rated Speed (Synchronous Speed at 50Hz) Ana Motor Devri (50Hz'deki Senkronize Devir)		rpm	3000	3000		
		Main Motor Rated Speed (Synchronous Speed at 60Hz) Ana Motor Devri (60Hz'deki Senkronize Devir)		rpm	3600	3600		
		Main Motor Insulation Class Ana Motor İzolasyon Sınıfı			F	F		
		Main Motor Temperature Rise Class Ana Motor Sıcaklık Sınıfı			B	B		
	FAN MOTOR(S) Not Applicable to [W] Version FAN MOTOR(LAR) [W] Versiyonlarda Uygulanamaz	Number of Fans Fan Sayısı		#	1	1		
		Fan Motor(s) Rated Input Power (All Fans) Fan Motor Giriş Gücü (Tüm Fanlar)		kW	2.94	2.94		
		Fan Motor(s) Degree of Protection Fan Motor Muhafaza Derecesi		IP	IP54	IP54		
		Fan Motor(s) Pole Number Fan Motor Kutup Sayısı		#P	4	4		
		Fan Motor(s) Rated Speed (Synchronous Speed at 50Hz) Fan Motor Devri (50Hz'deki Senkronize Devir)		rpm	1500	1500		
		Fan Motor(s) Rated Speed (Synchronous Speed at 60Hz) Fan Motor Devri (60Hz'deki Senkronize Devir)		rpm	1800	1800		





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## DATA SHEET

19-Nov-2012	DVK 125		 dalgakiran.com	
Rev. No: 03				
GENERAL TECHNICAL DATA GENEL TEKNİK VERİLER	Oil Quantity Yağ Miktarı	l	45	45
	Residual Oil Content in Compressed Air Basınçlı Havada Kalan Yağ İçeriği	mg/m <sup>3</sup>	≤ 3	≤ 3
	Compressed Air Outlet Basınçlı Hava Çıkışı	R	2"	2"
	Compressor Package Inlet Power Cable Minimum Cross-Section Area (This recommended cross-section area is up to 25m Power Cable) Kompresöre Verilen Gücün Kablo Kesiti (Bu kablo kesiti 25m güç kablosuna kadar geçerlidir)	mm <sup>2</sup>	3 x 70 +35	3 x 70 +35
	Noise Level (ISO 2151, ±3dB (A)) Ses Seviyesi	dB (A)	79	79
	Compressor Weight (approx.) Kompresör Ağırlığı (yaklaşık)	kg	2240	2240
	Compressor Dimensions ( L x W x H ) Kompresör Boyutları ( B x E x Y )	mm	2500x1400x2037	2500x1400x2037
	Please Contact DALGAKIRAN KOMPRESOR for Lower / Higher Operating Pressures Yüksek / Alçak Çalıştırma Basınçları için Lütfen DALGAKIRAN KOMPRESÖR'le İletişime Geçiniz		All rights reserved. DALGAKIRAN KOMPRESOR has the legal rights to change this specification without an announcement. Tüm hakları saklıdır. DALGAKIRAN KOMPRESÖR bu belgeyi haber vermeksizin değiştirme hakkına sahiptir.	
REFERENCE CONDITIONS REFERANS KOŞULLARI	Absolute Inlet Pressure / Mutlak Giriş Basıncı	1 bar(a)	 dalgakiran.com	
	Relative Air Humidity / Bağıl Nem	0%		
	Air Inlet Temperature / Hava Giriş Sıcaklığı	20°C		
	Standard Oil Type ** / Standart Yağ Tipi **	Dalgakiran Smartoil		
	Set Point Thermostatic Valve / Termostatik Valf Set Değeri	71°C		
	(*) +10°C / Minimum Water Inlet Temp. / (*) +10°C / Minimum Su Giriş Sıcaklığı			
	(**) Special lubricants for different applications are available, please contact DALGAKIRAN KOMPRESOR Sales Department			
	(**) Farklı uygulamalar için özel yağlar mevcuttur, lütfen DALGAKIRAN KOMPRESÖR Satış Departmanı'yla iletişime geçiniz			

Inlet Air Filter Technical Specifications							
Model	Con. Size Inlet / Outlet (mm)	Nominal Flow Rate (m <sup>3</sup> / min)	Replacement Filter Element		Aprox. Weight (kg)	Dimensions (mm)	
			main element	secondary element		Ø	H
Mann & Hummel Europiclon 600	110 / 110	7,5 - 15	C 23 610	CF 610	5,0	323	441

Compressor Air End Screw Technical Specifications							
Brand Model	Power Range up to (kW)	Capacity up to (m <sup>3</sup> /min.)	Pressure up to (bar)	Weight (kg)	Speed Max. (rpm)	Dimensions (mm.)	Material
Rotorcomp B260	132	25	15	250	3500	691x464x345	Grey Cast Iron



