

Vinidexair



THE BLUE AIR PRESSURE PIPING SYSTEM



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Vinidexair - the blue air pressure piping system

Compressed air should be handled with respect. Now there is a poly pipe designed specifically to handle compressed air.

With Vinidexair, Vinidex provides a complete range of high quality pipes and fittings for compressed air lines.

Offering easy, clean, quick and safe installation, this corrosion resistant, cost efficient, high strength polyethylene pipe system is a proven performer.

Vinidexair is manufactured from high density polyethylene PE100 using Australian Standards AS4130, AS4131. The system is coloured dark blue for ease of identification.

Quality which is long lasting

Through our extensive quality assurance programmes the continuous high quality of Vinidexair pipes and fittings is ensured. This commitment to product quality is evidenced by certification as a Quality Endorsed Company to AS/NZS ISO9002.



Economy and long term savings

Vinidexair piping system is versatile, easy and economical to install. It also provides long term savings in project and maintenance programs through its efficiency, reliability and durability.

Benefits

The most important properties of this piping system are:

- easy, clean, quick and safe installation
- corrosion resistant resistant to most compressor oils
- low weight for easy handling
- excellent weldability ensuring a sealed pipeline
- screwed fittings have threaded metal inserts
- · coloured blue for easy identification
- excellent thermal insulating properties
- · low noise transmission
- Vinidex quality and technical support

Extensive size range

Available in sizes 20mm, 25mm, 32mm, 40mm, 50mm, 63mm, 90mm, 110mm with an extensive range of fittings to complete the system.



Quick and clean installation

Pipes and fittings should be joined by means of the socket fusion welding technique according to Vinidex recommendations.

Sizes to 40mm diameter may be joined by hand, but it is recommended to use the inline welding apparatus for larger sizes. Vinidexair provides a leak-free, clean system.

Permissible operating pressures for Vinidexair piping system

operating-	operating-	operating-
temperature	period	pressure
(°C)	(years)	(bar)
20	>50	16
30	>50	14
40	>50	12.5



System design guidelines for the selection of Vinidexair compressed air pipelines

It is customary to find the Inside Diameter of the pipe by using formulas such as shown below. The formulas used are generally for approximation purposes only, surmising that the temperature of the compressed air corresponds roughly to the induction temperature. You will obtain an acceptable approximation through the following equation.

$$d = \sqrt[5]{\frac{450.L_E.Q^{1.85}}{\Delta p.p}}$$

Where:

d = Pipe Internal Diameter in mm

 $L_{E} = Pipe Length in m$

Q = Volumetric Flowrate in L/s

 Δp = Pressure Decrease in bar

p = Working Pressure in bar

The use of a nomogram is a quicker and easier method to source information (see Figure 1). In this nomogram the Pressure Decrease (Δp) is indicated in bar, the Working Pressure (p) in bar, the Volumetric Flowrate (Q) in L/s, the Pipe Length ($L_{\scriptscriptstyle E}$) in m, and the Pipe Nominal Diameter DN.

Note

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Product data and advisory information are subject to change at any time without notice.

The advantage of using the nomogram is that no further conversion factors are required for pipe sizing. Also, when four of the parameters are known the fifth can be determined by reading directly from the nomogram.

Example for the use of the air-line nomogram to determine the required pipe size

Working Pressure 7 bar
Volumetric Flowrate 30 L/s
Nominal length 200 m
Pressure Decrease 0.05 bar

- Utilising the above operating figures, proceed to mark those positions around the perimeter of the nomogram.
- 2 Locate the separation line between (Δp) & (p). (See base of nomogram.)
- 3 Commencing at the lower right hand side of the nomogram draw a line up from the Working Pressure (p) to the line indicating the Volumetric Flowrate (Q).

- 4 Using point (3) draw a diagonal line to the separation line.
- 5 Go to top of nomogram and use the point indicating the Length of Pipe and draw a line down to meet horizontal line from point (4).
- 6 Move to the Pressure Decrease in the Pipe (Δp) at the bottom of nomogram and draw a vertical line up to meet the diagonal drawn from point (5).
- 7 The Nominal Diameter of Pipe can now be found by reading from point (6) across to the left hand side of the nomogram.
 From this example DN63 pipe should be selected. If the completed nomogram falls between two sizes of pipe, always use the larger size.

