

**Gabbioneta Pumps®**  
Vertical Multistage Pumps  
**VBN - VBN DS Range**

## General information

The VBN and VBN-DS range heavy duty process pumps, available in double-casing or wet pit configurations, are vertical multistage, diffuser type pumps designed for full compliance with latest edition of API 610 Standard.

A wide range of sizes, number of stages and material combinations complete the variety of the offered products.

## Main design features:

- Geometry of pump components optimised through hydraulic, structural, thermal and dynamic F.E.M. analysis to guarantee high product reliability
- To avoid seizures correlated to dangerous resonances, the F.E.M. dynamic analysis is carried out on all manufactured pumps taking into account the proper site operating conditions
- Closed type impeller with front and rear wear rings as well as balancing holes, to minimise the axial thrust
- Large eye single suction or double suction 1st stage impeller to meet low NPSH requirements
- Deep stuffing boxes, designed in accordance to API 682 Standard, suitable to accept any type of mechanical or packing seal
- Labyrinths and deflectors at both bearing housing to maximise protection against dirt
- Number of stages rangeable from 1 to 14
- Pump shaft in one or two pieces, fully machined to respect the more restrictive run-out API limits
- Air fan cooling system provided on bearing bracket and [or mechanical seal when required by hot temperature applications
- Rotor axial thrust supported by a duplex oil lubricated ball angular contact type bearing as a standard
- Renewable bushings provided at all interstage casings and columns.

## Options

The following pump designs can be provided:

- Air fan cooling system provided on bearing bracket and/or mechanical seal when required by hot temperature applications
- Additional rigid coupling to facilitate mechanical seal maintenance activities
- Inside drain line
- Axial thrust tilting pad bearings for ultra high thrust operating condition
- Anti reverse rotation device
- Special bearing isolators at both bearing housing ends
- Oil mist lubrication (pure or purge)
- Temperature and/or vibration detection and monitoring equipment

## Main pumps applications refer to heavy duties on

- Oil & Gas
- Fluid transportation
- Pipeline
- Hydrocarbon booster
- Condensate extraction

## Operating data

### Capacity

up to 2000 m<sup>3</sup>/h (8800 USgpm)

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### Head

up to 2000 m (6500 feet)

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### Temperature

from -150°C (-240°F) to 400°C (750°F)

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### Design working pressure

up to 210 barg (3000 psig)

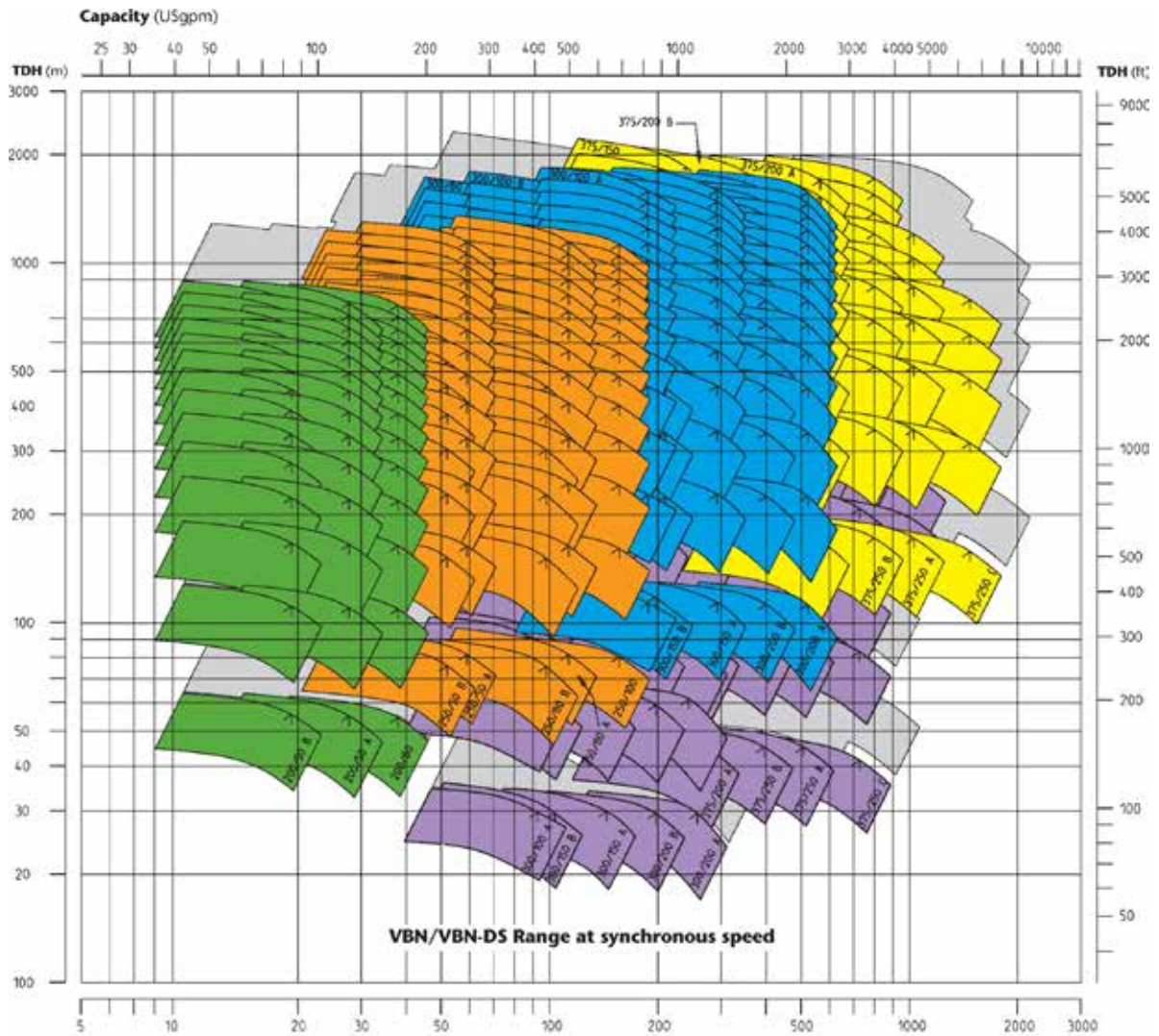
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### Rotational speed

