

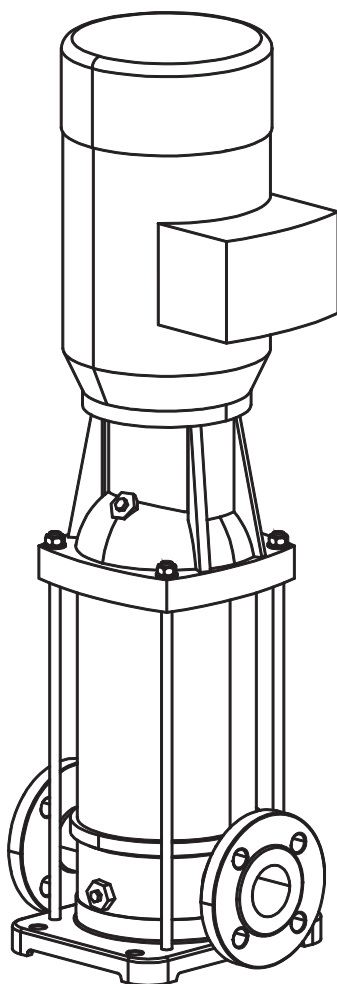


## **4710 SERIES**

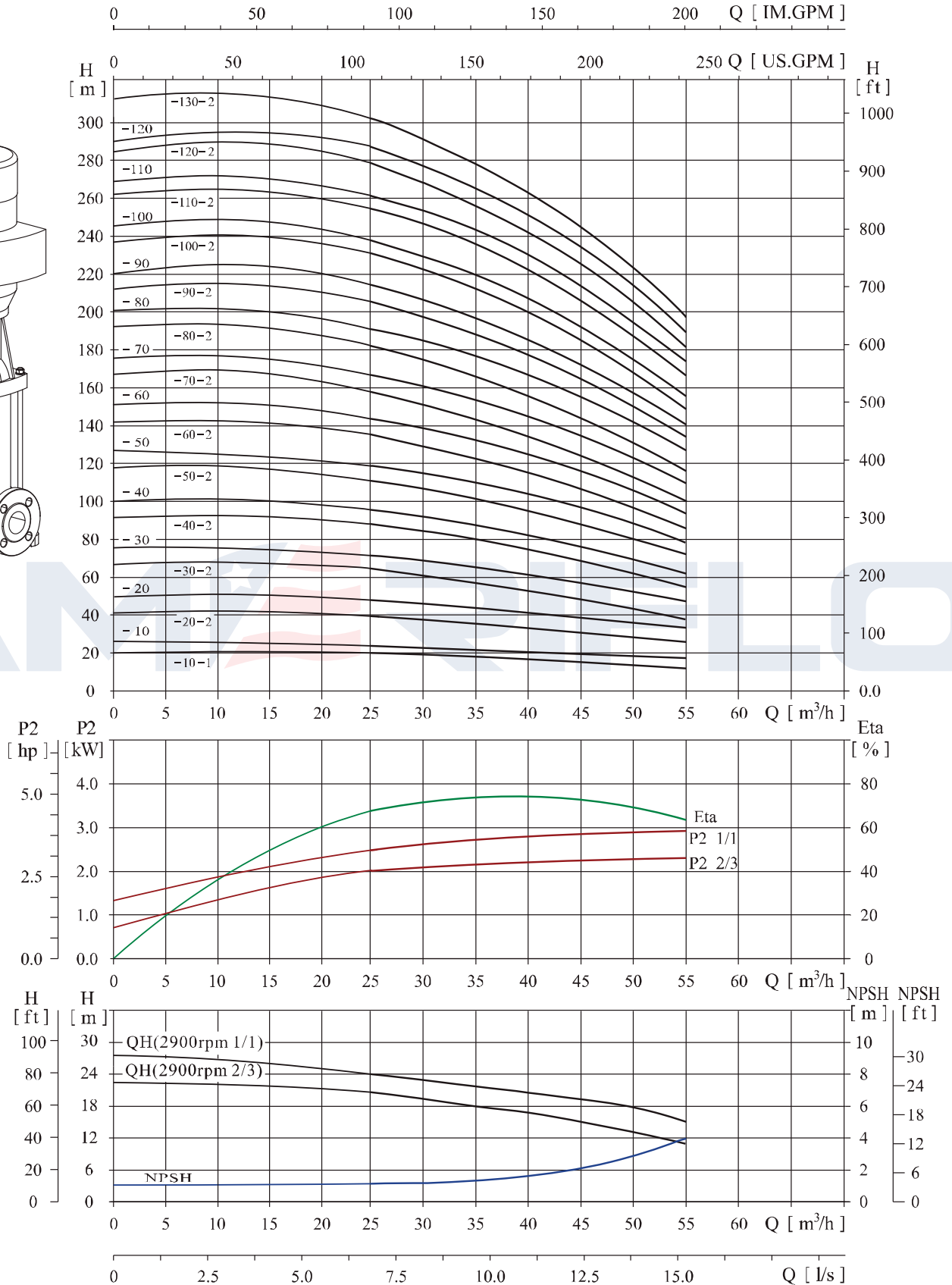
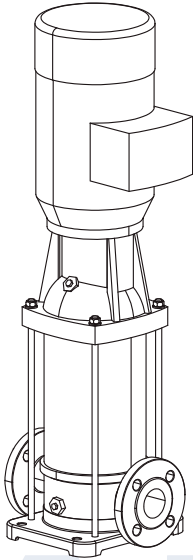
### **VERTICAL MULTISTAGE PUMPS**

