

Technical brochure

LTG Fans

Tangential fans

Type/Series VQ

Impeller diameter 8“ to 40“ (200 to 1000 mm)



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Dimensions in this technical documentation are given in inches (mm).

General tolerances according to DIN ISO 2768-cl apply.

An advantage for best heating, cooling, drying, air sweeping

Many production processes require a linear extended and absolutely even distribution of air or other gases to the working area.

Because of their special design, tangential fans meet these requirements especially well.

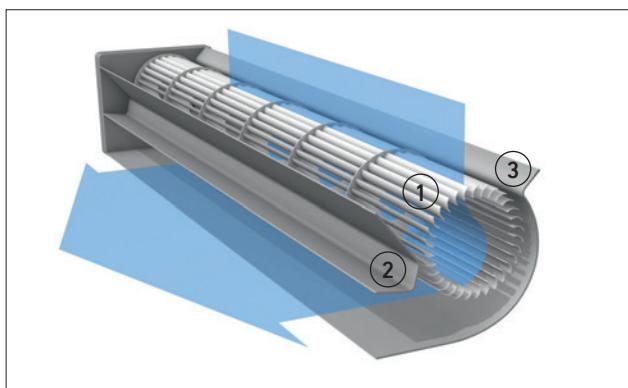
The rigid design and the use of high quality materials secure a long service life.

The working principle that does away with the need for additional baffles and vanes and the space saving design makes the use of tangential fans very economical.

FLOW PRINCIPLE

The air intake of tangential fans takes place over the whole length of the outer impeller periphery. The air then flows into the impeller interior where it is reversed and accelerated by the vortex caused by the impeller rotation. Finally the air is distributed at the discharge side over the whole impeller length. In this way the air flows through the impeller first from outside to inside and then from inside to outside. The impeller is a cylindrical cage of forward curved impeller blades with two or more supporting discs

The vortex separates suction side and discharge side at the narrowest line between impeller ① and vortex inducer ② and causes the flow pattern together with the scroll ③.



① Impeller
 ② Vortex inducer
 ③ Fan scroll

ADVANTAGES

- Uniform air flow over the entire fan width. Additional baffles, plenums and guide vanes are not required.
- Space saving due to a 90° or 180° airflow deflection.
- The fan width can be exactly matched to the machine width. The air flow pattern does not change with wider machines (simplifies design and drawings of modular systems).
- Works equally well in any arrangement (right hand drive or left hand drive available).
- Low noise operation due to aerodynamic design of casing and impeller.
- Long life expectancy due to the robust design and location of impeller bearings out of the air flow.
- Many bolt-on options.

APPLICATION OF LTG HIGH PERFORMANCE TANGENTIAL FANS

Agricultural technology, air conditioning technology, apparatus engineering, automotive industry, bakery technology, biomedical industry, building material industry, chemical industry, cleaning technology, control panel technology, dedusting technology, drying technology, electronic industry, environmental simulations, food industry, furnace technology, heat treatment technology, mechanical and plant engineering, medical technology, packaging industry, paper industry, pharmaceutical industry, power plant engineering, process engineering, railway technology, refrigeration technology, store design, surface technology, swimming pool technology, textile machinery design, tobacco industry, transportation cooling, wood industry...

POSITION OF THE FAN

Standard arrangement is horizontal. With vertical arrangement the drive motor has to be at the bottom.

INSTALLATION AND START UP

Mount the fans to a plane base frame without any distortion. Utilize only the bolt holes in the side elements. Make sure to observe the applicable safety codes before starting the fans.

MOTOR ARRANGEMENT

With the suction opening on top and viewing the discharge opening the driving motor is either on the right hand or the left hand side.



THE MANUFACTURING PROGRAM: TYPE VQN, VQH, VQT



Tangential fan Type VQH 250/1600
right hand drive

With the suction opening on top, viewed against the discharge opening, the drive side shaft end can be right hand or left hand.

Type VQN Service Conditions

gas temperatures:

-15 up to +250 °F (-25 up to +120 °C)

ambient temperatures:

-15 up to 100 °F (-25 up to +40 °C)

permissible bearing temperatures:

-15 up to 250 °F (-25 up to +120 °C)

SPECIFICATION, DESIGN FEATURES

Tangential fan with shaft end on the drive side.

Rigid welded casing with duct connection flanges on the suction side and the discharge side.

The impeller is bedded on both sides in self-aligning ball bearings in pillow block frames.

Bearing design life is 20,000 hours (90% statistical). Both bearings have grease nipples.

The impeller is balanced to grade G 6.3 of DIN ISO 21940-11.

MATERIALS

Casing: galvanized steel
stainless steel 1.4541
steel painted.

Impeller: galvanized steel
stainless steel 1.4541
steel painted.

TYPE VQH SERVICE CONDITIONS

gas temperatures:

-15 up to 600 °F (-25 up to +300 °C)

ambient temperatures:

-15 up to 100 °F (-25 up to +40 °C)

permissible bearing temperatures:

-15 up to 250 °F (-25 up to +120 °C)

SPECIFICATION, DESIGN FEATURES

Tangential fan with shaft end on the drive side.

Rigid welded casing with duct connection flanges on the suction side and the discharge side.

The impeller is bedded on both sides in self-aligning ball bearings in pillow block frames.

Bearing design life is 20,000 hours (90% statistical). Bearings protected against high gas temperatures by insulation material.

Insulation thickness 2 inches (50 mm). Both bearings have grease nipples.

The impeller is balanced to grade G 6.3 of DIN ISO 21940-11.

MATERIALS

Casing: galvanized steel
stainless steel 1.4541

Impeller: galvanized steel
stainless steel 1.4541

TYPE VQT SERVICE CONDITIONS

gas temperatures:

-40 up to 950 °F (-40 up to +500 °C)

ambient temperatures:

-15 up to 100 °F (-25 up to +40 °C)

permissible bearing temperatures:

-15 up to 250 °F (-25 up to +120 °C)

SPECIFICATION, DESIGN FEATURES

Tangential fan with shaft end on the drive side.

Rigid welded casing with duct connection flanges on the suction side and the discharge side.

The impeller is bedded on both sides in self-aligning ball bearings in pillow block frames.

Bearing design life is 20,000 hours (90% statistical). Bearings protected against high gas temperatures by insulation material.

Insulation thickness 4 inches (100 mm) (Additional aluminum cooling disc between fan casing and pillow block frame).

Both bearings have grease nipples.

The impeller is balanced to grade G 6.3 of DIN ISO 21940-11.

MATERIALS

Casing: stainless steel 1.4541

Impeller: stainless steel 1.4541

Available sizes

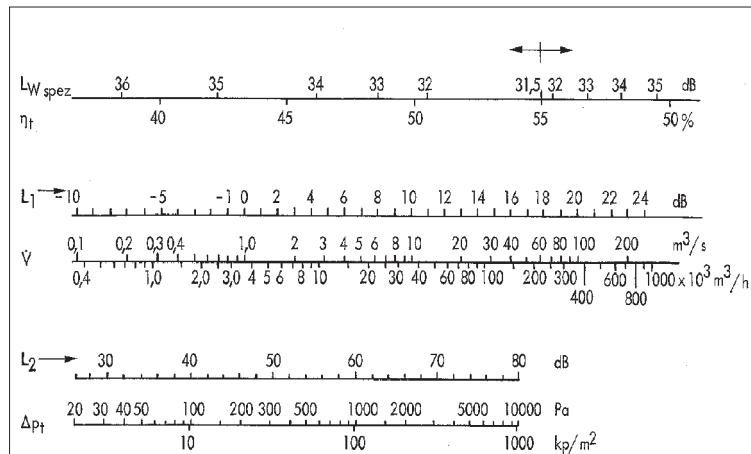
| active impeller length | [mm] [in] | 400 15.7 | 500 19.7 | 630 21.4 | 800 31.5 | 1000 39.4 | 1250 49.2 | 1400 55.1 | 1600 63 | 2000 78.7 | 2300 90.6 | 2500 89.4 | 3000 118.1 |
|---------------------------------------|--------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|------------|--------------|--------------|--------------|---------------|
| impeller diameter [mm] [in] | | | | | | | | | | | | | |
| 200 8 | | • | • | • | • | • | • | • | • | | | | |
| 250 10 | | | • | • | • | • | • | | • | • | | | |
| 315 12.5 | | | | • | • | • | • | | • | • | | | |
| 400 16 | | | | | • | • | • | | • | • | | • | |
| 500 20 | | | | | | • | • | | • | • | | • | • |
| 630 25 | | | | | | | • | | • | • | | • | • |
| 800 31.5 | | | | | | | • | | • | • | • | | • |
| 1000 39.5 | | | | | | | • | | • | • | | • | • |

ACOUSTICS, GREASING INTERVALS

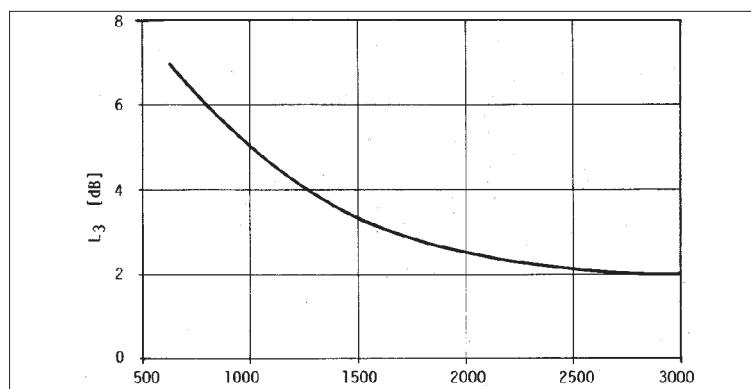
THE CATALOGUE DATA ARE BASED ON:

The specific mass of air s : $\rho = 0.075 \text{ lb/cuft} (1.2 \text{ kg/m}^3)$.

The performance data are laboratory tested according to VDI 2044 with unobstructed air flow.



$$\text{Unweighted sound power level } L_W [\text{dB}] \quad L_W = L_{W\text{spez.}} + L_1 + L_2 [\text{dB}]$$

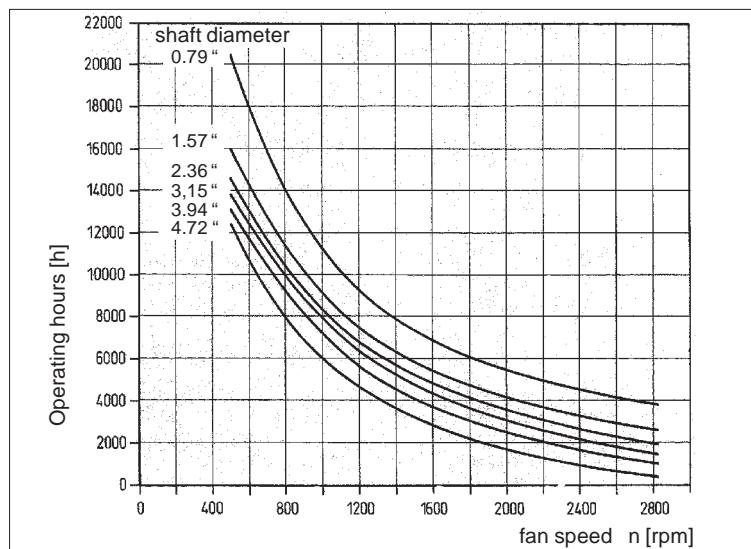


$$\text{A-weighted sound power level } L_{WA} [\text{dB(A)}] \quad L_{WA} = L_W - L_3 [\text{dB(A)}]$$

LUBRICATION INTERVALS

At bearing temperatures above $+160^\circ\text{F}$ ($+70^\circ\text{C}$) the frequency of lubrication must be increased by a factor of two with every 15 K temperature rise. Do not exceed the temperature rating of the grease. At operating temperatures below $+160^\circ\text{F}$ ($+70^\circ\text{C}$) the frequency of lubrication is reduced. At operating temperatures below $+120^\circ\text{F}$ ($+50^\circ\text{C}$) the time between lubrication can be doubled.