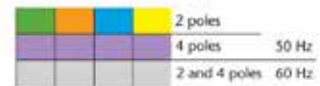
up to 3800 rpm

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# Coverage Chart



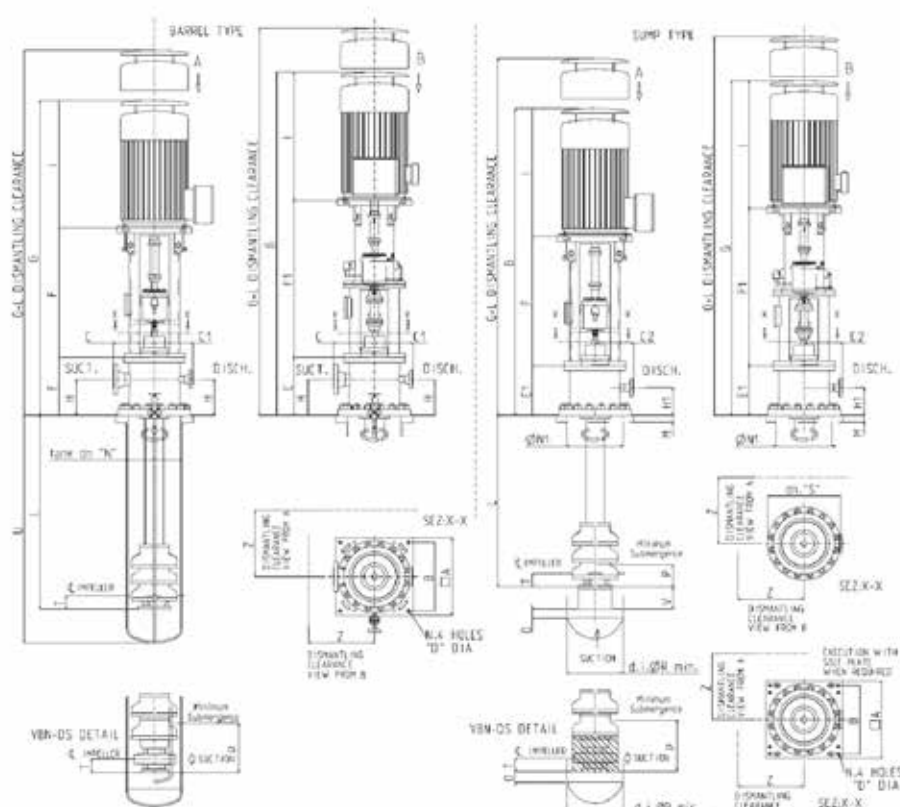
Capacity (m<sup>3</sup>/h)