#### **VM42**

#### **ENGINEERING INFORMATION**



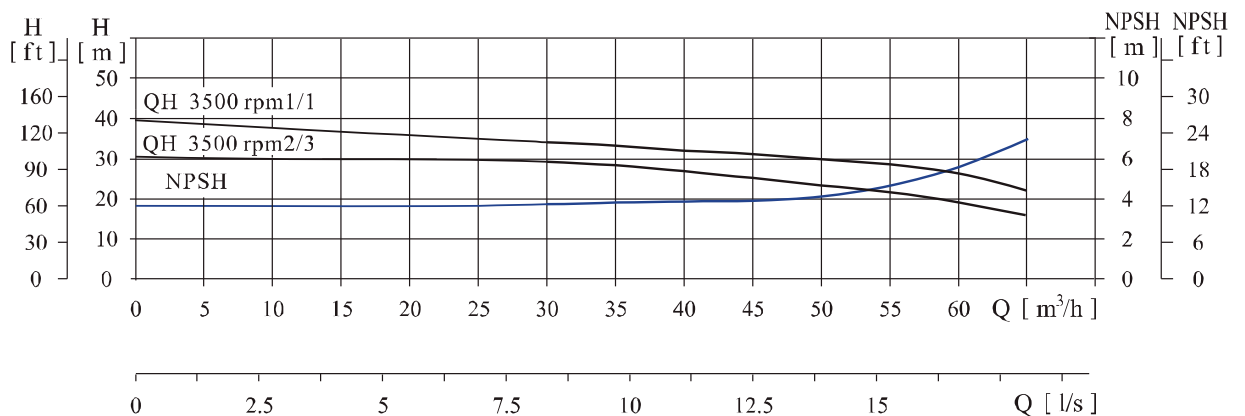
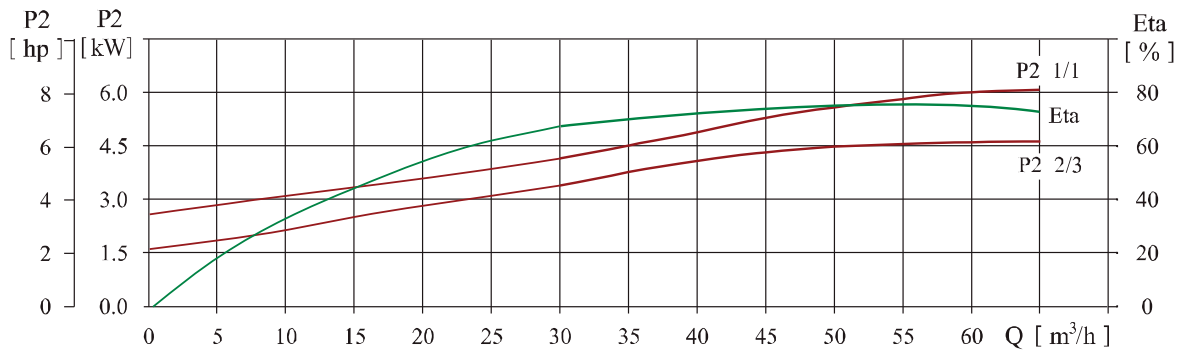