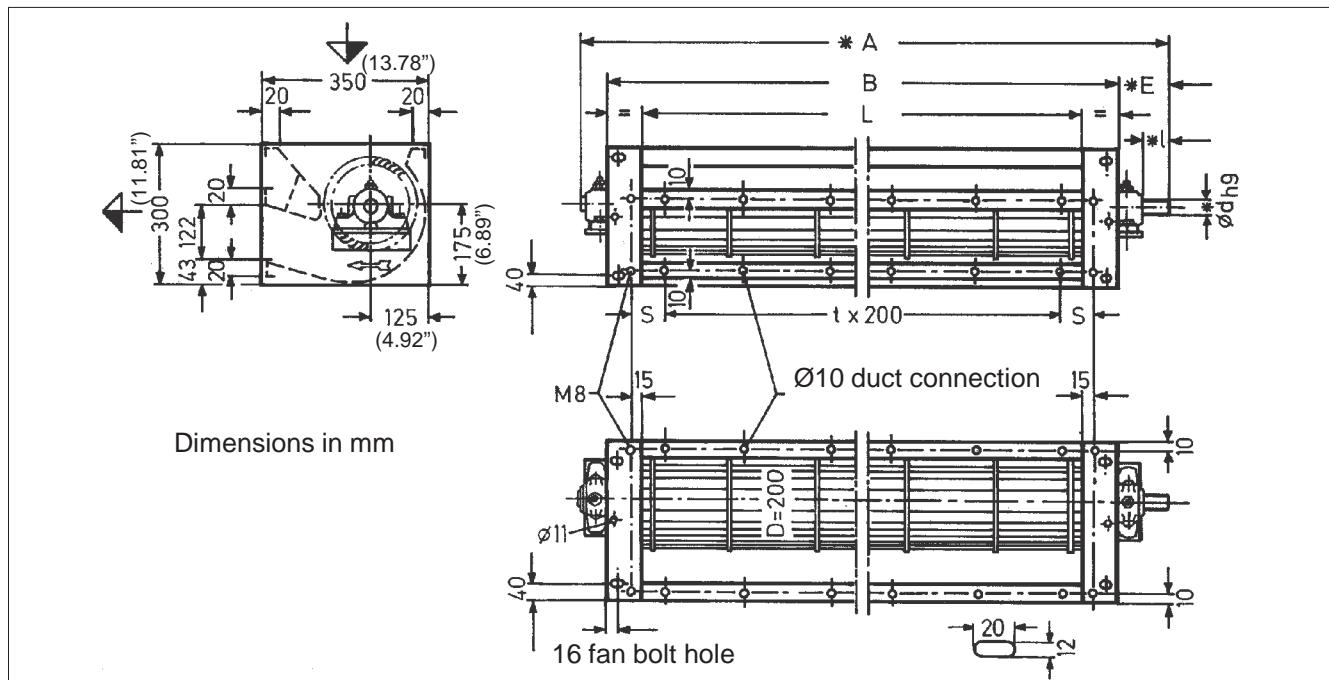
The lubrication requirements are also influenced by several other factors. In case of vertical installation for example the frequency is doubled. Harsh operating and environmental conditions as well as variable speeds also increase lubrication frequency. For specific applications please contact LTG.



The diagram is for $+160^\circ\text{F}$ ($+70^\circ\text{C}$) bearing temperature

IMPELLER DIAMETER 8" (200 MM)

DIMENSIONS, TECHNICAL DATA

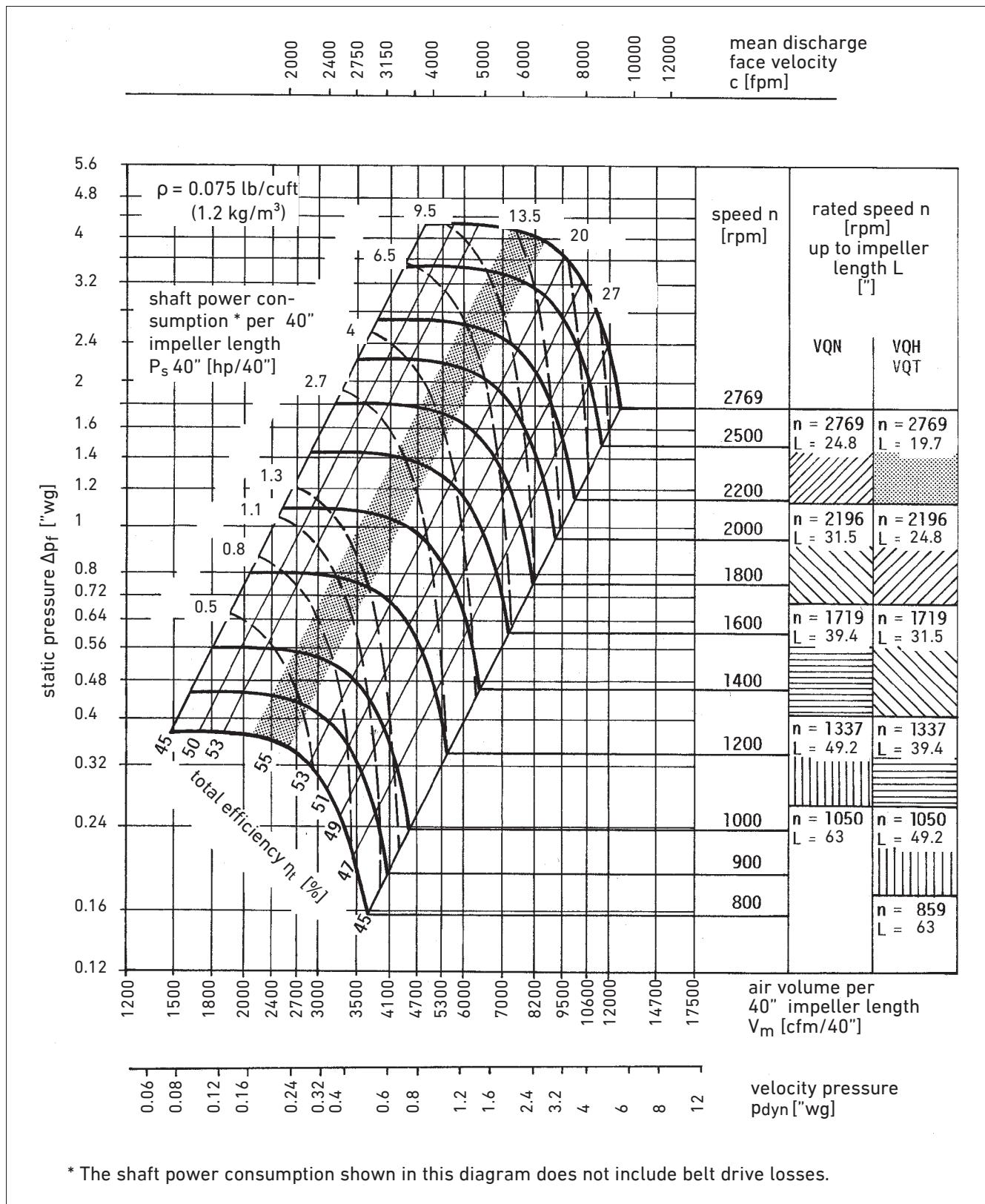


| Type | D/L | A* [inch] | B [inch] | L [inch] | d* [inch] | E* [inch] | I* [inch] | t | S [inch] | n max. [rpm] | P max. Motor [hp] | Weight approx. [lb] |
|--|----------|-----------|----------|----------|-----------|-----------|-----------|---|----------|--------------|-------------------|---------------------|
| VQN gas temperatures; -15 to +250 °F (-25 to +120 °C) | 200/0400 | 30.59 | 23.62 | 15.75 | 1.38 | 4.65 | 2.36 | 1 | 4.53 | 2769 | 20 | 88 |
| | 200/0500 | 34.53 | 27.56 | 19.69 | 1.38 | | | 1 | 6.50 | 2769 | 20 | 104 |
| | 200/0630 | 39.65 | 32.68 | 24.80 | 1.38 | | | 2 | 5.12 | 2769 | 20 | 115 |
| | 200/0800 | 46.34 | 39.37 | 31.50 | 1.38 | | | 3 | 4.53 | 2196 | 20 | 130 |
| | 200/1000 | 54.21 | 47.24 | 39.37 | 1.38 | | | 4 | 4.53 | 1719 | 15 | 148 |
| | 200/1250 | 64.06 | 57.09 | 49.21 | 1.18 | | | 5 | 5.51 | 1337 | 7.5 | 170 |
| | 200/1600 | 77.83 | 70.87 | 62.99 | 1.18 | | | 7 | 4.53 | 1050 | 5 | 201 |
| VQH gas temperatures; -15 to +600 °F (-25 to +300 °C) | 200/0400 | 35.08 | 27.56 | 15.75 | 1.18 | 4.84 | 2.36 | 1 | 4.53 | 2769 | 15 | 102 |
| | 200/0500 | 39.02 | 31.50 | 19.69 | 1.18 | | | 1 | 6.50 | 2769 | 15 | 117 |
| | 200/0630 | 44.13 | 36.61 | 24.80 | 1.38 | | | 2 | 5.12 | 2196 | 15 | 128 |
| | 200/0800 | 50.83 | 43.31 | 31.50 | 1.38 | | | 3 | 4.53 | 1719 | 10 | 143 |
| | 200/1000 | 58.70 | 51.18 | 39.37 | 1.18 | | | 4 | 4.53 | 1337 | 5 | 161 |
| | 200/1250 | 68.54 | 61.02 | 49.21 | 1.18 | | | 5 | 5.51 | 1050 | 4 | 183 |
| | 200/1600 | 82.32 | 74.80 | 62.99 | 1.18 | | | 7 | 4.53 | 859 | 3 | 214 |
| VQT gas temperatures; -40 to +950 °F (-40 to +500 °C) | 200/0400 | 42.56 | 31.50 | 15.75 | 1.18 | 6.61 | 2.36 | 1 | 4.53 | 2769 | 15 | 119 |
| | 200/0500 | 46.50 | 35.43 | 19.69 | 1.18 | | | 1 | 6.50 | 2769 | 15 | 135 |
| | 200/0630 | 51.61 | 40.55 | 24.80 | 1.38 | | | 2 | 5.12 | 2196 | 15 | 146 |
| | 200/0800 | 58.31 | 47.24 | 31.50 | 1.38 | | | 3 | 4.53 | 1719 | 10 | 161 |
| | 200/1000 | 66.18 | 55.12 | 39.37 | 1.18 | | | 4 | 4.53 | 1337 | 5 | 179 |
| | 200/1250 | 76.02 | 64.96 | 49.21 | 1.18 | | | 5 | 5.51 | 1050 | 4 | 201 |

* The indicated dimensions are for the max. rated power for each nominal length. Dimensions for lower rated motor power on request.

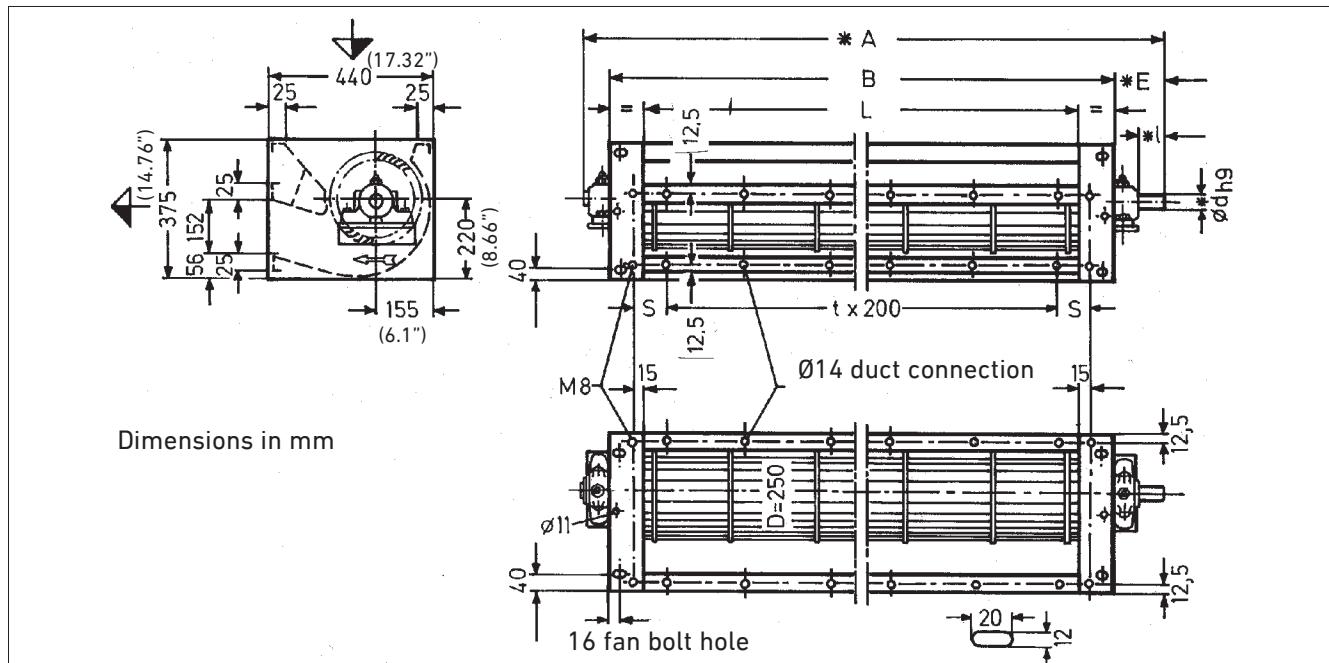
IMPELLER DIAMETER 8" (200 MM)