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# Air Compressor System

## DATA SHEET

### Water Separator Technical Specifications

Filter Model	Max. Operating Temp.	Pressure Loss (mbar)	Connection Size	Weight (kg)	Flow Rate @ 10 bar @ 13 bar	Dimensions (mm)			
						A	B	C	D
MIKROPOR G 1200 WS	80 °C	50	DN 50	10,5	1390 m³/h 1585 m³/h	145	42	467	550

### Compressed Air Filter Technical Specifications

Brand Filter	Connection Size Inlet/Outlet	Flow Rate @ 11 bar	Max. Working Pressure	Element Model	Max. Working Temperature	Initial Pressure Loss	Weight (Kg)	Dimensions (mm)			
								A	B	C	D
MIKROPOR G01820 MX	DN 65	2220,5 m³/h	16 bar	M1820	80 °C	80 mbar	11,33	194	865	808	45

Specifications	Pre Filtering	General Purpose	Oil Removal	Activated Carbon
Grade	P	X	Y	A
Particle Removal (Micron)	5	1	0,01	0,01
Max. Oil carryover at 21°C (mg/m³)	5	0,5	0,01	0,03
Max. working temperature (°C)	80	80	80	25
Initial pressure loss (mbar)	40	80	100	80
Pressure loss for element change (mbar)	700	700	700	700
Element colour code	GREEN	BLUE	RED	METAL SS

### Air Receivers Technical Specifications

Model	Capacity	Inlet/Outlet Connections	Diameter / Height	Test Pressure	Max. Working Temperature	Min. Working Temperature	Corrosion Allowance	Weight	End Type	Welding Method
YAKUT KAZAN DHT 5	5000 lt	DN 65	1400 / 3750 mm	24 bar	100 °C	10 °C	1,5mm	1540 kg	Elliptical	Submerged Ar. Welding



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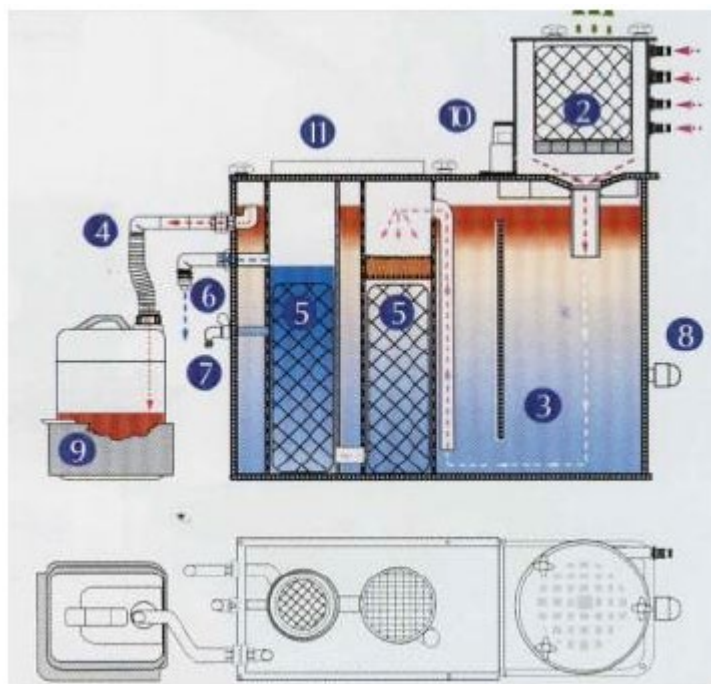
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## DATA SHEET

### OIL WATER SEPARATOR – BEKO D-MAT30



- 1 Condensate inlet
- 2 Expansion chamber with filter
- 3 Rooting- and smoothing chamber
- 4 Oil discharge
- 5 Filtering
- 6 Water discharge
- 7 Test valve
- 8 Heater (optional)
- 9 Oil collect tank with overflow guard
- 10 Test set
- 11 Document department

