



### Construction

Vertical multi-stage pumps with suction and delivery connections of the same diameter and arranged along the same axis (in-line).

Corrosion-resistant bearing sleeves lubricated by the pumped liquid.

**MXV-E (AISI 304)** Internal parts in contact with the liquid in chrome-nickel stainless steel 304, with pump casing and upper cover in cast iron for MXV-E 50-65-80.

**MXVL-E (AISI 316L)** Internal parts in contact with the liquid in Cr-Ni-Mo AISI 316L, including pump casing and upper cover for MXVL-E 50-65-80.

### Applications

Building services pressure boosting.  
Water supply to multi-storey buildings.  
Washing plants.  
Industrial pressure boosting systems.  
Performance curve adjustment for industrial system application.

### Operating conditions

For clean non-explosive liquids, without solid, filamentary or abrasive matter (with adaptation of sealing materials on request).  
Temperature of liquid: from -15 °C to +110 °C.  
Operating environment temperature: up to 40 °C.  
Maximum permissible pressure in pump casing: 25 bar.

### Materials (wetted parts)

| Component                                                                                                                                                   | MXV-E (AISI 304)                                          | MXVL-E (AISI 316L)                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------|
| MXV-E 25,32,40<br>Flange<br>External jacket<br>Suction casing<br>Delivery casing<br>Stage casing<br>Impeller<br>Lower cover<br>Upper cover<br>Spacer sleeve | Cr-Ni steel<br>1.4301 EN 10088<br>(AISI 304)              | Cr-Ni-Mo steel<br>1.4404 EN 10088<br>(AISI 316L) |
| MXV-E 50,65,80<br>Pump casing<br>Upper cover                                                                                                                | Cast iron<br>GJL 250 EN 1561                              | Cr-Ni-Mo steel<br>1.4404 EN 10088<br>(AISI 316L) |
| MXV-E 50,65,80<br>External jacket<br>Stage casing<br>Impeller<br>Spacer sleeve                                                                              | Cr-Ni steel<br>1.4301 EN 10088<br>(AISI 304)              | Cr-Ni-Mo steel<br>1.4404 EN 10088<br>(AISI 316L) |
| For all types<br>Pump shaft<br>Plug                                                                                                                         | Cr-Ni steel<br>1.4305 EN 10088<br>(AISI 303)              | Cr-Ni-Mo steel<br>1.4404 EN 10088<br>(AISI 316L) |
| Bearing sleeve/<br>Bearing in stage casing                                                                                                                  | Corrosion-resistant, cemented carbide/<br>Ceramic alumina |                                                  |
| Mechanical seal<br>ISO 3069 - KU                                                                                                                            | Hard metal/Carbon/EPDM                                    |                                                  |
| Wear ring                                                                                                                                                   | PTFE                                                      |                                                  |
| O-rings                                                                                                                                                     | NBR                                                       |                                                  |

### Inverter-Motor

Inverter supply: three-phase 380-480 V ± 10%, 50/60 Hz.  
2-pole induction motor.  
Construction IM B5.  
Insulation class F.  
Protection IP 55.

### Special features on request

- Special mechanical seal.
- O-rings FPM.
- Higher or lower liquid or ambient temperatures.
- Flanges to screw, in chrome-nickel steel for MXV-E 25-32-40.

### Designation

MXVL-E 25-2 05 G  
MXVL-E 50-16 05 H1

Series \_\_\_\_\_  
AISI 316L Version (no code = AISI 304 version) \_\_\_\_\_  
with frequency controller \_\_\_\_\_  
DN ports in mm \_\_\_\_\_  
Rated capacity in m³/h (n = 2900 rpm) \_\_\_\_\_  
Number of stages \_\_\_\_\_

**Construction variants**  
threaded ports \_\_\_\_\_ G  
flanged ports \_\_\_\_\_ F  
with support feet for horizontal installation H, variant 1 \_\_\_\_\_

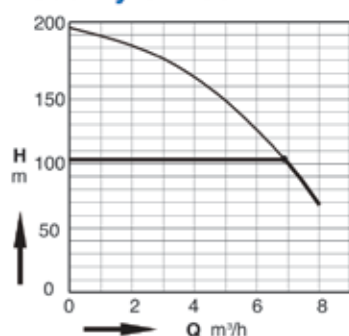
### Advantages

- Energy saving.
- Compact Design.
- Economical use of space.
- Flexible operation.
- Low-noise operation.
- Programmable to suit the system requirements.

### Main features

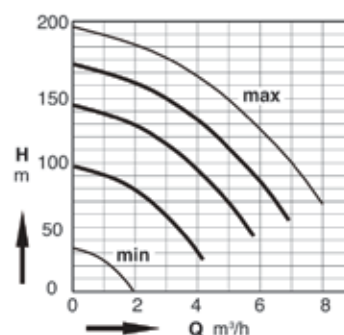
Control range 1500 to 2900 rpm.  
Dry-running protection.  
Phase failure protection.  
Overload protection.  
Low-noise: max 64 dB(A).

### Modality of use



#### Constant pressure mode

With a pressure transducer the system maintains a constant pressure with variation of flow.