DIMENSIONS, TECHNICAL DATA



IMPELLER DIAMETER 10" (250 MM)

DIMENSIONS, TECHNICAL DATA

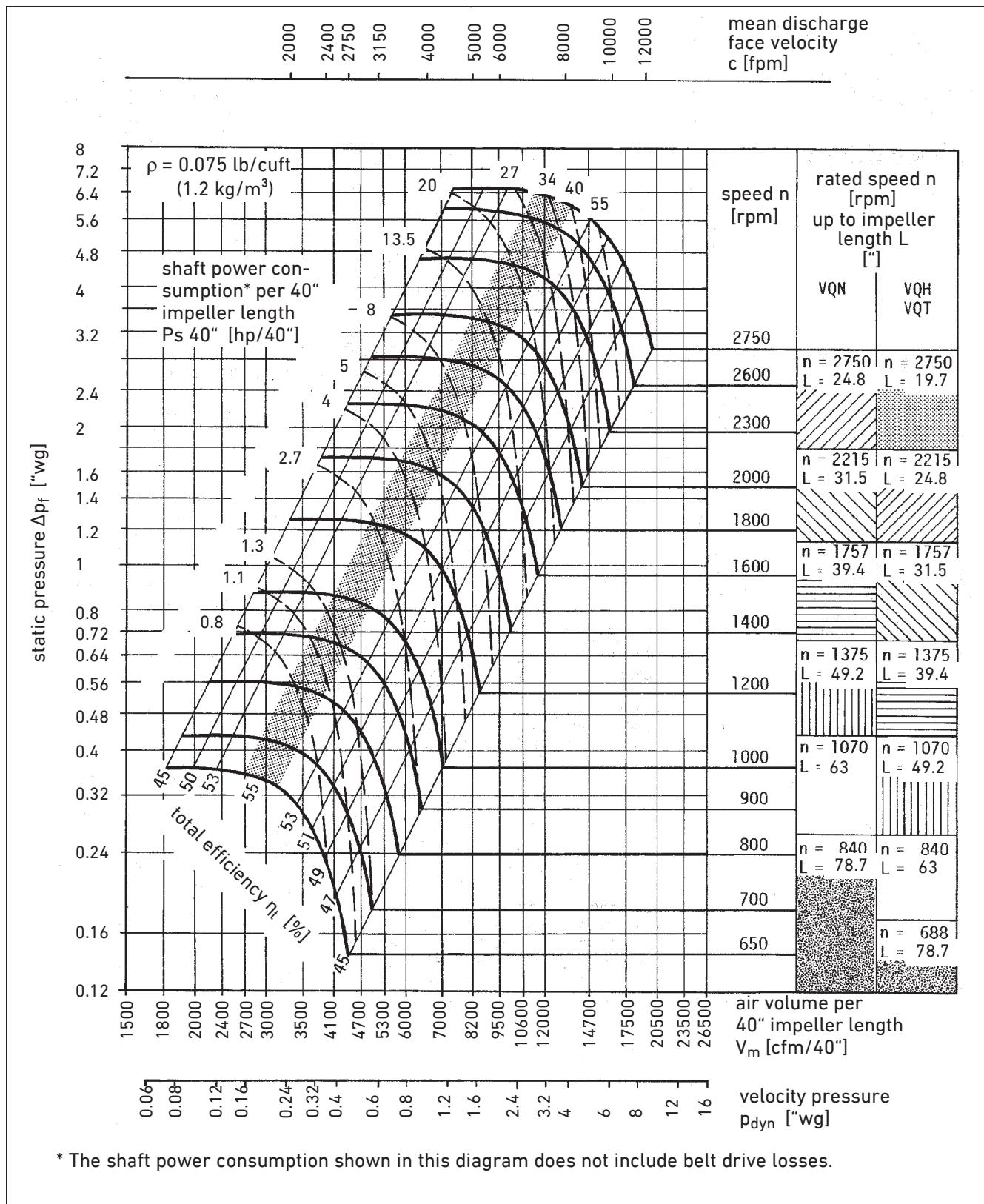


| Type | D/L | A* [inch] | B [inch] | L [inch] | d* [inch] | E* [inch] | l* [inch] | t | S [inch] | n max. [rpm] | P max. Motor [hp] | Weight approx. [lb] |
|--|----------|-----------|----------|----------|-----------|-----------|-----------|---|----------|--------------|-------------------|---------------------|
| VQN gas temperatures; -15 to +250 °F (-25 to +120 °C) | 250/0500 | 36.81 | 27.56 | 19.69 | 1.97 | 6.14 | 3.15 | 1 | 6.50 | 2750 | 50 | 137 |
| | 250/0630 | 41.93 | 32.68 | 24.80 | 1.97 | 6.14 | 3.15 | 2 | 5.12 | 2750 | 50 | 150 |
| | 250/0800 | 48.62 | 39.37 | 31.50 | 1.97 | 6.14 | 3.15 | 3 | 4.53 | 2215 | 50 | 165 |
| | 250/1000 | 56.50 | 47.24 | 39.37 | 1.97 | 6.14 | 3.15 | 4 | 4.53 | 1757 | 30 | 185 |
| | 250/1250 | 65.35 | 57.09 | 49.21 | 1.57 | 5.63 | 3.15 | 5 | 5.51 | 1375 | 20 | 209 |
| | 250/1600 | 77.83 | 70.87 | 62.99 | 1.38 | 4.65 | 2.36 | 7 | 4.53 | 1070 | 10 | 245 |
| | 250/2000 | 93.58 | 86.61 | 78.74 | 1.38 | 4.65 | 2.36 | 9 | 4.53 | 840 | 7.5 | 284 |
| VQH gas temperatures; -15 to +600 °F (-25 to +300 °C) | 250/0500 | 41.46 | 31.50 | 19.69 | 1.97 | 6.46 | 3.15 | 1 | 6.50 | 2215 | 40 | 154 |
| | 250/0630 | 46.57 | 36.61 | 24.80 | 1.97 | 6.46 | 3.15 | 2 | 5.12 | 2215 | 40 | 168 |
| | 250/0800 | 52.32 | 43.31 | 31.50 | 1.57 | 5.98 | 3.15 | 3 | 4.53 | 1757 | 25 | 183 |
| | 250/1000 | 60.20 | 51.18 | 39.37 | 1.57 | 5.98 | 3.15 | 4 | 4.53 | 1375 | 15 | 203 |
| | 250/1250 | 68.54 | 61.02 | 49.21 | 1.38 | 4.84 | 2.36 | 5 | 5.51 | 1070 | 10 | 227 |
| | 250/1600 | 82.32 | 74.80 | 62.99 | 1.38 | 4.84 | 2.36 | 7 | 4.53 | 840 | 5 | 262 |
| | 250/2000 | 98.07 | 90.55 | 78.74 | 1.38 | 4.84 | 2.36 | 9 | 4.53 | 688 | 4 | 302 |
| VQT gas temperatures; -40 to +950 °F (-40 to +500 °C) | 250/0500 | 48.94 | 35.43 | 19.69 | 1.97 | 8.27 | 3.15 | 1 | 6.50 | 2215 | 40 | 176 |
| | 250/0630 | 54.06 | 40.55 | 24.80 | 1.97 | 8.27 | 3.15 | 2 | 5.12 | 2215 | 40 | 190 |
| | 250/0800 | 59.76 | 47.24 | 31.50 | 1.57 | 7.76 | 3.15 | 3 | 4.53 | 1757 | 25 | 205 |
| | 250/1000 | 67.64 | 55.12 | 39.37 | 1.57 | 7.76 | 3.15 | 4 | 4.53 | 1375 | 15 | 225 |
| | 250/1250 | 76.02 | 64.96 | 49.21 | 1.38 | 6.61 | 2.36 | 5 | 5.51 | 1070 | 10 | 249 |
| | 250/1600 | 89.80 | 78.74 | 62.99 | 1.38 | 6.61 | 2.36 | 7 | 4.53 | 840 | 5 | 284 |

* The indicated dimensions are for the max. rated power for each nominal length. Dimensions for lower rated motor power on request.

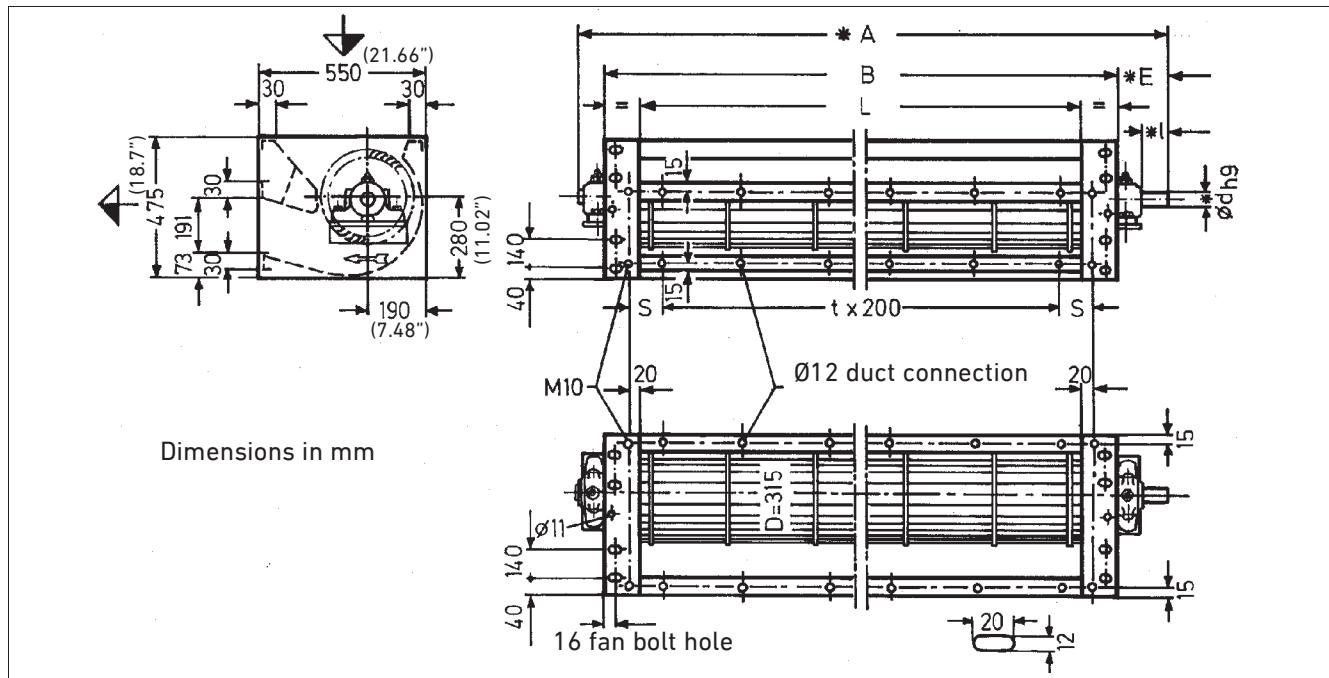
IMPELLER DIAMETER 10" (250 MM)

FAN CURVES



IMPELLER DIAMETER 12.4" (315 MM)