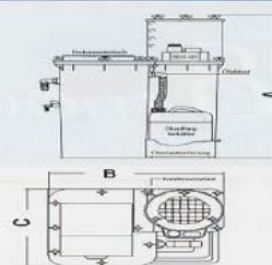
TECHNICAL DATA

	compressor capacity up to m³/min	volume of container Liter	dimensions (mm)			weight kg	condensate input	water drain	oil drain	filtering		
			A	B	C					pre-filter kg	charcoalfilter	
											water kg	exh. air kg
mini	1,2	14	610	285	285	9	4 × 1/2"	1"	1"	Combifilter	1 × 1,5	
1	2	22	650	430	325	10	4 × 1/2"	1"	1"	Combifilter	1 × 1,5	
2	3	40	908	437	325	15	4 × 1/2"	1"	1"	–	1 × 3,8	1 × 1,5
4	5	74	965	600	380	22	4 × 1/2"	1"	1"	–	1 × 3,8	1 × 1,5
8	8	120	965	620	520	25	4 × 1/2"	1"	1"	–	1 × 3,8	1 × 1,5
15	15	160	1160	620	520	28	4 × 1/2"	1"	1"	1 × 0,3	1 × 3,8	1 × 1,5
30	30	230	1160	850	520	55	4 × 1/2"	1"	1"	1 × 0,3	2 × 3,8	1 × 1,5
61	70	790	1450	1300	1000	90	4 × 1/2"	2"	2"	4 × 0,3	4 × 3,8	1 × 1,5

A

B

C



\* Capacity valid for screw compressors using non-emulsifying oils. When using other types of compressors and other types of compressor oils, these figures have to be reduced. (See Maintenance Book). \* 1 m<sup>3</sup>/min = 35,3 cfm



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**PARTICULAR SPECIFICATION - AIR COMPRESSION PACKAGE - 140-GP-1000**

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	CRITERIA	UNIT	DATA	VENDOR DATA	Note
	<b>General:</b>				
	Item	-	<b>Air Compression Package</b>	<b>Air compression package</b>	
	Tag number		<b>140-GP-1000</b>	<b>140-GP-1000</b>	
	Service	-	Unit 143 - 145: Service Air production	<b>Units 143 - 145:</b> <b>Service Air production</b>	
	Number required	-	- Compressors: - 2 x 100% (1 running, 1 stand by) or 3 x 50% (2 running, 1 stand by) - Air coolers: - 2 x 100% (1 running, 1 stand by) or 3 x 50% (2 running, 1 stand by) + 1 x 100 % in common - Wet air receiver	- Compressors: 3 x 50% (2 running, 1 stand by) - Integrated Air coolers - Wet air receiver	
	Type of compressor	-	Lubricated screw Compressor preferred	<b>Oil injected rotary screw compressor</b>	
	Hazardous area classification	-	Non classified	<b>Non classified</b>	
	Gas handled	-	Air	<b>Air</b>	
	Duty	-	Continuous	<b>Continuous</b>	
	Location	-	Outdoor, under shelter	<b>Outdoor, under shelter</b>	
	Compressor manufacturer	-	By VENDOR	<b>DALGAKIRAN</b>	
	Model	-	Vendor to confirm.	<b>3 x DVK125</b>	
	<b>Flow rate capacity (at battery limit):</b>				
	Nominal	m <sup>3</sup> / h	1087	<b>1320</b>	Note 1,2
	Design	m <sup>3</sup> / h	VENDOR DATA	<b>1620</b>	Note 1,2
	<b>Inlet conditions:</b>				
	Pressure	bar abs	1.01	<b>1.01</b>	
	Temperature:				
	Minimum	°C	5	<b>5</b>	
	Average	°C	35	<b>35</b>	
	Maximum	°C	47	<b>47</b>	
	Relative humidity				
	Warm season	%	75% @ 47°C	<b>75% @ 47°C</b>	
	Rainy fall season	%	100% @ 35°C	<b>100% @ 35°C</b>	
	Other seasons	%	60% @ 5°C	<b>60% @ 5°C</b>	
	<b>Discharge conditions:</b>				
	Pressure:				
	Maximum	bar g	12	<b>13</b>	
	Normal	bar g	11	<b>11</b>	
	Design (mechanical)	bar g	12	<b>12</b>	
	Temperature:				
	Maximum	°C	62	<b>60</b>	
	Normal	°C	20 to 62	<b>15 to 60</b>	
	Design (mechanical)	°C	80	<b>80</b>	
	Quality of air required according to NF ISO 8573-1, Juin 2010		SERVICE AIR	<b>SERVICE AIR</b>	
	Particulates		Class 4	<b>Class 4</b>	Note 2,3
	Dew Point		N/A	<b>N/A</b>	Note 2,3
	Oil		Class 4	<b>Class 4</b>	Note 2,3
	<b>Main power data (compressor):</b>				
	Power required @ coupling / service factor)	kW / -	Vendor to confirm.	<b>86.91 / 1</b>	
	Rated	kW	Vendor to confirm.	<b>90</b>	Note 2
	<b>CONSTRUCTION DATA</b>				
	<b>Stage of compression:</b>				
	Speed (1st)	rpm	As per VENDOR standard	<b>1900</b>	
	Rotor diameter	mm	As per VENDOR standard	<b>270</b>	
	<b>Materials:</b>				
	Casing	-	As per VENDOR standard	<b>Carbon Steel</b> <b>(grade DD11 of EN 10111)</b>	
	Rotors	-	As per VENDOR standard	<b>Carbon Steel</b> <b>(Tradename : OVAKO 520S)</b>	
	Wet air receiver	-	As per VENDOR standard	<b>Carbon Steel</b> <b>(grade P265GH)</b>	
	<b>Oil system:</b>				
	Oil circulation	-	As per VENDOR standard	<b>Differential pressure</b>	
	Oil type	-	As per VENDOR standard	<b>Corena S2R</b>	
	Oil brand	-	As per VENDOR standard	<b>Shell</b>	
	Oil tank / separator	-	YES	<b>Yes - CE stamp</b>	
	Oil filters	-	3 x 100%	<b>3 x 100%</b>	
	Oil cooler (type / quantity)	-	As per VENDOR standard	<b>Aluminium plates type - fan</b>	
	Thermal valve	-	As per VENDOR standard	<b>Yes</b>	

