PORT EQUIPMENT - SHIP LOADERS / UNLOADERS

Mobile & Portable Pneumatic Machines
Vacuators / Grain pumps

Most Various Applications
THE 3 WORKING MODES OF VIGAN MOBILE PNEUMATIC MACHINES

1 - SUCK AND BLOW: T100 and T120

2 - SUCK ONLY (gravity discharge): T100, T120 and T200

3 - BLOW ONLY (gravity feed): T100 and T120

Note: No product passes through the turbine. Air always enters the turbine through the automatic regulator

FULL 60-PAGE CATALOGUE AVAILABLE UPON REQUEST
TYPICAL CAPACITY GRAPHS

General explanations about the conveying capacity calculation

- vertical axis: capacity in metric tons/hour.
- horizontal axis: transport distances, computed in corrected metres (c.m.).

Vertical, horizontal and inclined transport distances as well as pressure losses such as elbows, curves, cyclones etc... must be converted into corrected metres to obtain a total for use in graphical interpretation.

1 metre horizontal blowing = 1 c.m.
1 metre horizontal suction = 1.5 c.m.
1 metre vertical suction = 4 c.m.
1 metre vertical blowing = 1.5 c.m.
90° elbow, rigid or flexible = 13 c.m.
60° elbow, rigid or flexible = 9.5 c.m.
45° elbow, rigid or flexible = 6.5 c.m.
30° elbow, rigid or flexible = 4.9 c.m.
discharge cyclone = 26 c.m.

With nozzles nr 22, nr 22 S, nr 23, it is advised to multiply the resulting capacity by 0.8.

Corrected capacities for inclined tubes between + 5° and + 80° are calculated by adding the horizontal and vertical coordinates.

Temperature correction: For every 5 °C (41°F) increment above 18°C (64°F) capacity must be reduced by 1 %.

Altitude correction: For every 200 m increment above sea level, capacity must be reduced by 1 %.

Graphs are based on handling of barley:
for maize, clean soya beans, dry peas: add 3% to capacity - for wheat, subtract 2% from capacity - for milo, subtract 6% from capacity - for rapeseed, subtract 15% from capacity.

All these graphs are calculated on wheat and in typical working conditions.
To calculate a conveying capacity in specific conditions or for other products, please contact us.
T120

TONS PER HOUR / TONNIES PAR HEURE

BLOWING ONLY
REFOULEMENT SEUL

SUCTION ONLY
ASPIRATION SEULE

SUCTION & BLOWING
ASPIRATION & REFOULEMENT

T200

TONS PER HOUR / TONNIES PAR HEURE

CORRECTED METERS / METRES CORRIGES

SUCTION ONLY
ASPIRATION SEULE

CORRECTED METERS / METRES CORRIGES
ABOUT PRACTICAL EXAMPLES IN THE FOLLOWING PAGES

CONVEYING CAPACITIES

Capacities are variable according to the suction and blowing distances, as well as to other main parameters: refer to pages A3 and A4 for technical explanations. Therefore, the illustrations of practical applications with approximate conveying capacities are only given as examples. For any specific project, VIGAN will confirm to his customers the expected conveying capacity according to its typical characteristics.

ACCESSORY CODES

When illustrated by a small number, please refer into the full catalogue for a detailed description of the accessory. For each project, VIGAN will suggest a full set of accessories directly in relation with the forecasted working conditions and based on VIGAN experience for similar applications.

TYPE 100, 120 or 200: HOW TO CHOOSE?

VIGAN engineers will orient the customer to select the appropriate model. To provide most suitable alternatives of solutions is part of VIGAN commitment.

<table>
<thead>
<tr>
<th>Type 100 and Type 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Suction and/or blowing</td>
</tr>
<tr>
<td>• Maximum conveying capacity: ± 140 mtph (Type 100) and ± 170 mtph (Type 120)</td>
</tr>
<tr>
<td>• Weight: between 5.5 to 7 tons according to options &amp; accessories</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Only suction and most frequently with a belt conveyor</td>
</tr>
<tr>
<td>• Maximum conveying capacity: ± 250 mtph</td>
</tr>
<tr>
<td>• Weight: about 8 tons (machine) + 8 tons (support + belt conveyor)</td>
</tr>
</tbody>
</table>
UNLOADING MEDIUM AND LARGE SIZE VESSELS

VIGAN MACHINE ON SHIP DECK: suction and blowing

Distances of transport (example)

<table>
<thead>
<tr>
<th>Suction height</th>
<th>Type 100 mtph</th>
<th>Type 120 mtph</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 m(*)</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>10 m(*)</td>
<td>105</td>
<td>135</td>
</tr>
<tr>
<td>15 m(*)</td>
<td>95</td>
<td>120</td>
</tr>
</tbody>
</table>

(*) vertical suction height:
see graph pages 10 and 11
mpt = metrics tons per hour