DIMENSIONS, TECHNICAL DATA

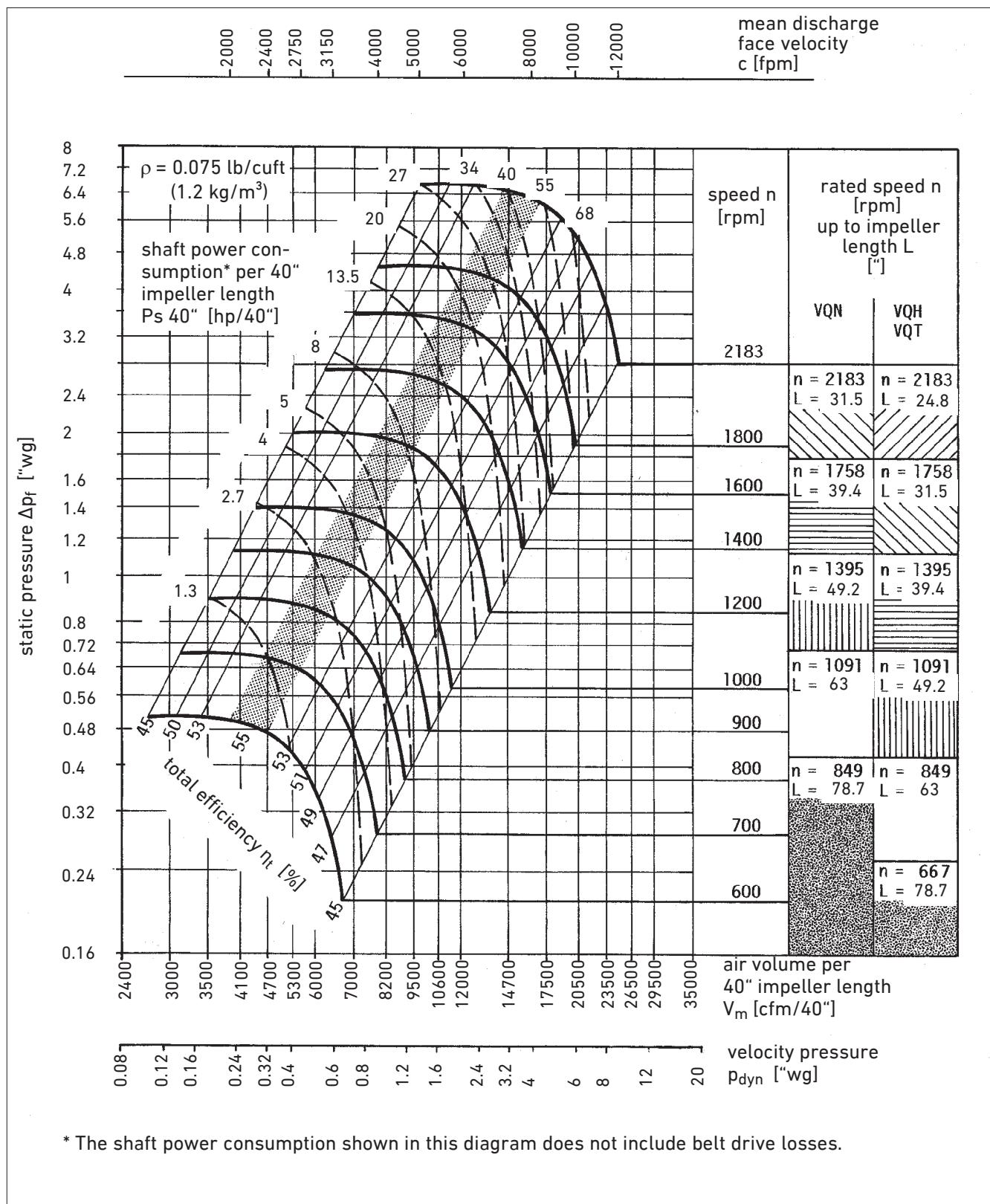


| Type | D/L | A* [inch] | B [inch] | L [inch] | d* [inch] | E* [inch] | l* [inch] | t | S [inch] | n max. [rpm] | P max. Motor [hp] | Weight approx. [lb] |
|---|----------|-----------|----------|----------|-----------|-----------|-----------|---|----------|--------------|-------------------|---------------------|
| VQN gas temperatures; -15 to +250 °F (-25 to +120 °C) | 315/0630 | 41.93 | 32.68 | 24.80 | 1.97 | 6.14 | 3.15 | 2 | 5.31 | 2183 | 75 | 271 |
| | 315/0800 | 48.62 | 39.37 | 31.50 | 1.97 | 6.14 | | 3 | 4.72 | 2183 | 75 | 298 |
| | 315/1000 | 56.50 | 47.24 | 39.37 | 1.97 | 6.14 | | 4 | 4.72 | 1758 | 75 | 320 |
| | 315/1250 | 66.34 | 57.09 | 49.21 | 1.97 | 6.14 | | 5 | 5.71 | 1395 | 50 | 346 |
| | 315/1600 | 80.12 | 70.87 | 62.99 | 1.97 | 6.14 | | 7 | 4.72 | 1091 | 30 | 392 |
| | 315/2000 | 95.87 | 86.61 | 78.74 | 1.97 | 6.14 | | 9 | 4.72 | 849 | 20 | 430 |
| VQH gas temperatures; -15 to +600 °F (-25 to +300 °C) | 315/0630 | 46.57 | 36.61 | 24.80 | 1.97 | 6.46 | 3.15 | 2 | 5.31 | 2183 | 60 | 293 |
| | 315/0800 | 53.27 | 43.31 | 31.50 | 1.97 | 6.46 | | 3 | 4.72 | 1758 | 60 | 320 |
| | 315/1000 | 61.14 | 51.18 | 39.37 | 1.97 | 6.46 | | 4 | 4.72 | 1395 | 40 | 342 |
| | 315/1250 | 70.20 | 60.24 | 49.21 | 1.97 | 6.46 | | 5 | 5.71 | 1091 | 30 | 364 |
| | 315/1600 | 84.76 | 74.80 | 62.99 | 1.97 | 6.46 | | 7 | 4.72 | 849 | 20 | 408 |
| | 315/2000 | 99.57 | 90.55 | 78.74 | 1.57 | 5.98 | | 9 | 4.72 | 667 | 10 | 452 |
| VQT gas temperatures; -40 to +950 °F (-40 to +500 °C) | 315/0630 | 54.06 | 40.55 | 24.80 | 1.97 | 8.27 | 3.15 | 2 | 5.31 | 2183 | 60 | 324 |
| | 315/0800 | 60.75 | 47.24 | 31.50 | 1.97 | 8.27 | | 3 | 4.72 | 1758 | 60 | 351 |
| | 315/1000 | 68.62 | 55.12 | 39.37 | 1.97 | 8.27 | | 4 | 4.72 | 1395 | 40 | 373 |
| | 315/1250 | 78.46 | 64.96 | 49.21 | 1.97 | 8.27 | | 5 | 5.71 | 1091 | 30 | 395 |
| | 315/1600 | 92.24 | 78.74 | 62.99 | 1.97 | 8.27 | | 7 | 4.72 | 849 | 20 | 439 |
| | 315/2000 | 107.01 | 94.49 | 78.74 | 1.57 | 7.76 | | 9 | 4.72 | 667 | 10 | 483 |

* The indicated dimensions are for the max. rated power for each nominal length. Dimensions for lower rated motor power on request.

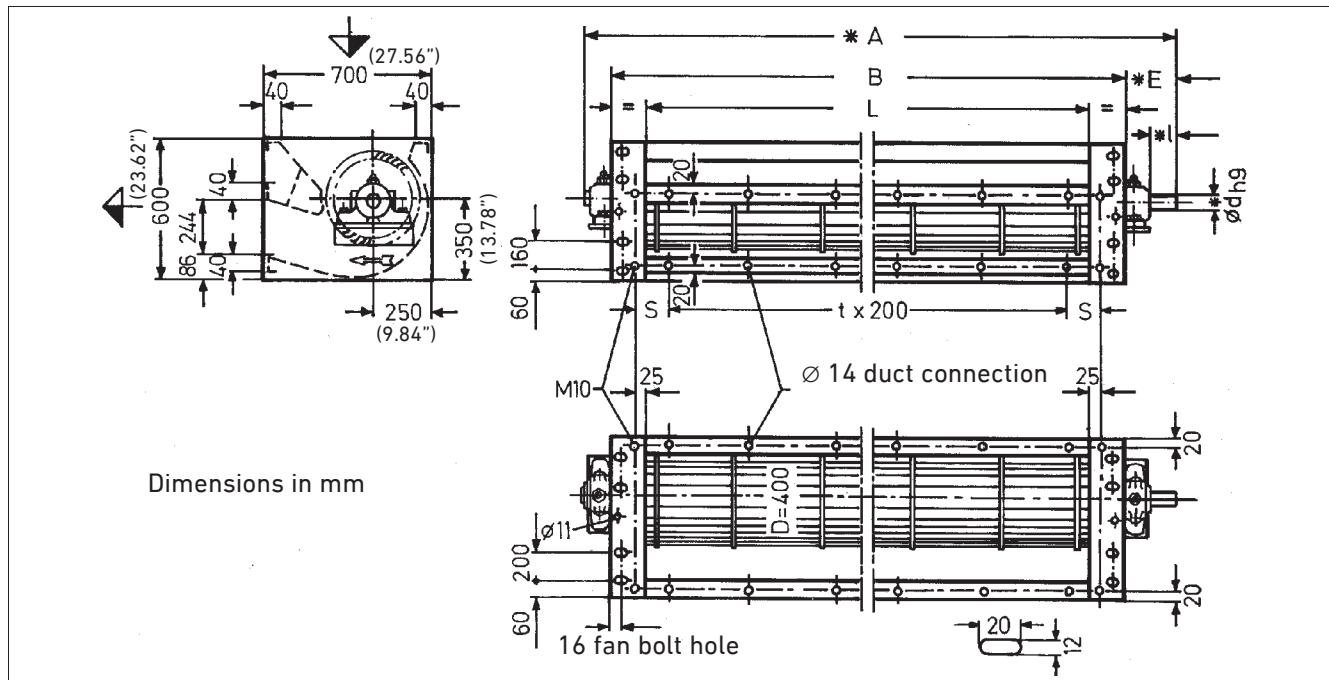
IMPELLER DIAMETER 12.4" (315 MM)

FAN CURVES



IMPELLER DIAMETER 16" (400 MM)