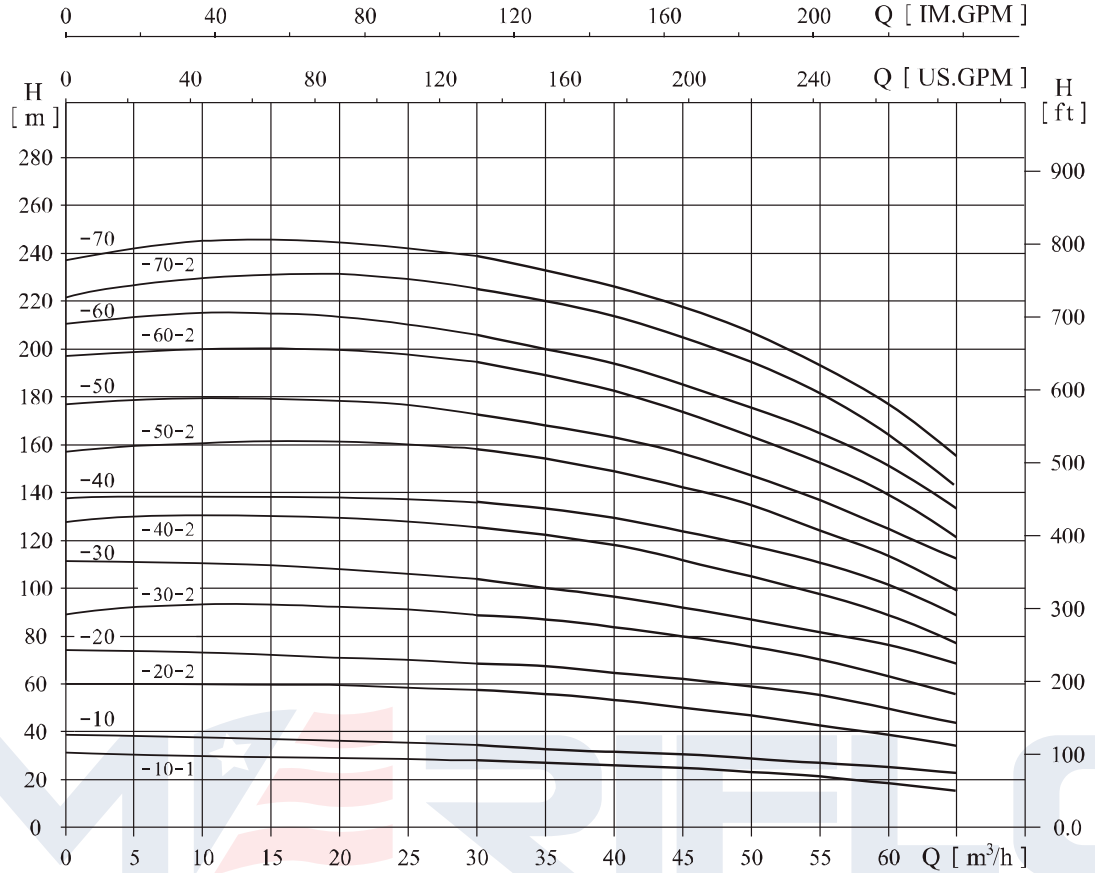
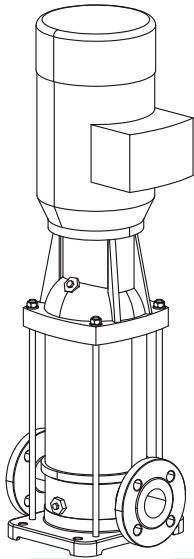
# VM42 (3x3) 2900 RPM



