

NK 40 GAS

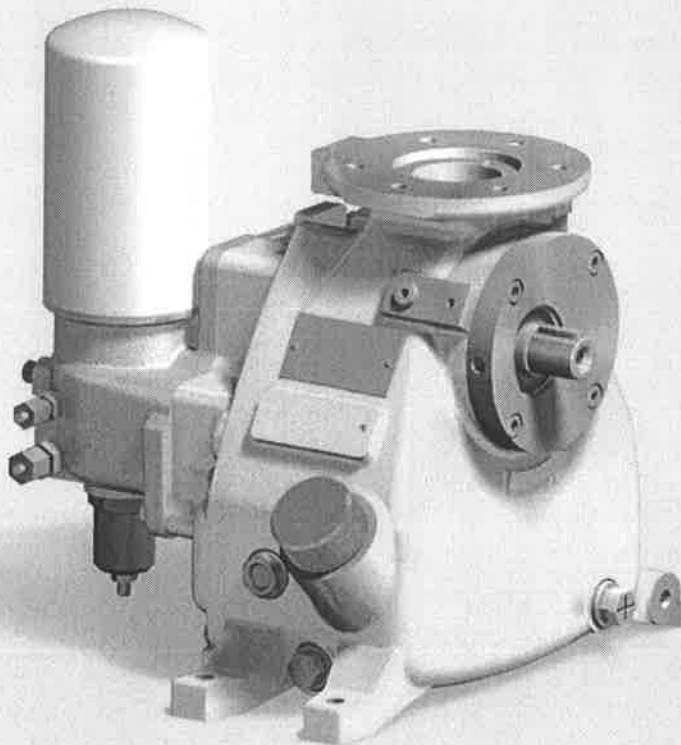
Compact Unit

ROTORCOMP[®] rotary screw gas ends are especially suited for gas compressor applications.

The wear-free ROLLING PROFILE[®] and the generously dimensioned subassemblies guarantee a high life cycle. Our gas compact moduls provide optimum operating

reliability and reduced construction costs for your compressor package.

Furthermore you benefit from small space requirements, low engineering costs, simplified service and maintenance and after all reduced logistics.



Operating range

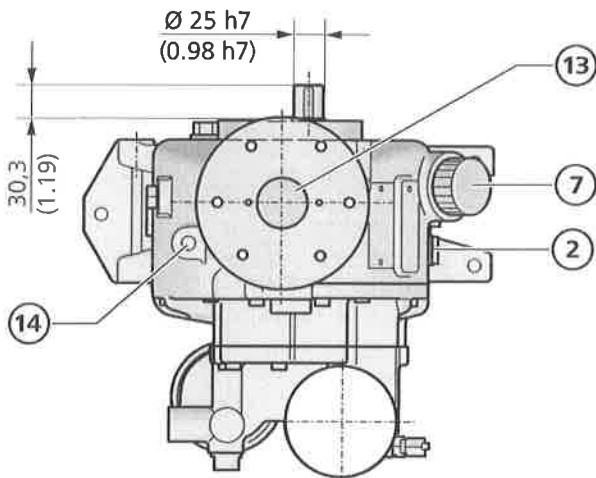
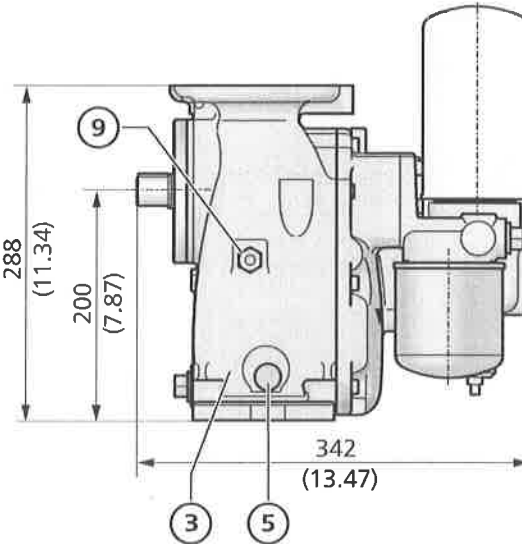
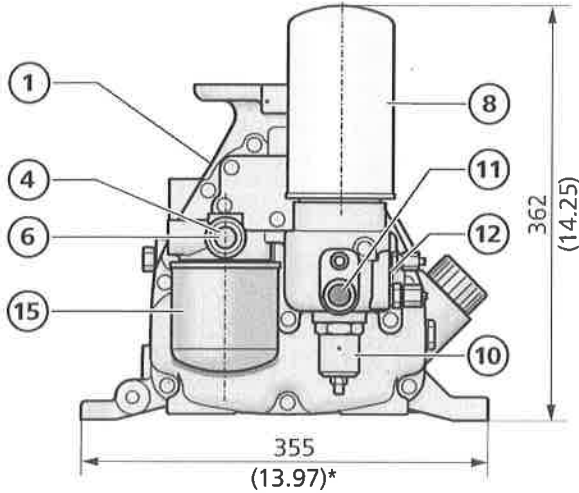
› Power range up to	7.5 kW*
	10 hp
› Capacity up to	1.1 m ³ /min
	39 scfm
› Pressure up to	15 bar g
	217 psi
› Suction pressure	0.7 bar g**
	10 psi
› Weight dry approx.	39 kg
	85 lbs
› Oil volumen	3 Ltr.
	0.8 US gal

