Comefri Replacement Plenum Fans
Replacement of existing belt driven fans with Comefri Plenum Fans

Complete Plenum Fans

NPA

NPL

TE

The fan consists of structure, impeller, inlet cone with pressure measuring connection, electric motor, flexible connection and vibration eliminators. The fan is completely tested in the factory. All three impeller types are available in the same structure.

Alternative fan types

NPA The NPA impeller is manufactured in steel, with backward curved airfoil blades and painted finish.

NPL The NPL impeller is manufactured in steel, with backward curved blades and painted finish

TE The TE impeller is manufactured in glass reinforced polyamid .

Plenum fans delivered in components for assembly on site

It is not always possible to carry and assemble a new fan in one piece in the casing of existing fan section of AHU. A special stucture for assembly on site is available, too. Picture of a complete NPL 800 (below) shows parts which are delivered loose to the site and assembled there together with screws and bolts.
Actually any size of existing fan up to air flow 30 m^3/s can be replaced by a plenum fan which is carried to the mounting place through ordinary doors. If needed two plenum fans are mounted parallel in the casing (big air flows/low pressure difference).

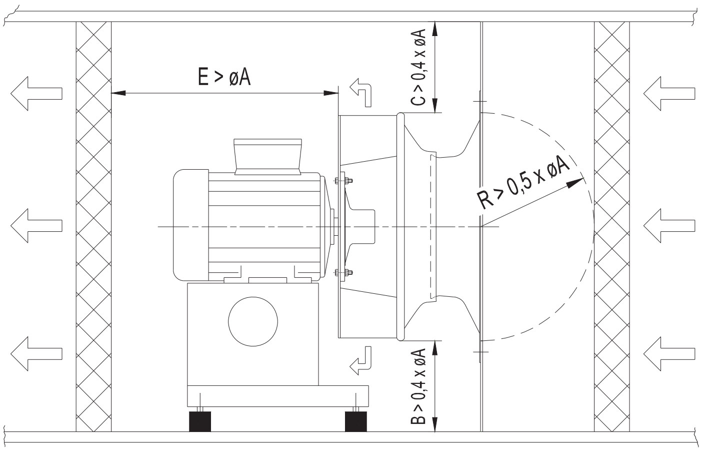
Parts of the structure:

1. Impeller
2. Inlet cone with static pressure measuring point
3. End plate
4. Supports (2 pieces)
5. Base
6. Electric motor
7. Flexible connection (not in the picture)

The vibration eliminators are ready mounted under the base.

Note! The electric motor shall be connected to Inverter. Two parallel fans can be connected to one Inverter using directions of the manufacturer.

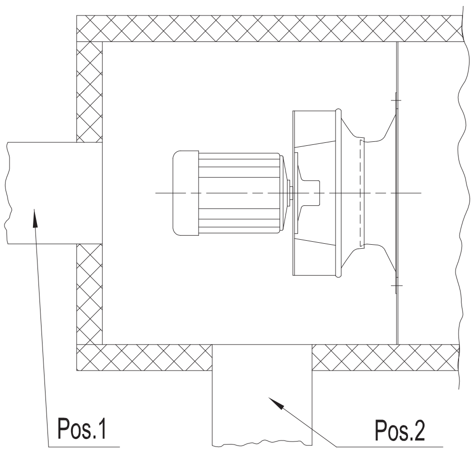
Minimum assembly distances inside of the casing



<table>
<tr><td rowspan="2">Fan size</td><td>ØA [mm]</td><td colspan="2">Impeller outer diameter</td></tr>
<tr><td>NPL</td><td>NPA</td><td>TE</td></tr>
<tr><td>180</td><td rowspan="3">-</td><td rowspan="5">-</td><td>180</td></tr>
<tr><td>200</td><td>202</td></tr>
<tr><td>225</td><td>226</td></tr>
<tr><td>250</td><td>288</td><td>250</td></tr>
<tr><td>280</td><td>323</td><td>282</td></tr>
<tr><td>315</td><td colspan="2">364</td><td>316</td></tr>
<tr><td>355</td><td colspan="2">410</td><td>357</td></tr>
<tr><td>400</td><td colspan="2">460</td><td>402</td></tr>
<tr><td>450</td><td colspan="2">512</td><td>455</td></tr>
<tr><td>500</td><td colspan="2">574</td><td rowspan="10">-</td></tr>
<tr><td>560</td><td colspan="2">645</td></tr>
<tr><td>630</td><td colspan="2">720</td></tr>
<tr><td>710</td><td colspan="2">810</td></tr>
<tr><td>800</td><td colspan="2">910</td></tr>
<tr><td>900</td><td colspan="2">1000</td></tr>
<tr><td>1000</td><td colspan="2">1120</td></tr>
<tr><td>1120</td><td colspan="2">1250</td></tr>
<tr><td>1250</td><td colspan="2">1400</td></tr>
<tr><td>1400</td><td colspan="2">1600</td></tr>
</table>