# PARTICULAR SPECIFICATION - AIR COMPRESSION PACKAGE - 140-GP-1000

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CRITERIA	UNIT	DATA	VENDOR DATA	Note
<b>Cooling system:</b>				
After cooler (type)	-	By Vendor	Air cooling fan Integrated compact heat exchanger	
Air cooler filter	-	By Vendor	Filter panel	
Air fan motor	-	IP / KW	IP54 / 2.94	
<b>Shaft seals:</b>				
Type		As per VENDOR standard	Slip free V - Belt	
<b>Couplings and guards:</b>				
Manufacturer		As per VENDOR standard	ROTORCOMP	
Type		Non-lubricated	Non - Lubricated	
Coupling guard		YES	YES	
Anti sparking		YES	YES	
<b>Mounting Plates:</b>				
Common Baseplate compressor / driver		YES	YES	
Common single lift base plate		YES	YES	
Anchor bolts		As per VENDOR standard	Not required	
<b>Intake filter:</b>				
Type	-	by VENDOR	High dusty filter - MH Europiclon 600	
Dust collector	-	As per VENDOR standard	YES	
Free area	m²	As per VENDOR standard	Vendor standard	
Efficiency (mesh %)	%	1 µm 98%	Vendor standard	
Nominal air capacity	m³/min	As per VENDOR standard	from 7.5 to 15	
<b>Driver:</b>				
Type	-	Electric Motor	Electric Motor Leroy Somer (Vendor std)	Note 4
Manufacturer	-	As per VENDOR standard		
Characteristics	V / - / HZ	400 V / 3 phases / 50 Hz	400 V / 3 phases / 50 Hz	
Main power	kW	-	90	Note 2
ATEX certification	-	Not required	Not proposed	
<b>Compressor instrumentation:</b>				
Local Gauge Boards	-	As per VENDOR standard	Yes - Logika control	
Local Control Panel	-	PLC by Vendor	PLC - Logik 25-S	
Differential pressure on oil filter	-	As per VENDOR standard	YES - Indicator	
ATEX certification	-	Not required	Not proposed	
IP 65	-	IP 65 is acceptable as a minimum	IP65 - Pressure switch and transmitter	
Pressure switch	-	Required	YES	
Safety pressure valve	-	Required	YES	
<b>AUXILIARY EQUIPMENT</b>				
<b>Wet Air Receiver (Service Air):</b>				
N° required	-	1	1	
Fluid	-	Wet compressed air	Wet Compressed air	
Capacity	m³	2	2	
Operating pressure (gauge)	bar g	11	Up to 12	
Design pressure (gauge)	bar g	12	Up to 20	
Max allowable pressure drop	bar g	3	0	
Operating temperature	°C	20 to 62	15 to 62	
Design temperature	°C	80	100	
Design - Fabrication - Inspection code	-	ASME VIII div 1 preferred	PED 97/23/EC	Note 5
Stamp ASME (if any)	-	Required	CE	Note 5
<b>Water separator</b>				
Manufacturer	-	As per VENDOR standard	MIKROPOR	
Model	-	As per VENDOR standard	G1200WS	
Air flow (max)	m³/h	As per VENDOR standard	1200	
Pressure loss (max)	mBar	As per VENDOR standard	50	
N° required	-	3 x 100%	3 x 100%	
<b>Package outlet filter:</b>				
Type	-	As per VENDOR standard	High efficiency air line filter for particles/oil removal	
Number of filters	-	2 x 100%	2 x 100%	
Manufacturer	-	As per VENDOR standard	MIKROPOR	
Model	-	As per VENDOR standard	G1600 Mx	
Particles removal efficiency	µm	Class 4 - ISO 8573	1	
Air flow (max)	m³/h	As per VENDOR standard	1600	
Oil removal efficiency	mg/m3	Class 4 - ISO 8573	0.5	
Differential pressure	-	As per VENDOR standard	Level indicator	
Pressure loss	mBar	As per VENDOR standard	80	
Purge Auto	-	As per VENDOR standard	Effective drain	
Design - Fabrication - Inspection code	-	As per VENDOR standard	PED 97/23/EC	Note 5

