

1. What volume of air must the compressors deliver?

1.1 Demand of existing pneumatic tools and machines

Tools, machines	Air requirement per tool, machine m ³ /min	Number of tools, machines	Utilisation factor	Simultaneous working factor	Actual calculated air demand m ³ /min
		x		x	= <input type="text"/>
		x		x	+ <input type="text"/>
		x		x	+ <input type="text"/>
		x		x	+ <input type="text"/>
		x		x	+ <input type="text"/>
		x		x	+ <input type="text"/>

Air demand of all tools

= V_{tools} m³/min

+

1.2 Other consumers

V_{other} m³/min

+

1.3 Airmain leakages

V_{leakage} m³/min

+

1.4 Reserve

V_{reserve} m³/min

Min. effective FAD

= V_{FAD} m³/min

- weaving machines -

1. What volume of air must the compressors deliver?

1.5 Air demand of existing weaving machines

Weaving machine group	Air demand per machine Nm ³ /min (DIN 1343)	Number of machines	Total air demand	
			V _{group1}	<input type="text"/> Nm ³ /min (DIN 1343)
			+	
			V _{group2}	<input type="text"/> Nm ³ /min (DIN 1343)
			+	
			V _{group3}	<input type="text"/> Nm ³ /min (DIN 1343)
			+	
			V _{group4}	<input type="text"/> Nm ³ /min (DIN 1343)
			+	
			V _{group5}	<input type="text"/> Nm ³ /min (DIN 1343)
			+	
			V _{group6}	<input type="text"/> Nm ³ /min (DIN 1343)

Air demand of all weaving machines

V_{looms} Nm³/min (DIN 1343)

+

1.6 Other users

V_{other} Nm³/min (DIN 1343)

+

1.7 Airmain leakages

V_{leak} Nm³/min (DIN 1343)

+

1.8 Reserve

V_{reserve} Nm³/min (DIN 1343)

Min. effective FAD

V_{FAD} Nm³/min (DIN 1343)

Kaeser Energy Saving System



2. Are compressors already installed?

no

yes

Designation	Maker	Model	Working pressure bar	FAD m ³ /min	Continued use planned?	
					yes	no
				<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

Total FAD of installed compressors to continue in use

= $V_{\text{installed}}$ m³/min

3. Are standby compressors installed (reserve/security)?

yes, how many?

no future planned:

4. Is a master controller available?

yes, which?

no

future planned:

simple base load sequencer

SAM ___ / ___

VESIS

5. Will heat be recovered?

yes, purpose:

no future planned:

6. What air quality is needed?

(see technical files air treatment and condensate treatment)

Central air demand m ³ /min	Local air demand m ³ /min	Class of air quality according to ISO 8573-1		
		Remaining water	dust	oil
<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. What max. pressure(g) should the compressors provide

7.1 Min. working pressure required by the consumers

p_{Wmin} bar

7.2 Pressure losses

air main pipework

pipe material

length of the main m

+

p_{am} bar

activated carbon adsorber

p_{ACTmin} bar

+

p_{ACTmax} bar

sterile filter

p_{FSTmin} bar

+

p_{FSTmax} bar

microfilter

p_{FFGmin} bar

+

p_{FFGmax} bar

microfilter combination

$p_{FE/FFmin}$ bar

+

$p_{FE/FFmax}$ bar

other filter

p_{FDmin} bar

+

p_{FDmax} bar

dryer

+

p_{Dry} bar

7.3 Compressor control differential

+

p_{Dif} bar

Required max. compressor pressure

= p_{max} bar

Compressor minimum pressure ($p_{max} - p_{dif}$)

p_{min} bar

8. Operating conditions

8.1 Max. air inlet temperature

t_{Amax} °C

8.2 Min. ambient air pressure (at max. inlet temperature)

p_{Amin} bar

8.3 Max. relative humidity (at max. inlet temperature)

$F_{relAmax}$ %

8.4 Min. air inlet temperature

t_{Amin} °C

8.5 Cooling

air-cooled

water-cooled

enclosed loop

water inlet temperature

t_{inmax} °C

open loop

t_{inmin} °C

cooling water quality

water return temperature

t_{retmax} °C

to KAESER standard

t_{retmin} °C

water initial pressure

p_{cwip} bar

Max. permissible cooling water pressure drop

p_{cwpd} bar

8.6 Heat recovery

Warm air

Application:

Warm water

Application:

water inlet temperature

t_{wi}

 °C

water return temperature

t_{wr}

 °C

volume

V_w

 m³/h

8.7 Ambient conditions in the compressor room

Degree of dustiness

low

high

General level of cleanliness

low

high

Air inlet aperture

available, m²

not available

Air discharge aperture

available, m²

not available