The following minimum distances, B,C, E and R are recommended for a correct plug fan installation. Impeller diameters are shown in the table above. In the case vertical/horizontal distance is larger the another one can be exeeded.

Losses of duct take offs



The loss associated with the duct take off from the plenum must be added to the static pressure required by the fan. These losses, as literature indicates, are:

$\Delta 1 = 2 \times p_{dc}$

$\Delta 2 = 1,5 \times p_{dc}$

In formulas p_{dc} = dynamic pressure in the discharge duct

$p_{dc} = ½ \cdot \varrho \cdot (V/A)^2$ where ϱ = density of air [kg/dm³], V = air flow in the duct [m³/s] and A = area of duct.

Air flow measuring

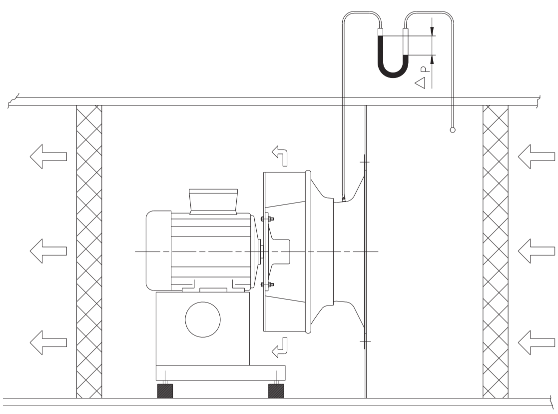


Fig.4

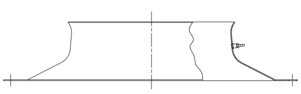


Fig.3

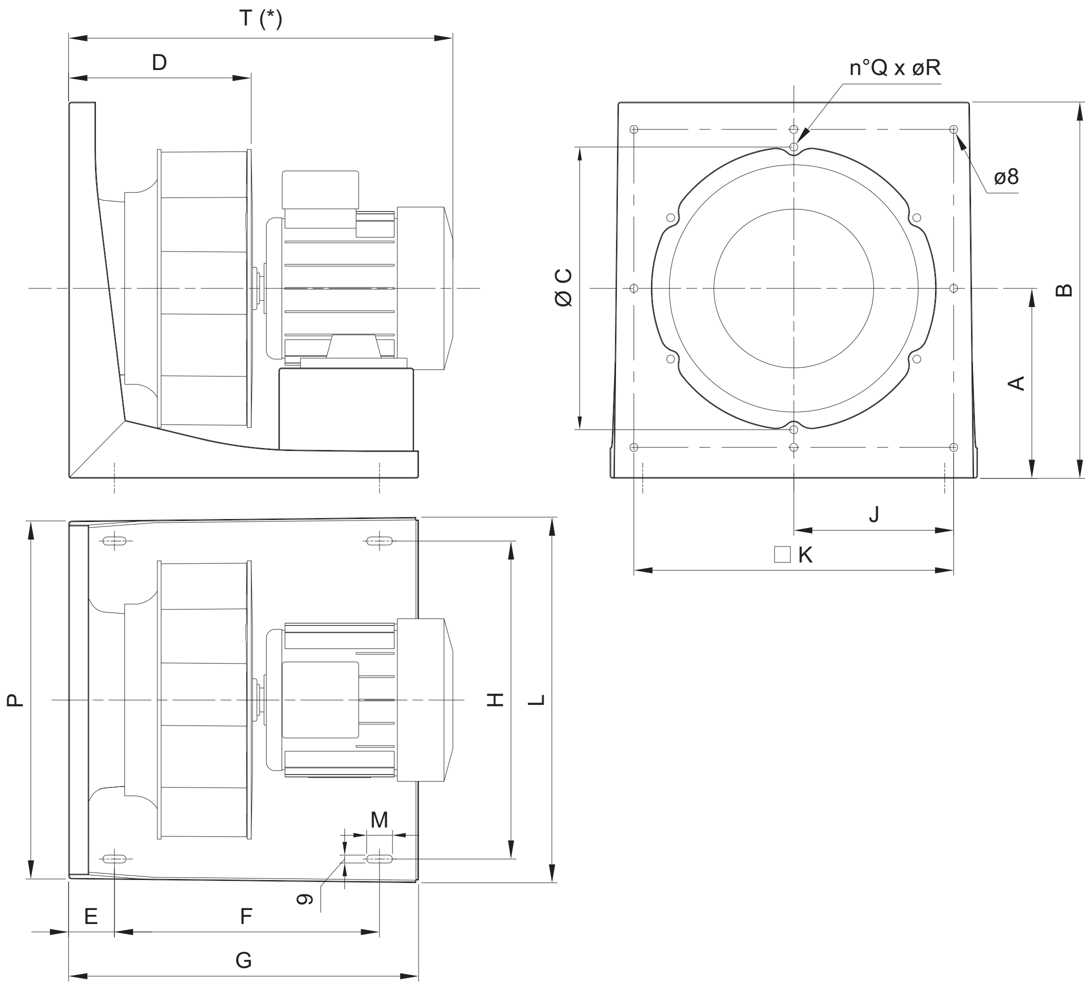

Fig.5

Air flow is measured and controlled with a. 5 to 10% tolerance. The device consists of one static pressure measuring point, mounted directly into the inlet cone (Fig.3). The differential pressure (Δp) measured between the inlet of the AHU and the flow measuring device (Fig.4) can be converted to the volume flow by using formula $q = K \cdot \sqrt{(\Delta p)^2}$. There are two types of measuring devices:

Electronic Cometer with transmitter 0-10V output voltage. Input 24VAC.
DPim meter 9V battery for measuring the air flow locally.

Example: Needed air flow is 3 m³/s and Δ_{pst} =900 Pa. Max. fan size is 630.
Results: Three fans available: NPA560 (2,6-3,6 m³/s), NPL560 (2-3,5 m³/s) and NPL630 (2,5-4,2 m³/s)

Dimensions of fan sizes 180-630



<table>
<tr><th rowspan="2"></th><th rowspan="2">A</th><th rowspan="2">B</th><th colspan="3">C</th><th colspan="3">D</th><th rowspan="2">E</th><th rowspan="2">H</th><th rowspan="2">K</th><th rowspan="2">J</th><th rowspan="2">L</th><th rowspan="2">M</th><th rowspan="2">P</th><th rowspan="2">QxϕR</th></tr>
<tr><th>TE</th><th>NPL</th><th>NPA</th><th>TE</th><th>NPL</th><th>NPA</th></tr>
