

## ENCLOSED IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in AISI 304



DWC-N



DWC-V



Enclosed impeller centrifugal electric pumps in AISI 304 stainless steel.

### APPLICATIONS

- Cooling, air conditioning and heating systems
- Chiller
- Washing systems
- Industrial liquids

### TECHNICAL DETAILS

- Available in two different versions: with threaded (DWC-N) and Victaulic connections (DWC-V)
- Insulation as per standard for the Victaulic version (DWC-V)

### PUMP TECHNICAL DATA

- Maximum working pressure: 8 bar
- Maximum temperature of the liquid:
  - 15°C ÷ +90°C
  - 15°C ÷ +110°C for H-HS-HW-HSW versions
- Suction and discharge connection G2 for DWC-N
- Suction and discharge connection Ø2" (60.3 mm) for DWC-V
- For further information please see our Data Book on the web site [www.ebara-europe.com](http://www.ebara-europe.com)

### MOTOR TECHNICAL DATA

- High efficiency IE2 motors starting from 0.75kW up to 5.5kW
- IE3 starting from 0.75kW
- Self-ventilated 2 pole asynchronous motor
- Class of insulation F
- IP55 protection degree
- 230/400V ±10% 50Hz three phase voltage
- Protection under user's responsibility for the three phase version

### MATERIALS

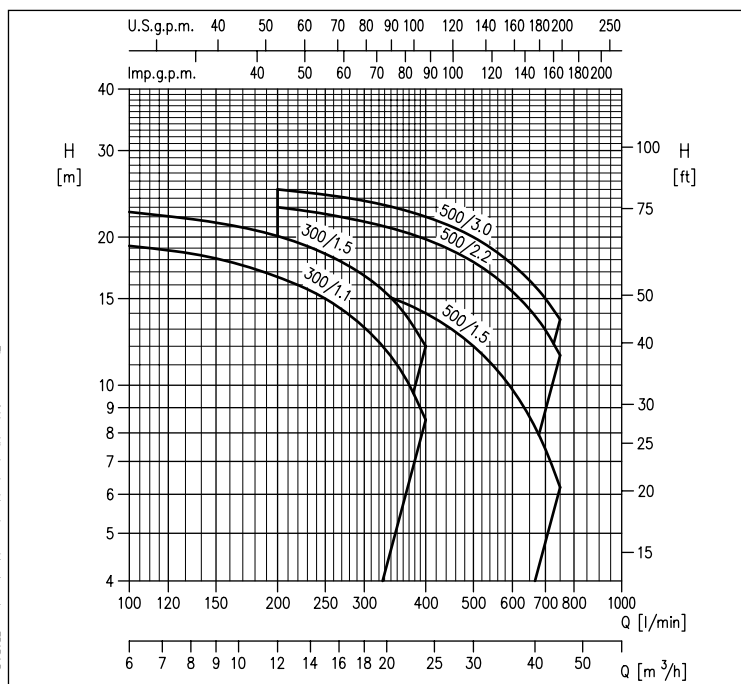
- Pump casing, casing cover, impeller and shaft (part in contact with the liquid) in AISI 304
- Bracket and motor frame in aluminium
- Mechanical seal in:
  - Ceramic/Carbon/EPDM (standard)
  - special versions: see p. 32

### ACCESSORIES (On request)

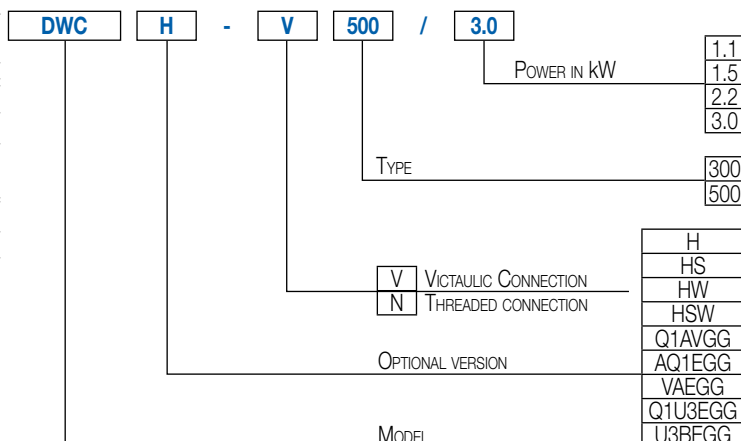
Insulation casing for DWC pump casing for applications with refrigerant liquids or liquids with high thermal difference that may generate condensate.