Correction factors for fittings

The table below indicates the approximate pressure loss for fittings in terms of an equivalent length of straight pipe in metres. For each pipeline fitting, add the equivalent length of pipe to the original length of pipeline. This length is used for the calculation of the equation above or for the nomogram (Figure 1).

Fitting	equivalent pipe length in m							
	DN 20	DN 25	DN 32	DN 40	DN 50	DN 63	DN 90	
socket welding joint	0.2	0.2	0.3	0.4	0.5	0.6	1.1	
45° bend	0.2	0.3	0.4	0.6	0.9	1.2	2.3	
90° bend	0.4	0.7	1.0	1.3	1.8	2.3	4.5	
tees	8.0	1.4	1.9	2.4	2.8	3.8	7.5	
reducer	0.3	0.4	0.5	0.6	0.7	0.9	2.1	



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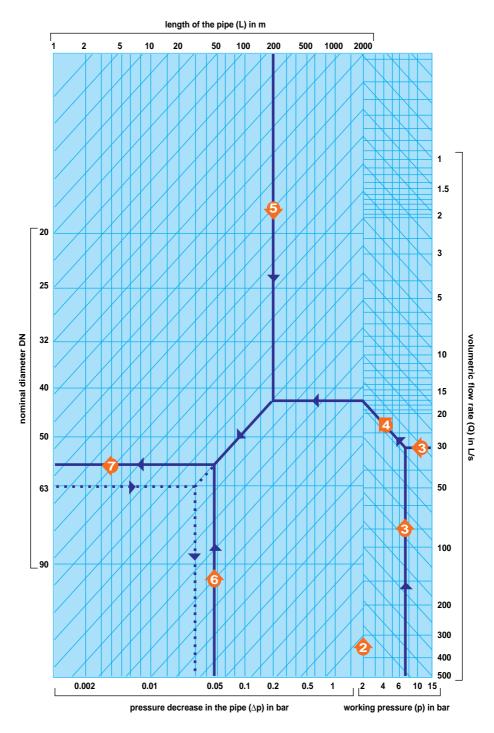


Figure 1

Sources:Feldmann, K.H.: Druckluftverteilung in der Praxis (Munchen 1985)

Atlas Copco: information sheets



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recommended support distances for Vinidexair

	DN	support distances (mm)							
(m	ım)	20°C	30°C	40°C	50°C	60°C			
	20	690	670	600	540	480			
	25	790	730	670	670	600			
	32	910	910	790	790	670			
	40	1090	1030	910	910	790			
	50	1270	1210	1090	1030	910			
	63	1450	1390	1270	1210	1090			
	75	1630	1570	1450	1330	1210			
	90	1810	1750	1630	1510	1390			
	110	2000	1940	1810	1750	1570			

Applications

Vinidexair piping systems are suitable for installation throughout industries requiring compressed air lines. These include:

- Food
- Packaging
- Mining
- · Engineering
- Automotive
- Transport
- Construction
- Laboratories
- Maintenance workshops
- Other manufacturing and processing operations

Peace of mind

Vinidexair pipes have been designed with a safety factor of 2.

note

The accumulation of an electrostatic charge can occur and careful consideration must be given where an explosive atmosphere may exist.

Where Vinidexair is exposed to solar radiation, Vinidex recommends the use of Polywrap to protect the pipe from UV degradation and to reduce surface temperatures.

Should you require further information please contact your Vinidexair distributor or Vinidex technical office.

Product range

Pipes

DN 20 - 110mm

Elbows 90°

DN 20 - 110mm

Elbows 45°

DN 20 - 110mm

Tees

DN 20 - 110mm

Sockets

DN 20 - 110mm

Endcaps

DN 20 - 110mm

Stub Flanges

DN 20 - 110mm

Reducers

DN 25/20 - 110/63mm

Bends for mounting below wall surface

short radius bend c/w bracket and threaded metal insert (Female) DN 20 x 15

Adaptor Unions

complete with threaded metal insert (Female)

DN 20 x 15 - 63 x 50

Backing rings

DN 20 - 110mm

Pipe holders

DN 20 - 50mm

Pipe clips

DN 63 - 110mm

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