**MODEL VM42 - PERFORMANCE TABLE (2900 RPM)**

| MODEL       | SPEED | MOTOR<br>HP | FLOW<br>GPM   | 130 | 150 | 175 | 200 | 225 |  |  |  |
|-------------|-------|-------------|---------------|-----|-----|-----|-----|-----|--|--|--|
| VM42-10-1   | 2900  | 5           | HEAD<br>(PSI) | 27  | 26  | 24  | 21  | 18  |  |  |  |
| VM42-10     |       | 5           |               | 33  | 31  | 30  | 27  | 26  |  |  |  |
| VM42-20-2   |       | 7.5         |               | 54  | 51  | 47  | 43  | 38  |  |  |  |
| VM42-20     |       | 10          |               | 65  | 62  | 60  | 55  | 50  |  |  |  |
| VM42-30-2   |       | 15          |               | 87  | 82  | 77  | 71  | 62  |  |  |  |
| VM42-30     |       | 15          |               | 98  | 94  | 89  | 82  | 75  |  |  |  |
| VM42-40-2   |       | 20          |               | 119 | 114 | 107 | 98  | 88  |  |  |  |
| VM42-40     |       | 20          |               | 131 | 125 | 119 | 111 | 101 |  |  |  |
| VM42-50-2   |       | 25          |               | 151 | 145 | 136 | 125 | 114 |  |  |  |
| VM42-50     |       | 25          |               | 163 | 156 | 149 | 138 | 125 |  |  |  |
| VM42-60-2   |       | 30          |               | 185 | 178 | 166 | 153 | 138 |  |  |  |
| VM42-60     |       | 30          |               | 196 | 187 | 178 | 165 | 151 |  |  |  |
| VM42-70-2   |       | 40          |               | 216 | 207 | 196 | 180 | 163 |  |  |  |
| VM42-70     |       | 40          |               | 229 | 219 | 207 | 192 | 176 |  |  |  |
| VM42-80-2   |       | 40          |               | 248 | 238 | 226 | 207 | 189 |  |  |  |
| VM42-80     |       | 40          |               | 261 | 250 | 237 | 219 | 200 |  |  |  |
| VM42-90-2   |       | 40          |               | 281 | 270 | 256 | 236 | 213 |  |  |  |
| VM42-90     |       | 50          |               | 304 | 281 | 267 | 247 | 226 |  |  |  |
| VM42-100-2  |       | 50          |               | 327 | 301 | 284 | 263 | 239 |  |  |  |
| VM42-100    |       | 50          |               | 338 | 312 | 297 | 274 | 251 |  |  |  |
| VM42-110-2  |       | 60          |               | 362 | 335 | 317 | 293 | 267 |  |  |  |
| VM42-110    |       | 60          |               | 374 | 346 | 330 | 304 | 278 |  |  |  |
| VM42-120-2  |       | 60          |               | 397 | 368 | 348 | 321 | 293 |  |  |  |
| VM42-120    |       | 60          |               | 410 | 381 | 362 | 335 | 307 |  |  |  |
| VM-42-130-2 |       | 60          |               | 433 | 401 | 379 | 351 | 320 |  |  |  |

# VM42 (3x3) 3500 RPM



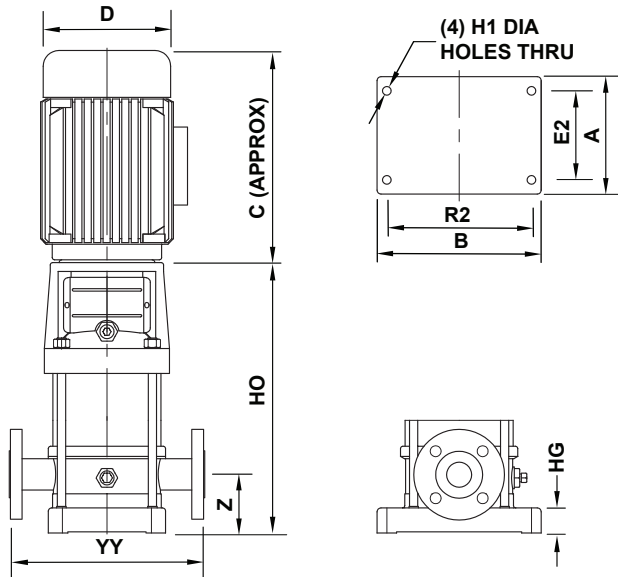
**MODEL VM42 - PERFORMANCE TABLE (3500 RPM)**