### Pump identification

Pump type: VBN 250 / 50 10  
 Nominal impeller diameter (mm): 250  
 Nominal discharge nozzle diameter (mm): 50  
 Number of stages: 10

## Overall dimensions



## General notes

1. All dimensions are in mm. Do not use for construction unless certified.
2. Dimensions G and I vary with driver selection.
3. Dimensions L and U depending on purchaser requirement.

| PUMP Type VBN | NOZZLE SIZE | A    | B    | C   | C1  | C2  | D  | E   | E1  | F Max | F1 Max | H   | H1  | L Min | M  | N   | N1  | O   | P   | R   | S ANSI 150RF | T   | U Min | V   | Z    |
|---------------|-------------|------|------|-----|-----|-----|----|-----|-----|-------|--------|-----|-----|-------|----|-----|-----|-----|-----|-----|--------------|-----|-------|-----|------|
| 200/50 VL     | 4"/2"       | 700  | 620  | 375 | 325 | 325 | 30 | 525 | 450 | 1070  | 1360   | 300 | 250 | 618   | 70 | 14" | 340 | 100 | 270 | 18" | 16"          | 104 | 900   | 200 | 1200 |
| 200/50        | 4"/2"       | 700  | 620  | 375 | 325 | 325 | 30 | 525 | 450 | 1070  | 1360   | 300 | 250 | 618   | 70 | 16" | 390 | 100 | 270 | 18" | 16"          | 104 | 900   | 200 | 1200 |
| 200/80        | 4"/3"       | 700  | 620  | 375 | 325 | 325 | 30 | 525 | 450 | 1070  | 1360   | 300 | 250 | 618   | 70 | 16" | 390 | 100 | 270 | 18" | 16"          | 104 | 900   | 200 | 1200 |
| 250/50        | 4"/2"       | 700  | 620  | 375 | 350 | 350 | 30 | 525 | 450 | 1120  | 1425   | 325 | 250 | 655   | 70 | 20" | 440 | 100 | 300 | 20" | 18"          | 123 | 900   | 200 | 1200 |
| 250/80        | 4"/3"       | 700  | 620  | 375 | 350 | 350 | 30 | 525 | 450 | 1120  | 1425   | 325 | 250 | 655   | 70 | 20" | 440 | 100 | 300 | 20" | 18"          | 123 | 900   | 200 | 1200 |
| 250/100       | 6"/4"       | 700  | 620  | 375 | 350 | 350 | 30 | 525 | 450 | 1120  | 1425   | 325 | 250 | 655   | 70 | 20" | 440 | 130 | 300 | 20" | 18"          | 123 | 900   | 200 | 1200 |
| 300/80        | 4"/3"       | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 748   | 70 | 28" | 590 | 150 | 400 | 26" | 24"          | 134 | 1000  | 200 | 1500 |
| 300/100       | 6"/4"       | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 748   | 70 | 28" | 590 | 150 | 400 | 26" | 24"          | 134 | 1000  | 200 | 1500 |
| 300/150       | 8"/6"       | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 748   | 70 | 28" | 590 | 150 | 400 | 26" | 24"          | 134 | 1000  | 200 | 1500 |
| 300/200       | 10"/8"      | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 748   | 70 | 28" | 590 | 200 | 400 | 26" | 24"          | 134 | 1000  | 200 | 1500 |
| 350/150       | 8"/6"       | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 770   | 70 | 28" | 640 | 150 | 400 | 28" | 26"          | 180 | 1000  | 200 | 1500 |
| 375/150       | 8"/6"       | 1200 | 1100 | 675 | 650 | 650 | 36 | 800 | 800 | 1285  | 1625   | 450 | 450 | 820   | 70 | 34" | 740 | 150 | 500 | 32" | 30"          | 168 | 1000  | 200 | 1500 |
| 375/200       | 10"/8"      | 1200 | 1100 | 675 | 650 | 650 | 36 | 800 | 800 | 1425  | 1750   | 450 | 450 | 820   | 70 | 34" | 740 | 200 | 500 | 32" | 30"          | 168 | 1000  | 200 | 1500 |
| 375/250       | 12"/10"     | 1200 | 1100 | 675 | 650 | 650 | 36 | 800 | 800 | 1425  | 1750   | 450 | 450 | 820   | 70 | 34" | 740 | 200 | 500 | 32" | 30"          | 168 | 1000  | 250 | 1500 |
| 375/250C      | 14"/10"     | 1200 | 1100 | 700 | 650 | 650 | 36 | 800 | 800 | 1425  | 1750   | 450 | 450 | 820   | 70 | 34" | 740 | 200 | 600 | 32" | 30"          | 268 | 1000  | 250 | 1500 |