<tr><td>180</td><td rowspan="3">173</td><td rowspan="3">323</td><td>202</td><td rowspan="3">-</td><td rowspan="5">-</td><td>119</td><td rowspan="3">-</td><td rowspan="5">-</td><td rowspan="3">50</td><td rowspan="3">280</td><td rowspan="3">259</td><td rowspan="3">-</td><td rowspan="3">318</td><td rowspan="3">25</td><td rowspan="3">306</td><td rowspan="5">6x7,5</td></tr>
<tr><td>200</td><td>232</td><td>132</td></tr>
<tr><td>225</td><td>257</td><td>148</td></tr>
<tr><td>250</td><td rowspan="3">215</td><td rowspan="3">426</td><td colspan="2" rowspan="2">320</td><td>168</td><td>156</td><td rowspan="3">52</td><td rowspan="3">360</td><td rowspan="3">352</td><td rowspan="3">176</td><td rowspan="3">415</td><td rowspan="5">40</td><td rowspan="3">405</td></tr>
<tr><td>280</td><td>192</td><td>174</td></tr>
<tr><td>315</td><td colspan="3">355</td><td>207</td><td>186</td><td>211</td><td>6x10</td></tr>
<tr><td>355</td><td rowspan="2">270</td><td rowspan="2">510</td><td>395</td><td rowspan="2">395</td><td>395</td><td>237</td><td>211</td><td>233</td><td rowspan="2">58</td><td rowspan="2">460</td><td rowspan="2">434</td><td rowspan="2">217</td><td rowspan="2">513</td><td rowspan="2">492</td><td rowspan="4">8x10</td></tr>
<tr><td>400</td><td>440</td><td>440</td><td>257</td><td>237</td><td>260</td></tr>
<tr><td>450</td><td rowspan="2">335</td><td rowspan="2">630</td><td>490</td><td rowspan="2">490</td><td>490</td><td>288</td><td>254</td><td>290</td><td rowspan="2">60</td><td rowspan="2">560</td><td rowspan="2">537</td><td rowspan="2">269</td><td rowspan="2">613</td><td rowspan="2">45</td><td rowspan="2">600</td></tr>
<tr><td>500</td><td rowspan="3">-</td><td>540</td><td rowspan="3">-</td><td>303</td><td>326</td></tr>
<tr><td>560</td><td rowspan="2">433</td><td rowspan="2">800</td><td rowspan="2">610</td><td>610</td><td>341</td><td>366</td><td rowspan="2">67</td><td rowspan="2">720</td><td rowspan="2">668</td><td rowspan="2">334</td><td rowspan="2">795</td><td rowspan="2">60</td><td rowspan="2">765</td><td rowspan="2">8x12</td></tr>
<tr><td>630</td><td>610</td><td>381</td><td>408</td></tr>
</table>