| MODEL     | SPEED | MOTOR | FLOW                  | 130 | 150 | 175 | 200 | 225 | 260 | 290 |  |
|-----------|-------|-------|-----------------------|-----|-----|-----|-----|-----|-----|-----|--|
|           |       | HP    | GPM                   |     |     |     |     |     |     |     |  |
| VM42-10-1 | 3500  | 7.5   | <b>HEAD<br/>(PSI)</b> | 41  | 40  | 38  | 36  | 33  | 27  | 23  |  |
| VM42-10   |       | 10    |                       | 48  | 47  | 45  | 43  | 41  | 36  | 31  |  |
| VM42-20-2 |       | 15    |                       | 81  | 78  | 75  | 70  | 65  | 54  | 47  |  |
| VM42-20   |       | 20    |                       | 98  | 95  | 92  | 87  | 84  | 71  | 62  |  |
| VM42-30-2 |       | 25    |                       | 128 | 125 | 121 | 114 | 107 | 89  | 78  |  |
| VM42-30   |       | 25    |                       | 145 | 142 | 138 | 131 | 125 | 108 | 97  |  |
| VM42-40-2 |       | 30    |                       | 178 | 172 | 168 | 159 | 149 | 126 | 111 |  |
| VM42-40   |       | 40    |                       | 193 | 189 | 183 | 175 | 166 | 145 | 126 |  |
| VM42-50-2 |       | 40    |                       | 226 | 219 | 212 | 202 | 190 | 163 | 141 |  |
| VM42-50   |       | 40    |                       | 243 | 236 | 229 | 219 | 206 | 179 | 159 |  |
| VM42-60-2 |       | 50    |                       | 276 | 267 | 258 | 246 | 232 | 197 | 173 |  |
| VM42-60   |       | 50    |                       | 291 | 284 | 274 | 264 | 250 | 216 | 190 |  |
| VM42-70-2 |       | 60    |                       | 322 | 312 | 303 | 291 | 274 | 234 | 205 |  |
| VM42-70   |       | 60    |                       | 339 | 330 | 321 | 307 | 290 | 239 | 223 |  |



# MODEL VM42 - VERTICAL MULTISTAGE, ELECTRIC NEMA MOTOR

## GENERAL ARRANGEMENT DRAWING



| FLANGE DRILLING STANDARD & DETAILS |           |        |       |           |       |     |
|------------------------------------|-----------|--------|-------|-----------|-------|-----|
| SUCT                               | 250# ANSI |        | DISC  | 250# ANSI |       |     |
|                                    | SIZE      | RF DIA | P.C.D | # HOLES   | SIZE  |     |
| SUCT                               | 3.00      | 5.000  | 6.625 | 8         | 0.750 |     |
| DISC                               | 3.00      | 5.000  | 6.625 | 8         | 0.750 |     |
| FORCES (LBS) & MOMENTS (LB-Feet)   |           |        |       |           |       |     |
|                                    | Fx        | Fy     | Fz    | Mx        | My    | Mz  |
| SUCT                               | 240       | 300    | 200   | 700       | 350   | 530 |
| DISC                               | 240       | 300    | 200   | 700       | 350   | 530 |

