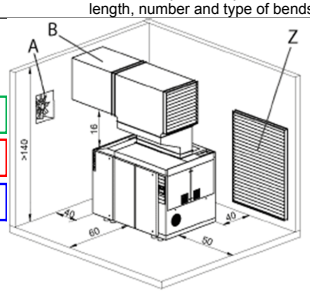
KAESER COMPRESSORS

Installation Data Sheet

Series: 1:1 Direct Drive DSD.3
Document No.: TI-DATA-2016-DSD 125T 150T 175T
Version: 2.6
Revision Date: 04/17/2023

Model	DSD 125T			DSD 150T				DSD 175T				
Rated Pressure [psig]	**110**	**125**	**130**	**110**	**125**	**145**	**175**	**110**	**125**	**145**	**175**	**217**
I. COOLING DATA												
Cooling System Available [Std., Opt.]	A/C, W/C			A/C, W/C				A/C, W/C				
Standard Ambient Temp. Range [°F]	40 - 115			40 - 115				40 - 115				
VENTILATION OF COMPRESSOR ROOM												
Air Inlet Opening [sq. ft. free area] (A/C) Z	26.9			33.4				38.8				
Air Inlet Opening [sq. ft. free area] (W/C) Z	7.5			8.6				10.8				
Solution A (forced ventilation with exhaust fan) as shown in service manual												
Cooling Fan Capacity [CFM] (A/C)	20,600			25,897				30,606				
Cooling Fan Capacity [CFM] (W/C)	5,886			7,063				8,240				
Solution B (exhaust air used for space heating) as shown in service manual												
Internal Cooling Fan Capacity [CFM] (A/C), **do not duct the dryer cooling air, exhaust fan required**	Compressor	Dryer		Compressor	Dryer			Compressor	Dryer			
	7,652	2,825		10,006	2,825			11,772	2,825			
Internal Cooling Fan Capacity [CFM] (W/C)	1,472	2,825		1,472	2,825			1,472	2,825			
Max. Additional Pressure Drop for Ducts [inch Water Column] (A/C) | (W/C)	0.40 / 0.16			0.40 / 0.16				0.32 / 0.16				
Exhaust Air Opening Reference Dimensions (L x W) [in] — See drawing for actual dimensions. The actual individual duct dimension will vary for every installation based on actual length, number and type of bends, accessories etc.	54 x 54			54 x 54				54 x 54				

Model shown for reference only
Actual Duct size may vary with installation



Solution A Exhaust Fan

Solution B Exhaust Duct

Ventilation of Compressor Room Z

AIR COOLED DATA												
Internal Cooling Fan Capacity [CFM]	7,652			10,006				11,772				
Approach Temp. [°F] — Reference conditions: 14.5 psia, 30% relative humidity and 68°F inlet air temperature.	12.6			14.4	12.6			16.2	14.4	12.6		
Typical Heat Rejected [BTU / HR]	350,500			412,500				511,500				
Fan Motor [HP], oilcooler | aircooler	4 / 1			4 / 1				4 / 1				
WATER COOLED DATA												
Type of heat exchangers	stainless steel, plate-type			stainless steel, plate-type				stainless steel, plate-type				
Internal Cooling Fan Capacity [CFM]	1,472			1,472				1,472				
Approach Temp. [°F] — Reference conditions: 14.5 psia, 30% relative humidity and 68°F inlet air temperature.	1.8			1.8				1.8				
Typical Heat Rejected into Cooling Water [BTU / HR] — Based on highest input kW of machine.	331,000			387,000				482,000				
Heat Rejected into Cooling Air [BTU / HR]	21,000			24,000				30,000				
Max. outlet temperature [°F] — Discharge temperature limited for non-treated water (to prevent calcification).	132			132				132				
Temperature differential between inlet water and max. discharge water temperature [°F]	27	54		27	54			27	54			
Max. inlet water temperature [°F]	105	77		105	77			105	77			
Min. cooling water flow [gpm]	23.8	11.9		29.9	15			35.6	18			
Pressure drop across compressor package [psi] WITHOUT cooling water throttling valve	4.5	2.9		6	3.6			7.25	4.4			
Pressure drop across compressor package [psi] WITH cooling water throttling valve	7	4		9	5			11	5			