Dimensions F, G, T of fan sizes 180-630

<table>
<tr><th rowspan="4">Motor-size IEC</th><th colspan="5">180 / 200 / 225</th><th colspan="9">250 / 280 / 315</th></tr>
<tr><th rowspan="3">F</th><th rowspan="3">G</th><th>180</th><th>200</th><th>225</th><th rowspan="3">F</th><th rowspan="3">G</th><th colspan="2">250</th><th colspan="2">280</th><th colspan="3">315</th></tr>
<tr><th>TE</th><th>TE</th><th>TE</th><th>TE</th><th>NPL</th><th>TE</th><th>NPL</th><th>TE</th><th>NPL</th><th>NPA</th></tr>
<tr><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th></tr>
<tr><td>63</td><td rowspan="5">242</td><td rowspan="5">323</td><td>308</td><td>320</td><td>336</td><td colspan="9">-</td></tr>
<tr><td>71</td><td>338</td><td>350</td><td>366</td><td rowspan="4">327</td><td rowspan="4">425</td><td>386</td><td>374</td><td>410</td><td>393</td><td>425</td><td colspan="2">-</td></tr>
<tr><td>80</td><td>372</td><td>373</td><td>389</td><td>409</td><td>397</td><td>433</td><td>416</td><td>449</td><td>433</td><td>439</td></tr>
<tr><td>90 S</td><td>383</td><td>384</td><td>400</td><td>420</td><td>408</td><td>444</td><td>427</td><td>460</td><td>444</td><td>440</td></tr>
<tr><td>90 L</td><td>408</td><td>409</td><td>425</td><td>445</td><td>433</td><td>469</td><td>452</td><td>485</td><td>469</td><td>465</td></tr>
<tr><td>100 L</td><td rowspan="3" colspan="5">-</td><td rowspan="2">357</td><td rowspan="2">450</td><td rowspan="2">-</td><td>475</td><td>512</td><td>495</td><td>528</td><td>512</td><td>513</td></tr>
<tr><td>112 M</td><td>-</td><td>-</td><td>-</td><td>-</td><td>533</td><td>534</td></tr>
<tr><td>132 S</td><td>427</td><td>519</td><td colspan="5">-</td><td>612</td><td>613</td></tr>
</table>

<table>
<tr><th rowspan="4">Motor-size IEC</th><th colspan="8">355 / 400</th></tr>
<tr><th rowspan="3">F</th><th rowspan="3">G</th><th colspan="3">355</th><th colspan="3">400</th></tr>
<tr><th>TE</th><th>NPL</th><th>NPA</th><th>TE</th><th>NPL</th><th>NPA</th></tr>
<tr><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th></tr>
<tr><td>80</td><td rowspan="3">380</td><td rowspan="3">475</td><td>478</td><td>459</td><td>462</td><td>502</td><td>485</td><td>490</td></tr>
<tr><td>90 S</td><td>489</td><td>470</td><td>463</td><td>513</td><td>496</td><td>491</td></tr>
<tr><td>90 L</td><td>514</td><td>491</td><td>485</td><td>538</td><td>521</td><td>512</td></tr>
<tr><td>100 L</td><td rowspan="2">400</td><td rowspan="2">495</td><td>557</td><td>538</td><td>536</td><td>581</td><td>559</td><td>564</td></tr>
<tr><td>112 M</td><td>578</td><td>564</td><td>561</td><td>602</td><td>585</td><td>590</td></tr>
<tr><td>132 S</td><td>465</td><td>560</td><td rowspan="2">-</td><td>614</td><td>635</td><td rowspan="2">-</td><td>636</td><td>660</td></tr>
<tr><td>160 M</td><td>540</td><td>675</td><td>-</td><td>-</td><td>742</td><td>765</td></tr>
</table>