| PUMP Type VBN - DS | NOZZLE SIZE | A    | B    | C   | C1  | C2  | D  | E   | E1  | F Max | F1 Max | H   | H1  | L Min | M  | N   | N1  | O   | P   | R   | S ANSI 150RF | T   | U Min | V | Z    |
|--------------------|-------------|------|------|-----|-----|-----|----|-----|-----|-------|--------|-----|-----|-------|----|-----|-----|-----|-----|-----|--------------|-----|-------|---|------|
| 250/80             | 4"/3"       | 700  | 620  | 375 | 350 | 350 | 30 | 525 | 450 | 1120  | 1425   | 325 | 250 | 655   | 70 | 20" | 440 | 100 | 400 | 20" | 18"          | 143 | 900   | - | 1200 |
| 250/100            | 6"/4"       | 700  | 620  | 375 | 350 | 350 | 30 | 525 | 450 | 1120  | 1425   | 325 | 250 | 655   | 70 | 20" | 440 | 100 | 400 | 20" | 18"          | 143 | 900   | - | 1200 |
| 300/80             | 4"/3"       | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 748   | 70 | 28" | 590 | 150 | 500 | 26" | 24"          | 178 | 1000  | - | 1500 |
| 300/100            | 6"/4"       | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 748   | 70 | 28" | 590 | 150 | 500 | 26" | 24"          | 178 | 1000  | - | 1500 |
| 300/150            | 8"/6"       | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 748   | 70 | 28" | 590 | 150 | 500 | 26" | 24"          | 178 | 1000  | - | 1500 |
| 300/200            | 10"/8"      | 900  | 820  | 500 | 475 | 475 | 30 | 650 | 600 | 1285  | 1625   | 400 | 350 | 748   | 70 | 28" | 590 | 200 | 500 | 26" | 24"          | 178 | 1000  | - | 1500 |
| 375/150            | 8"/6"       | 1200 | 1100 | 675 | 650 | 650 | 36 | 800 | 800 | 1285  | 1625   | 450 | 450 | 820   | 70 | 34" | 740 | 150 | 625 | 32" | 30"          | 224 | 1000  | - | 1500 |
| 375/200            | 10"/8"      | 1200 | 1100 | 675 | 650 | 650 | 36 | 800 | 800 | 1425  | 1750   | 450 | 450 | 820   | 70 | 34" | 740 | 200 | 625 | 32" | 30"          | 224 | 1000  | - | 1500 |
| 375/250            | 12"/10"     | 1200 | 1100 | 675 | 650 | 650 | 36 | 800 | 800 | 1425  | 1750   | 450 | 450 | 820   | 70 | 34" | 740 | 200 | 625 | 32" | 30"          | 224 | 1000  | - | 1500 |
| 375/250C           | 14"/10"     | 1200 | 1100 | 700 | 650 | 650 | 36 | 800 | 800 | 1425  | 1750   | 450 | 450 | 820   | 70 | 34" | 740 | 200 | 850 | 32" | 30"          | 454 | 1000  | - | 1500 |

## VBN - VBN DS Pump



## A century of experience

Since the foundation of the company in 1897, Gabbioneta Pumps® has been engaged in design and manufacture of high quality centrifugal pumps.

The products and the markets served progressively changed from water to chemical industry and finally, in the last thirty years, to API 610 heavy duty pumps for refinery and petrochemical industries.

Product development is based on a thorough interchange of marketing and operating experience within the company and in close cooperation with project and plant engineers.

Manufacturing is carried out in a factory equipped with several modern CNC machines and machine tools. Special note has to be given to the machining centers where pump casings can be machined completely with only two settings.

In-house facilities are designed to meet the performance and NPSH testing requirements of all pumps manufactured in the company in full compliance with API 610 Standards.

A quality assurance system certified in accordance with ISO 9001 ensures Gabbioneta Pumps® are of the highest quality.



**VBN pumps in Gabbioneta test room**



**Trillium Pumps Italy S.p.A.**  
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[www.trilliumflow.com](http://www.trilliumflow.com) Certified: ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007