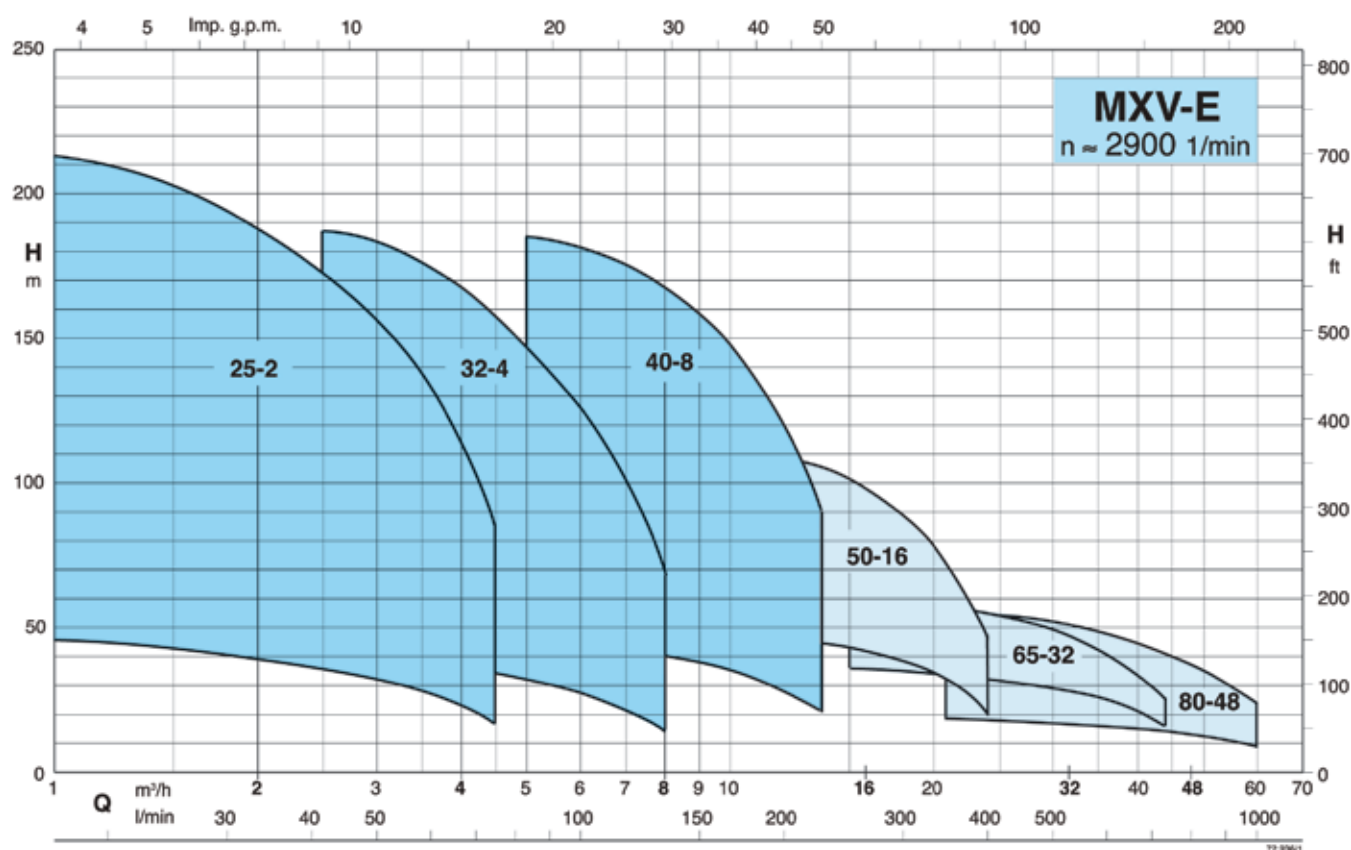


#### Fixed speed mode

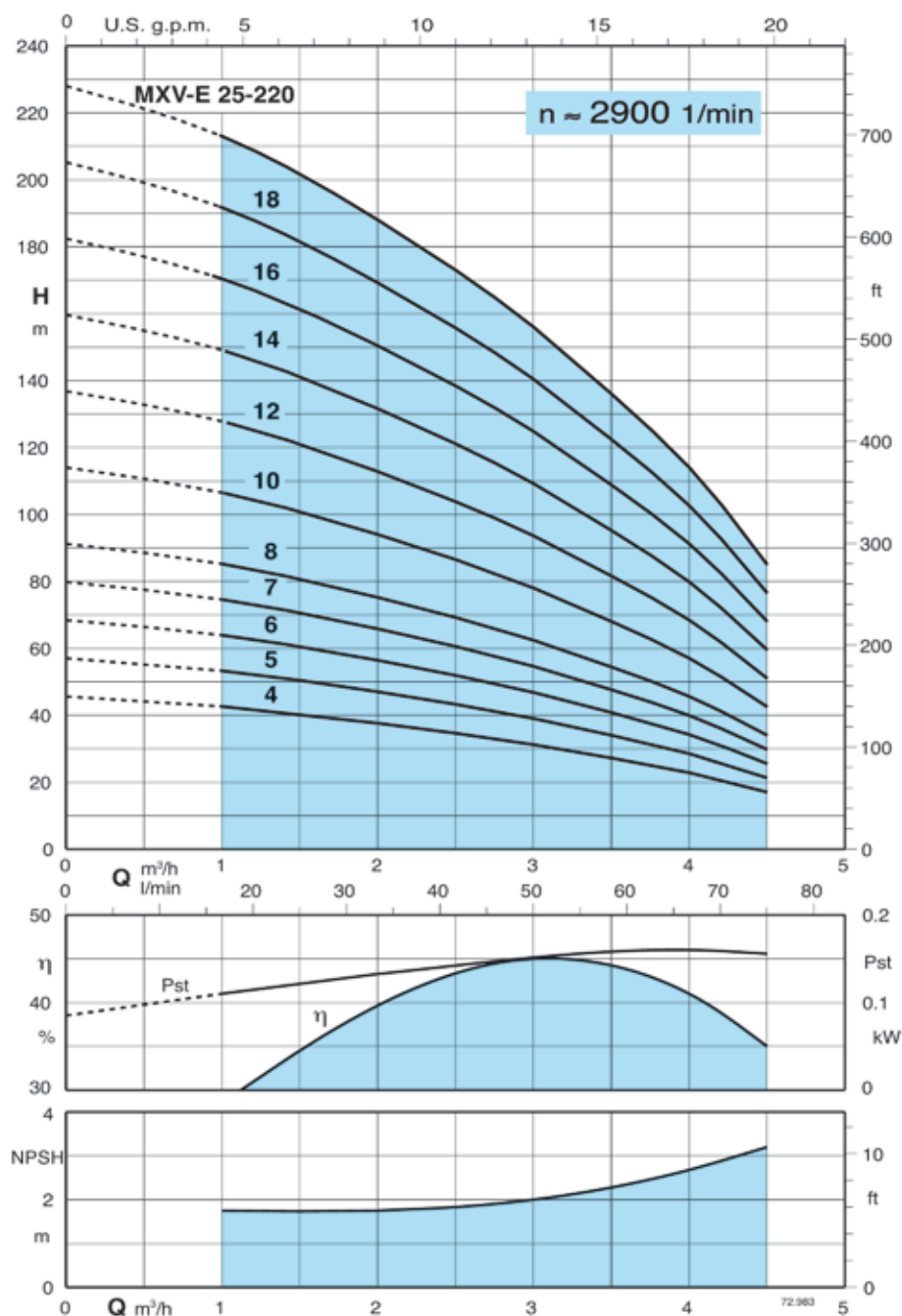
Variation of the operating frequency allows for the choice of operating curve to match the system requirements

The system is factory programmed and can be easily modified via the local control panel (optional).

### Coverage chart $n \approx 2900$ rpm



### Characteristic curves and performance $n \approx 2900$ rpm



Test results with clean cold water, without gas content.

A safety margin of + 0.5 m is recommended for the NPSH value.