DIMENSIONS, TECHNICAL DATA

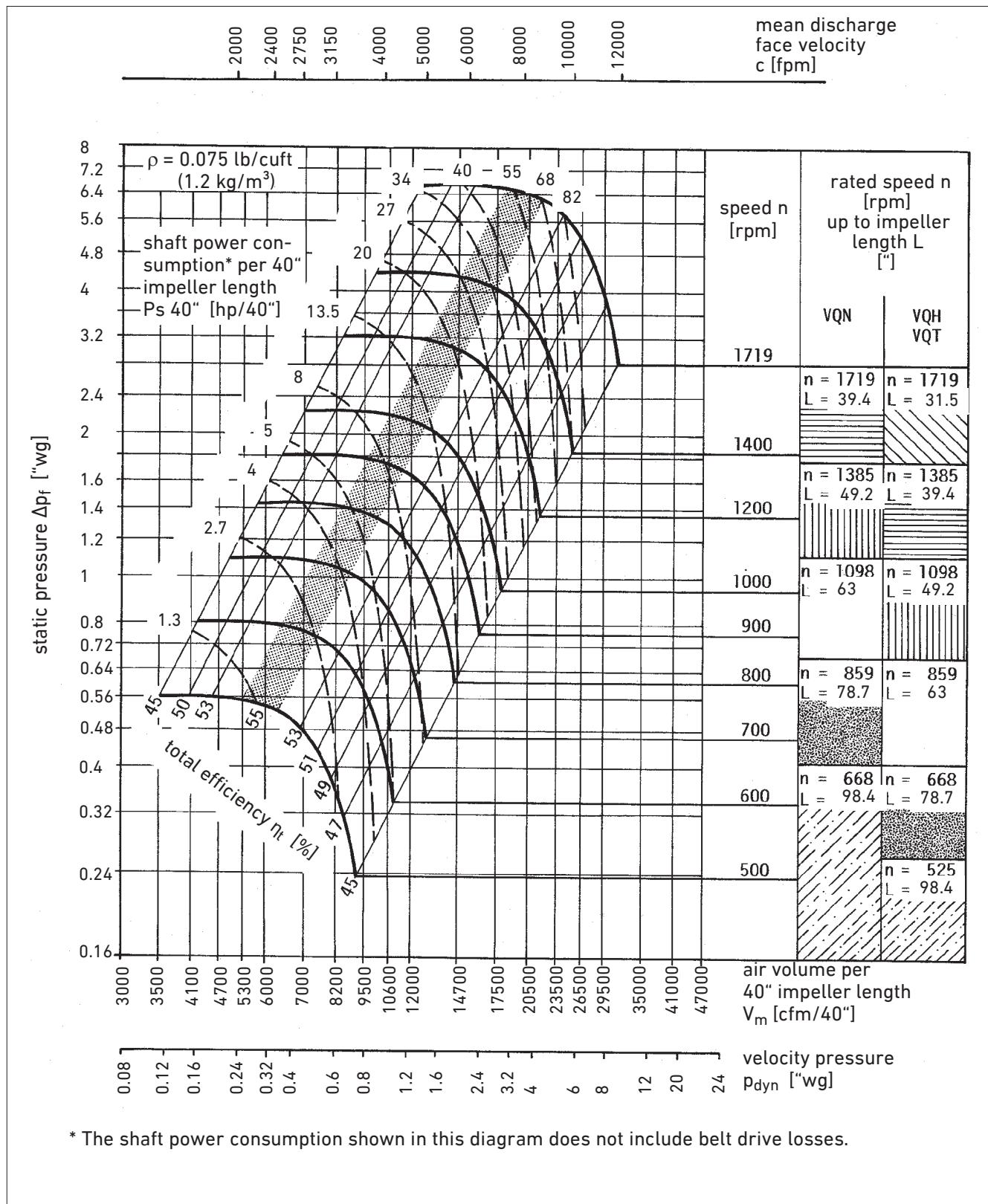


| Type | D/L | A* [inch] | B [inch] | L [inch] | d* [inch] | E* [inch] | l* [inch] | t | S [inch] | n max. [rpm] | P max. Motor [hp] | Weight approx. [lb] |
|---|----------|-----------|----------|----------|-----------|-----------|-----------|----|----------|--------------|-------------------|---------------------|
| VQN gas temperatures; -15 to +250 °F (-25 to +120 °C) | 400/0800 | 54.37 | 40.16 | 31.50 | 2.95 | 9.17 | 4.33 | 3 | 4.92 | 1719 | 125 | 505 |
| | 400/1000 | 62.24 | 48.03 | 39.37 | 2.95 | 9.17 | 4.33 | 4 | 4.92 | 1719 | 125 | 540 |
| | 400/1250 | 72.09 | 57.87 | 49.21 | 2.95 | 9.17 | 4.33 | 5 | 5.91 | 1385 | 125 | 576 |
| | 400/1600 | 83.46 | 71.65 | 62.99 | 2.36 | 8.03 | 4.33 | 7 | 4.92 | 1098 | 75 | 584 |
| | 400/2000 | 99.21 | 87.40 | 78.74 | 2.36 | 8.03 | 4.33 | 9 | 4.92 | 859 | 50 | 717 |
| | 400/2500 | 118.90 | 107.09 | 98.43 | 2.36 | 8.03 | 4.33 | 11 | 6.89 | 668 | 30 | 805 |
| VQH gas temperatures; -15 to +600 °F (-25 to +300 °C) | 400/0800 | 58.70 | 44.49 | 31.50 | 2.95 | 9.17 | 4.33 | 3 | 4.92 | 1719 | 100 | 549 |
| | 400/1000 | 66.57 | 52.36 | 39.37 | 2.95 | 9.17 | 4.33 | 4 | 4.92 | 1385 | 100 | 584 |
| | 400/1250 | 74.02 | 62.20 | 49.21 | 2.36 | 8.03 | 4.33 | 5 | 5.91 | 1098 | 60 | 619 |
| | 400/1600 | 87.80 | 75.98 | 62.99 | 2.36 | 8.03 | 4.33 | 7 | 4.92 | 859 | 40 | 672 |
| | 400/2000 | 101.46 | 91.73 | 78.74 | 1.97 | 6.34 | 3.15 | 9 | 4.92 | 668 | 20 | 761 |
| | 400/2500 | 121.14 | 111.42 | 98.43 | 1.97 | 6.34 | 3.15 | 11 | 6.89 | 525 | 15 | 849 |
| VQT gas temperatures; -40 to +950 °F (-40 to +500 °C) | 400/0800 | 68.94 | 48.43 | 31.50 | 2.95 | 12.32 | 4.33 | 3 | 4.92 | 1719 | 100 | 611 |
| | 400/1000 | 76.81 | 56.30 | 39.37 | 2.95 | 12.32 | 4.33 | 4 | 4.92 | 1385 | 100 | 646 |
| | 400/1250 | 82.56 | 66.14 | 49.21 | 2.36 | 10.35 | 4.33 | 5 | 5.91 | 1098 | 60 | 681 |
| | 400/1600 | 96.34 | 79.92 | 62.99 | 2.36 | 10.35 | 4.33 | 7 | 4.92 | 859 | 40 | 734 |
| | 400/2000 | 110.12 | 95.67 | 78.74 | 1.97 | 8.70 | 3.15 | 9 | 4.92 | 668 | 20 | 822 |
| | 400/2500 | 129.80 | 115.35 | 98.43 | 1.97 | 8.70 | 3.15 | 11 | 6.89 | 525 | 15 | 911 |

* The indicated dimensions are for the max. rated power for each nominal length. Dimensions for lower rated motor power on request.

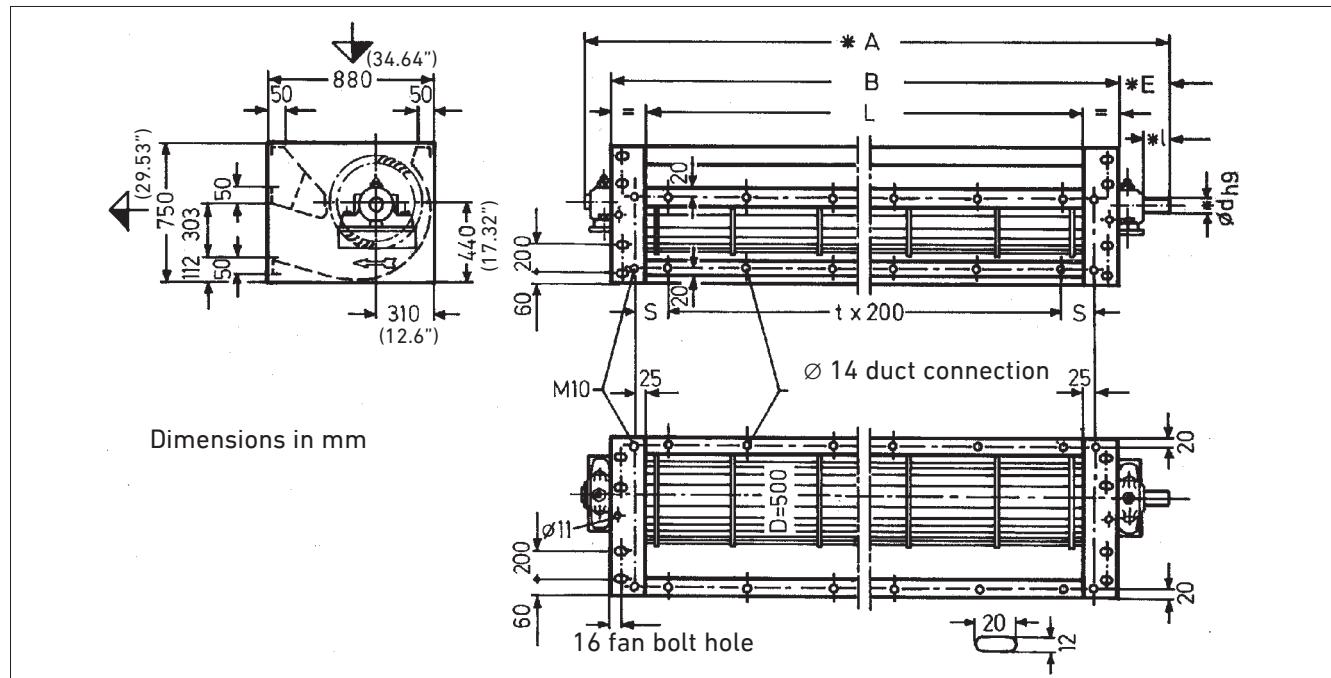
IMPELLER DIAMETER 16" (400 MM)

FAN CURVES



IMPELLER DIAMETER 20" (500 MM)