* Higher shaft power on request.

** Higher suction pressure on request

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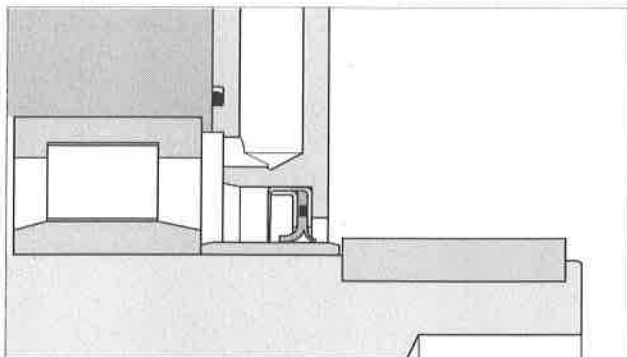
Dimensional details



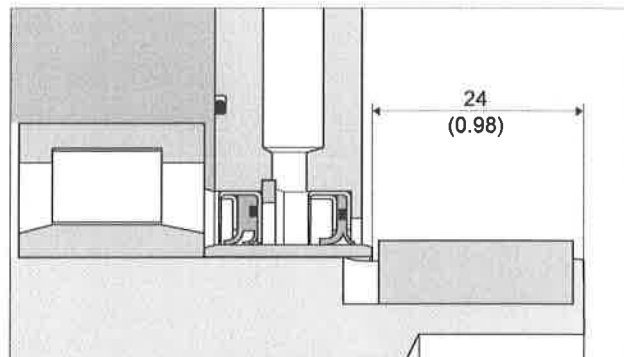
- 1 Gas end
- 2 Oil level sight glass, optional
- 3 Oil reservoir
- 4 Connection thermostat
- 5 Oil circuit / out
- 6 Oil circuit / in
- 7 Oil filling plug
- 8 Separator cartridge
- 9 Temperature probe connection
- 10 Minimum pressure valve
- 11 Compressed gas outlet
- 12 Connection pressure switch
- 13 Gas intake
- 14 Safety valve connection
- 15 Oil filter

For detailed designing please order the installation drawing
 Dimensions in mm (inch)

Shaft seal systems



Gas standard seal system



Optional double seal system with oil chamber

Performance Sizing Program for Oil-Injected Screw Compressors for Gases

Version: G.09.01.5

User: JGreimeier

Date: 8/13/2018 2:26 PM

Project:

Note:

Selection mode and optimized type

Selection mode: Required volume flow of 53.0 MCFD

Standard conditions of selected flow (volume, mass): 1.614 bar; 23.9 °C; 60 % r.F.
Suction conditions