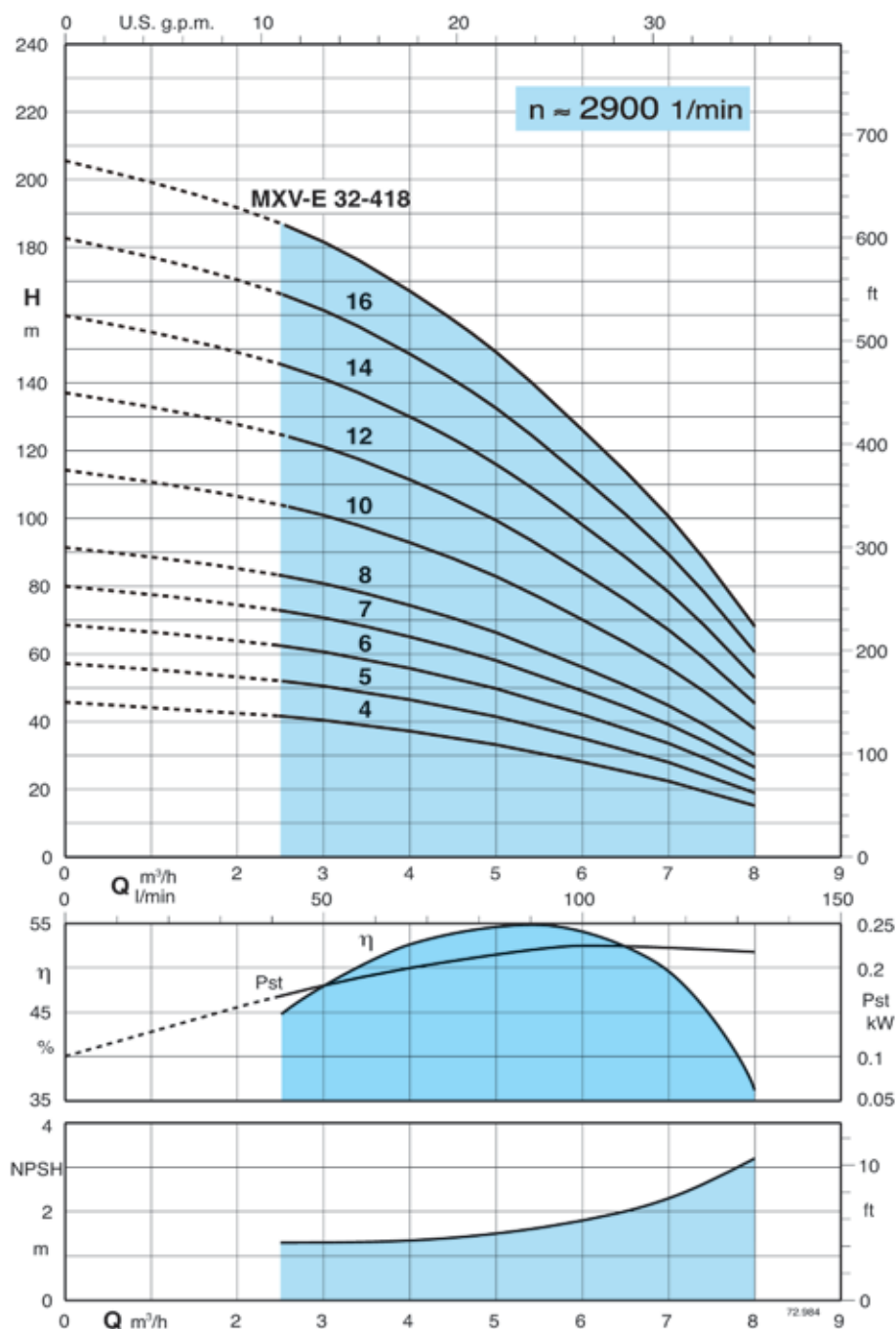
Tolerances in accordance with ISO 9906, Annex A.

Head and power values valid for liquids with density  $\rho = 1,0 \text{ kg/dm}^3$  and kinematic viscosity  $\nu = \text{max } 20 \text{ mm}^2/\text{sec}$ .

Pst = Power with reference to one stage.

| Pump type      | P <sub>2</sub> |     | Q<br>m³/h<br>l/min | 0    | 1    | 1,5  | 2    | 2,5  | 3    | 3,5  | 4    | 4,5 |
|----------------|----------------|-----|--------------------|------|------|------|------|------|------|------|------|-----|
|                | kW             | HP  |                    | 0    | 16,6 | 25   | 33,3 | 41,6 | 50   | 58,3 | 66,6 | 75  |
| MXV-E 25 - 204 | 0,75           | 1   | H<br>m             | 44   | 42,5 | 40   | 37,5 | 34,5 | 31   | 27   | 22,5 | 17  |
| MXV-E 25 - 205 | 1,1            | 1,5 |                    | 56   | 53   | 50   | 47   | 43   | 39   | 34   | 28   | 21  |
| MXV-E 25 - 206 | 1,1            | 1,5 |                    | 68   | 63,5 | 60,5 | 56   | 51,5 | 46,5 | 40,5 | 34   | 25  |
| MXV-E 25 - 207 | 1,5            | 2   |                    | 79,5 | 74   | 70,5 | 65,5 | 60   | 54,5 | 47,5 | 39,5 | 30  |
| MXV-E 25 - 208 | 1,5            | 2   |                    | 91   | 85   | 80,5 | 75   | 69   | 62   | 54   | 45,5 | 34  |
| MXV-E 25 - 210 | 2,2            | 3   |                    | 114  | 106  | 101  | 94   | 86   | 78   | 68   | 57   | 42  |
| MXV-E 25 - 212 | 2,2            | 3   |                    | 136  | 127  | 121  | 112  | 103  | 93,5 | 81,5 | 68   | 51  |
| MXV-E 25 - 214 | 3              | 4   |                    | 159  | 149  | 141  | 131  | 121  | 109  | 95   | 79,5 | 59  |
| MXV-E 25 - 216 | 3              | 4   |                    | 182  | 170  | 161  | 150  | 138  | 124  | 108  | 91   | 68  |
| MXV-E 25 - 218 | 3              | 4   |                    | 205  | 191  | 181  | 169  | 155  | 140  | 122  | 102  | 76  |
| MXV-E 25 - 220 | 4              | 5,5 |                    | 228  | 213  | 202  | 188  | 173  | 156  | 136  | 114  | 85  |

### Characteristic curves and performance $n \approx 2900$ rpm



Test results with clean cold water, without gas content.

A safety margin of + 0.5 m is recommended for the NPSH value.

Tolerances in accordance with ISO 9906, Annex A.