DIMENSIONS, TECHNICAL DATA

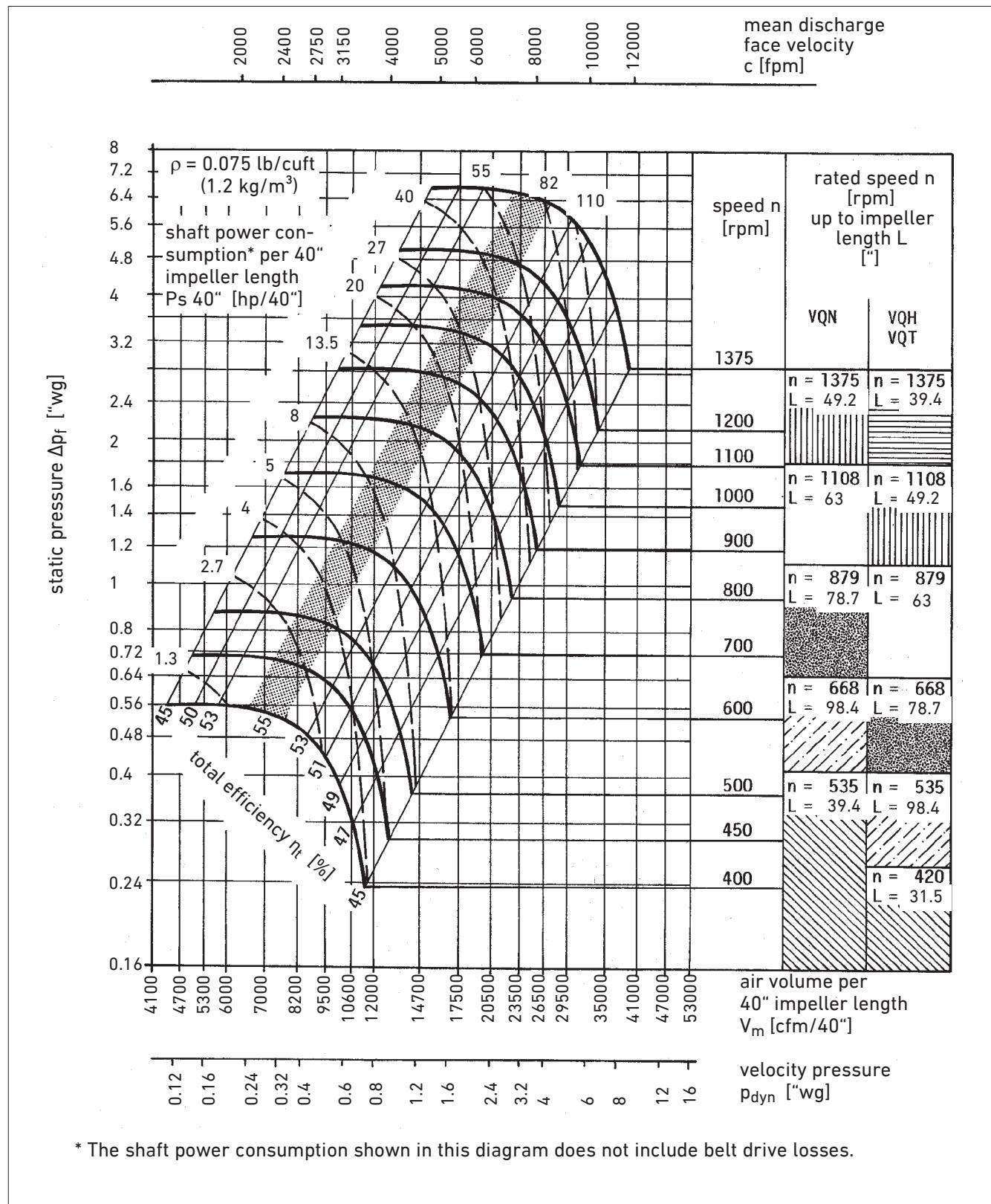


| Type | D/L | A* [inch] | B [inch] | L [inch] | d* [inch] | E* [inch] | l* [inch] | t | S [inch] | n max. [rpm] | P max. Motor [hp] | Weight approx. [lb] |
|---|----------|-----------|----------|----------|-----------|-----------|-----------|----|----------|--------------|-------------------|---------------------|
| VQN gas temperatures; -15 to +250 °F (-25 to +120 °C) | 500/1000 | 62.24 | 48.03 | 39.37 | 2.95 | 9.17 | 4.33 | 4 | 4.92 | 1375 | 180 | 705 |
| | 500/1250 | 72.09 | 57.87 | 49.21 | 2.95 | 9.17 | | 5 | 5.91 | 1375 | 180 | 772 |
| | 500/1600 | 85.87 | 71.65 | 62.99 | 2.95 | 9.17 | | 7 | 4.92 | 1108 | 180 | 851 |
| | 500/2000 | 101.61 | 87.40 | 78.74 | 2.95 | 9.17 | | 9 | 4.92 | 879 | 125 | 948 |
| | 500/2500 | 121.30 | 107.09 | 98.43 | 2.95 | 9.17 | | 11 | 6.89 | 668 | 75 | 1102 |
| | 500/3000 | 140.98 | 126.77 | 118.11 | 2.95 | 9.17 | | 14 | 4.92 | 535 | 40 | 1191 |
| VQH gas temperatures; -15 to +600 °F (-25 to +300 °C) | 500/1000 | 66.57 | 52.36 | 39.37 | 2.95 | 9.17 | 4.33 | 4 | 4.92 | 1375 | 150 | 760 |
| | 500/1250 | 76.42 | 62.20 | 49.21 | 2.95 | 9.17 | | 5 | 5.91 | 1108 | 150 | 827 |
| | 500/1600 | 90.20 | 75.98 | 62.99 | 2.95 | 9.17 | | 7 | 4.92 | 879 | 100 | 907 |
| | 500/2000 | 105.94 | 91.73 | 78.74 | 2.95 | 9.17 | | 9 | 4.92 | 668 | 60 | 1003 |
| | 500/2500 | 125.63 | 114.42 | 98.43 | 2.95 | 9.17 | | 11 | 6.89 | 535 | 40 | 1157 |
| | 500/3000 | 142.91 | 131.10 | 118.11 | 2.36 | 8.03 | | 14 | 4.92 | 420 | 20 | 1246 |
| VQT gas temperatures; -40 to +950 °F (-40 to +500 °C) | 500/1000 | 76.81 | 56.30 | 39.37 | 2.95 | 12.32 | 4.33 | 4 | 4.92 | 1375 | 150 | 838 |
| | 500/1250 | 86.65 | 66.14 | 49.21 | 2.95 | 12.32 | | 5 | 5.91 | 1108 | 150 | 904 |
| | 500/1600 | 100.43 | 79.92 | 62.99 | 2.95 | 12.32 | | 7 | 4.92 | 879 | 100 | 983 |
| | 500/2000 | 116.18 | 95.67 | 78.74 | 2.95 | 12.32 | | 9 | 4.92 | 668 | 60 | 1080 |
| | 500/2500 | 135.87 | 115.35 | 98.43 | 2.95 | 12.32 | | 11 | 6.89 | 535 | 40 | 1235 |
| | 500/3000 | 151.46 | 135.04 | 118.11 | 2.36 | 10.35 | | 14 | 4.92 | 420 | 20 | 1323 |

* The indicated dimensions are for the max. rated power for each nominal length. Dimensions for lower rated motor power on request.

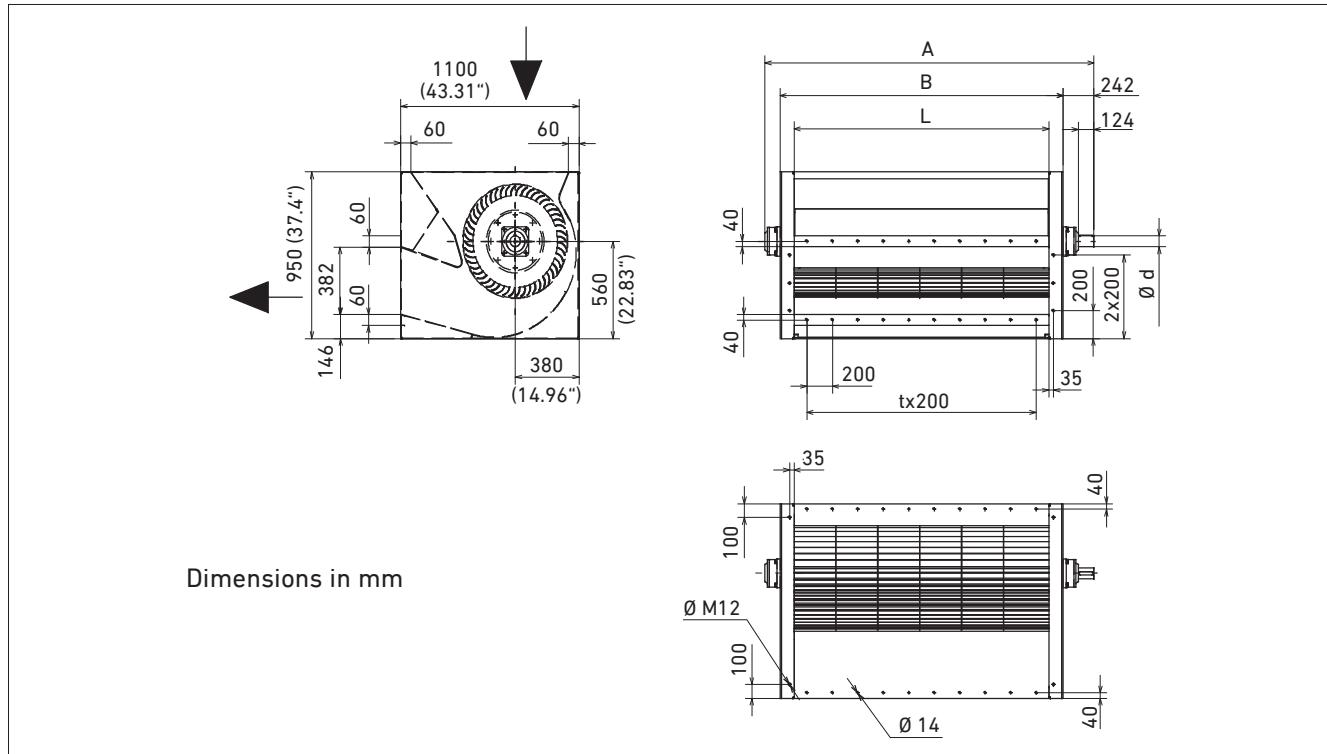
IMPELLER DIAMETER 20" (500 MM)

FAN CURVES



IMPELLER DIAMETER 25" (630 MM)

DIMENSIONS, TECHNICAL DATA

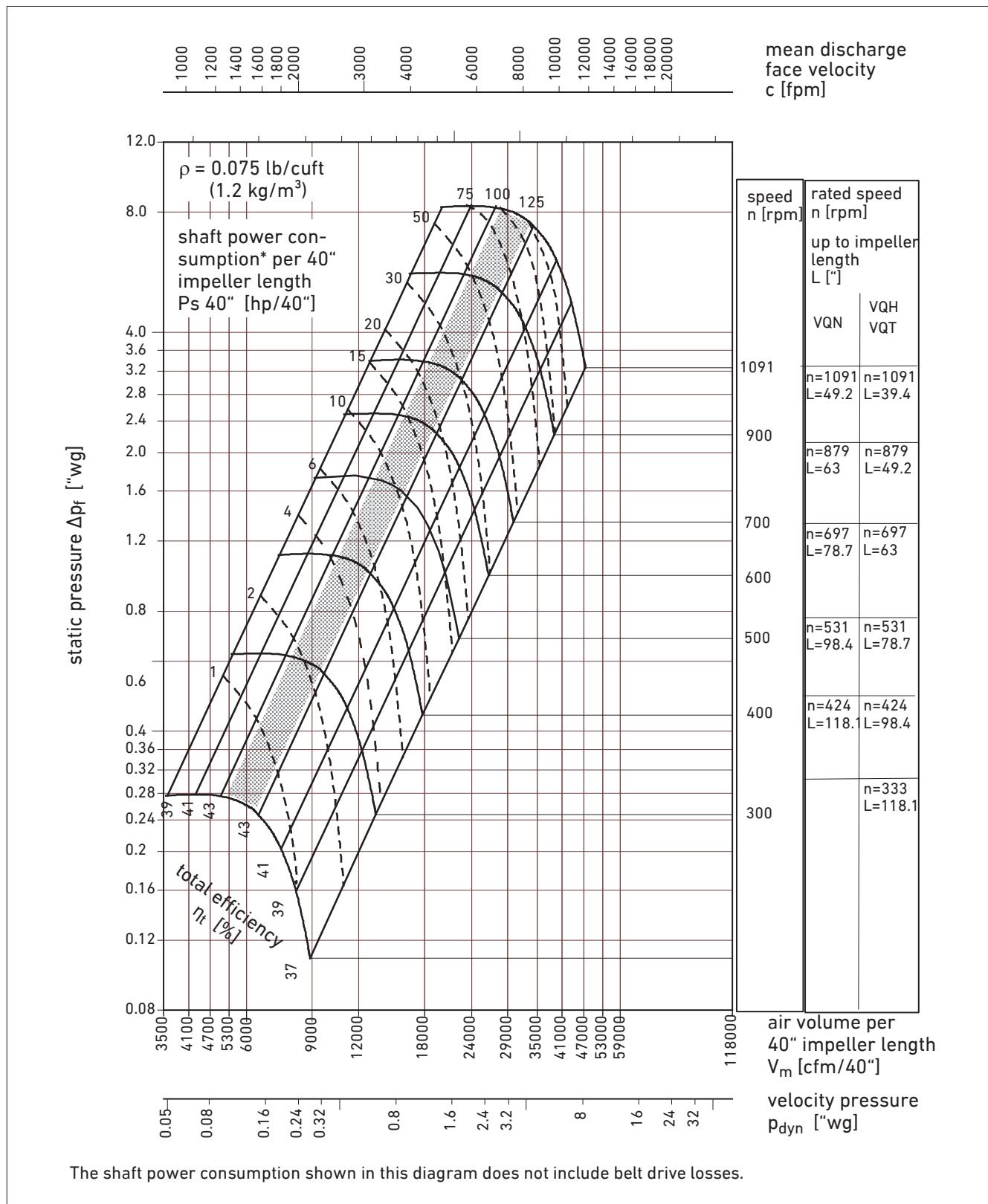


| Type | D/L | A* [inch] | B [inch] | L [inch] | d* [inch] | t | n max. [rpm] | P max. Motor [hp] |
|--|----------|-----------|----------|----------|-----------|----|--------------|-------------------|
| VQN gas temperatures; -15 to +250 °F (-25 to +120 °C) | 630/1000 | 62.2 | 48.19 | 39.37 | 2.95 | 4 | 1090 | 270 |
| | 630/1250 | 72.05 | 58.03 | 49.21 | | 5 | 1090 | 270 |
| | 630/1600 | 85.83 | 71.81 | 62.99 | | 7 | 880 | 215 |
| | 630/2000 | 101.57 | 87.56 | 78.74 | | 9 | 697 | 150 |
| | 630/2630 | 121.26 | 107.24 | 98.43 | | 12 | 530 | 100 |
| | 630/3000 | 140.94 | 126.93 | 118.11 | | 14 | 424 | 75 |
| VQH gas temperatures; -15 to +600 °F (-25 to +300 °C) | 630/1000 | 74.02 | 59.84 | 39.37 | 2.95 | 4 | 1090 | 270 |
| | 630/1250 | 83.86 | 69.69 | 49.21 | | 5 | 880 | 215 |
| | 630/1600 | 97.64 | 83.46 | 62.99 | | 7 | 697 | 150 |
| | 630/2000 | 113.39 | 99.21 | 78.74 | | 9 | 530 | 100 |
| | 630/2630 | 133.07 | 118.90 | 98.43 | | 12 | 424 | 75 |
| | 630/3000 | 152.76 | 138.58 | 118.11 | | 14 | 262 | 40 |

* The indicated dimensions are for the max. rated power for each nominal length. Dimensions for lower rated motor power on request.

