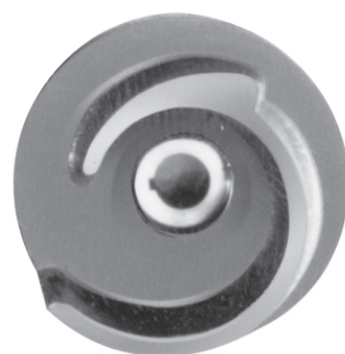


# ZUJ(3)

KAWAMOTO SUBMERSIBLE PUMP

2 POLES / 50 Hz

SIZE 50 ~ 80 MM.



CHANNEL IMPELLER



# APPLICATIONS AND FEATURES

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## ■ APPLICATIONS

- Sewage and wastewater with solids.

## ■ FEATURES

- This channel impellers provides excellent ability to pass foreign objects.
- The pump is free from forming air pocket behind impeller.
- Equipped with a motor with built-in auto-cut to prevent motor burnout.
- ZUJ type is equipped with a pedestal support for easy maintenance and inspection.
- Some model with output of 3.7 kW or less are available with a float switch. (automatic, auto alternate built-in)

# STANDARD SPECIFICATIONS

| Description         |               | Model : ZUJ/ZU3                                                         |
|---------------------|---------------|-------------------------------------------------------------------------|
| Applicable Liquid   |               | Waste water, filthy water and other miscellaneous dirty water           |
| Liquid Temperature  |               | 0~40 °C                                                                 |
| pH                  |               | 5~9                                                                     |
| Main Pump           | Casing        | Cast Iron                                                               |
|                     | Impeller      | Cast Iron                                                               |
|                     | Shaft         | Stainless Steel (SUS420J2)                                              |
| Motor               | Speed         | 3000 rpm                                                                |
|                     | Protection    | IP68, Class F                                                           |
| Construction        | Shaft Seal    | Double mechanical seal<br>Pump : Sic x Sic<br>Motor : Ceramics x Carbon |
|                     | Motor Bearing | Sealed ball bearing                                                     |
| Maximum Submergence |               | 0.75kw : 5m<br>1.5~7.5kw : 8m                                           |

# OPTIONAL SPECIFICATIONS

| Description        |               | Model : ZUJ/ZU3                                                         |
|--------------------|---------------|-------------------------------------------------------------------------|
| Applicable Liquid  |               | Waste water, filthy water and other miscellaneous dirty water           |
| Liquid Temperature |               | 0~60 °C                                                                 |
| pH                 |               | 5~9                                                                     |
| Main Pump          | Casing        | Cast Iron                                                               |
|                    | Impeller      | Cast Iron                                                               |
|                    | Shaft         | Stainless Steel (SUS420J2)                                              |
| Motor              | Speed         | 3000 rpm                                                                |
|                    | Protection    | IP68, Class F                                                           |
| Construction       | Shaft Seal    | Double mechanical seal<br>Pump : Sic x Sic<br>Motor : Ceramics x Carbon |
|                    | Motor Bearing | Sealed ball bearing                                                     |
| Cable length(m)    |               | 10m, 20m, 30m                                                           |

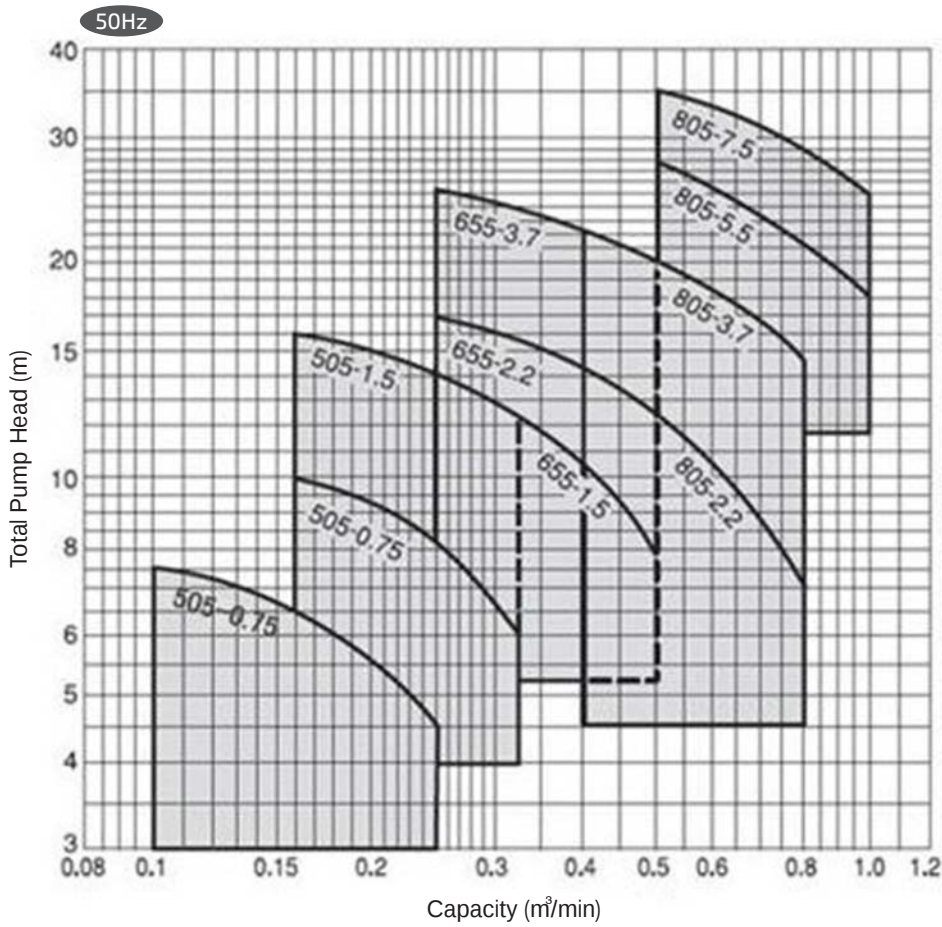
## SOLID PASSAGE

| Pump Bore (mm) | Solid diameter (mm) | Clothes(mm) |
|----------------|---------------------|-------------|
| 50             | 35                  | 200 x 200   |
| 65             | 35                  | 300 x 300   |
| 80             | 40                  | 300 x 450   |