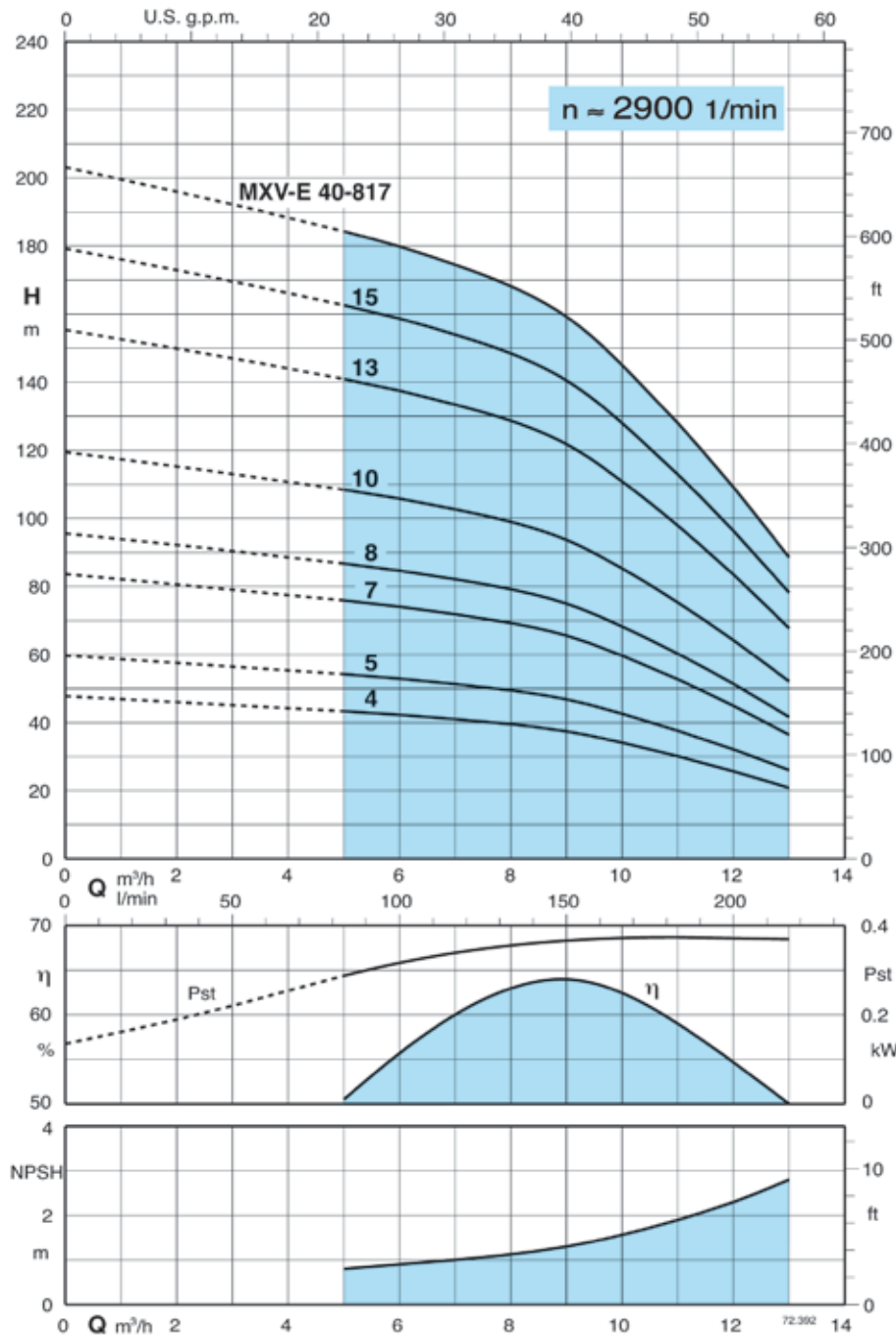
Head and power values valid for liquids with density  $\rho = 1,0 \text{ kg/dm}^3$  and kinematic viscosity  $\nu = \text{max } 20 \text{ mm}^2/\text{sec}$ .

Pst = Power with reference to one stage.

| Pump type      | P2  |     | Q<br>m³/h<br>l/min | 0    | 2,5  | 3    | 3,5  | 4    | 4,5  | 5    | 6    | 7     | 8     |
|----------------|-----|-----|--------------------|------|------|------|------|------|------|------|------|-------|-------|
|                | kW  | HP  |                    | 0    | 41,6 | 50   | 58,3 | 66,6 | 75   | 83,3 | 100  | 116,6 | 133,3 |
| MXV-E 32 - 404 | 1,1 | 1,5 | H<br>m             | 45   | 41,5 | 40   | 38,5 | 36,5 | 34,5 | 32,5 | 27,5 | 22    | 14,5  |
| MXV-E 32 - 405 | 1,5 | 2   |                    | 56   | 51,5 | 50   | 48   | 46   | 43,5 | 41   | 34,5 | 27,5  | 18,5  |
| MXV-E 32 - 406 | 1,5 | 2   |                    | 68   | 62   | 60   | 58   | 55,5 | 52,5 | 49,5 | 42   | 33,5  | 22,5  |
| MXV-E 32 - 407 | 2,2 | 3   |                    | 79,5 | 72,5 | 70,5 | 68   | 65   | 61,5 | 58   | 49   | 39    | 26,5  |
| MXV-E 32 - 408 | 2,2 | 3   |                    | 91   | 83   | 80,5 | 78   | 74   | 70   | 66   | 56   | 44,5  | 30    |
| MXV-E 32 - 410 | 3   | 4   |                    | 114  | 104  | 101  | 97,5 | 93   | 88   | 83   | 70   | 56    | 38    |
| MXV-E 32 - 412 | 3   | 4   |                    | 136  | 124  | 121  | 117  | 111  | 105  | 99,5 | 84   | 67    | 45,5  |
| MXV-E 32 - 414 | 4   | 5,5 |                    | 159  | 145  | 141  | 136  | 130  | 123  | 116  | 98   | 78    | 53    |
| MXV-E 32 - 416 | 4   | 5,5 |                    | 182  | 166  | 161  | 156  | 148  | 140  | 132  | 112  | 89,5  | 60,5  |
| MXV-E 32 - 418 | 5,5 | 7,5 |                    | 205  | 187  | 181  | 175  | 167  | 158  | 149  | 126  | 100   | 68    |



### Characteristic curves and performance $n \approx 2900$ rpm



Test results with clean cold water, without gas content.

A safety margin of + 0.5 m is recommended for the NPSH value.