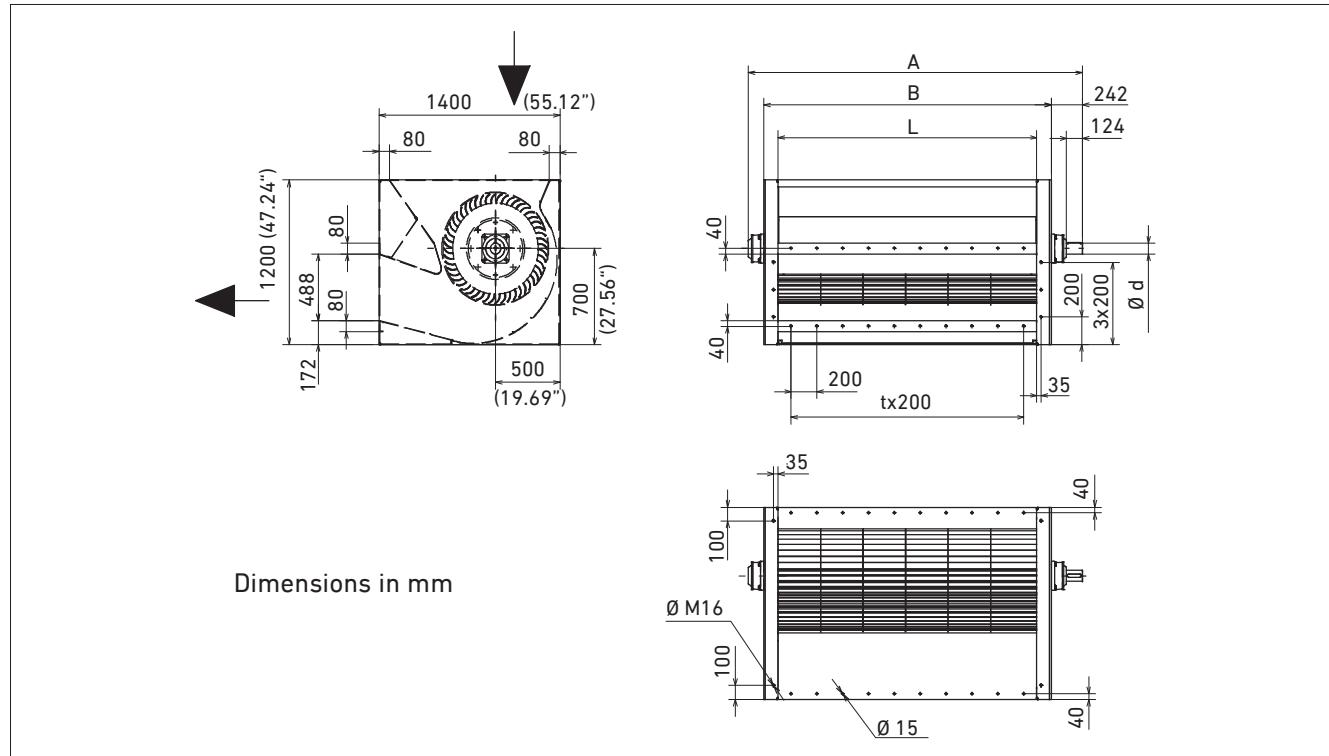
IMPELLER DIAMETER 25" (630 MM)

FAN CURVES



IMPELLER DIAMETER 31.5" (800 MM)

DIMENSIONS, TECHNICAL DATA

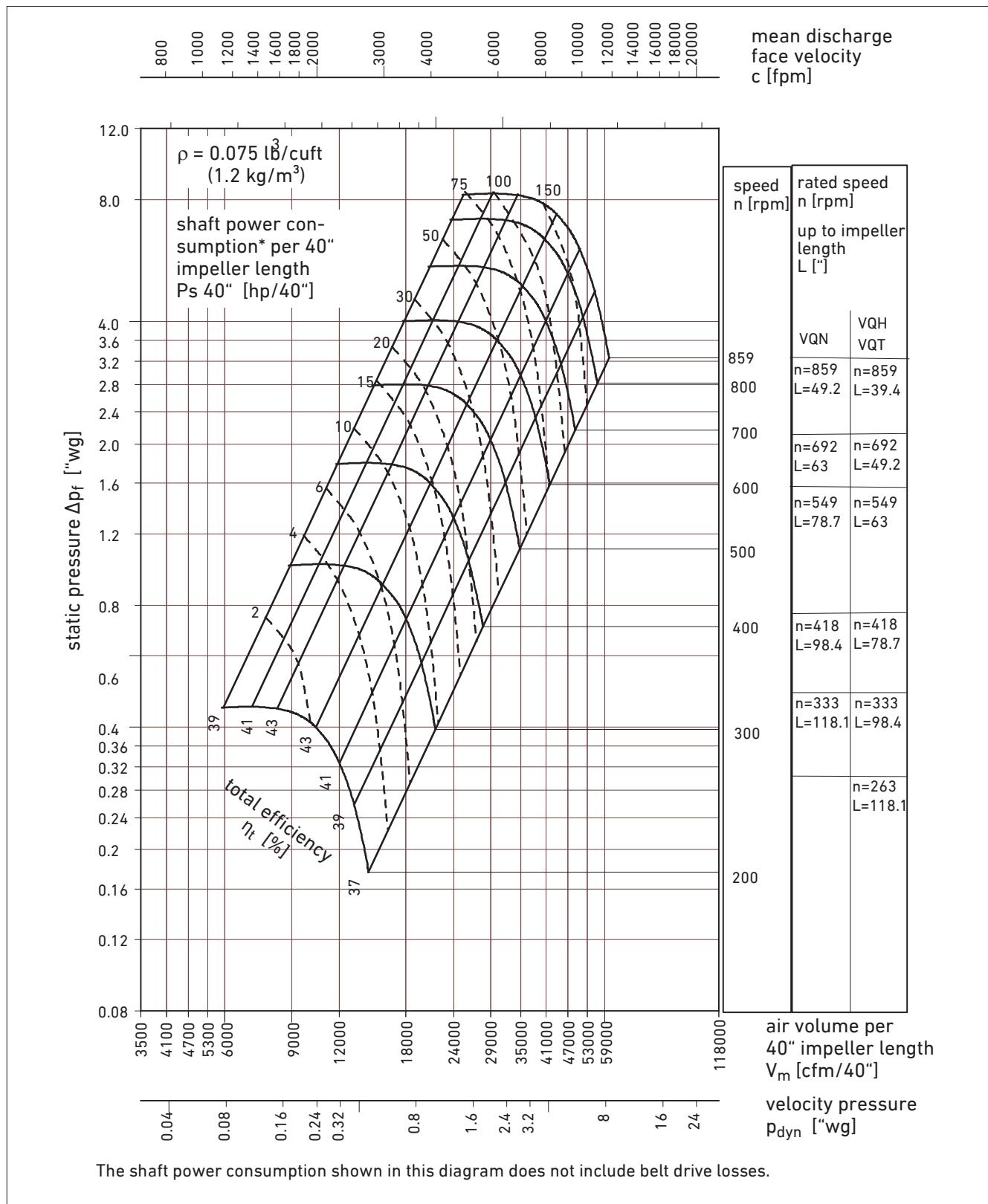


| Type | D/L | A* [inch] | B [inch] | L [inch] | d* [inch] | t | n max. [rpm] | P max. Motor [hp] |
|--|----------|-----------|----------|----------|-----------|----|--------------|-------------------|
| VQN gas temperatures; -15 to +250 °F (-25 to +120 °C) | 800/1000 | 62.36 | 48,19 | 39.37 | 3.15 | 4 | 860 | 340 |
| | 800/1400 | 78.11 | 63.94 | 55.12 | | 6 | 860 | 340 |
| | 800/1600 | 85.98 | 71.81 | 62.99 | | 7 | 692 | 270 |
| | 800/2000 | 101.73 | 87.56 | 78.74 | | 9 | 550 | 180 |
| | 800/2300 | 113.54 | 99.37 | 90.55 | | 11 | 417 | 100 |
| | 800/3000 | 141.10 | 126.93 | 118.11 | | 14 | 335 | 75 |
| VQH gas temperatures; -15 to +600 °F (-25 to +300 °C) | 800/1000 | 74.02 | 59.84 | 39.37 | 3.15 | 4 | 860 | 340 |
| | 800/1400 | 89.76 | 75.59 | 55.12 | | 6 | 692 | 215 |
| | 800/1600 | 97.64 | 83.46 | 62.99 | | 7 | 550 | 150 |
| | 800/2000 | 113.39 | 99.21 | 78.74 | | 9 | 417 | 75 |
| | 800/2300 | 125.20 | 111.02 | 90.55 | | 11 | 335 | 60 |
| | 800/3000 | 152.76 | 138.58 | 118.11 | | 14 | 262 | 40 |

* The indicated dimensions are for the max. rated power for each nominal length. Dimensions for lower rated motor power on request.

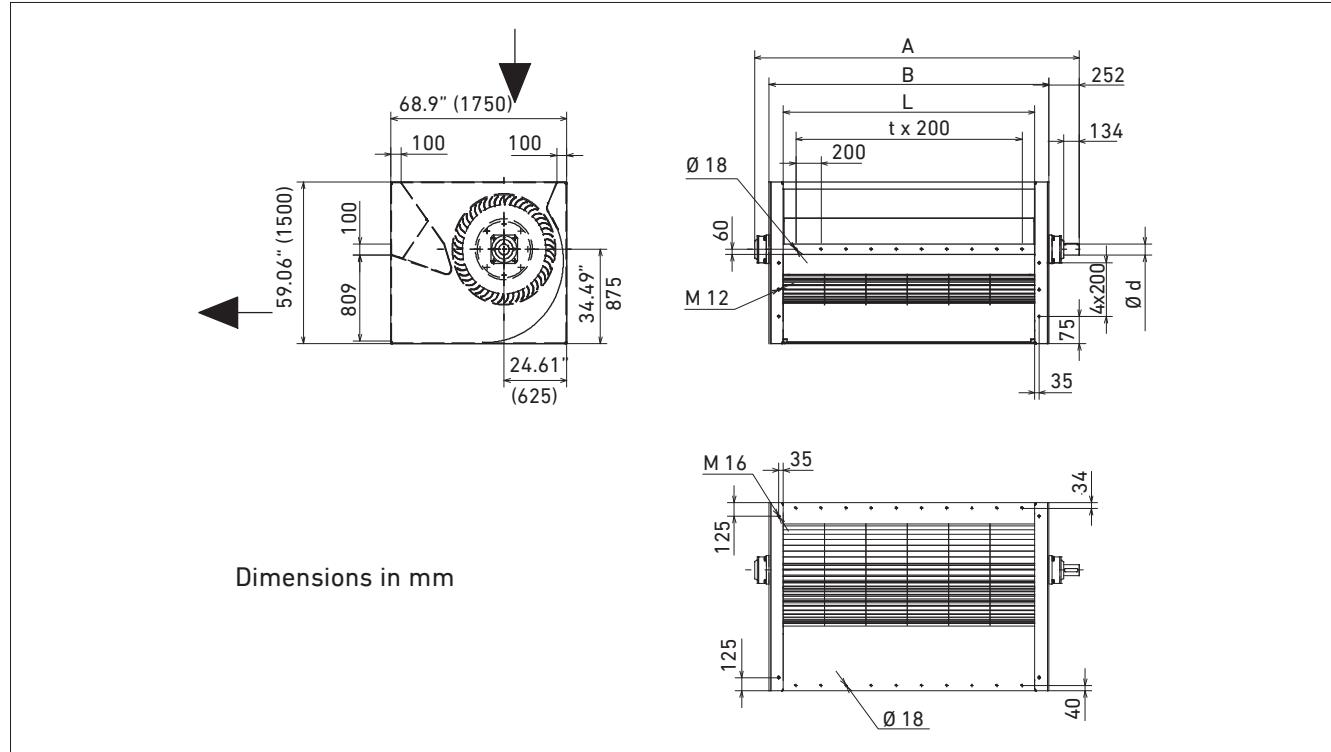
IMPELLER DIAMETER 31.5" (800 MM)