## CABLE

| Output (kW) | Phase | Size (mm <sup>2</sup> ) | Core | Outer diameter (mm) | Length (m) |
|-------------|-------|-------------------------|------|---------------------|------------|
| 0.75        | 3     | 1.25                    | 4    | 11                  | 6          |
| 1.5         | 3     | 1.25                    | 4    | 11                  | 10         |
| 2.2         | 3     | 1.25                    | 4    | 11                  | 10         |
| 3.7         | 3     | 2                       | 4    | 11.7                | 10         |
| 5.5         | 3     | 3.5                     | 4    | 14                  | 10         |
| 7.5         | 3     | 5.5                     | 4    | 16.5                | 10         |

# PERFORMANCE CHART



# MODEL CODE

ZUJ(3) - 50

5 - 0.75

T4

L

Pump type :  
- ZUJ : Q.D.C TYPE  
- ZU3 : FLANGE TYPE

50 Hz

Motor output (kW)

Phase - (T4 : Three Phase)

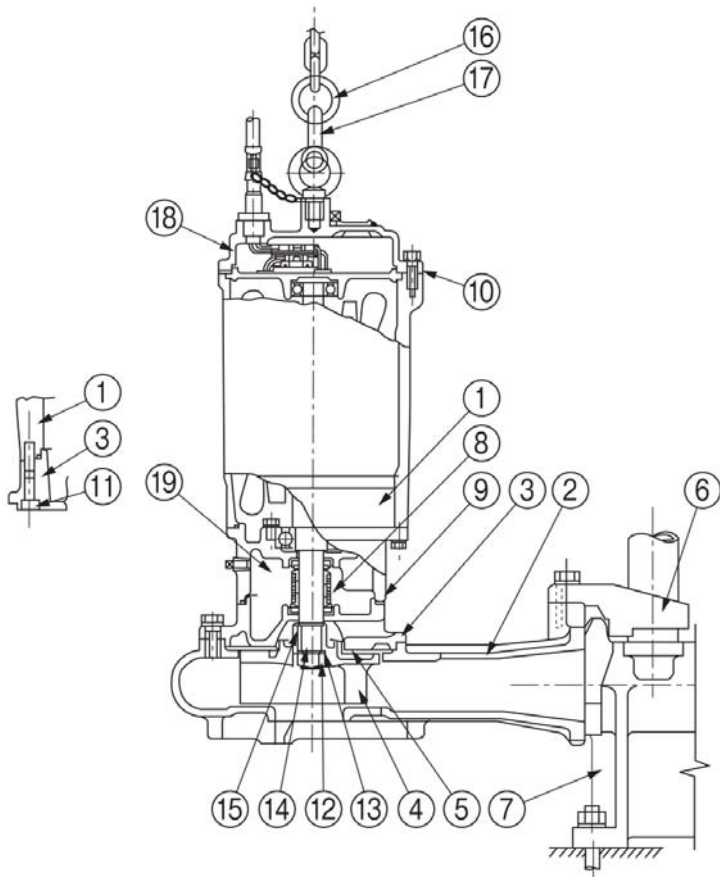
Operation Type :  
- L (1 pump automatics)  
- LN (2nd pump for automatic alternate/simultaneous)

## SPECIFICATION TABLE - ZUJ (3)

| No. | Bore<br>(mm) | Model                  | Motor<br>(kW) | Performance                       |                   |                                   |                   |
|-----|--------------|------------------------|---------------|-----------------------------------|-------------------|-----------------------------------|-------------------|
|     |              |                        |               | Capacity<br>(m <sup>3</sup> /min) | Total Head<br>(m) | Capacity<br>(m <sup>3</sup> /min) | Total Head<br>(m) |
| 1   | 50           | ZUJ(3)-505-0.75T4      | 0.75          | 0.16                              | 10                | 0.32                              | 6                 |
| 2   |              | ZUJ(3)-505-1.5T4       | 1.5           | 0.16                              | 16                | 0.32                              | 12.2              |
| 3   | 65           | ZUJ(3)-655-1.5T4       | 1.5           | 0.25                              | 13.8              | 0.5                               | 7.8               |
| 4   |              | ZUJ(3)-655-2.2T4       | 2.2           | 0.25                              | 17                | 0.5                               | 12.2              |
| 5   |              | ZUJ(3)-655-3.7T4       | 3.7           | 0.25                              | 25                | 0.5                               | 20.5              |
| 6   | 80           | ZUJ(3)-805-2.2T4       | 2.2           | 0.4                               | 14.2              | 0.8                               | 6.8               |
| 7   |              | ZUJ(3)-805-3.7T4       | 3.7           | 0.4                               | 22.5              | 0.8                               | 14.2              |
| 8   |              | ZUJ(3)-805-5.5T4       | 5.5           | 0.5                               | 27.5              | 1                                 | 17.5              |
| 9   |              | ZUJ(3)-805-7.5T4       | 7.5           | 0.5                               | 35                | 1                                 | 25                |
| 10  | 50           | ZUJ(3)-505-0.75T4L(LN) | 0.75          | 0.16                              | 10                | 0.32                              | 6                 |
| 11  |              | ZUJ(3)-505-1.5T4L(LN)  | 1.5           | 0.16                              | 16                | 0.32                              | 12.2              |
| 12  | 65           | ZUJ(3)-655-1.5T4L(LN)  | 1.5           | 0.25                              | 13.8              | 0.5                               | 7.8               |
| 13  |              | ZUJ(3)-655-2.2T4L(LN)  | 2.2           | 0.25                              | 17                | 0.5                               | 12.2              |
| 14  |              | ZUJ(3)-655-3.7T4L(LN)  | 3.7           | 0.25                              | 25                | 0.5                               | 20.5              |
| 15  | 80           | ZUJ(3)-805-2.2T4L(LN)  | 2.2           | 0.4                               | 14.2              | 0.8                               | 6.8               |
| 16  |              | ZUJ(3)-805-3.7T4L(LN)  | 3.7           | 0.4                               | 22.5              | 0.8                               | 14.2              |