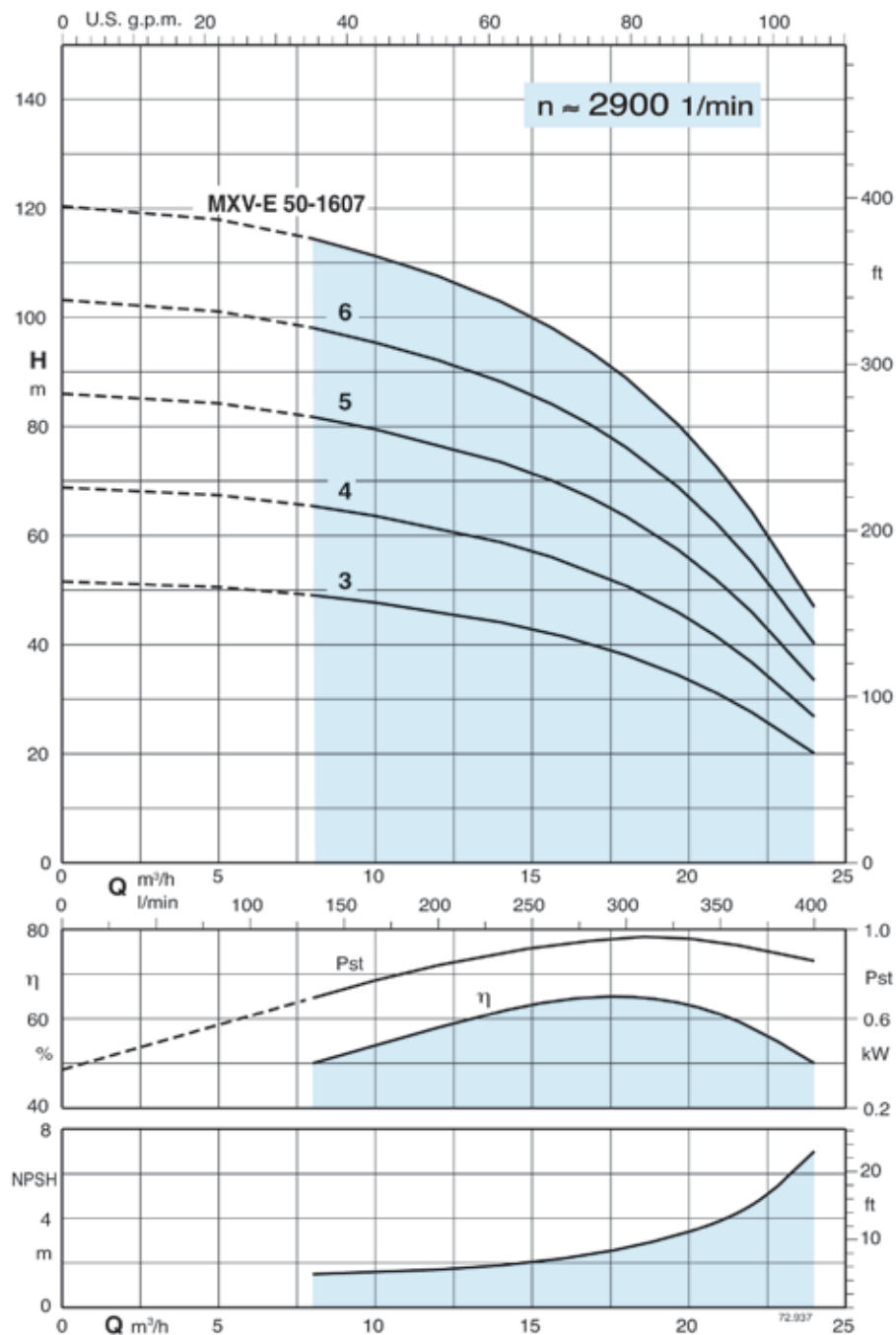
Tolerances in accordance with ISO 9906, Annex A.

Head and power values valid for liquids with density  $\rho = 1,0 \text{ kg/dm}^3$  and kinematic viscosity  $\nu = \text{max } 20 \text{ mm}^2/\text{sec}$ .

$P_{st}$  = Power with reference to one stage.

| Pump type      | P <sub>2</sub> |     | Q<br>m <sup>3</sup> /h<br>l/min | 0   | 5    | 6   | 7     | 8     | 9   | 10    | 11    | 12  | 13    |
|----------------|----------------|-----|---------------------------------|-----|------|-----|-------|-------|-----|-------|-------|-----|-------|
|                | kW             | HP  |                                 | 0   | 83,3 | 100 | 116,6 | 133,3 | 150 | 166,6 | 183,3 | 200 | 216,6 |
| MXV-E 40 - 804 | 2,2            | 3   | H<br>m                          | 47  | 43   | 42  | 41    | 40    | 37  | 34    | 30    | 26  | 21    |
| MXV-E 40 - 805 | 2,2            | 3   |                                 | 59  | 54   | 53  | 51    | 50    | 47  | 43    | 38    | 32  | 26    |
| MXV-E 40 - 807 | 3              | 4   |                                 | 83  | 76   | 74  | 72    | 69    | 66  | 60    | 53    | 45  | 36    |
| MXV-E 40 - 808 | 4              | 5,5 |                                 | 95  | 87   | 85  | 82    | 79    | 75  | 69    | 60    | 51  | 42    |
| MXV-E 40 - 810 | 5,5            | 7,5 |                                 | 119 | 109  | 106 | 103   | 99    | 94  | 86    | 75    | 64  | 52    |
| MXV-E 40 - 813 | 5,5            | 7,5 |                                 | 155 | 141  | 138 | 134   | 129   | 122 | 111   | 98    | 84  | 68    |
| MXV-E 40 - 815 | 7,5            | 10  |                                 | 179 | 163  | 159 | 154   | 149   | 141 | 128   | 113   | 96  | 78    |
| MXV-E 40 - 817 | 7,5            | 10  |                                 | 202 | 184  | 180 | 175   | 168   | 159 | 145   | 128   | 109 | 89    |

### Characteristic curves and performance $n \approx 2900$ rpm



Test results with clean cold water, without gas content.

A safety margin of + 0.5 m is recommended for the NPSH value.