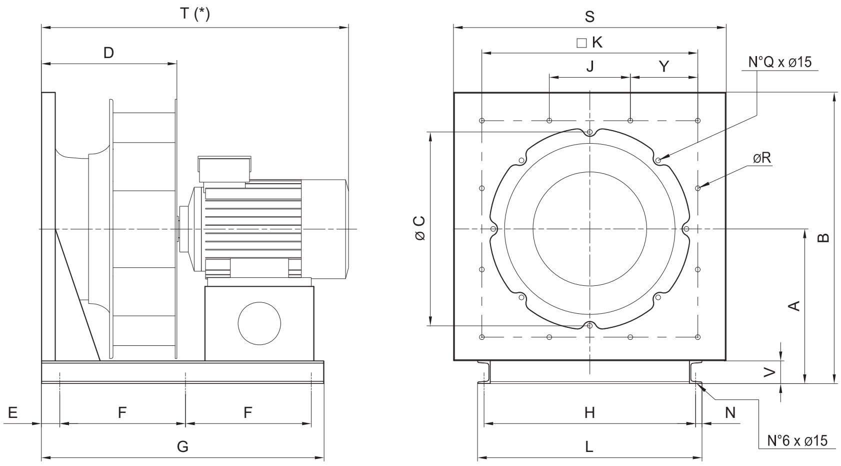
<table>
<tr><th rowspan="4">Motor-size IEC</th><th colspan="7">450 / 500</th><th colspan="6">560 / 630</th></tr>
<tr><th rowspan="3">F</th><th rowspan="3">G</th><th colspan="3">450</th><th colspan="2">500</th><th rowspan="3">F</th><th rowspan="3">G</th><th colspan="2">560</th><th colspan="2">630</th></tr>
<tr><th>TE</th><th>NPL</th><th>NPA</th><th>NPL</th><th>NPA</th><th>NPL</th><th>NPA</th><th>NPL</th><th>NPA</th></tr>
<tr><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th><th>T(*)</th></tr>
<tr><td>80</td><td rowspan="3">415</td><td rowspan="3">545</td><td>532</td><td>511</td><td>520</td><td>551</td><td>556</td><td rowspan="3" colspan="6">-</td></tr>
<tr><td>90 S</td><td>543</td><td>522</td><td>522</td><td>562</td><td>558</td></tr>
<tr><td>90 L</td><td>568</td><td>547</td><td>547</td><td>587</td><td>583</td></tr>
<tr><td>100 L</td><td rowspan="2">455</td><td rowspan="2">560</td><td>611</td><td>590</td><td>595</td><td>630</td><td>630</td><td rowspan="5">652</td><td rowspan="5">825</td><td>630</td><td>653</td><td colspan="2">-</td></tr>
<tr><td>112 M</td><td>632</td><td>611</td><td>620</td><td>651</td><td>655</td><td>632</td><td>655</td><td>673</td><td>700</td></tr>
<tr><td>132 S/M</td><td>530</td><td>635</td><td rowspan="2">-</td><td>662</td><td>690</td><td>702</td><td>725</td><td>750</td><td>750</td><td>790</td><td>793</td></tr>
<tr><td>160 M</td><td>585</td><td>686</td><td>768</td><td>795</td><td>808</td><td>831</td><td rowspan="2">856</td><td rowspan="2">880</td><td rowspan="2">895</td><td rowspan="2">922</td></tr>
<tr><td>160 L</td><td rowspan="2" colspan="7">-</td></tr>
<tr><td>180 M/L</td><td>720</td><td>850</td><td>860</td><td>884</td><td>900</td><td>926</td></tr>
</table>

(*) Dimension T may vary according to the motor manufacturer.