Ambient data

Atmospheric pressure:	0.925	bar(a)	13.42	psi(a)
Ambient temperature:	29	°C	85	°F

Gas type: Natural gas H

Molar weight (dry):	19.042	g/mol
Compressibility factor (standard cond.):	0.996	
Compressibility factor (suction cond.):	0.996	
Isentropic exponent (suction cond.):	1.279	

Operating data based on ambient conditions

Suction pressure:	0.69	bar(g)	10.0	psi(g)
Suction temperature:	24	°C	75	°F
Relative humidity:	100	%		
Press. loss before stage:	0.00	bar	0.0	psi
Press. loss after MPV:	0.00	bar	0.0	psi
Final pressure:	8.96	bar(g)	130.0	psi(g)
Oil pipe pressure loss:	1.00	bar	14.5	psi
Volume flow (suction):	52.6	MCFD		
Mass flow (suction):	1.29	kg/min	2.8	lb/min
Volume flow (standard):	53.0	MCFD		
Mass flow (standard):	1.30	kg/min	2.9	lb/min
Volume flow aftercooler (at 1000 mbar):	89.4	MCFD		
Discharge temperature aftercooler:	40	°C	104	°F
Aftercooler demanded heat-reject:	2.1	kW	1.9	BTU/s
Aftercooler condensate dropout:	0.3	kg/h	0.6	lb/h