**PARTICULAR SPECIFICATION - AIR COMPRESSION PACKAGE - 140-GP-1000**

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CRITERIA	UNIT	DATA	VENDOR DATA	Note
<b>Condensate / drain collection:</b>				
Condensate / oil collection device	-	As per VENDOR standard	<b>D-MAT 30</b>	
Number of collector per unit	-	1 - Drain manifolded	<b>1</b>	
<b>Painting:</b>				
Type / Code		As per TSU standard	<b>Vendor standard</b>	
<b>Weight &amp; Dimensions:</b>				
Compressor	kg	By VENDOR	<b>2240</b>	
Dimensions of the complete skid	mm	By VENDOR (L / W / H)	<b>6300 x 2500 x 2400</b>	
<b>Part II: Misceallenous supply</b>				
<b>Installation &amp; Piping:</b>				
Interconnecting Piping Material	-	As per VENDOR standard	<b>Galvanized Carbon Steel</b>	
Outlet flange	-	DQ01 ASME B16.5 / RF / 150#	<b>ASME B16.5 / RF / 150#</b>	Note 9
Skidded equipment	-	Required	<b>Yes</b>	
Anchor bolts	-	As per VENDOR standard	<b>Not required</b>	
<b>Electrical</b>				
Package type	-	E2 - Field	<b>E2-field</b>	
Electrical cabinet	-	Required	<b>Supplied - IP55</b>	
Electrical cable type (interconnecting cables)	-	Copper core, XLPE insulated, PVC outer sheath	<b>Compliant</b>	
Electrical cable trays type	-	Hot dipped galvanized steel	<b>Compliant</b>	
<b>Instrumentation</b>				
Package type	-	P3	<b>P3 - Multicontroller</b>	
Communication type (to MCS)	-	Modbus / TCP-IP	<b>Modbus / TCP-IP</b>	
<b>Part III: Particular supply</b>				
<b>Pressure reducing valves</b>				
Quantity to be supplied	-	1	<b>1</b>	
Upstream / downstream pressure	bar g	11/7	<b>11/7</b>	



CRITERIA	UNIT	DATA	VENDOR DATA	Note
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**Notes :**

**Note 1:** Flowrate capacity (m3/h) at theBattery limit / outlet of the package are as per the ISO1217 requirements and are including dryers air regeneration (20% air flow estimated)

**Note 2 :** Performance Requirements and Guarantees for the Package:

Performance Requirements and Guarantees:	Values	Tolerances
Nominal	1087 m³/h	- 0%
Air discharge pressure	11/ 7 bar g	+ 0%
Maximum outlet temperature	60°C	+ 0%
<b>Quality of air :</b>	<b>Service Air</b>	
Particulates	Class 4	+ 0%
Dew Point	N/A	+ 0%
Oil	Class 4	+ 0%
Electrical power consumption (absorbed power @ normal / design conditions)	90 per compressor	+ 0%
Noise level @ rated conditions	85 dB(A) @ 1 m	+0 dB(A)

**Note 3:** The quality of air required is defined according to NF ISO 8573-1, Juin 2010

	SERVICE AIR
	Class 4
Particulates (nb of particulates/m3 according to particulates size)	0,1 µm < d ≤ 0,5 µm : Not specified 0,5 µm < d ≤ 1,0 µm : Not specified 1,0 µm < d ≤ 5,0 µm : ≤ 10 000
Dew Point (under pressure)	-
Oil	-
(total oil concentration, at 20°C and 100 kPa) (in mg/m3)	Class 4 ≤ 5

**Note 4:** Motor shall be protected against too repetitive start-ups

**Note 5:** 97/23/EC PED is acceptable for design code for pressure vessel (compliant with the VENDOR standard)

**Note 6:** Each drying unit shall be double body (one in adsorption, one in regeneration)

**Note 7:** Afterfilters with valving for maintenance shall be installed downstream the 2 drying units to provide final cleaning of the dry air stream by removing solid particles from the dryer desiccant