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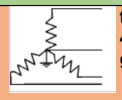
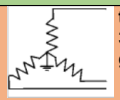
II. ELECTRICAL DATA	***Electrical data may vary in accordance with motor manufacturer's specifications. Motors are EISA compliant.***												
DRIVE MOTOR													
Motor HP		125			150				175				
Insulation Class		F			F				F				
Standard Voltage		460V/3ph/60Hz			460V/3ph/60Hz				460V/3ph/60Hz				
Full Load Amps [FLA] @ 460V/3ph/60Hz		143			177				205				
Full Load Amps [FLA] @ 575V/3ph/60Hz		CF			CF				CF				
FAN MOTOR (A/C) Oilcooler													
Insulation Class		F			F				F				
Fan Motor [HP]		4			4				4				
Full Load Amps [FLA] @ 460V/3ph/60Hz		6.0			6.0				6.0				
Full Load Amps [FLA] @ 575V/3ph/60Hz		CF			CF				CF				
FAN MOTOR (A/C) Aircooler													
Insulation Class		F			F				F				
Fan Motor [HP]		1			1				1				
Full Load Amps [FLA] @ 460V/3ph/60Hz		1.76			1.76				1.76				
Full Load Amps [FLA] @ 575V/3ph/60Hz		CF			CF				CF				
FAN MOTOR (W/C)													
Insulation Class		F			F				F				
Fan Motor [HP], Single Speed		0.4			0.4				0.4				
Full Load Amps [FLA] @ 460V/3ph/60Hz		0.6			0.6				0.6				
Full Load Amps [FLA] @ 575V/3ph/60Hz		CF			CF				CF				
TOTAL PACKAGE DATA (A/C)													
Do NOT operate package on any unsymmetrical power supply. Also do NOT operate package on power supplies like, for example, a three-phase (open) delta or three-phase star with non-grounded neutral. The machine requires a symmetrical three-phase power supply transformer with a WYE configuration output as shown on the right. In a symmetrical three-phase supply the phase angles and voltages are all the same. Other power supplies are not suitable.		 **three-phase star (wye); 4-wire; grounded neutral**						 **three-phase star (wye); 3-wire; grounded neutral**				
Continuous Duty [Hours per day]		24			24				24				
Control Cabinet Class (NEMA)		12			12				12				
Short Circuit Current Rating (SCCR) [kA] @ 460V/3ph/60Hz	Field installed fuse required, see below*	50			50				50				
Short Circuit Current Rating (SCCR) [kA] @ 575V/3ph/60Hz	Field installed fuse required, see below*	CF			CF				CF				
Package Full Load Amps @ 460V/3ph/60Hz [FLA]		169			198				235				
Package Full Load Amps @ 575V/3ph/60Hz [FLA]		CF			CF				CF				
Recommended Disconnect Fuse Size [Amps] @ 460V/3ph/60Hz	*Time delay (dual element) fuse; Class J ≤ 600A (e.g. AJT) / Class L > 600A (e.g. A4BQ). Based on 2020 NEC 240.6, 430.52, and Tables 430.52, 430.248, and 430.250	250			250				350				
Recommended Disconnect Fuse Size [Amps] @ 575V/3ph/60Hz		CF			CF				CF				
Recommended Disconnect Wire Size [AWG/kcmil] @ 460V/3ph/60Hz	The following multi-strand copper core wires are given according to 2020 NEC 310.14, 310.15, 310.16 and table 310.16 adjusted for 40°C ambient temperature. If other local conditions prevail, for example high temperature, the cross section should be checked and adjusted according to 2020 NEC 110.14(C), 220.3, 310.14, 310.15, 310.16, 430.6, 430.22, 430.24, 670.4(A) and other local codes.	250 kcmil per phase and ground			2 x 1/0 AWG per phase and ground				2 x 2/0 AWG per phase and ground				
Recommended Disconnect Wire Size [AWG/kcmil] @ 575V/3ph/60Hz		CF			CF				CF				
TOTAL PACKAGE DATA (W/C)													
Package Full Load Amps @ 460V/3ph/60Hz [FLA]		165			194				231				
Package Full Load Amps @ 575V/3ph/60Hz [FLA]		N/A			CF				CF				