15 x 4 = 60.- c.m.
90° = 13.- c.m.
7.6 x 1.5 = 11.4 c.m.
5.5 x 1 = 5.5 c.m.
discharge cyclone = 26.- c.m.
TOTAL = 115.9 c.m.
c.m. = corrected meters
OTHER ALTERNATIVES ON SHIP DECK: suction and blowing

THE HOPPER AVOIDS STOPPING THE SUCTION BETWEEN THE TRUCKS

THE MAIN ADVANTAGE OF THIS ALTERNATIVE IS ALMOST ZERO EMISSION OF DUST WITH DISCHARGE CYCLONE (see page 36), DUST WILL BE BLOWN OUT AT ITS STOP

COVERED HOPPER WITH SELF-CLEANING FILTER
MORE SOLUTIONS WITH MACHINE ON SHIP DECK: only suction and with belt conveyor

<table>
<thead>
<tr>
<th>Suction height (*)</th>
<th>Type 200 (mtph)</th>
<th>Type 100 (mtph)</th>
<th>Type 120 (mtph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 m</td>
<td>250</td>
<td>140</td>
<td>180</td>
</tr>
<tr>
<td>10 m</td>
<td>230</td>
<td>125</td>
<td>175</td>
</tr>
<tr>
<td>15 m</td>
<td>210</td>
<td>100</td>
<td>160</td>
</tr>
</tbody>
</table>

(*) vertical suction height: see graph pages 10 and 11
mpth = metrics tons per hour
UNLOADING MEDIUM AND LARGE SIZE VESSELS

OTHER ALTERNATIVES ON SHIP DECK: only suction

TYPE 100 or 120

THANKS TO SEVERAL MOBILE CONVEYORS (up to 20-25 meters each) ON THE QUAY, THE DISTANCE BETWEEN THE MACHINE(S) AND THE DELIVERY POINT CAN BE EASILY ADJUSTED

TYPE 200 WITH QUAY HOPPER
UNLOADING MEDIUM AND SMALL SIZE VESSELS

MACHINES ON QUAY: suction & blowing

<table>
<thead>
<tr>
<th>Output - Wheat basis</th>
<th>Type 100</th>
<th>Type 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suction height</td>
<td>mtph</td>
<td>mtph</td>
</tr>
<tr>
<td>5 m(*)</td>
<td>105</td>
<td>130</td>
</tr>
<tr>
<td>10 m(*)</td>
<td>95</td>
<td>118</td>
</tr>
<tr>
<td>15 m(*)</td>
<td>85</td>
<td>105</td>
</tr>
</tbody>
</table>

(*) vertical suction height:
see graph pages 10 and 11
mpth = metrics tons per hour

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UNLOADING MEDIUM AND SMALL SIZE VESSELS

OTHER ALTERNATIVES ON QUAY: only suction with higher conveying rate

TYPE 200

NO DUST

THE HOPPER AVOIDS STOPPING THE SUCTION BETWEEN THE TRUCKS

BOTH ILLUSTRATIONS TYPE 200
MAX. CAPACITY: 250 mtph
(suction height: 5m)
SIMILAR APPLICATIONS
WITH TYPE 100 or 120

ALMOST NO DUST BUT NEED TO STOP THE SUCTION BETWEEN TRUCKS
UNLOADING LARGE SIZE VESSELS

MACHINES ON QUAY: only suction

<table>
<thead>
<tr>
<th>Suction height</th>
<th>Type 100 mtph</th>
<th>Type 120 mtph</th>
<th>Type 200 mtph</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 m(*)</td>
<td>130</td>
<td>180</td>
<td>240</td>
</tr>
<tr>
<td>10 m(*)</td>
<td>115</td>
<td>168</td>
<td>220</td>
</tr>
<tr>
<td>15 m(*)</td>
<td>100</td>
<td>155</td>
<td>200</td>
</tr>
</tbody>
</table>

(*) vertical suction height; see graph p.10/11

mpth = metrics tons per hour

Distances of transport (example)

10 x 4 = 60. c.m.
90° = 13. c.m.
15 x 1.5 = 22.5 c.m.
TOTAL = 75.5 c.m.
OTHER ALTERNATIVES ON QUAY: only suction

Distances of transport (example)

| 10 x 4 = 60.- c.m. |
| 90° = 13.- c.m. |
| 10 x 1.5 = 15.- c.m. |
| **TOTAL = 68.- c.m.** |
OTHER APPLICATIONS

TRANSHIPMENT: large ships from/to barges
OTHER APPLICATIONS

SHIP AND BARGE LOADING: suction and/or blowing
OTHER APPLICATIONS

FILLING OR EMPTYING WAREHOUSES & SILOS

THE ILLUSTRATED APPLICATIONS IN PAGES 49-60 ARE ONLY THE MAIN AND MOST COMMON EXAMPLES. VIGAN HAS HUNDREDS OF ILLUSTRATIONS AND WILL PREPARE A DRAWING ACCORDING TO EACH CUSTOMER'S REQUIREMENTS.
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