



BY JOHNSON
CONTROLS

Sabroe

Refrigeration Plant Computation

Version 34.50

File : HungaryNaxpex	Ref : BANA	Page : 1
Date : 2025/02/18	Time : 16.39.03	
User : JCI GLOBAL USER MSI INSTALL		
Prog : COMP1/209901	Print : MIE ver. 9.11.22621.0	

SINGLE STAGE COMPRESSOR

compressor type	HPX 716 VSD	refrigerant	R 717
number of compressors	1.00	evaporating temperature	42.0 deg.C
compressor load	100.0 %	condensing temperature	88.0 deg.C
drive shaft speed	1800.0 RPM (list)	total suction superheat	0.0 K
no. of working cylinders:	16	suction line superheat	0.0 K
drive type	direct	total liquid subcooling	0.0 K
suction line loss	0.5 K	condenser liquid subcooling	0.0 K
discharge line loss	0.5 K		

total cooling capacity	1400.2 kW	total shaft power req.	314.8 kW
		drive shaft torque	1670. Nm
total heating capacity	1714. kW	cooling cap./shaft power ratio	4.45

equipment for head cooling	by WHC-system
equipment for oil cooling	by WHC-system

oil separator: OVUR 6015

operating conditions:			
suction pressure	16.21 bar_a	discharge pressure	49.58 bar_a
suction temperature	41.50 deg.C	discharge temperature	140.36 deg.C
suction specific volume	0.0801 m3/kg	discharge specific volume	0.0341 m3/kg
enthalpy difference (ref.)	855.90 kJ/kg	condenser subcooled liquid density	487.6 kg/m3
suction side mass flow	1.6360 kg/s	evaporator saturated liquid density	576.2 kg/m3
swept volume	532.0 m3/h	pressure ratio (p2/p1)	3.06

errors and warnings:

NB: no starting torque check - motor data not available !
 NB: please notice min. load discharge temperature (max 190 deg.C)
 NB: No weight found for compressor
 NB: At certain VSD frequencies, resonance vibrations may occur.
 NB: Skipping limited frequency ranges may be necessary.
 NB: All data valid for factory built VSD unit only !
 NB: design limits violation - please run Design Limits Check !

The tolerance of all performance data issued for the products is according to EN-12900.
 Measurement tolerances according to EN13771.
 Data subject to change without notice.



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Noise data - compressor unit

Sound Power: 105.9 +/- 3 dB(A) re 10E-12 Watt
Mean Sound Press.: 88.5 +/- 3 dB(A) re 2E-5 N/m2
Free field over reflecting plane, dist. = 1 m
Ref. surface: L= 2.9 W= 1.2 H= 1.4 m

Frequency Hz	Total Sound Power dB	Total Mean S. Pressure dB
63	95.7	78.3
125	102.8	85.4
250	102.1	84.7
500	102.2	84.8
1k	101.7	84.3
2k	98.4	81.0
4k	95.1	77.7
8k	87.8	70.4
dB(L)	109.1	91.7
dB(A)	105.9	88.5

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SABROE base refrigerant composition

refrigerant designation	R-717			
number of elements in mixture	1			(1)
mixture critical temperature	132.25 deg.C	evaporating line temperature glide	0.00 K	
mixture critical pressure	113.33 bar_a	condensing line temperature glide	0.00 K	
mixture average mol. weight	17.03 kg/kmol	mixture surface tension at TE	.2057E-01 N/m	

number		name	mol-%	weight-%
1	R717	ammonia	100.000	100.000

errors and warnings:

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