### PERFORMANCE RANGE (according to ISO 9906 Attachment A)



### IDENTIFICATION CODE



## ENCLOSED IMPELLER CENTRIFUGAL ELECTRIC PUMPS

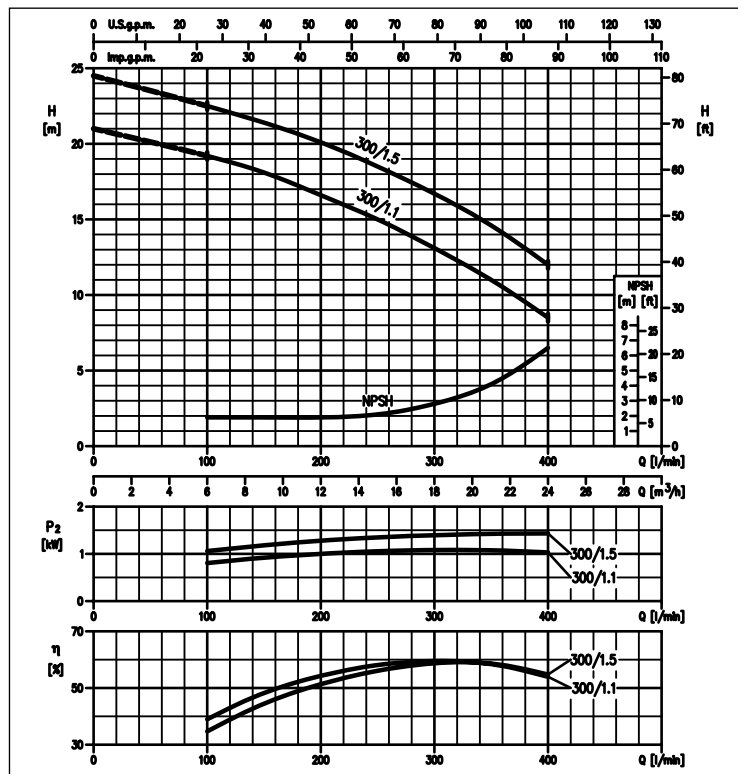
in AISI 304

### PERFORMANCE CHART

| Model<br>Three phase<br>230/400V | P <sub>2</sub> |      | Q = Flow Rate              |          |          |           |           |           |            |           |           |           |           |           |
|----------------------------------|----------------|------|----------------------------|----------|----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|
|                                  | [HP]           | [kW] | l/min<br>m <sup>3</sup> /h | 100<br>6 | 150<br>9 | 200<br>12 | 250<br>15 | 300<br>18 | 350<br>21  | 400<br>24 | 500<br>30 | 600<br>36 | 700<br>42 | 750<br>45 |
|                                  |                |      |                            |          |          |           |           |           | H=Head [m] |           |           |           |           |           |
| DWC 300/1.1                      | 1.5            | 1.1  | 19.2                       | 18.1     | 16.6     | 15.0      | 13.1      | 11.0      | 8.5        | -         | -         | -         | -         | -         |
| DWC 300/1.5                      | 2              | 1.5  | 22.5                       | 21.4     | 20.1     | 18.5      | 16.7      | 14.6      | 12.0       | -         | -         | -         | -         | -         |
| DWC 500/1.5                      | 2              | 1.5  | -                          | -        | 17.0     | 16.4      | 15.7      | 14.9      | 14.0       | 12.0      | 9.8       | 7.4       | 6.2       | -         |
| DWC 500/2.2                      | 3              | 2.2  | -                          | -        | 23.0     | 22.3      | 21.5      | 20.7      | 19.8       | 17.8      | 15.5      | 13.0      | 11.5      | -         |
| DWC 500/3.0                      | 4              | 3    | -                          | -        | 25.0     | 24.4      | 23.7      | 22.9      | 22.0       | 20.0      | 17.6      | 15.0      | 13.6      | -         |