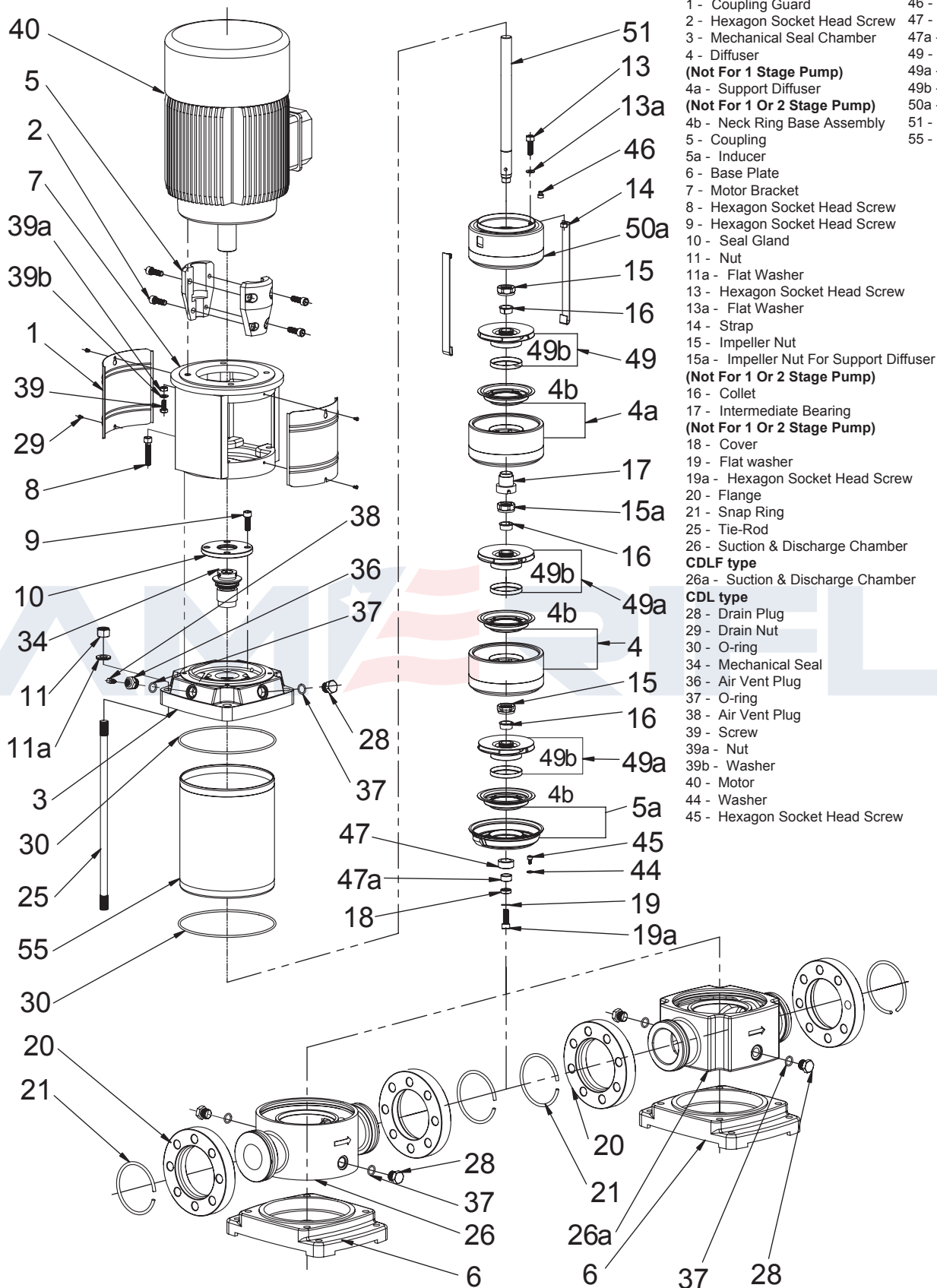
## VM42

| MODEL    | SPEED        | A     | B      | C      | D      | E2     | H1    | HG    | HO     | R2    | YY     | Z     | WEIGHT |
|----------|--------------|-------|--------|--------|--------|--------|-------|-------|--------|-------|--------|-------|--------|
|          | RPM          |       |        |        |        |        |       |       |        |       |        |       | LBS    |
| VM42-10  | 2900<br>3500 | 9.625 | 13.000 | 14.000 | 9.000  | 10.500 | 0.500 | 1.750 | 22.000 | 7.500 | 14.375 | 5.500 | 198    |
| VM42-20  |              | 9.625 | 13.000 | 15.375 | 10.250 | 10.500 | 0.500 | 1.750 | 25.250 | 7.500 | 14.375 | 5.500 | 243    |
| VM42-30  |              | 9.625 | 13.000 | 19.688 | 13.000 | 10.500 | 0.500 | 1.750 | 32.500 | 7.500 | 14.375 | 5.500 | 403    |
| VM42-40  |              | 9.625 | 13.000 | 19.688 | 13.000 | 10.500 | 0.500 | 1.750 | 35.625 | 7.500 | 14.375 | 5.500 | 434    |
| VM42-50  |              | 9.625 | 13.000 | 21.625 | 13.000 | 10.500 | 0.500 | 1.750 | 35.625 | 7.500 | 14.375 | 5.500 | 487    |