Comefri Replacement Plenum Fans

Replacement of existing belt driven fans with Comefri Plenum Fans

Dimensions of fan sizes 710-1250



	A	B	C NPL CL.1	C NPL CL.2	C NPA	D NPL CL.1	D NPL CL.2	D NPA	E	H	K	J	Y	L	N	S	ϕR	V	Q NPL	Q NPA
710	543	1023	680		755	421	422	462	65	750	831	360	236	790	20	960	8	80	8	8
800			755		845	476	477	511												
900	674	1264	845		945	524	525	574	70	1000	1037	270	384	1040		1180		100		
1000			945		1050	580	582	638												
1120	810	1525	1050		1195	659	661	708		1300	1301	600	351	1340	25	1430	11	120		12
1250			1195		1325	727	729	795											12	

Motor-size IEC	710 / 800 F	710 / 800 G	710 NPL T(*)	710 NPA T(*)	800 NPL T(*)	800 NPA T(*)	900 / 1000 F	900 / 1000 G	900 NPL T(*)	900 NPA T(*)	1000 NPL T(*)	1000 NPA T(*)
132 M	383	910	810	846	865	900	-					
160 M/L			940	975	975	1005	468	1070	1025	1070	1080	1132
180 M	443	995	965	980	1000	1015			1055	1074	1105	1136
180 L												
200 L			1055	1090	1085	1115	508	1150	1130	1178	1185	1240
225 S/M	455	1040	-	1145	-	1210			1220	1268	1275	1330

Motor-size IEC	1120 / 1250 F	1120 / 1250 G	1120 NPL T(*)	1120 NPA T(*)	1250 NPL T(*)	1250 NPA T(*)
200 L	545	1250	1285	1330	-	
225 S/M			1365	1405		
250 M	670	1500	1500	1540	1565	1630
280 S/M			1510	1550	1575	1640
315 S	675	1510	-		1770	1835
315 M	(*)				1915	1980

Dimensions T, F and G may vary according to motor manufacturer.

Instructions of replacement work and need for space

ALTERNATIVE FAN TYPES

Alt. 1: Complete Fan

- Motor and impeller mounted
- Flexible connection mounted
- Vibration eliminators mounted
- Completely tested in the factory

Alt. 2: Delivery as components

- See picture of NPL 800 on page 1

Selection of fan

The pre-selection of fan size and type can be made by using the table on page 7. The final selection is done by Comefri Aeolus selection program considering specific needs of energy consumption and sound characteristics. Need for mounting space is specified in the table on page 8.

Steps preparing the old casing for a new fan mount

1. Dismantling the old belt driven fan

2. Mounting of inlet wall (plate)

The inlet wall is made of galvanized steel plate and constructed to tolerate the designed differential pressure. Distances according to page 2. A square opening in accordance with the measures of flexible connection.

3. Changing the outlet opening of the case

If the outlet opening of the casing is dimensioned in accordance with the oulet of the existing belt driven fan the opening shall be enlarged. Pressure losses are taken into consideration (formulas page 2).

4. Improvments of the existing casing

It has earlier been underpressure all over in the casing. After replacement there will be underpressure before and overpressure after the wall. Firmness and tightness of the casing shall be checked and improved if needed. Side panels with overpressure are equipped with safety chains. Sealings and latches are renewed if needed.

5. New support rails under the new fan

Depending on the construction of the existing casing a suitable rail system is built on the bottom under the plug fan. The flexible connection is fastened on the inlet wall. The new plenum fan is standing freely on vibration eliminators and support rails.

Estimate of the mounting space

MOUNTING LENGTH OF THE FAN

A. Length of the flex. connection min.100 mm

B. Assembly distance L_s from the wall
0,5 x D meas. from outer edge of flex.conn.
D = outer diameter of impeller in table page 3, estimately ~ size of the fan.