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INSTALLATION and MAINTENANCE DATA													
A/C with Super Soundproofing [dB(A)]	SOUND PRESSURE LEVEL [Measured in dB(A) according to ISO 2151 using ISO 9614-2]		71			73				75			
W/C with Super Soundproofing [dB(A)]			68			69				70			
A/C Air Discharge [inches NPT or Flange]			2 1/2 ASME B16.5 class 150										
W/C Air Discharge [inches NPT or Flange]			2 1/2 ASME B16.5 class 150										
Cooling Water Connection [inches NPT or Flange]			1 1/2 ASME B16.5 class 150										
Power Input Conduit Opening(s) [inches]			2 x 3 in			2 x 3 in				2 x 3 in			
Condensate Drain Connection [NPT]			1/2			1/2				1/2			
Width [inches]			108 1/4			108 1/4				108 1/4			
Depth [inches]			68 1/8			68 1/8				68 1/8			
Height [inches]			84 1/2			84 1/2				84 1/2			
Floor Space [sq. ft.]			51 1/5			51 1/2				51 1/3			
Weight (A/C) [lb]	Weight may vary based on airend selected.		7,408			7,430				8,157			
Weight (W/C) [lb]			7,408			7,430				8,157			
COMPRESSOR FLUID DATA													
Fluid Capacity (A/C) [gal]			18.5			18.5				18.5			
Fluid Capacity (W/C) [gal]			15.3			15.3				15.3			
Flow Rate [gal/min]			35.7			35.7				35.7			
Typical Oil Consumption [fl. Oz./100 h]			14.9			17.9				22			
Standard Fluid Type			Sigma S-460			Sigma S-460				Sigma S-460			
MAINTENANCE PARTS													
Air Inlet Filter			4E0303.0										
Filter Mat (optional)			6.1943.00040 (4x)										
Filter Mat for Control Cabinet			7.4519.0 (4x)										
Fluid Filter			6.4493.0 (2x)										
Fluid Separator Kit			6.4272.2										
Maintenance Kit for Optional 5-year warranty			ANAKDSD3S										
Maintenance Kit for Optional 5-year warranty, with food-grade lubricant			ANAKDSD3F										
DRYER DATA - FOR T MODELS													
Dryer Model			ABT 250			ABT 250				ABT 250			
Maximum Inlet Air Pressure (Compressed Air at Inlet to Dryer) [psig]			232			232				232			
Nominal Pressure Drop at Rated Flow [psid]			1.75			1.75				1.75			
Rated Pressure Dewpoint [°F] at Standard Conditions	Reference conditions: 14.5 psia, 30% relative humidity and 68°F inlet air temperature.		38			38				38			
Pressure Dewpoint per ISO 8573-1			Class 4 - 6 based on ambient conditions.										
REFRIGERATION SYSTEM DATA - FOR T MODELS													
Compressor Type			MLZ 30 (Danfoss)			MLZ 30 (Danfoss)				MLZ 30 (Danfoss)			
BTU/Refrigeration ASHRAE			36,640			36,640				36,640			
Outlet Air Temperature (Nominal at Rated Conditions) [°F]	Reference conditions: 14.5 psia, 30% relative humidity and 68°F inlet air temperature.		80			80				80			
Refrigerant Type			R-513A			R-513A				R-513A			
GWP (Global Warming Potential)			631			631				631			
CO2 equivalent [t]			1.08			1.08				1.08			
Refrigerant Charge [lb]			3.77			3.77				3.77			
Air Flow Across Condenser [CFM]			2,825			2,825				2,825			