Screw compressor data

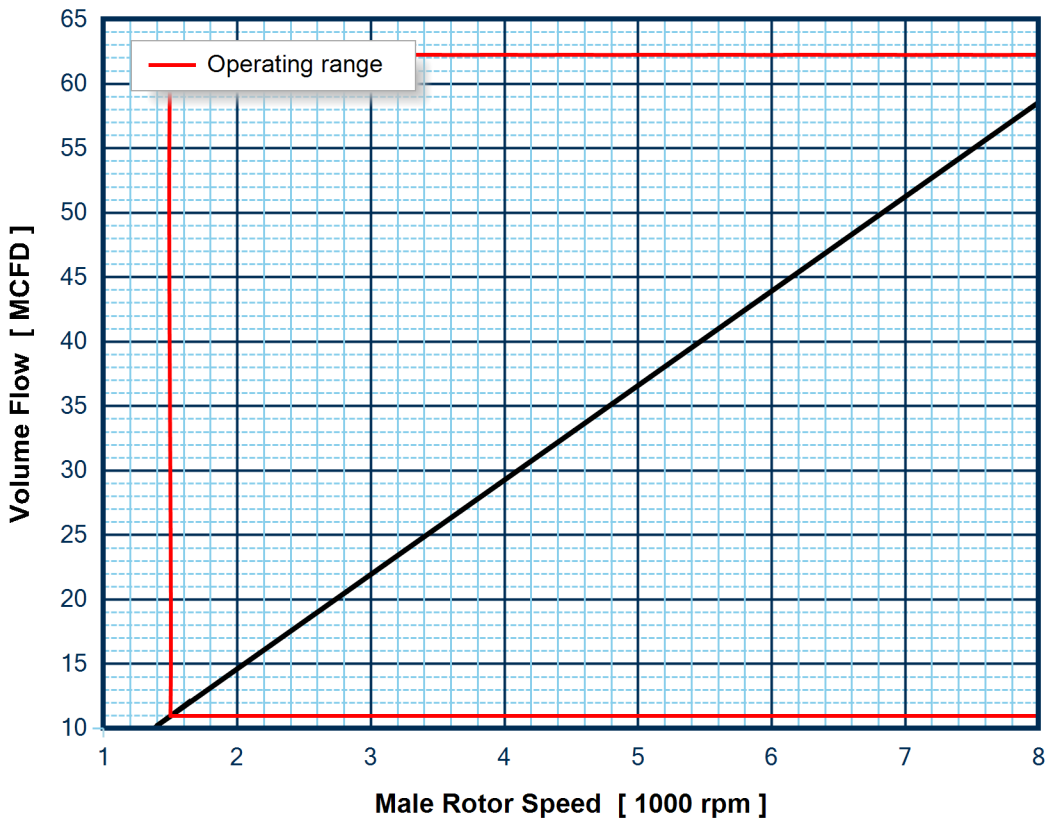
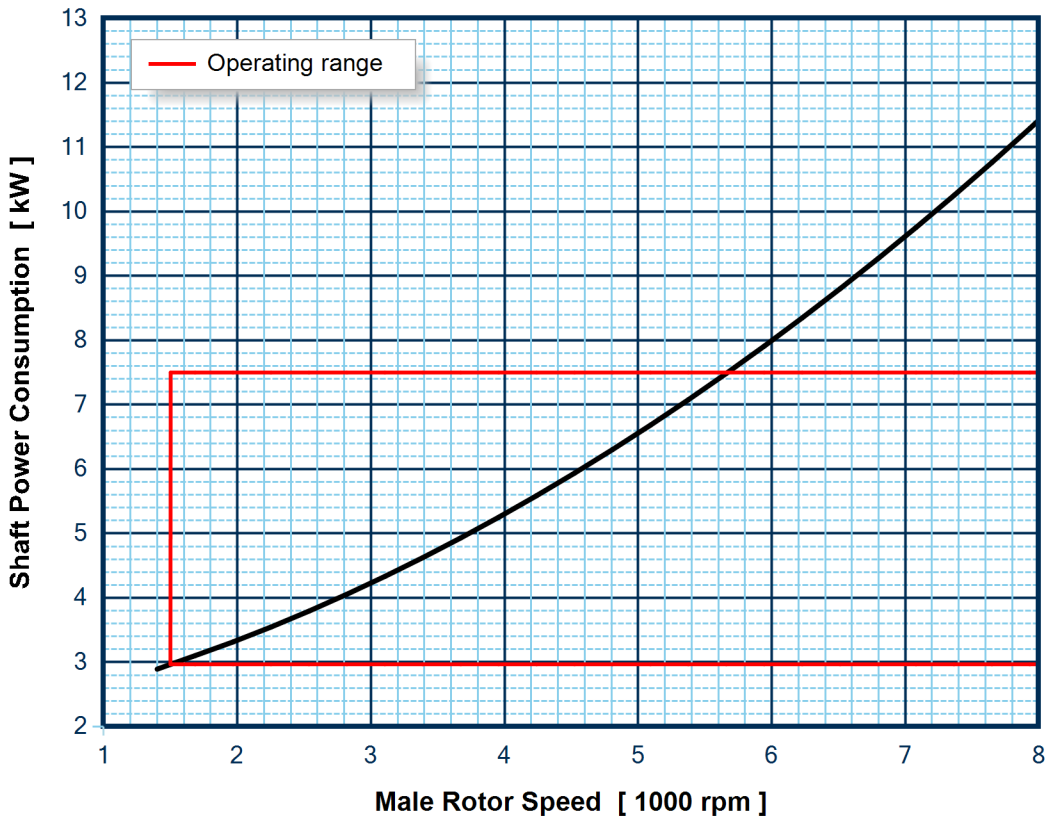
Screw compressor type:	NK40-Gas			
Drive:	Belt			
Built-in volume ratio:	4.08	(standard)		
Optimal volume ratio:	4.08			
Driveshaft speed:	7184	rpm		
Male rotor speed:	7184	rpm		
Gear ratio:	without gear box			
Tip speed (MRS):	24.1	m/s		
Volumetric efficiency:	84.0	%		
Shaft power consumption:	9.9	kW	13.3	bhp
Specific power:	0.19	kW/MCFD	0.25	bhp/MCFD
Torque:	13	Nm	9.7	lb-ft
Mass moment of inertia:	8	kg*cm ²	2.7	lb*in ²
Discharge temperature:	80	°C	176	°F
Dew point (discharge):	48	°C	118	°F

Oil data

Oil volume flow:	14	l/min	3.6	gal/min
Oil heat rejected:	6.6	kW	6.2	BTU/s
Oil injection temperature:	63	°C	146	°F
Recommended oil viscosity class ISO VG:	ISO VG 100			
Separator load:	76	%		

Power consumption is based on an oil and operating temperature of at least 50 °C. At colder operating conditions the required power consumption can be much larger.

Curves of optimized type at standard conditions: NK40-Gas; $V_i=4.1$; without gear box



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