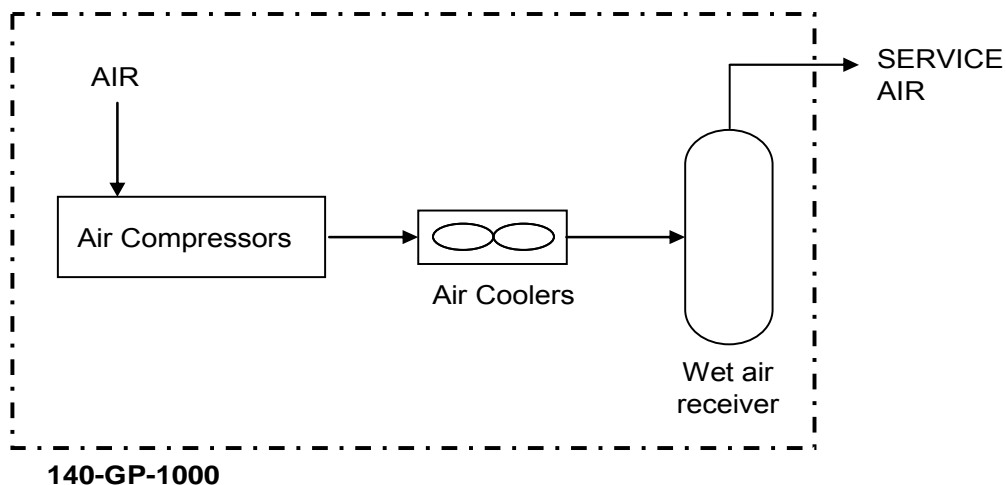
**Note 8:** Regeneration performed by dry air from the dryer outlet (Approx 20% of total flow rate is used for dryer regeneration). Air used for regeneration shall be exhausted to the atmosphere

**Note 9:** Piping battery limit connections for the Package are:

	Tie-in points ref.	Project piping class	Size	Rating	Finish	Material	Corrosion allowance
Outlet - Unit 143	(*)	DA01	(*)	150#	RF	CS Galvanized	1.5 mm
Outlet - Unit 145	(*)	DA01	(*)	150#	RF	CS Galvanized	1.5 mm
Drain Oily Water (to collector)	(*)	DA01	(*)	150#	RF	CS	1.5 mm

\* To be defined by VENDOR

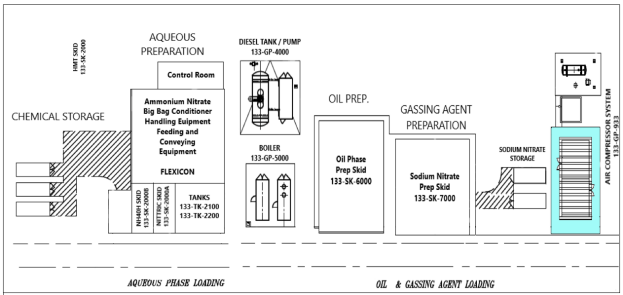
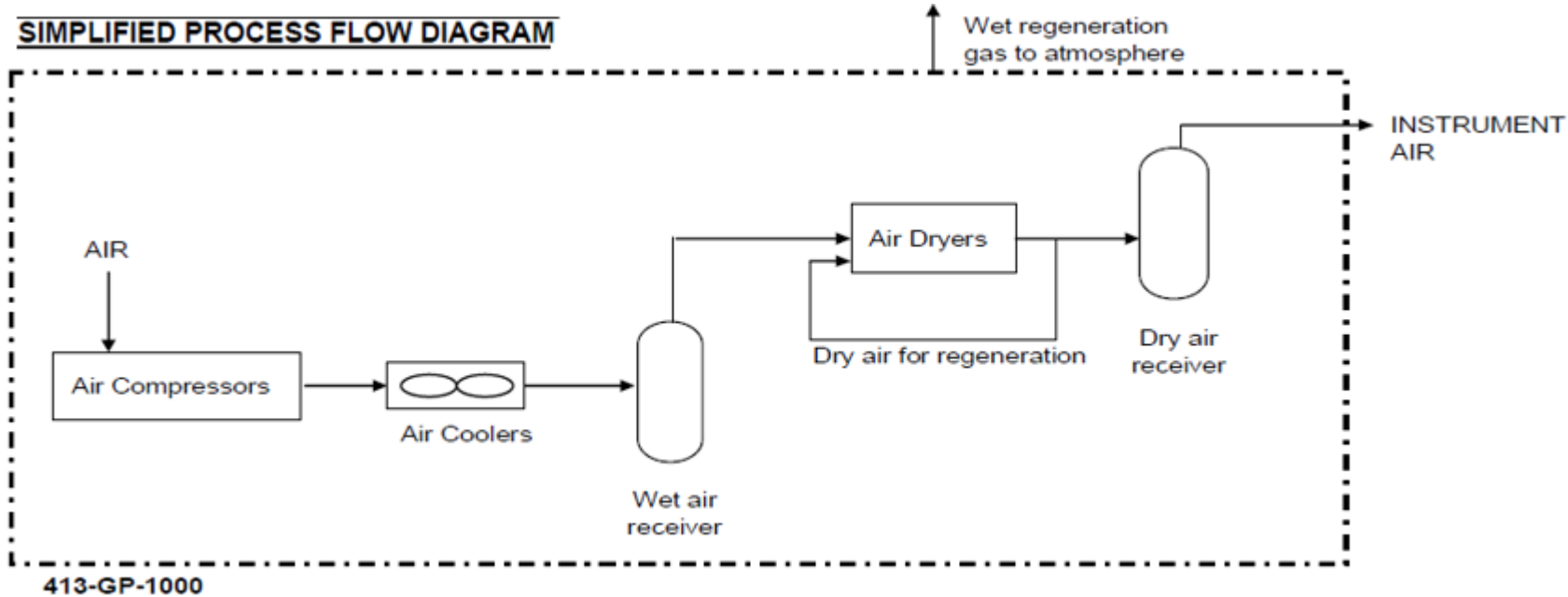
**SIMPLIFIED PROCESS FLOW DIAGRAM**