C. Length of the fan
Dimension T (tables pages 4-6)

D. Assembly distance behind electric motor
Min. 150 mm

TOTAL MAX. LENGTH:

L_{max} **= A + B + C + D mm**

MOUNTING HEIGHT OF THE FAN

E. Lowest height of vibration eliminators:

Size 200 - 355	25 mm
Size 400 - 500	30 mm
Size 560 - 710	40 mm
Size 800 - 1250	45 mm

F. Height of the structure of the fan
Dimension A (height level of shaft) + 0,4 x D

G. Support rails + allowance over the fan
Totally a. 70 mm
Note! Check dimensions of mounting opening !

TOTAL MAX. HEIGHT

H_{max} **= E + F +G mm**

Comefri Replacement Plenum Fans

Replacement of existing belt driven fans with Comefri Plenum Fans

Selection of the fan

The preliminary selection is done by using table below and the final selection with Comefri Aeolus selection program. There are three alternative fan types: NPL, NPA and TE. In the table η_{max} = the maximum static efficiency of the fan. Dimensions of the selected fan shall be checked according to tables and directions on page 8. Numbers with a line between describe the estimated air flow area of each fan type/size at static pressure Δ_{pst} .

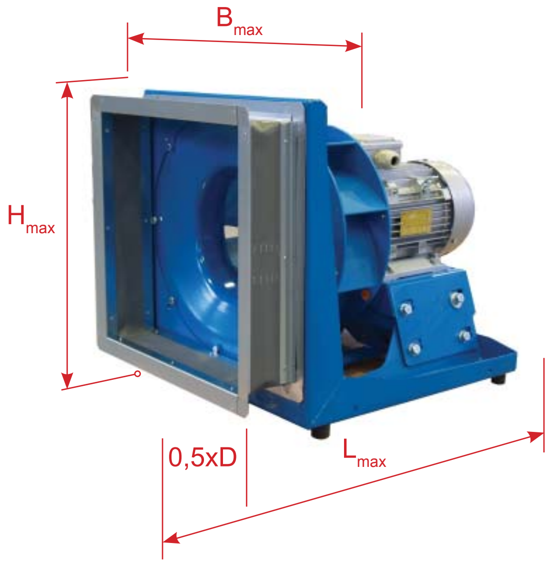
Example:
Operating point 1,0 m^3/s at static pressure 900 Pa.
Available fans are NPA315, TE315, NPA355, NPL355 and TE355. NPA and NPL have the highest efficiency. The final selection is done by using Aeolus program according to power input and sound level.

Fan size	$\frac{V}{\eta_{max}}$	Air flow (m^3/s) at the best efficiency area										
		Δ_{pst} = 600 Pa			Δ_{pst} = 900 Pa			Δ_{pst} = 1200 Pa			Δ_{pst} = 1500 Pa	
		NPA	**NPL**	**TE**	**NPA**	**NPL**	**TE**	**NPA**	**NPL**	**TE**	**NPA**	**NPL**
200	m^3/s			0,21-0,33			0,28-0,36			0,24-0,31		
	%			55			55			55		
225	m^3/s			0,33-0,43			0,4-0,53			0,46-0,58		
	%			55			55			55		
250	m^3/s		0,29-0,42	0,39-0,54		0,35-0,51	0,48-0,67		0,41-0,6	0,56-0,76		0,46-0,67
	%		68	57		68	57		68	57		68
280	m^3/s		0,39-0,65	0,57-0,79		0,47-0,80	0,7-0,97		0,54-0,93	0,8-1,13		0,64-1,04
	%		69	62		69	62		69	62		69
315	m^3/s	0,69-0,94	0,5-0,63	0,68-0,85	0,86-1,17	0,61-0,87	0,83-1,11	0,97-1,31	0,7-1,0	0,96-1,28	1,08-1,49	0,78-1,13
	%	71	70	62	71	70	62	71	70	62	71	70
355	m^3/s	0,8-1,14	0,63-0,98	0,8-1,22	0,97-1,42	0,76-1,21	1,0-1,49	1,12-1,61	0,89-1,42	1,14-1,72	1,25-1,80	1,0-1,58
	%	72	71	64	72	71	64	72	71	64	72	71
400	m^3/s	0,92-1,61	0,9-1,15	0,97-1,44	1,17-1,94	1,11-1,42	1,19-1,77	1,36-2,25	1,28-1,65	1,46-1,77	1,55-2,52	1,42-1,83
	%	73	72	64	73	72	64	73	72	64	73	72
450	m^3/s	1,26-1,94	1,03-1,56	1,32-1,98	1,54-2,39	1,25-1,89	1,61-2,43	1,78-2,75	1,44-2,19	1,86-2,36	2,0-3,06	1,61-2,44
	%	73	73	65	73	73	65	73	73	65	73	73
500	m^3/s	1,67-2,39	1,29-1,89		2.01-2,94	1,56-2,31		2,33-3,4	1,8-2,65		2,61-3,80	2,03-3,0
	%	73	73		73	73		73	73		73	73
560	m^3/s	2,1-2,9	1,6-2,8		2,6-3,6	2-3,5		3-4,2	2,3-4,0		3,3-4,6	2,6-4,5
	%	73	73		73	73		73	73		73	73
630	m^3/s	2,5-3,9	2,0-3,4		3,1-4,8	2,5-4,2		3,6-5,6	2,9-4,8		4,0-6,2	3,2-5,4
	%	74	74		74	74		74	74		74	74
710	m^3/s	3,1-5,2	2,5-4,4		3,8-6,4	3,1-5,4		4,4-7,4	3,6-6,3		4,9-8,2	4,0-7,0
	%	74	74		74	74		74	74		74	74
800	m^3/s	3,9-6,5	3,6-5,6		4,6-8	4,4-6,8		5,6-9,3	5,6-6,5		6,2-10,3	5,7-8,8
	%	74	74		74	74		74	74		74	74
900	m^3/s	5-8,6	4,1-6,5		6,1-10,4	5,1-7,9		7,1-12,1	5,8-9,3		7,9-13,5	6,5-10,3
	%	74	75		74	75		74	75		74	75
1000	m^3/s	6,5-11,4	4,6-7,2		9,7-13,9	6,3-9,6		11,1-16	7,2-11,6		12,5-17,8	8,1-12,6
	%	75	75		75	75		75	75		75	75
1120	m^3/s	8,6-12,8	6,4-10,8		10,6-15,6	7,8-13,3		12,2-18,1	9-15,3		13,6-20,1	10-17,2
	%	74	75		74	75		74	75		74	75
1250	m^3/s	10,1-15,6	8,1-13,9		12,5-18,9	9,8-16,9		14,4-22,2	11,4-19,4		16,1-24,7	12,8-21,9
	%	74	75		74	75		74	75		74	75