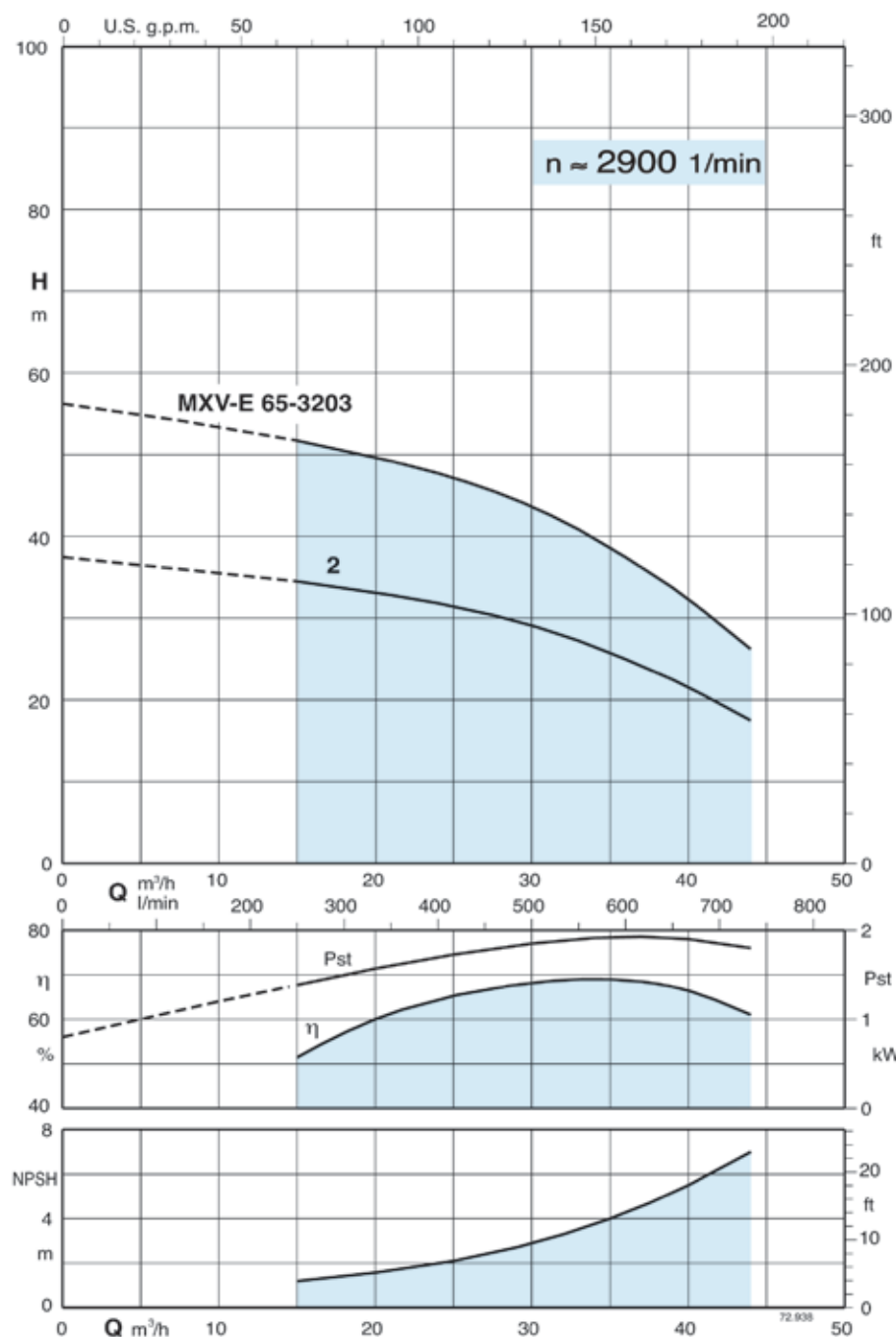
Tolerances in accordance with ISO 9906, Annex A.

Head and power values valid for liquids with density  $\rho = 1,0 \text{ kg/dm}^3$  and kinematic viscosity  $\nu = \text{max } 20 \text{ mm}^2/\text{sec}$ .

Pst = Power with reference to one stage.

| Pump type       | P <sub>2</sub> |     | Q<br>m³/h<br>l/min | 0   | 8     | 10    | 12  | 14  | 16  | 18  | 20  | 22  | 24  |
|-----------------|----------------|-----|--------------------|-----|-------|-------|-----|-----|-----|-----|-----|-----|-----|
|                 | kW             | HP  |                    | 0   | 133,3 | 166,6 | 200 | 233 | 266 | 300 | 333 | 366 | 400 |
| MXV-E 50 - 1603 | 4              | 5,5 | H<br>m             | 51  | 49    | 48    | 46  | 44  | 41  | 38  | 33  | 27  | 20  |
| MXV-E 50 - 1604 | 5,5            | 7,5 |                    | 69  | 65    | 63    | 61  | 59  | 55  | 51  | 44  | 37  | 27  |
| MXV-E 50 - 1605 | 5,5            | 7,5 |                    | 86  | 81    | 79    | 76  | 73  | 69  | 63  | 55  | 46  | 33  |
| MXV-E 50 - 1606 | 7,5            | 10  |                    | 103 | 98    | 95    | 92  | 88  | 83  | 76  | 67  | 55  | 40  |
| MXV-E 50 - 1607 | 7,5            | 10  |                    | 120 | 114   | 111   | 107 | 103 | 97  | 89  | 78  | 64  | 47  |

### Characteristic curves and performance $n \approx 2900$ rpm



Test results with clean cold water, without gas content.

A safety margin of + 0.5 m is recommended for the NPSH value.

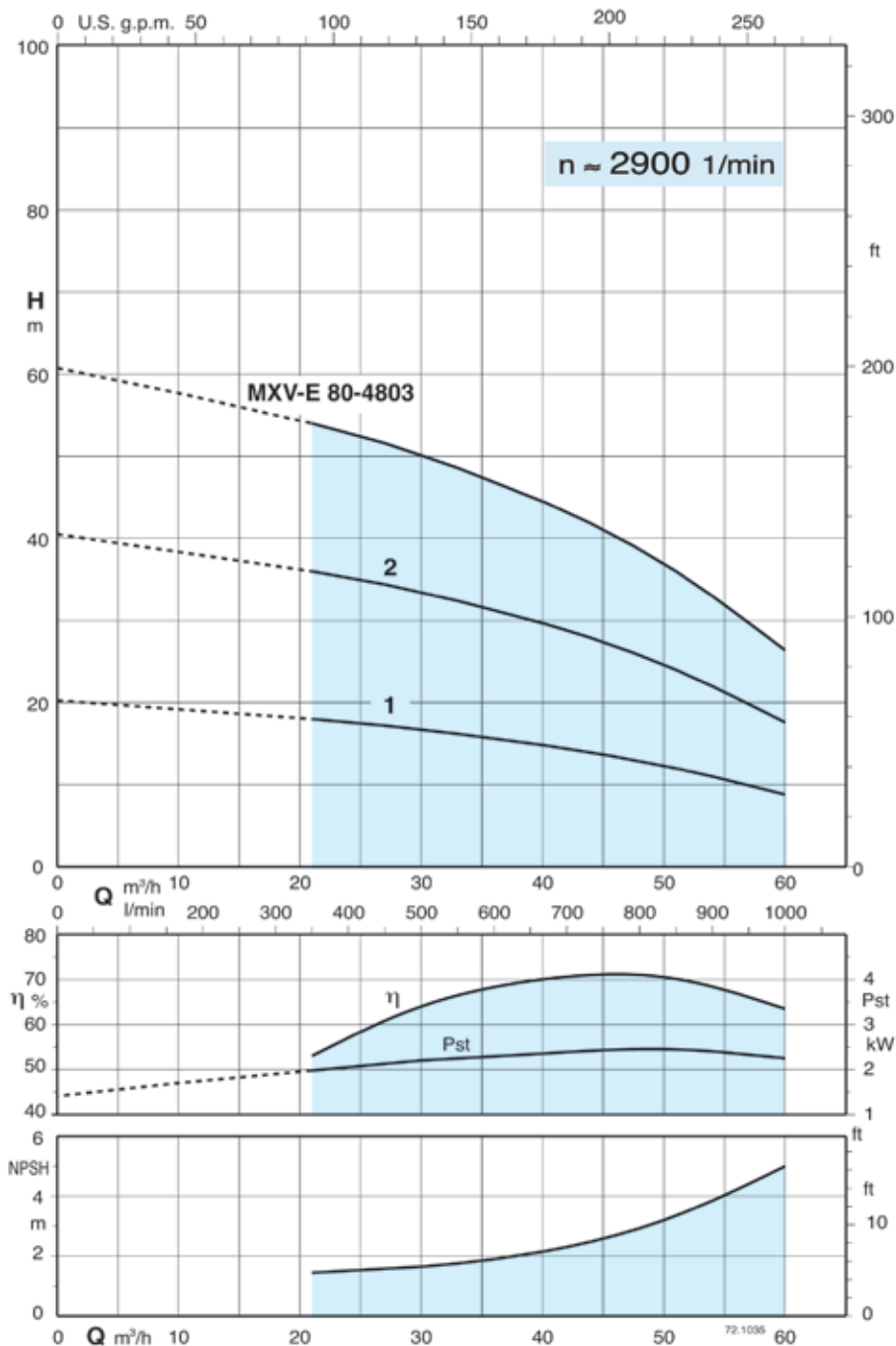
Tolerances in accordance with ISO 9906, Annex A.