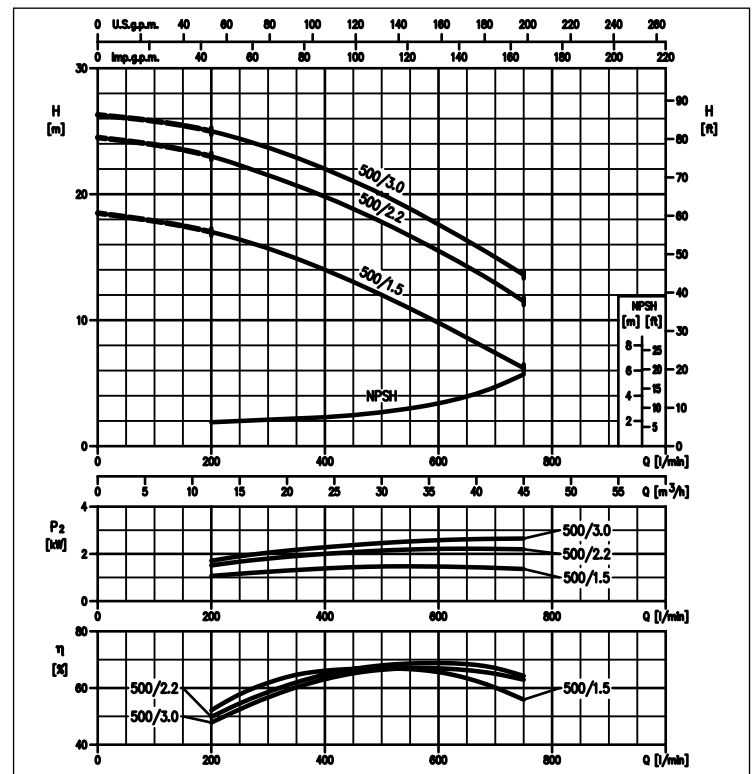
### PERFORMANCE CURVES DWC 300 series

(according to ISO 9906 Attachment A)

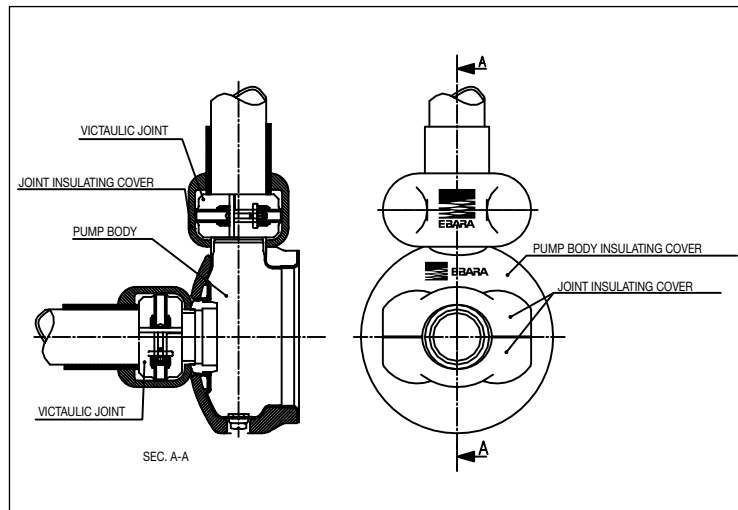


### PERFORMANCE CURVES DWC 500 series

(according to ISO 9906 Attachment A)