Comefri Replacement Plenum Fans

Replacement of existing belt driven fans with Comefri Plenum Fans

Estimate of the mounting space



Dimensions L_{max}, B_{max} ja H_{max} are need for free space inside of the casing. Dimensions are determined according to conditions on page 6 and they give an estimate for design of mounting.

If the way to the site is narrow please check width B_{as} and length L_{as} of the fan in the table below.
If it is not possible to carry a complete unit to the site the fan is delivered in parts according to the picture on page 1.

Need of mounting space of the new Plenum Fan

Koko	L_{max} mm	B_{max} mm	H_{max} mm	IEC	H_{as} mm	L_{as} mm	B_{as} mm
200	724	364	450	80	348	473	318
225	752	407	471	80	348	489	318
250	814	518	569	90	451	520	415
280	856	581	601	90	451	544	415
315	892	655	638	90	451	560	415
355	969	738	734	90	535	614	513
400	1018	828	784	90	540	638	513
450	1117	922	896	100	660	711	613
500	1167	1033	952	100	660	730	613
560	1323	1161	1124	132	840	850	795
630	1403	1296	1191	132	840	893	795
710	1635	1458	1382	180	1063	1080	960
800	1720	1638	1472	180	1063	1115	960
900	1928	1800	1689	200	1309	1278	1180
1000	2050	2016	1797	200	1309	1340	1180
1120	2425	2250	2050	280	1570	1650	1430
1250	2590	2520	2185	280	1570	1740	1430

Notes when using the table

IEC code of electric motors
In the table there is column of IEC codes of the motors used in calculations. If the final motor size is smaller or bigger dimension L_{max} changes.

Impeller diameter
Selected outer diameter of the impeller (D) is the maximum of fan types TE, NPL or NPA. Dimensions H_{max} and B_{max} shall be checked in the final selection. Differences in diameters are within a few centimeters.

Free space behind the electric motor
L_{max} is based on 150 mm space behind the motor. In smaller units this value can be reduced by 3-4 centimeters.

The size of the mounting opening in the casing
The actual dimensions of the fan are shown in the table. Heihgt H_{as} includes vibration eliminators and legth L_{as} includes the length of the flexible connection. Dimension B_{as} is the maximum with of the fan. Size of the mounting opening is determined by these dimensions.