FAN CURVES



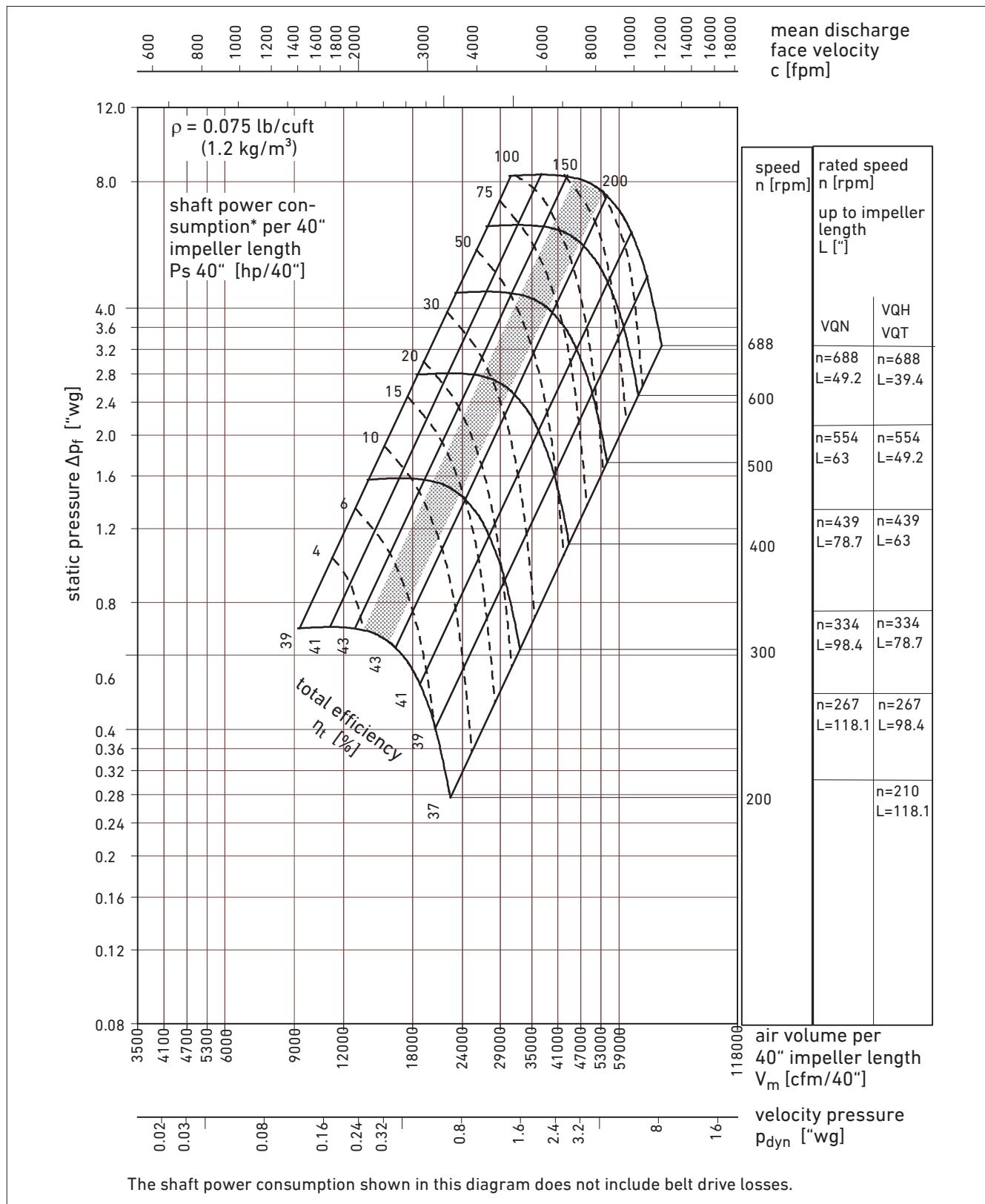
IMPELLER DIAMETER 39.5" (1000 MM)

DIMENSIONS, TECHNICAL DATA

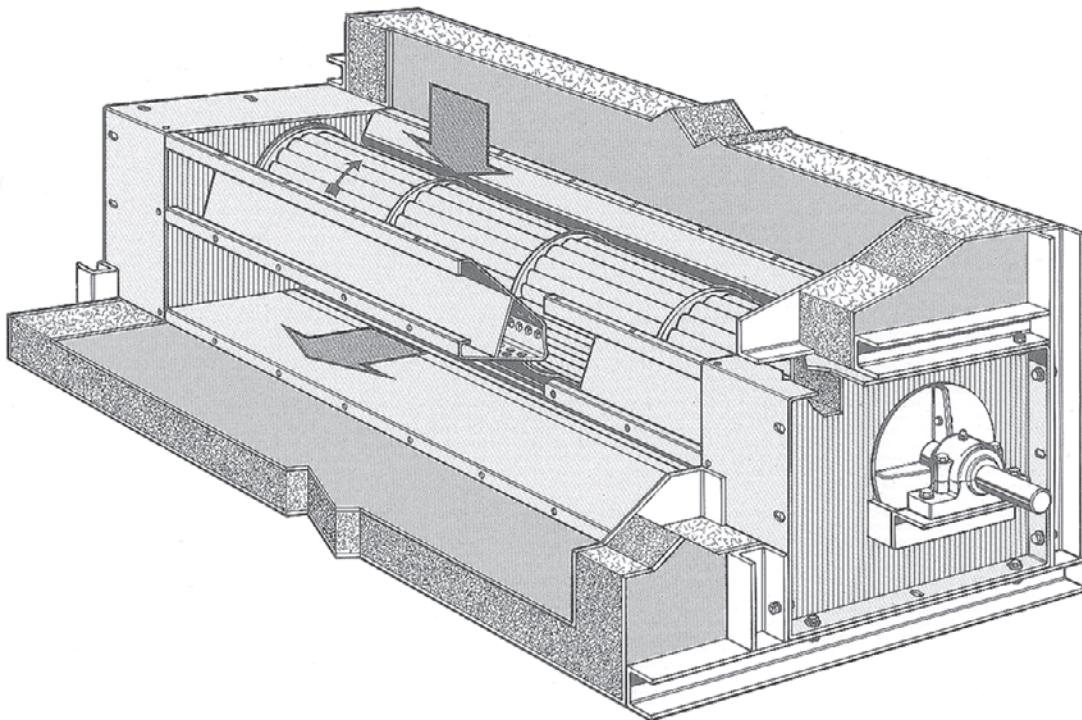


| Type | D/L | A* [inch] | B [inch] | L [inch] | d* [inch] | t | n max. [rpm] | P max. Motor [hp] |
|--|-----------|-----------|----------|----------|-----------|----|--------------|-------------------|
| VQN gas temperatures; -15 to +250 °F (-25 to +120 °C) | 1000/1000 | 62.76 | 48.19 | 39.37 | 3.15 | 4 | 688 | 425 |
| | 1000/1400 | 72.60 | 58.03 | 49.21 | | 5 | 688 | 425 |
| | 1000/1600 | 86.38 | 71.81 | 62.99 | | 7 | 554 | 215 |
| | 1000/2000 | 102.13 | 87.56 | 78.74 | | 9 | 440 | 180 |
| | 1000/2300 | 121.81 | 107.24 | 98.43 | | 12 | 334 | 100 |
| | 1000/3000 | 141.50 | 126.93 | 118.11 | | 14 | 268 | 60 |
| VQH gas temperatures; -15 to +600 °F (-25 to +300 °C) | 1000/1000 | 74.41 | 59.84 | 39.37 | 3.15 | 4 | 688 | 425 |
| | 1000/1400 | 84.25 | 69.69 | 49.21 | | 5 | 554 | 215 |
| | 1000/1600 | 98.03 | 83.46 | 62.99 | | 7 | 440 | 180 |
| | 1000/2000 | 113.78 | 99.21 | 78.74 | | 9 | 334 | 100 |
| | 1000/2300 | 133.46 | 118.90 | 98.43 | | 12 | 268 | 60 |
| | 1000/3000 | 153.15 | 138.58 | 118.11 | | 14 | 210 | 30 |

* The indicated dimensions are for the max. rated power for each nominal length. Dimensions for lower rated motor power on request.

IMPELLER DIAMETER 39.5" (1000 MM)**FAN CURVES**

INSTALLATION, OPERATION



Installation example of a fan type VQH and type VQT with on site insulation

INSTALLATION

Any arrangement is possible. Mount the fan without any distortion to a plane base frame.

Use only the bolt holes provided in the side elements to mount the fan.

For high temperature fans consider the thermal expansion of the housing and provide for movement of the counter side. With the suction opening on top, viewed against the discharge opening, the drive side bearing with shaft end can be ordered as right hand or left hand.

It is necessary to provide an on site insulation of the side elements to not to exceed the max. ambient temperature of the bearings.

OPERATION

Make sure to observe the applicable safety codes before starting the fans.

High- temperature versions VQH and VQT are suitable for recirculated air operation only.

For higher service temperatures check temperature resistance and service life of the V- belts.

The smallest permissible pulley diameter is the Nominal diameter of the impeller on the next smaller fan size.

Before using multiple belt drives, use as large a pulley diameter as possible.

The use of toothed belts is not recommended.

Always observe and verify the manufacturers' belt tension requirements.

The fans are designed for continuous operation with constant load (operation mode SI analogous to VDE 0530). For frequent start/stop operation please refer to LTG Incorporated.

The fans have smooth shaft ends without key ways for use with clamping bushings such as taper lock.

SELECTION

| Application | | | | Example | Your Data | Designations | |
|--|---------------------|----------------------|--|-------------------|------------------|---------------------|---|
| Gas | | | | hot air | | V | [cfm] air volume |
| Gas temperature | t | [°F] | | +930 | | Δp _f | [wg] static pressure |
| ambient temperature | | | | | | p _d | [wg] dynamic pressure at discharge area |
| drive side | t | [°F] | | +105 | | p _d | = $\rho/2 \cdot c^2$ |
| counter side | t | [°F] | | +105 | | Δp _t | [wg] total pressure |
| condensation | | | | no | | c | [fpm] velocity at the discharge area |
| located at | | | | tempering furnace | | ρ | [kg/m³] specific gravity |
| drive side | | | | right hand | | n | [rpm] speed |
| arrangement | | | | horizontal | | P _w | [hp] shaft power consumption |
| Drive motor | | | | | | L _w | [dB] sound power level |
| power supply | | | | 3-phase | | L _{WA} | [dB(A)] A-weighted sound power |
| voltage | U | [V] | | 460 | | L _{pA} | [dB(A)] A-weighted sound power level |
| frequency | f | [cps] | | 60 | | s | [m²] panel area |
| Specified performance | | | | | | η _t | [%] efficiency |
| air volume* | V | [cfm] | | 10,000 | | | |
| static pressure* | Δp _f | [wg] | | 1.3 | | | |
| *at specific gravity | ρ | [kg/m³] [lb/cuft] | | 1.2 0.075 | | | |
| active impeller length | L | ["] | | 49.2 | | | |
| Procedure | | | | | | | |
| 1. air volume | V | cfm] | | 10,000 | | | |
| 2. specific air volume $V_m = V/L$ [cfm/40"] (per 40" impeller length) | | | | 8130 | | | |
| 3. static pressure | Δp _f | [wg] | | 1.3 | | | |
| 4. gas temperature | t | [°F] | | +930 | | | |
| Selected | | | | | | | |
| LTG Tangential fan type | | | | VQT 315/1250 | | | |
| Performance data | | | | | | | |
| for standard density ($\rho = 0.075$ lb/cuft) and density at actual gas temp. ($\rho = 0.029$ lb/cuft) | | | | | | | |
| air volume | V | [cfm] | | 10,000 | | | |
| static pressure | Δp _f | [wg] | | 1.3 | | | |
| dynamic pressure | p _d | [wg] | | 0.96 | | | |
| total pressure | Δp _t | [wg] | | 2.26 | | | |
| exhaust velocity | c | [fpm] | | 3940 | | | |
| speed | n | [rpm] | | 1000 | | | |
| max. rated speed | n _{max} | [rpm] | | 1091 | | | |
| efficiency | η _t | [%] | | 54 | | | |
| shaft power consumption (per 40" impeller length) | P _{Wm} | [hp/40"] | | 5.4 | | | |
| shaft power consumption at 49,2" length | P _w | [hp] | | 6.6 | | | |
| | | | | | | | |
| Acoustical data | | | | | | | |
| spec. sound power level | L _{w spez} | [dB] | | 32 | | | |
| L1 | L _{pA} | [dB] | | 7 | | | |
| L2 | | [dB] | | 55 | | | |
| sound power level | | [dB] | | 94 | | | |
| L3 | | [dB] | | 4,5 | | | |



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