### THERMAL INSULATION



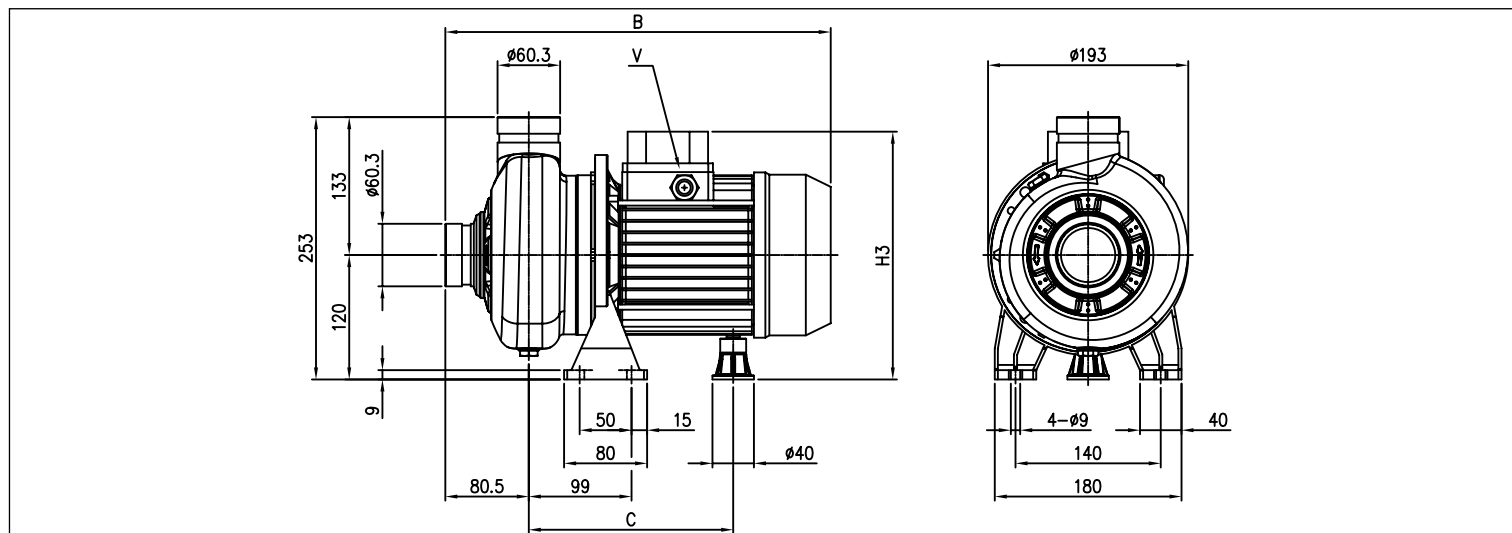
| Model         | Insulating cover<br>pump casing | Insulating cover<br>joint | Joint<br>Victaulic |
|---------------|---------------------------------|---------------------------|--------------------|
| DWC-V 300/1.1 | Standard                        | On request                | On request         |
| DWC-V 300/1.5 |                                 |                           |                    |
| DWC-V 500/1.5 |                                 |                           |                    |
| DWC-V 500/2.2 |                                 |                           |                    |
| DWC-V 500/3.0 |                                 |                           |                    |
| DWC-N 300/1.1 | On request                      | Not applicable            | Not applicable     |
| DWC-N 300/1.5 |                                 |                           |                    |
| DWC-N 500/1.5 |                                 |                           |                    |
| DWC-N 500/2.2 |                                 |                           |                    |
| DWC-N 500/3.0 |                                 |                           |                    |