SECTION VIEW - ZUJ

ZUJ

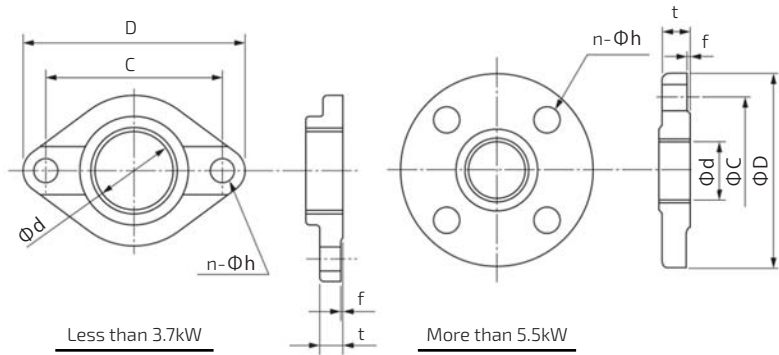


| No. | Part Name                      | Material  | Note    |
|-----|--------------------------------|-----------|---------|
| 1   | Motor                          | -         | Class F |
| 2   | Casing                         | Cast iron |         |
| 3   | Casing cover                   | Cast iron |         |
| 4   | Impeller                       | Cast iron |         |
| 5   | Liner ring                     | Bronze    |         |
| 6   | Sliding bracket                | FCD       |         |
| 7   | Connecting pipe with baseplate | Cast iron |         |
| 8   | Mechanical seal                | -         |         |
| 9   | O-Ring                         | Rubber    |         |
| 10  | Packing                        | Rubber    |         |
| 11  | Bolt                           | SUS304    |         |
| 12  | Nut                            | SUS304    |         |
| 13  | Washer                         | SUS304    |         |
| 14  | Key                            | SUS403    |         |
| 15  | Shim                           | SUS304    |         |
| 16  | Chain                          | Steel     |         |
| 17  | Shackle                        | Steel     |         |
| 18  | Motor cover                    | Cast iron |         |
| 19  | Turbine oil                    | VG32      |         |

※ Shaft : SUS403

FLANGE DIMENSION

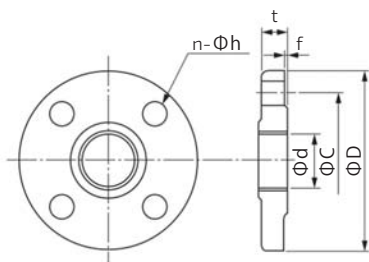
ZU3



Unit:mm

| Bore (mm) | d       | C   | D   | t  | f | n | h(Bolt) | Remark           |
|-----------|---------|-----|-----|----|---|---|---------|------------------|
| 50        | Rc2     | 95  | 120 | 14 | 0 | 2 | 13(M10) | less than 0.75kW |
|           | Rc2     | 120 | 150 | 16 | 0 | 2 | 15(M12) | 1.5kW            |
| 65        | Rc2 1/2 | 120 | 150 | 16 | 0 | 2 | 15(M12) | less than 1.5kW  |
|           | Rc2 1/2 | 140 | 175 | 18 | 0 | 2 | 19(M16) | 2.2,3.7kW        |
| 80        | Rc3     | 140 | 175 | 18 | 0 | 2 | 19(M16) | 2.2,3.7kW        |
|           | Rc3     | 150 | 185 | 18 | 2 | 8 | 15(M12) | 5.5,7.5kW        |

ZUJ

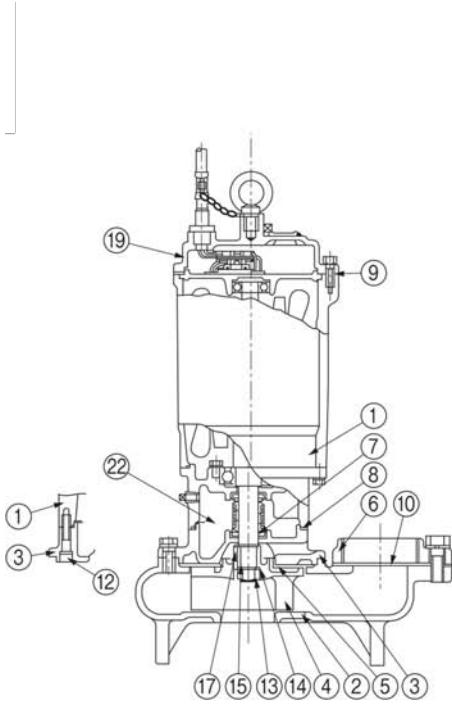


Unit:mm

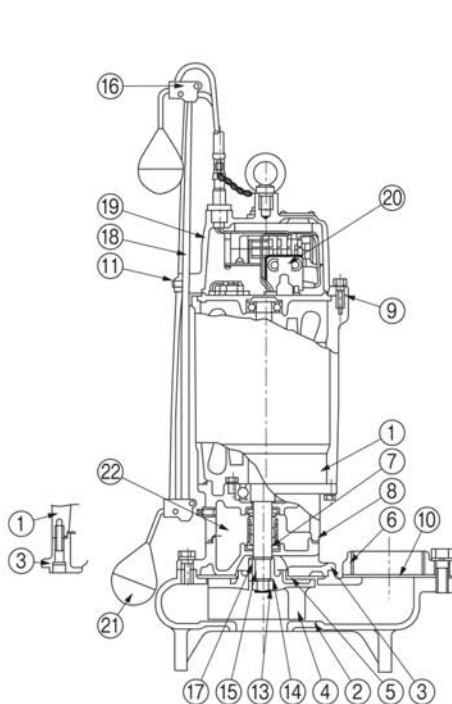
| Bore (mm) | d       | C   | D   | t  | f | n | h(Bolt) |
|-----------|---------|-----|-----|----|---|---|---------|
| 50        | Rc2     | 120 | 155 | 18 | 2 | 4 | 15(M12) |
| 65        | Rc2 1/2 | 140 | 175 | 18 | 2 | 4 | 15(M12) |
| 80        | Rc3     | 150 | 185 | 18 | 2 | 8 | 15(M12) |