# AIR COMPRESSOR & DRYING SYSTEM (SUPPORT EQUIP.)

Manufactured by DALGAKIRAN

SIMPLIFIED PROCESS FLOW DIAGRAM

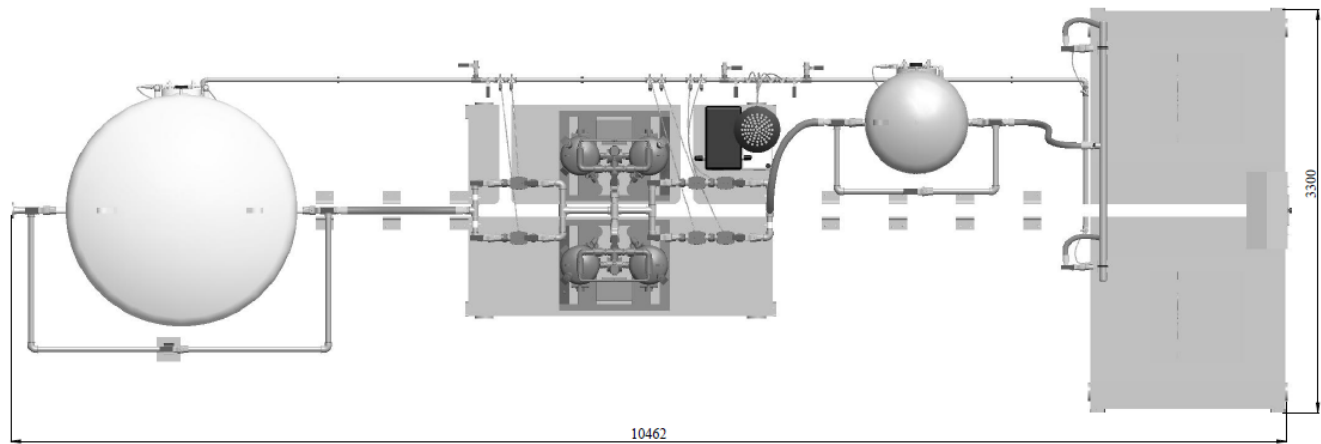


## Function

### Air Compressor Skid:

To provide a continuous, clean and dry source of compressed air. Equipment is sized and designed to support the equipment in this emulsion plant.

Comes with redundancies and fail-safes to ensure continuous and safe operations.