Head and power values valid for liquids with density  $\rho = 1,0 \text{ kg/dm}^3$  and kinematic viscosity  $\nu = \text{max } 20 \text{ mm}^2/\text{sec}$ .

Pst = Power with reference to one stage.

| Pump type       | P <sub>2</sub> |     | Q<br>m³/h<br>l/min | 0    | 15  | 21  | 24   | 27  | 30   | 33   | 36   | 39   | 44   |
|-----------------|----------------|-----|--------------------|------|-----|-----|------|-----|------|------|------|------|------|
|                 | kW             | HP  |                    | 0    | 250 | 350 | 400  | 450 | 500  | 550  | 600  | 650  | 733  |
| MXV-E 65 - 3202 | 4              | 5,5 | H                  | 37   | 34  | 32  | 31   | 30  | 29   | 27   | 24,5 | 22   | 17   |
| MXV-E 65 - 3203 | 7,5            | 10  | m                  | 55,5 | 51  | 49  | 47,5 | 46  | 43,5 | 40,5 | 37   | 33,5 | 25,5 |

### Characteristic curves and performance $n \approx 2900$ rpm



Test results with clean cold water, without gas content.

A safety margin of + 0.5 m is recommended for the NPSH value.

Tolerances in accordance with ISO 9906, Annex A.

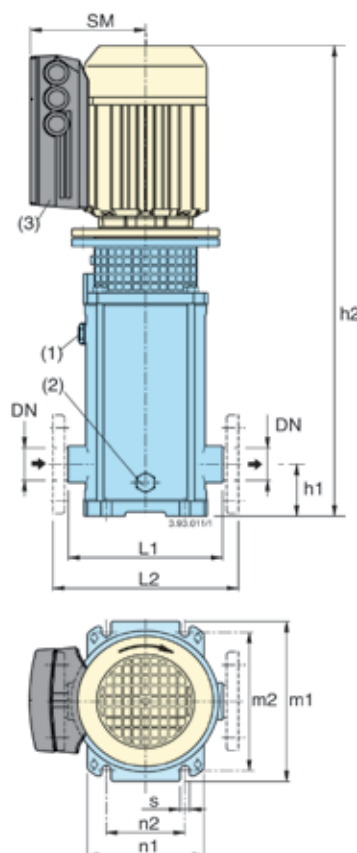
Head and power values valid for liquids with density  $\rho = 1,0 \text{ kg/dm}^3$  and kinematic viscosity  $\nu = \text{max } 20 \text{ mm}^2/\text{sec}$ .

Pst = Power with reference to one stage.

| Pump type       | P <sub>2</sub> |     | Q<br>m³/h<br>l/min | 0    | 21  | 27   | 33   | 39   | 45   | 48   | 51   | 54  | 60   |
|-----------------|----------------|-----|--------------------|------|-----|------|------|------|------|------|------|-----|------|
|                 | kW             | HP  |                    | 0    | 350 | 450  | 550  | 650  | 750  | 800  | 850  | 900 | 1000 |
| MXV-E 80 - 4801 | 3              | 4   | H<br>m             | 20   | 18  | 17   | 16   | 15   | 13   | 12   | 10,7 | 9,5 | 7    |
| MXV-E 80 - 4802 | 5,5            | 7,5 |                    | 40,5 | 36  | 34,5 | 32,5 | 29,5 | 26,5 | 24,5 | 22   | 20  | 15,5 |
| MXV-E 80 - 4803 | 7,5            | 10  |                    | 61   | 54  | 51   | 48   | 44   | 40   | 37   | 34   | 31  | 24,5 |