## DWC

## ENCLOSED IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

## DIMENSIONS DWC-V (VICTAULIC CONNECTION)

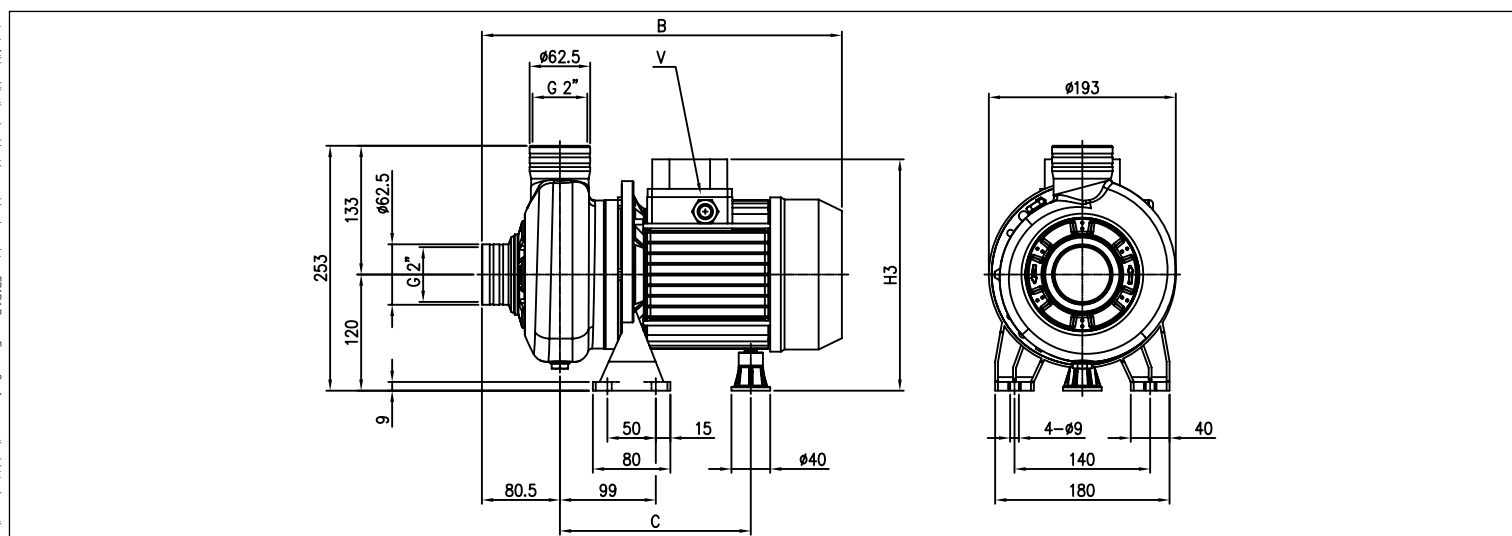


## DIMENSIONAL TABLE

| Model         | Dimensions [mm] |       |           |           |     |     |         |         | Weight [kg] |      |
|---------------|-----------------|-------|-----------|-----------|-----|-----|---------|---------|-------------|------|
|               | B               | B*    | C         | C*        | H3  | H3* | V       | V*      | *           |      |
| DWC-V 300/1.1 | 372             | 397   | 197       | 197       | 239 | 239 | PG11    | M20x1.5 | 14.5        | 15.4 |
| DWC-V 300/1.5 | 385             | 397.5 | 197       | 197       | 239 | 239 | PG11    | M20x1.5 | 16.0        | 16.9 |
| DWC-V 500/1.5 | 385             | 397.5 | 197       | 197       | 239 | 239 | PG11    | M20x1.5 | 17.0        | 17.9 |
| DWC-V 500/2.2 | 418             | 396.5 | 230 ÷ 241 | 197       | 244 | 239 | PG 13.5 | M20x1.5 | 20.3        | 20.3 |
| DWC-V 500/3.0 | 457             | 457   | 230 ÷ 241 | 230 ÷ 241 | 244 | 244 | PG 13.5 | M20x1.5 | 22.3        | 22.3 |