| VM42-60  |              | 9.625 | 13.000 | 22.625 | 14.188 | 10.500 | 0.500 | 1.750 | 38.813 | 7.500 | 14.375 | 5.500 | 575    |
| VM42-70  |              | 9.625 | 13.000 | 25.625 | 15.750 | 10.500 | 0.500 | 1.750 | 45.125 | 7.500 | 14.375 | 5.500 | 706    |
| VM42-80  |              | 9.625 | 13.000 | 25.625 | 15.750 | 10.500 | 0.500 | 1.750 | 48.250 | 7.500 | 14.375 | 5.500 | 714    |
| VM42-90  |              | 9.625 | 13.000 | 25.625 | 15.750 | 10.500 | 0.500 | 1.750 | 51.438 | 7.500 | 14.375 | 5.500 | 776    |
| VM42-100 |              | 9.625 | 13.000 | 25.625 | 15.750 | 10.500 | 0.500 | 1.750 | 55.500 | 7.500 | 14.375 | 5.500 | 783    |
| VM42-110 |              | 9.625 | 13.000 | 27.000 | 17.750 | 10.500 | 0.500 | 1.750 | 57.750 | 7.500 | 14.375 | 5.500 | 939    |
| VM42-120 |              | 9.625 | 13.000 | 27.000 | 17.750 | 10.500 | 0.500 | 1.750 | 60.875 | 7.500 | 14.375 | 5.500 | 952    |
| VM42-130 |              | 9.625 | 13.000 | 27.000 | 17.750 | 10.500 | 0.500 | 1.750 | 64.000 | 7.500 | 14.375 | 5.500 | 966    |

### NOTES:

ALL DIMENSIONS ARE IN INCHES [MM] AND MAY VARY ±0.375 INCHES.

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS CERTIFIED BY AMERIFLO.