SECTION VIEW - ZU3

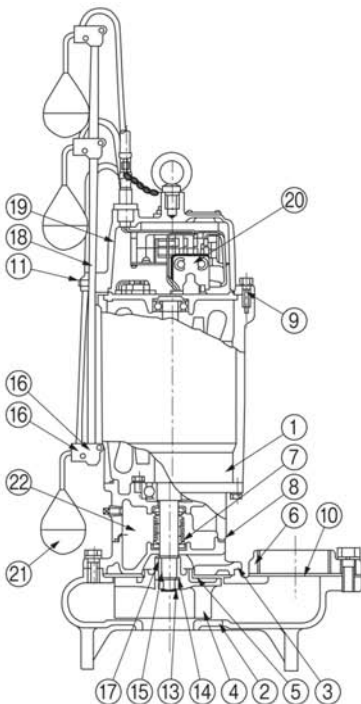
ZU3



ZU3-L



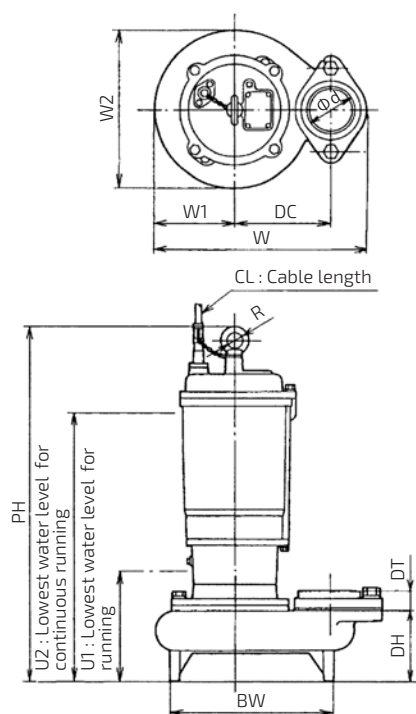
ZU3-LN



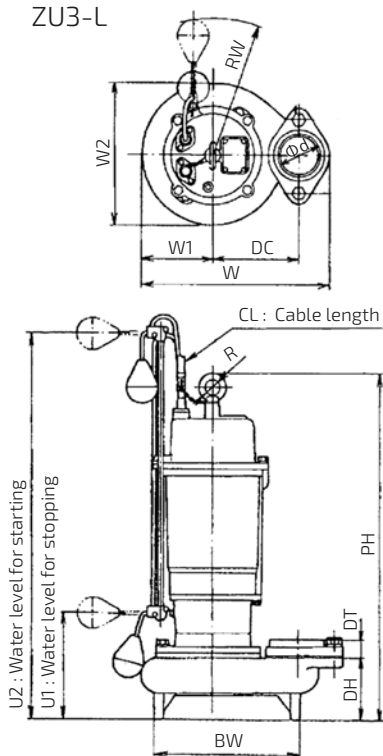
| No. | Part Name       | Material  | Note    | No. | Part Name       | Material  | Note |
|-----|-----------------|-----------|---------|-----|-----------------|-----------|------|
| 1   | Motor           | -         | Class F | 12  | Bolt            | SUS304    |      |
| 2   | Casing          | Cast iron |         | 13  | Nut             | SUS304    |      |
| 3   | Casing cover    | Cast iron |         | 14  | Washer          | SUS403    |      |
| 4   | Impeller        | Cast iron |         | 15  | Key             | SUS304    |      |
| 5   | Liner ring      | Bronze    |         | 16  | Clamp           | Resin     |      |
| 6   | Flange          | Cast iron |         | 17  | Shim            | SUS403    |      |
| 7   | Mechanical seal | -         |         | 18  | Rode            | Resin     |      |
| 8   | O-Ring          | Rubber    |         | 19  | Motor cover     | Cast iron |      |
| 9   | Packing         | Rubber    |         | 20  | Magnetic switch | -         |      |
| 10  | Packing         | Rubber    |         | 21  | Float switch    | -         |      |
| 11  | Screw           | SUS304    |         | 22  | Turbine oil     | VG32      |      |