\* Models with IE3 motor only

### DIMENSIONS VIEW DWC-N (THREADED CONNECTION)



## DIMENSIONAL TABLE

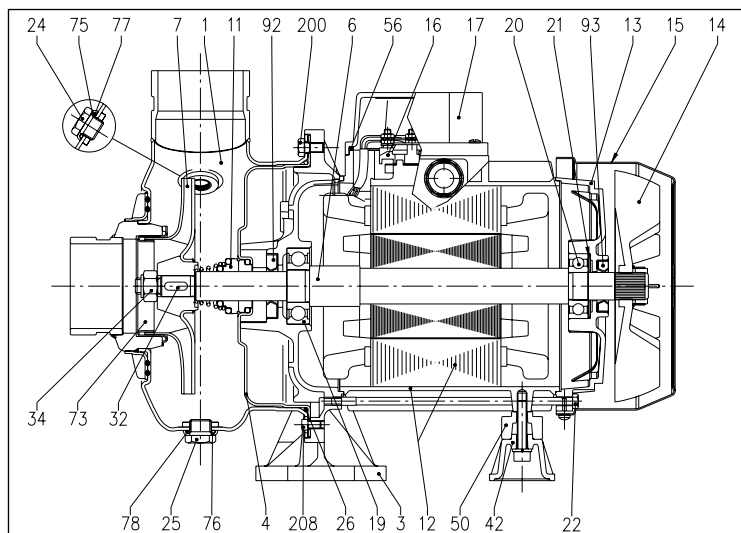
| Model         | Dimensions [mm] |       |           |           |     |     |         |         | Weight [kg] |      |
|---------------|-----------------|-------|-----------|-----------|-----|-----|---------|---------|-------------|------|
|               | B               | B*    | C         | C*        | H3  | H3* | V       | V*      | *           |      |
| DWC-N 300/1.1 | 372             | 397   | 197       | 197       | 239 | 239 | PG11    | M20x1.5 | 14.5        | 15.4 |
| DWC-N 300/1.5 | 385             | 397.5 | 197       | 197       | 239 | 239 | PG11    | M20x1.5 | 16.0        | 16.9 |
| DWC-N 500/1.5 | 385             | 397.5 | 197       | 197       | 239 | 239 | PG11    | M20x1.5 | 16.5        | 17.4 |
| DWC-N 500/2.2 | 418             | 396.5 | 230 ÷ 241 | 197       | 244 | 239 | PG 13.5 | M20x1.5 | 20.3        | 20.3 |
| DWC-N 500/3.0 | 457             | 457   | 230 ÷ 241 | 230 ÷ 241 | 244 | 244 | PG 13.5 | M20x1.5 | 22.3        | 22.3 |

\* Models with IE3 motor only

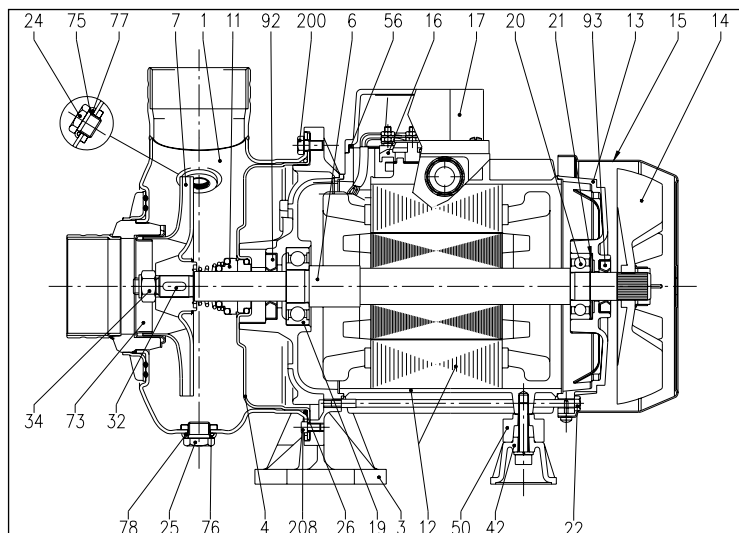
## ENCLOSED IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