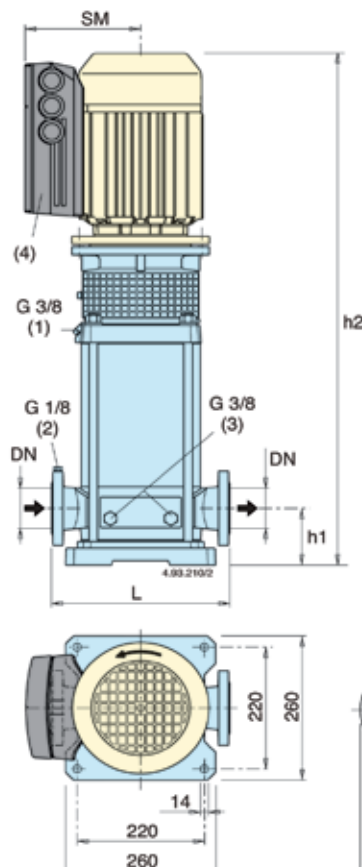


### Dimensions and weights



| Pump         | Motor |     | MXV-E (G)      |     | MXV-E (F)     |     | mm |      |     |     |     |     |     |      | Net weight<br>kg |
|--------------|-------|-----|----------------|-----|---------------|-----|----|------|-----|-----|-----|-----|-----|------|------------------|
|              |       |     | threaded ports |     | flanged ports |     |    |      |     |     |     |     |     |      |                  |
|              | kW    | HP  | G<br>ISO 228   | L1  | DN            | L2  | h1 | h2   | SM  | m1  | m2  | n1  | n2  | s    |                  |
| MXV-E 25-204 | 0,75  | 1   | G1             | 215 | 25            | 250 | 75 | 627  | 149 | 210 | 180 | 150 | 100 | 12,5 | 31               |
| MXV-E 25-205 | 1,1   | 1,5 |                |     |               |     |    | 675  | 153 |     |     |     |     |      | 38               |
| MXV-E 25-206 | 1,1   | 1,5 |                |     |               |     |    | 699  | 153 |     |     |     |     |      | 39               |
| MXV-E 25-207 | 1,5   | 2   |                |     |               |     |    | 723  | 153 |     |     |     |     |      | 43               |
| MXV-E 25-208 | 1,5   | 2   |                |     |               |     |    | 747  | 153 |     |     |     |     |      | 44               |
| MXV-E 25-210 | 2,2   | 3   |                |     |               |     |    | 812  | 169 |     |     |     |     |      | 53               |
| MXV-E 25-212 | 2,2   | 3   |                |     |               |     |    | 860  | 169 |     |     |     |     |      | 54               |
| MXV-E 25-214 | 3     | 4   |                |     |               |     |    | 908  | 169 |     |     |     |     |      | 56               |
| MXV-E 25-216 | 3     | 4   |                |     |               |     |    | 956  | 169 |     |     |     |     |      | 57               |
| MXV-E 25-218 | 3     | 4   |                |     |               |     |    | 1004 | 169 |     |     |     |     |      | 59               |
| MXV-E 25-220 | 4     | 5,5 | 1052           | 184 | 69            |     |    |      |     |     |     |     |     |      |                  |
| MXV-E 32-404 | 1,1   | 1,5 | G1 1/4         | 215 | 32            | 250 | 75 | 651  | 153 | 210 | 180 | 150 | 100 | 12,5 | 38               |
| MXV-E 32-405 | 1,5   | 2   |                |     |               |     |    | 675  | 153 |     |     |     |     |      | 39               |
| MXV-E 32-406 | 1,5   | 2   |                |     |               |     |    | 699  | 153 |     |     |     |     |      | 42               |
| MXV-E 32-407 | 2,2   | 3   |                |     |               |     |    | 740  | 169 |     |     |     |     |      | 50               |
| MXV-E 32-408 | 2,2   | 3   |                |     |               |     |    | 764  | 169 |     |     |     |     |      | 51               |
| MXV-E 32-410 | 3     | 4   |                |     |               |     |    | 812  | 169 |     |     |     |     |      | 54               |
| MXV-E 32-412 | 3     | 4   |                |     |               |     |    | 860  | 169 |     |     |     |     |      | 55               |
| MXV-E 32-414 | 4     | 5,5 |                |     |               |     |    | 908  | 186 |     |     |     |     |      | 66               |
| MXV-E 32-416 | 4     | 5,5 |                |     |               |     |    | 1000 | 186 |     |     |     |     |      | 67               |
| MXV-E 32-418 | 5,5   | 7,5 |                |     |               |     |    | 1133 | 212 |     |     |     |     |      | 87               |
| MXV-E 40-804 | 2,2   | 3   | G1 1/2         | 225 | 40            | 280 | 80 | 697  | 169 | 246 | 215 | 190 | 130 | 14   | 48               |
| MXV-E 40-805 | 2,2   | 3   |                |     |               |     |    | 727  | 169 |     |     |     |     |      | 49               |
| MXV-E 40-807 | 3     | 4   |                |     |               |     |    | 787  | 169 |     |     |     |     |      | 53               |
| MXV-E 40-808 | 4     | 5,5 |                |     |               |     |    | 861  | 186 |     |     |     |     |      | 64               |
| MXV-E 40-810 | 5,5   | 7,5 |                |     |               |     |    | 1026 | 186 |     |     |     |     |      | 89               |
| MXV-E 40-813 | 5,5   | 7,5 |                |     |               |     |    | 1116 | 212 |     |     |     |     |      | 91               |
| MXV-E 40-815 | 7,5   | 10  |                |     |               |     |    | 1176 | 212 |     |     |     |     |      | 98               |
| MXV-E 40-817 | 7,5   | 10  |                |     |               |     |    | 1236 | 212 |     |     |     |     |      | 99               |

(1) Filling (2) Draining (3) Standard position of terminal box. (for other positions rotate motor through 90° or 180°)



| Pump          | Motor |     | mm |     |     |     |     | Net weight<br>kg |
|---------------|-------|-----|----|-----|-----|-----|-----|------------------|
|               |       |     | DN | L   | h1  | h2  | SM  |                  |
| MXV-E 50-1603 | 4     | 5,5 |    |     |     | 730 | 186 | 79               |
| MXV-E 50-1604 | 5,5   | 7,5 |    |     |     | 824 | 212 | 80               |
| MXV-E 50-1605 | 5,5   | 7,5 | 50 | 300 | 90  | 858 | 212 | 105              |
| MXV-E 50-1606 | 7,5   | 10  |    |     |     | 893 | 212 | 112              |
| MXV-E 50-1607 | 7,5   | 10  |    |     |     | 927 | 212 | 113              |
| MXV-E 65-3202 | 4     | 5,5 |    |     |     | 741 | 186 | 82               |
| MXV-E 65-3203 | 7,5   | 10  | 65 | 320 | 105 | 847 | 212 | 113              |
| MXV-E 80-4801 | 3     | 4   |    |     |     | 745 | 186 | 73               |
| MXV-E 80-4802 | 5,5   | 7,5 | 80 | 320 | 105 | 840 | 212 | 107              |
| MXV-E 80-4803 | 7,5   | 10  |    |     |     | 901 | 212 | 115              |

(1) Filling and air vent (2) Sfiato aspirazione (3) Draining  
(4) Standard position of terminal box. (for other positions rotate motor through 90° or 180°)

### Flanges EN 1092-2 PN 25 - 40

| DN | DE  | DK  | DG  | Holes |    |
|----|-----|-----|-----|-------|----|
|    |     |     |     | N.    | Ø  |
| 50 | 165 | 125 | 99  | 4     | 19 |
| 65 | 185 | 145 | 118 | 8     | 19 |
| 80 | 200 | 160 | 132 | 8     | 19 |

### Features

#### Vertical multi-stage in-line pumps

**MXV-E** pump series with on-board Danfoss® frequency controller.

The **MXV-E** series is available with motors up to 7.5 kW, connected directly to the **MXV** series of vertical, in-line multi-stage pumps.

For units over 7.5 kW we offer panel mounted control systems.



Motor with factory programmed integrated frequency controller, series **VLT FCM 300**.



Programmable Local Control Panel with alphanumerical display.



Service plug with cable kit for a simple connection to the Local Control Panel.

The frequency converters feature a RS 485 connection.

Provision to connect a potentiometer to regulate the set point.