# PUMP DIMENSION - ZU3

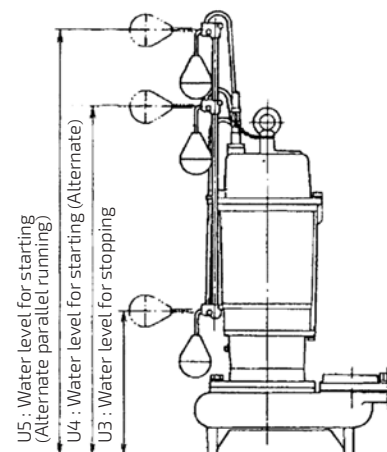
ZU3



ZU3-L



ZU3-LN



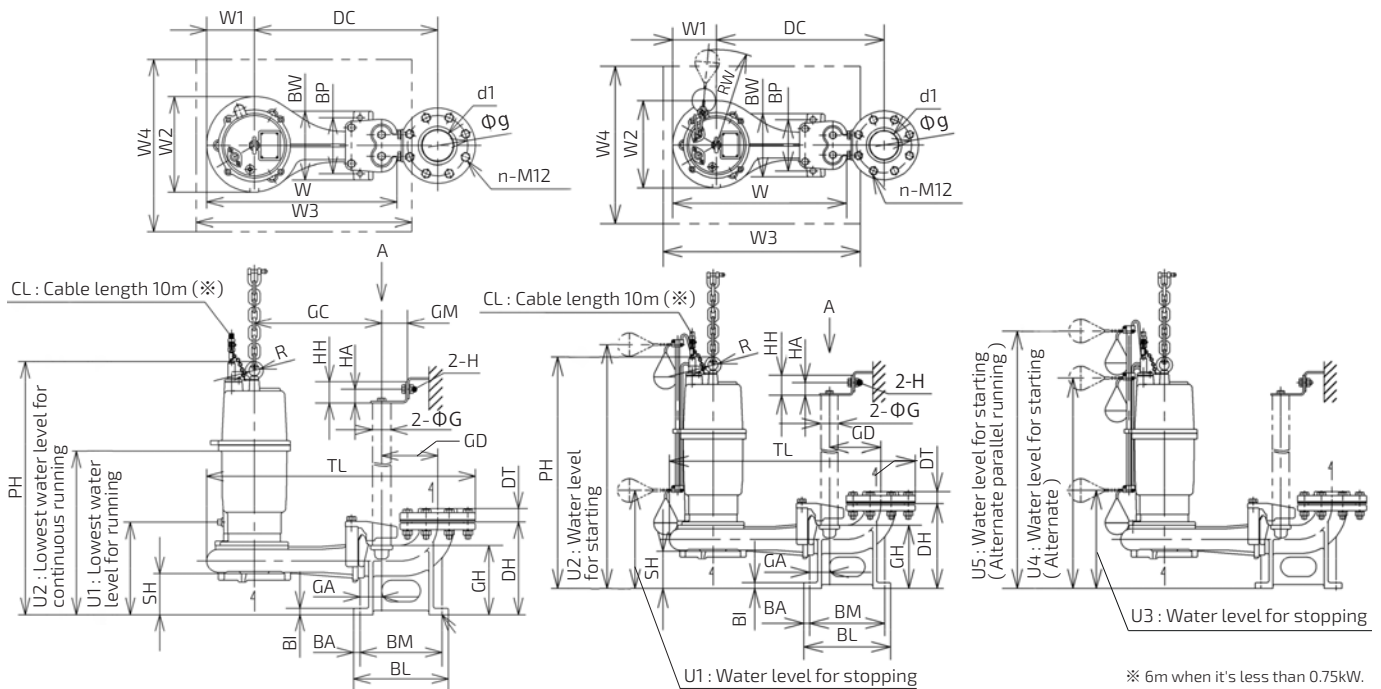
| Discharge Bore (mm) | Model              | Motor (kW) | Pump Combination |     |    |     |     |     |     |     | Water Level |     |     |     |     | Other |    |       | Weight (kg) |
|---------------------|--------------------|------------|------------------|-----|----|-----|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|----|-------|-------------|
|                     |                    |            | PH               | DH  | DT | DC  | W   | W1  | W2  | BW  | U1          | U2  | U3  | U4  | U5  | RW    | R  | CL(m) |             |
| 50                  | ZU3-505-0.75T4     | 0.75       | 397              | 98  | 27 | 120 | 254 | 95  | 190 | 205 | 140         | 250 | -   | -   | -   | -     | 25 | 6     | 21          |
|                     | ZU3-505-1.5T4      | 1.5        | 446              | 103 | 29 | 140 | 301 | 111 | 222 | 235 | 170         | 300 | -   | -   | -   | -     | 25 | 10    | 31          |
| 65                  | ZU3-655-1.5T4      | 1.5        | 446              | 103 | 29 | 140 | 301 | 111 | 222 | 235 | 170         | 300 | -   | -   | -   | -     | 25 | 10    | 31          |
|                     | ZU3-655-2.2T4      | 2.2        | 592              | 117 | 29 | 160 | 352 | 134 | 268 | 275 | 200         | 430 | -   | -   | -   | -     | 30 | 10    | 49          |
|                     | ZU3-655-3.7T4      | 3.7        | 592              | 117 | 29 | 160 | 352 | 134 | 268 | 275 | 200         | 430 | -   | -   | -   | -     | 30 | 10    | 55          |
| 80                  | ZU3-805-2.2T4      | 2.2        | 592              | 117 | 33 | 160 | 352 | 134 | 268 | 275 | 200         | 430 | -   | -   | -   | -     | 30 | 10    | 49          |
|                     | ZU3-805-3.7T4      | 3.7        | 592              | 117 | 33 | 160 | 352 | 134 | 268 | 275 | 200         | 430 | -   | -   | -   | -     | 30 | 10    | 55          |
|                     | ZU3-805-5.5T4      | 5.5        | 657              | 160 | 33 | 205 | 446 | 148 | 295 | 295 | 240         | 490 | -   | -   | -   | -     | 35 | 10    | 80          |
|                     | ZU3-805-7.5T4      | 7.5        | 657              | 160 | 33 | 205 | 446 | 148 | 295 | 295 | 240         | 490 | -   | -   | -   | -     | 35 | 10    | 84          |
| 50                  | ZU3-505-0.75T4(LN) | 0.75       | 442              | 98  | 27 | 120 | 254 | 95  | 190 | 205 | 140         | 210 | 200 | 450 | 570 | 242   | 25 | 6     | 24.5        |
|                     | ZU3-505-1.5T4(LN)  | 1.5        | 506              | 103 | 29 | 140 | 301 | 111 | 222 | 235 | 170         | 540 | 230 | 480 | 600 | 248   | 25 | 10    | 35          |
| 65                  | ZU3-655-1.5T4(LN)  | 1.5        | 506              | 103 | 29 | 140 | 301 | 111 | 222 | 235 | 170         | 540 | 230 | 480 | 600 | 248   | 25 | 10    | 35          |
|                     | ZU3-655-2.2T4(LN)  | 2.2        | 647              | 117 | 29 | 160 | 352 | 134 | 268 | 275 | 200         | 720 | 270 | 650 | 790 | 258   | 30 | 10    | 53.5        |
|                     | ZU3-655-3.7T4(LN)  | 3.7        | 647              | 117 | 29 | 160 | 352 | 134 | 268 | 275 | 200         | 720 | 270 | 650 | 790 | 258   | 30 | 10    | 59.5        |
| 80                  | ZU3-805-2.2T4(LN)  | 2.2        | 647              | 117 | 33 | 160 | 352 | 134 | 268 | 275 | 200         | 720 | 270 | 650 | 790 | 258   | 30 | 10    | 53.5        |
|                     | ZU3-805-3.7T4(LN)  | 3.7        | 647              | 117 | 33 | 160 | 352 | 134 | 268 | 275 | 200         | 720 | 270 | 650 | 790 | 258   | 30 | 10    | 59.5        |