**SECTIONAL VIEW DWC-V (VICTAULIC CONNECTION)**



**SECTIONAL VIEW DWC-N (THREADED CONNECTION)**



### MATERIALS TABLE

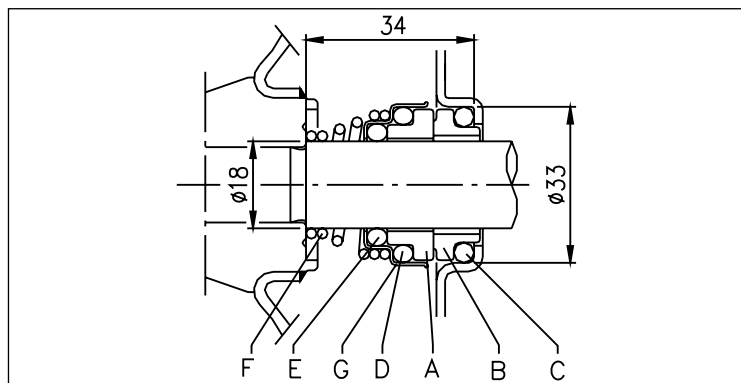
| Ref. | Name                 | Materials                                               | Ref. | Name                      | Materials                                |
|------|----------------------|---------------------------------------------------------|------|---------------------------|------------------------------------------|
| 1    | Pump casing          | EN 1.4301 (AISI 304)                                    | 25   | Plug                      | EN 1.4301 (AISI 304)                     |
| 3    | Motor bracket        | Aluminium                                               | 26   | O-Ring [1]                | EPDM                                     |
| 4    | Casing cover         | EN 1.4301 (AISI 304)                                    | 32   | Key                       | EN 1.4401 (AISI 316)                     |
| 6    | Shaft                | EN 1.4301 (AISI 304)<br>Part in contact with the liquid | 34   | Impeller nut              | EN 1.4301 (AISI 304)                     |
| 7    | Impeller             | EN 1.4301 (AISI 304)                                    | 42   | Motor support             | Aluminium / Galvanised steel             |
| 11   | Mechanical seal      | Ceramic/Carbon/EPDM                                     | 50   | Spacer                    | -                                        |
| 12   | Motor frame          | -                                                       | 56   | Terminal box cover gasket | NBR                                      |
| 13   | Motor cover          | Aluminium                                               | 73   | Casing ring               | EN 1.4301 (AISI 304)                     |
| 14   | Fan                  | PA                                                      | 75   | Washer                    | EN 1.4301 (AISI 304)                     |
| 15   | Fan cover            | Galvanised Fe P04                                       | 76   | Washer                    | EN 1.4301 (AISI 304)                     |
| 16   | Terminal Box         | -                                                       | 77   | O-Ring [1]                | EPDM                                     |
| 17   | Terminal box cover   | Aluminium                                               | 78   | O-Ring [1]                | EPDM                                     |
| 19   | Bearing (pump side)  | -                                                       | 92   | Seal ring                 | -                                        |
| 20   | Bearing (motor side) | -                                                       | 93   | Seal ring                 | -                                        |
| 21   | Adjustment ring      | Steel C70                                               | 200  | Screw (pump body)         | Stainless steel A2-70/1 class ISO 3506/1 |
| 22   | Tie-rod              | Galvanised Fe 42                                        | 208  | Screw                     | Stainless steel A2-70/1 class ISO 3506/1 |
| 24   | Plug                 | EN 1.4301 (AISI 304)                                    |      |                           |                                          |

[1]= FKM for H-HS-HW-HSW versions

## ENCLOSED IMPELLER CENTRIFUGAL ELECTRIC PUMPS

in AISI 304

### MECHANICAL SEAL standard



### MATERIALS TABLE

| Ref. | Name            | Materials |
|------|-----------------|-----------|
| A    | Rotating part   | Ceramic   |
| B    | Fixed part      | Carbon    |
| C    | O-Ring          | EPDM      |
| D    | O-Ring          | EPDM      |
| E    | O-Ring          | EPDM      |
| F    | Spring          | AISI 316  |
| G    | Structure/frame | AISI 304  |

### SPECIAL MECHANICAL SEALS (on request)

| Ref. | Name            | H Version | HS Version      | HW Version       | HSW Version      |
|------|-----------------|-----------|-----------------|------------------|------------------|
| A    | Rotating part   | Ceramic   | Silicon Carbide | Tungsten Carbide | Silicon Carbide  |
| B    | Fixed part      | Carbon    | Silicon Carbide | Tungsten Carbide | Tungsten Carbide |
| C    | O-Ring          | FKM       | FKM             | FKM              | FKM              |
| D    | O-Ring          | FKM       | FKM             | FKM              | FKM              |
| E    | O-Ring          | FKM       | FKM             | FKM              | FKM              |
| F    | Spring          | AISI 316  | AISI 316        | AISI 316         | AISI 316         |
| G    | Structure/frame | AISI 304  | AISI 316        | AISI 316         | AISI 316         |