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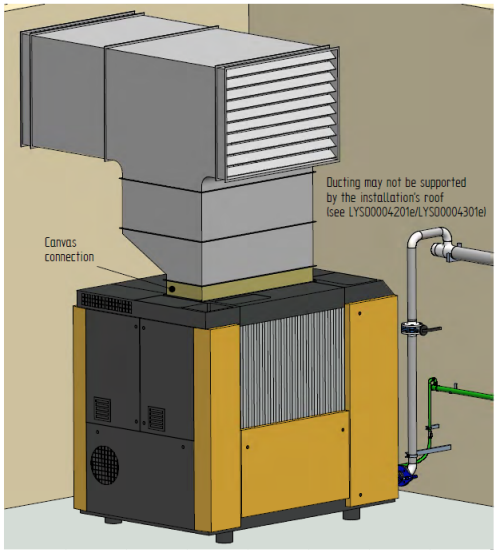
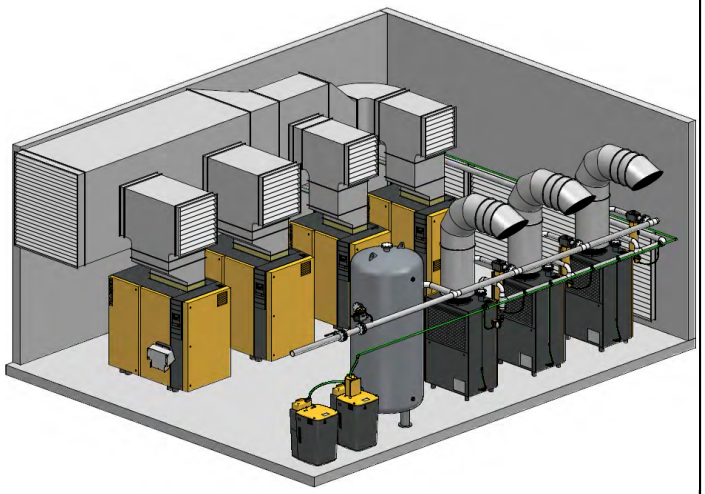
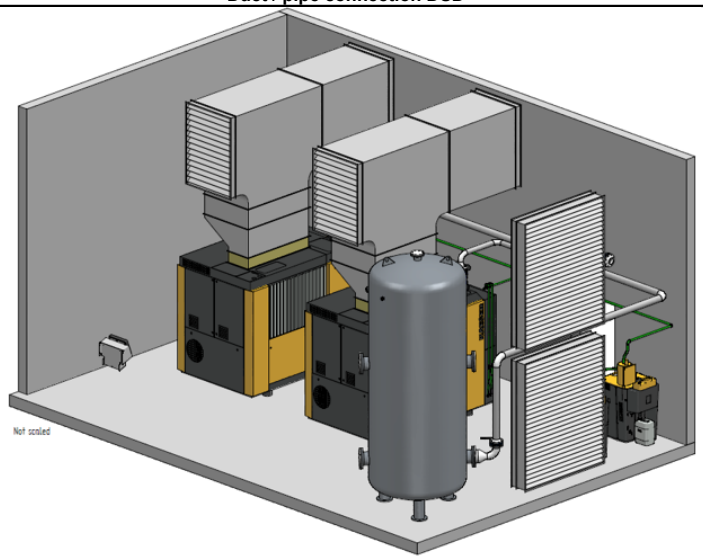
SAMPLE SKETCHES

Sample Installation Planning
Examples of room ventilation and ductwork
Please note the upsizing required for compressor exhaust ducts



Duct / pipe connection DSD





2x DSD 175 T / FE-283D

Example designs only, not for construction purposes.