# PUMP DIMENSION - ZUJ

ZUJ

ZUJ-L

ZUJ-LN



| Discharge Bore (mm) | Model               | Motor (kW) | Pump Combination |     |     |     |     |     | Water Level |     |     |     |     | Other |        | Weight (kg) |
|---------------------|---------------------|------------|------------------|-----|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-------|--------|-------------|
|                     |                     |            | PH               | SH  | DC  | TL  | W1  | W2  | U1          | U2  | U3  | U4  | U5  | RW    | CL (m) |             |
| 50                  | ZUJ-50S-0.75T4      | 0.75       | 437              | 81  | 345 | 518 | 95  | 190 | 180         | 290 | -   | -   | -   | -     | 6      | 33          |
|                     | ZUJ-50S-1.5T4       | 1.5        | 497              | 95  | 425 | 624 | 111 | 222 | 220         | 350 | -   | -   | -   | -     | 10     | 44          |
| 65                  | ZUJ-65S-1.5T4       | 1.5        | 497              | 95  | 425 | 624 | 111 | 222 | 220         | 350 | -   | -   | -   | -     | 10     | 44          |
|                     | ZUJ-65S-2.2T4       | 2.2        | 660              | 115 | 495 | 722 | 134 | 268 | 270         | 500 | -   | -   | -   | -     | 10     | 67.5        |
|                     | ZUJ-65S-3.7T4       | 3.7        | 660              | 115 | 495 | 722 | 134 | 268 | 270         | 500 | -   | -   | -   | -     | 10     | 74.5        |
| 80                  | ZUJ-80S-2.2T4       | 2.2        | 660              | 115 | 495 | 722 | 134 | 268 | 270         | 500 | -   | -   | -   | -     | 10     | 67.5        |
|                     | ZUJ-80S-3.7T4       | 3.7        | 660              | 115 | 495 | 722 | 134 | 268 | 270         | 500 | -   | -   | -   | -     | 10     | 74.5        |
|                     | ZUJ-80S-5.5T4       | 5.5        | 693              | 112 | 505 | 751 | 159 | 317 | 276         | 496 | -   | -   | -   | -     | 10     | 112         |
|                     | ZUJ-80S-7.5T4       | 7.5        | 693              | 112 | 505 | 751 | 159 | 317 | 276         | 496 | -   | -   | -   | -     | 10     | 117         |
| 50                  | ZUJ-50S-0.75T4L(LN) | 0.75       | 482              | 81  | 345 | 518 | 95  | 190 | 180         | 550 | 240 | 490 | 610 | 242   | 6      | 36.5        |
|                     | ZUJ-50S-1.5T4L(LN)  | 1.5        | 557              | 95  | 425 | 624 | 111 | 222 | 220         | 590 | 280 | 530 | 650 | 248   | 10     | 48          |
| 65                  | ZUJ-65S-1.5T4L(LN)  | 1.5        | 557              | 95  | 425 | 624 | 111 | 222 | 220         | 590 | 280 | 530 | 650 | 248   | 10     | 48          |
|                     | ZUJ-65S-2.2T4L(LN)  | 2.2        | 715              | 115 | 495 | 722 | 134 | 268 | 270         | 790 | 340 | 720 | 860 | 258   | 10     | 72          |
|                     | ZUJ-65S-3.7T4L(LN)  | 3.7        | 715              | 115 | 495 | 722 | 134 | 268 | 270         | 790 | 340 | 720 | 860 | 258   | 10     | 78.5        |
| 80                  | ZUJ-80S-2.2T4L(LN)  | 2.2        | 715              | 115 | 495 | 722 | 134 | 268 | 270         | 790 | 340 | 720 | 860 | 258   | 10     | 72          |
|                     | ZUJ-80S-3.7T4L(LN)  | 3.7        | 715              | 115 | 495 | 722 | 134 | 268 | 270         | 790 | 340 | 720 | 860 | 258   | 10     | 78.5        |