| Ref. | Name            | Q1AVGG Version    | AQ1EGG Version    | Materials<br>VAEGG Version | Q1U3EGG Version  | U3BEGG Version   |
|------|-----------------|-------------------|-------------------|----------------------------|------------------|------------------|
| A    | Rotating part   | Silicon Carbide   | Metallised carbon | Ceramic                    | Silicon Carbide  | Tungsten Carbide |
| B    | Fixed part      | Metallised carbon | Silicon Carbide   | Metallised carbon          | Tungsten Carbide | Graphite         |
| C    | O-Ring          | FKM               | EPDM              | EPDM                       | EPDM             | EPDM             |
| D    | O-Ring          | FKM               | EPDM              | EPDM                       | EPDM             | EPDM             |
| E    | O-Ring          | FKM               | EPDM              | EPDM                       | EPDM             | EPDM             |
| F    | Spring          | AISI 316          | AISI 316          | AISI 316                   | AISI 316         | AISI 316         |
| G    | Structure/frame | AISI 316          | AISI 316          | AISI 316                   | AISI 316         | AISI 316         |

### ELECTRIC DATA TABLE

| Model<br>Three phase<br>230/400V | P <sub>i</sub> |      | Efficiency  | Efficiency (%) |      |      | P <sub>i</sub>      | Absorbed Current [A] |      |
|----------------------------------|----------------|------|-------------|----------------|------|------|---------------------|----------------------|------|
|                                  | [HP]           | [kW] | Three phase | 50%            | 75%  | 100% | Three phase<br>[kW] | 230V                 | 400V |
| DWC 300/1.1                      | 1.5            | 1.1  | IE2         | 79.7           | 82.5 | 83.0 | 1.80                | 5.5                  | 3.2  |
|                                  | 1.5            | 1.1  | IE3         | 83.0           | 85.8 | 85.6 | 1.77                | 5.8                  | 3.3  |
| DWC 300/1.5                      | 2              | 1.5  | IE2         | 78.6           | 83.0 | 84.2 | 1.78                | 6.3                  | 3.7  |
|                                  | 2              | 1.5  | IE3         | 82.7           | 86.1 | 87.0 | 1.72                | 6.6                  | 3.8  |
| DWC 500/1.5                      | 2              | 1.5  | IE2         | 78.6           | 83.0 | 84.2 | 1.78                | 6.3                  | 3.7  |
|                                  | 2              | 1.5  | IE3         | 82.7           | 86.1 | 87.0 | 1.72                | 6.6                  | 3.8  |
| DWC 500/2.2                      | 3              | 2.2  | IE2         | 83.1           | 85.7 | 86.2 | 2.55                | 7.8                  | 4.5  |
|                                  | 3              | 2.2  | IE3         | 86.2           | 87.0 | 86.0 | 2.55                | 8.2                  | 4.7  |
| DWC 500/3.0                      | 4              | 3    | IE2         | 85.0           | 86.7 | 86.3 | 3.48                | 10.6                 | 6.1  |
|                                  | 4              | 3    | IE3         | 85.9           | 87.5 | 87.1 | 3.44                | 11.1                 | 6.4  |

### NOISE DATA TABLE

| Model<br>Three phase<br>230/400V | P <sub>i</sub> |      | L <sub>WA</sub> - dB(A)* |
|----------------------------------|----------------|------|--------------------------|
|                                  | [HP]           | [kW] |                          |
| DWC 300/1.1                      | 1.5            | 1.1  | <70                      |
| DWC 300/1.5                      | 2              | 1.5  |                          |
| DWC 500/1.5                      | 2              | 1.5  | <70                      |
| DWC 500/2.2                      | 3              | 2.2  |                          |
| DWC 500/3.0                      | 4              | 3    |                          |

\* Mean value of several measurements at 1 m distance around the pump.

Tolerance ± 2.5 dB.