**NOTE:** The screenshots are from original owner's drawings.

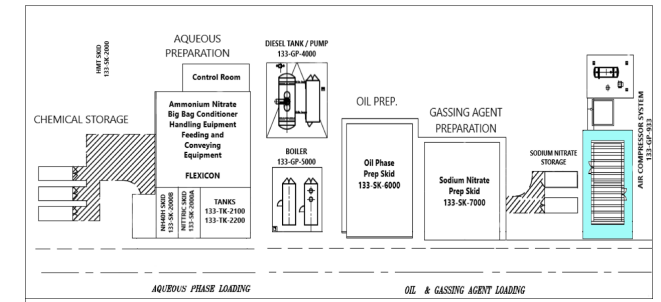
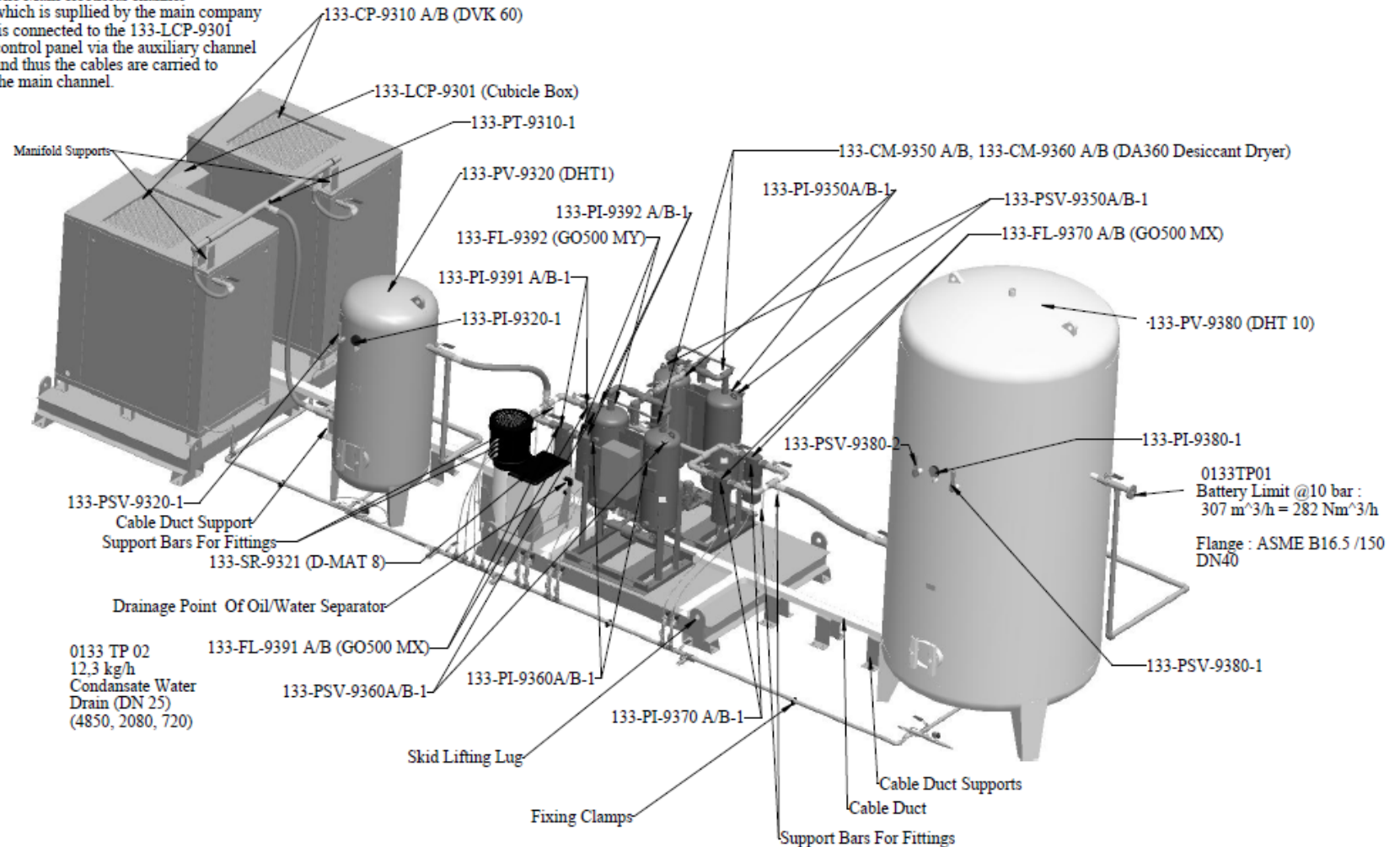
# AIR COMPRESSOR & DRYING SYSTEM (SUPPORT EQUIP.)

## Manufactured by DALGAKIRAN

### Major Components

- (2) Oil injected rotary screw air compressors (1 running, 1 in stand-by) integrated with air filter, cooling fan, heat exchanger, water separator. Air flow rate 384 m<sup>3</sup>/h @ 10 bar(g)
- Oil / Water Separator 8 m<sup>3</sup>/min
- Wet Air Receiver – 1m<sup>3</sup> Capacity @ Design Pressure / Test Pressure: 11 bar / 16.5 bar Actual thickness : 6 mm.
- Multiple High efficiency air line filters - 530 m<sup>3</sup>/h @8bar(g) 1-micron particle removal and 0.5 mg/m<sup>3</sup> oil carryover @21°C
- (2) Heatless Desiccant Air-Drying Unit (2 drying columns, 1 adsorption, 1 regeneration) (388.8 m<sup>3</sup>/h @8bar(g)
- Dry air receiver - 10 m<sup>3</sup> Capacity. Design Pressure / Test Pressure : 11 bar / 16.5 bar Actual thickness : 10 mm.

The Main electrical channel which is supplied by the main company is connected to the 133-LCP-9301 control panel via the auxiliary channel and thus the cables are carried to the main channel.



**NOTE:** The illustration above is from the original owner's drawings.