**MODEL VM42 - SECTIONAL VIEW**

# MODEL VM42 - SECTIONAL VIEW PART REFERENCE

| ITEM NUMBER | PART NAME                         | MATERIAL                                           |                    |
|-------------|-----------------------------------|----------------------------------------------------|--------------------|
|             |                                   | VM (304SS)                                         | VM (316 SS)        |
| 1           | Coupling Guard                    | 304 SS (EN 1.4301)                                 |                    |
| 2           | Hexagon Socket Head Screw         | A2-70 UNI 7323                                     |                    |
| 3           | Pump Head                         | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 4           | Diffuser                          | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 4a          | Support Diffuser                  | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 4b          | Neck Ring Base Assembly           | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 5           | Coupling                          | Die Cast Aluminum EN AB-AISI11Cu <sub>2</sub> (Fe) |                    |
| 5a          | Inducer                           | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 6           | Base Plate                        | Die Cast Aluminum EN AB-AISI11Cu <sub>2</sub> (Fe) |                    |
| 7           | Motor Bracket                     | Cast Iron EN-GJL-200-EN 1561                       |                    |
| 8           | Hexagon Socket Head Screw         | A2-70 UNI 7323                                     |                    |
| 9           | Hexagon Socket Head Screw         | A2-70 UNI 7323                                     |                    |
| 10          | Seal Gland                        | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 11          | Nut                               | Galvanized Steel                                   |                    |
| 11a         | Flat Washer                       | Galvanized Steel                                   |                    |
| 13          | Hexagon Socket Head Screw         | A2-70 UNI 7323                                     |                    |
| 13a         | Flat Washer                       | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 14          | Strap                             | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 15          | Impeller Nut                      | A2-70 UNI 7323                                     | A4-70 UNI 7323     |
| 15a         | Impeller Nut For Support Diffuser | A2-70 UNI 7323                                     | A4-70 UNI 7323     |
| 16          | Collet                            | A2-70 UNI 7323                                     | A4-70 UNI 7323     |
| 17          | Intermediate Bearing              | Tungsten Carbide                                   |                    |
| 18          | Cover                             | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 19          | Flat Washer                       | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 19a         | Hexagon Socket Head Screw         | A2-70 UNI 7323                                     |                    |
| 20          | Flange                            | Cast Iron                                          |                    |
| 21          | Snap Ring                         | 304 SS (EN 1.4301)                                 |                    |
| 25          | Tie-Rod                           | Galvanized Steel 6.8 Strength Class ISO 898/1      |                    |
| 26 & 26a    | Suction & Discharge Chamber       | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 28          | Drain Plug (M10)                  | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 29          | Drain Plug                        | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 30          | O-Ring                            | FPM                                                |                    |
| 34          | Mechanical Seal                   | Silicon Carbide / Carbon / FPM                     |                    |
| 36          | Air Vent Plug                     | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 37          | O-Ring                            | FPM                                                |                    |
| 38          | Air Vent Plug                     | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 39          | Screw                             | Galvanized Steel                                   |                    |
| 39a         | Nut                               | Galvanized Steel                                   |                    |
| 39b         | Washer                            | Galvanized Steel                                   |                    |
| 40          | Motor                             | Refer To Motor Manufacturer                        |                    |
| 44          | Washer                            | Galvanized Steel                                   |                    |
| 45          | Hexagon Socket Head Screw         | A2-70 UNI 7323                                     |                    |
| 46          | Adjusting Grommet                 | FPM                                                |                    |
| 47          | Bottom Bearing                    | Tungsten Carbide                                   |                    |
| 47a         | Bottom Sleeve                     | Tungsten Carbide                                   |                    |
| 49          | Impeller                          | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 49a         | Impeller                          | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 49b         | Ring For Neck Ring                | FPM                                                |                    |
| 50a         | Top Diffuser                      | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 51          | Shaft                             | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |
| 55          | Outer Casing                      | 304 SS (EN 1.4301)                                 | 316 SS (EN 1.4401) |

**MODEL VM42 - ENGINEERING INFORMATION**

| PUMP<br>MODEL | OPERATING<br>TEMPERATURE<br>RANGE   | MECHANICAL<br>SEAL TYPE | MECHANICAL SEAL MATERIAL |                    |            |        |        |
|---------------|-------------------------------------|-------------------------|--------------------------|--------------------|------------|--------|--------|
|               |                                     |                         | ROTATING<br>FACE         | STATIONARY<br>FACE | ELASTOMERS | SPRING | COLLAR |
| VM42          | +5°F TO +248°F<br>[-15°C TO +120°C] | BALANCED                | SILICON<br>CARBIDE       | CARBON             | FPM        | 316 SS | 316 SS |

|                            |                                            |
|----------------------------|--------------------------------------------|
| <b>RATED FLOW:</b>         | 185 GPM [42 M <sup>3</sup> /HR]            |
| <b>FLOW RANGE:</b>         | 132 - 286 GPM [30 - 65 M <sup>3</sup> /HR] |
| <b>MAXIMUM PRESSURE:</b>   | 377 PSI [26 BAR]                           |
| <b>MAXIMUM POWER:</b>      | 7.5 - 60 HP [5.5 - 45 KW]                  |
| <b>MAXIMUM EFFICIENCY:</b> | 75%                                        |