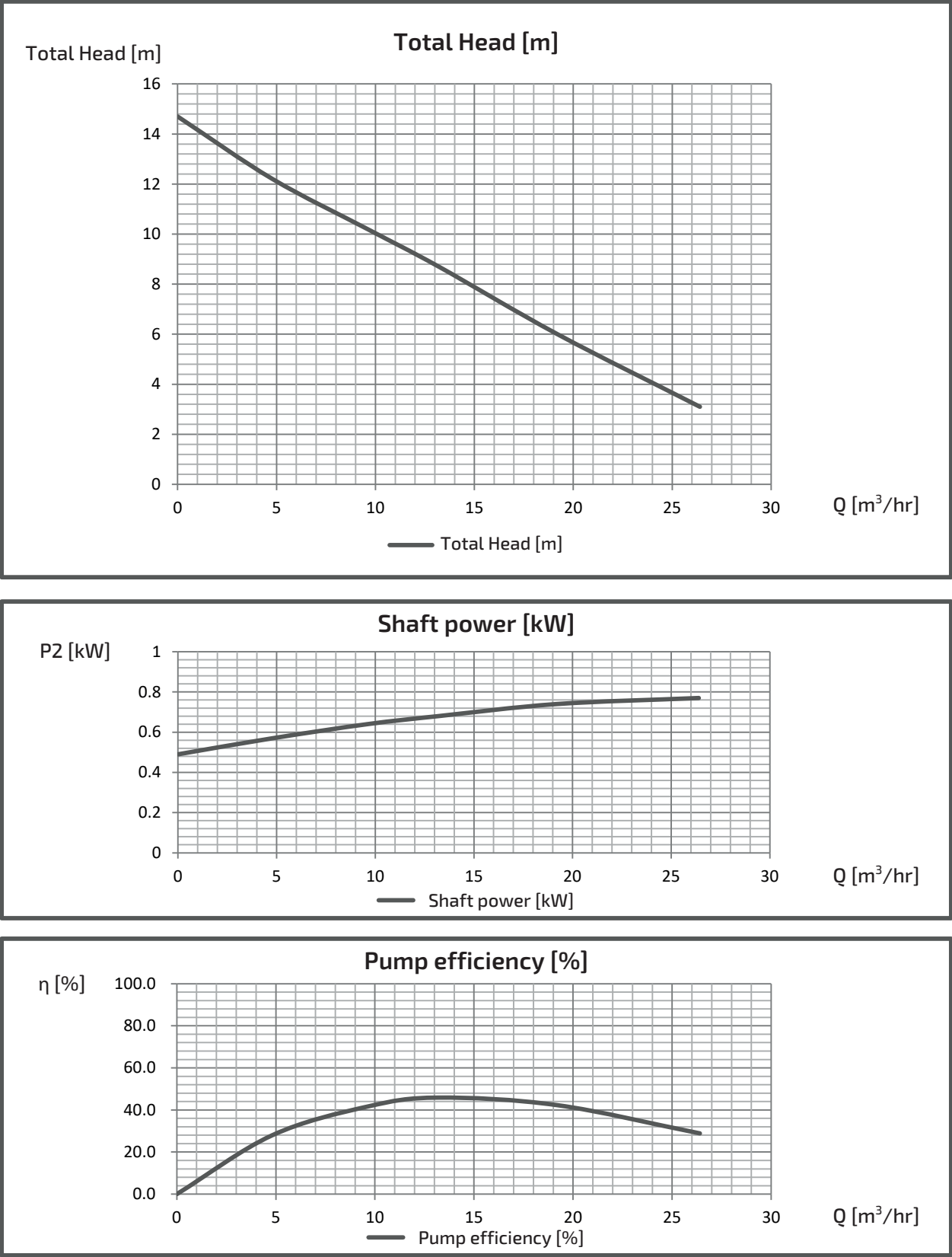
## PEDESTAL SUPPORT MOUNT

| Bore (mm) | Discharge Connection |    |    |     |     |     |     |         | Guide |    |     |    |     |     | Hanger |    |    |    |     | Manhole Cover |     | Motor (kW) |
|-----------|----------------------|----|----|-----|-----|-----|-----|---------|-------|----|-----|----|-----|-----|--------|----|----|----|-----|---------------|-----|------------|
|           | DH                   | DT | BI | BL  | BM  | BP  | BW  | H       | GH    | GA | GD  | GM | GP  | G   | HH     | HA | HL | HP | H   | W3            | W4  |            |
| 50        | 190                  | 27 | 15 | 210 | 180 | 100 | 130 | M12x160 | 141   | 50 | 120 | 50 | 100 | 32A | 48     | 30 | 76 | 50 | M10 | 500           | 400 | 0.75       |
|           | 215                  | 27 | 15 | 220 | 190 | 110 | 140 | M12x160 | 161   | 50 | 130 | 50 | 110 | 32A | 48     | 30 | 76 | 50 | M10 | 500           | 400 | 1.5        |
| 65        | 215                  | 31 | 15 | 220 | 190 | 110 | 140 | M12x160 | 161   | 50 | 130 | 50 | 110 | 32A | 48     | 30 | 76 | 50 | M10 | 500           | 400 | 1.5        |
|           | 250                  | 31 | 18 | 246 | 210 | 130 | 166 | M16x200 | 192   | 60 | 140 | 60 | 130 | 40A | 60     | 45 | 85 | 50 | M12 | 600           | 500 | 2.2-3.7    |
| 80        | 250                  | 33 | 18 | 246 | 210 | 130 | 166 | M16x200 | 192   | 60 | 140 | 60 | 130 | 40A | 60     | 45 | 85 | 50 | M12 | 600           | 500 | 2.2-3.7    |
|           | 250                  | 33 | 18 | 246 | 210 | 130 | 166 | M16x200 | 192   | 60 | 140 | 60 | 130 | 40A | 60     | 45 | 85 | 50 | M12 | 700           | 500 | 3.7-5.5    |

# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-505-0.75T4

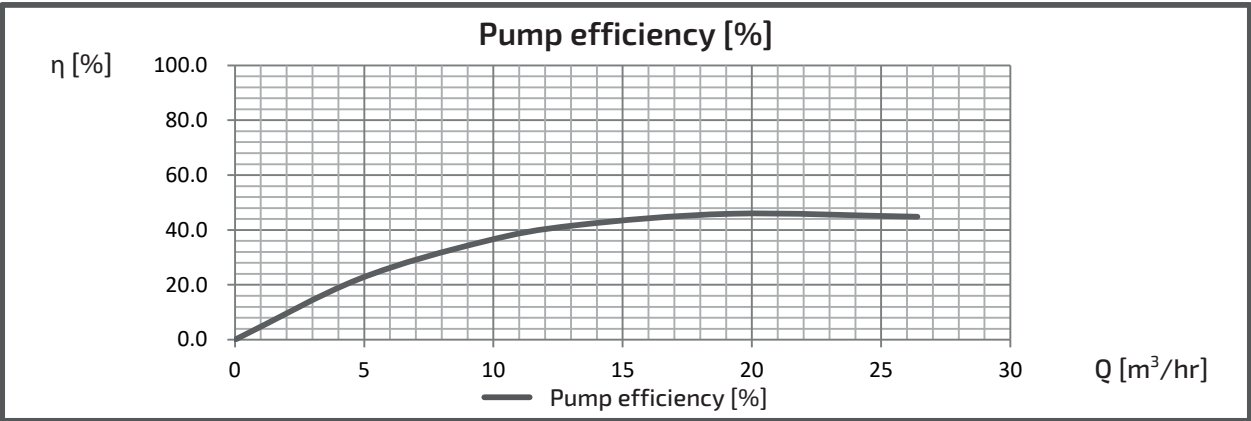
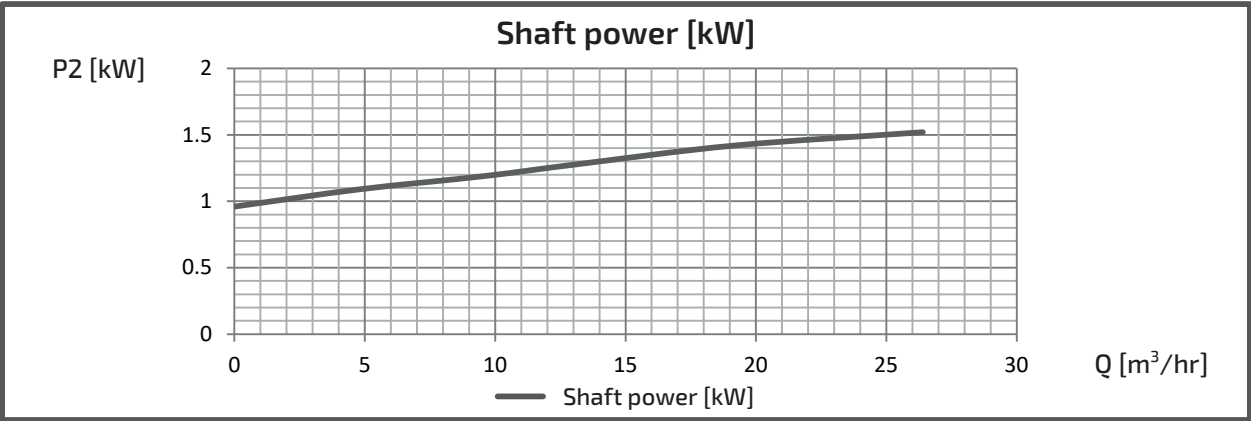
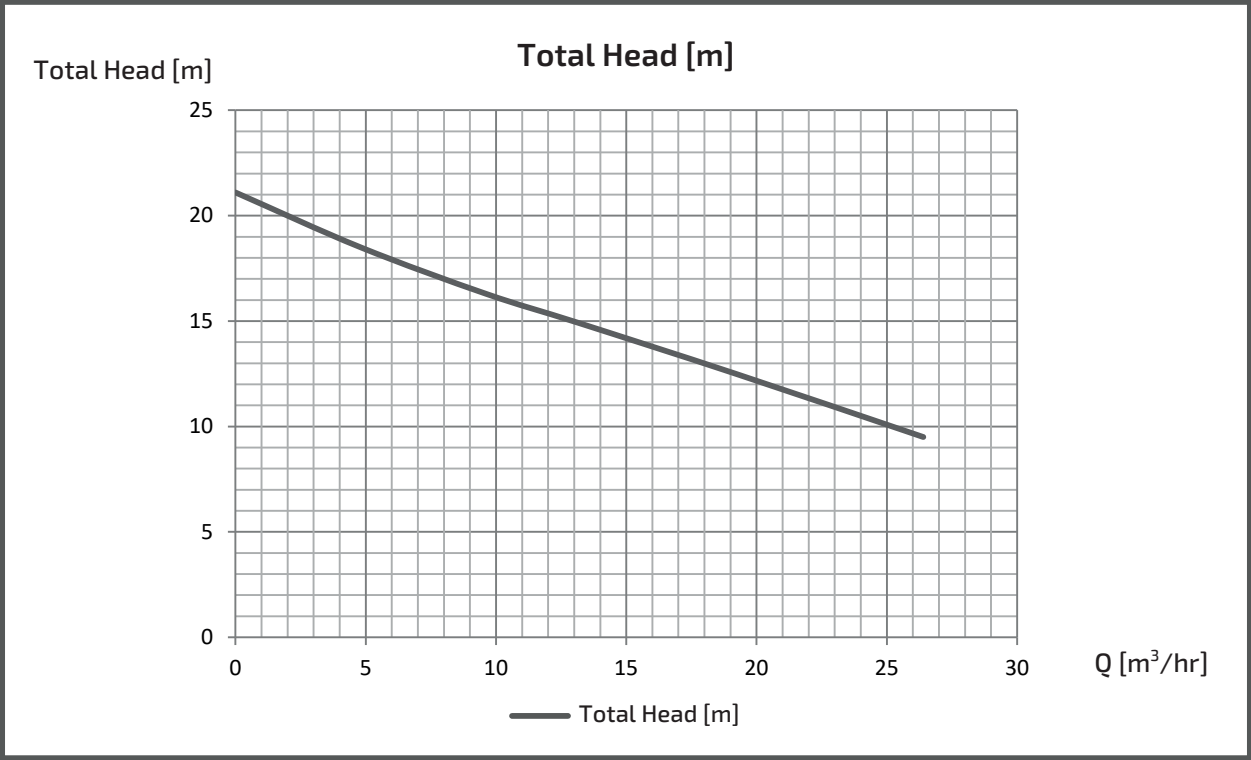
■ PERFORMANCE CURVES



# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-505-1.5T4

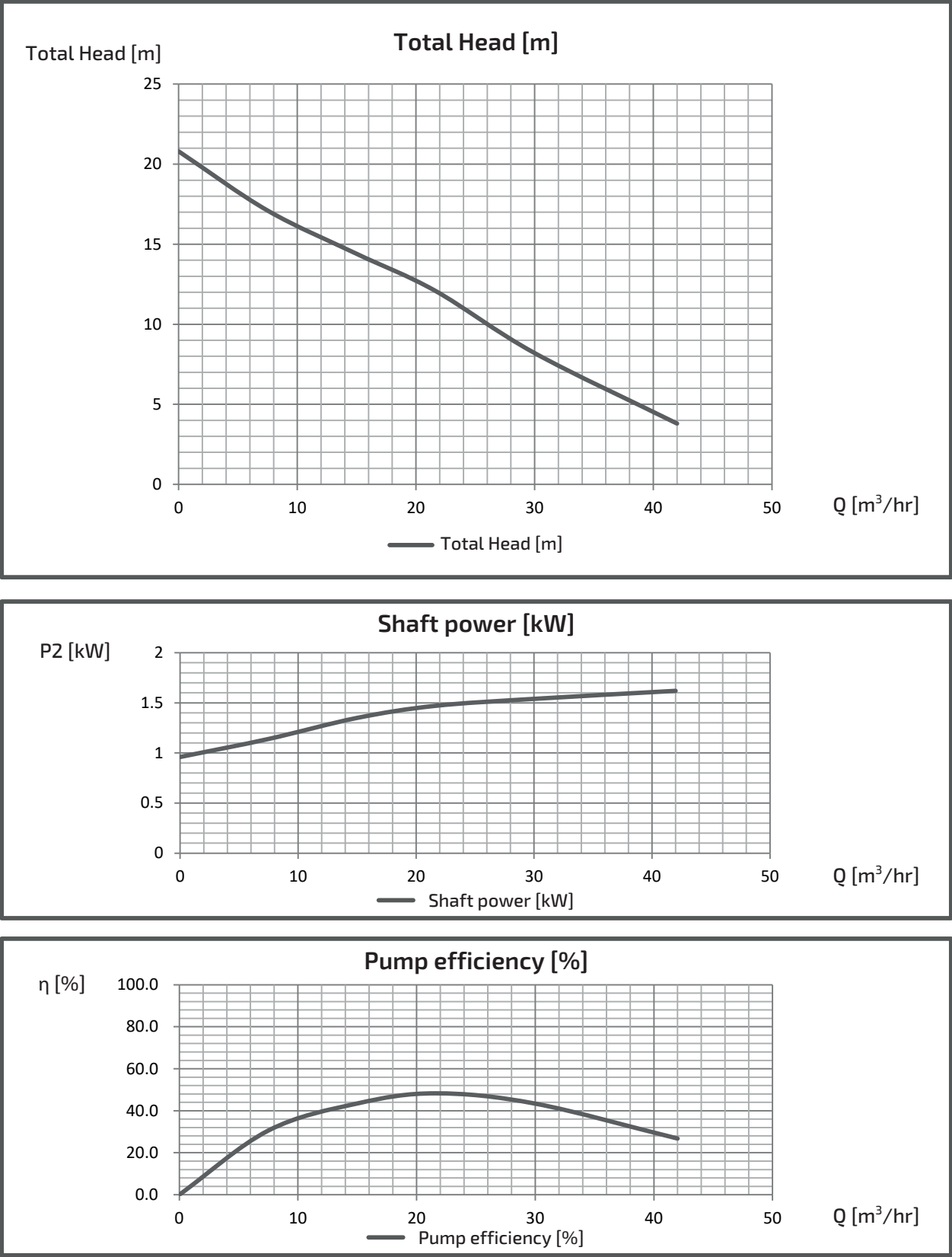
## ■ PERFORMANCE CURVES



# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-655-1.5T4

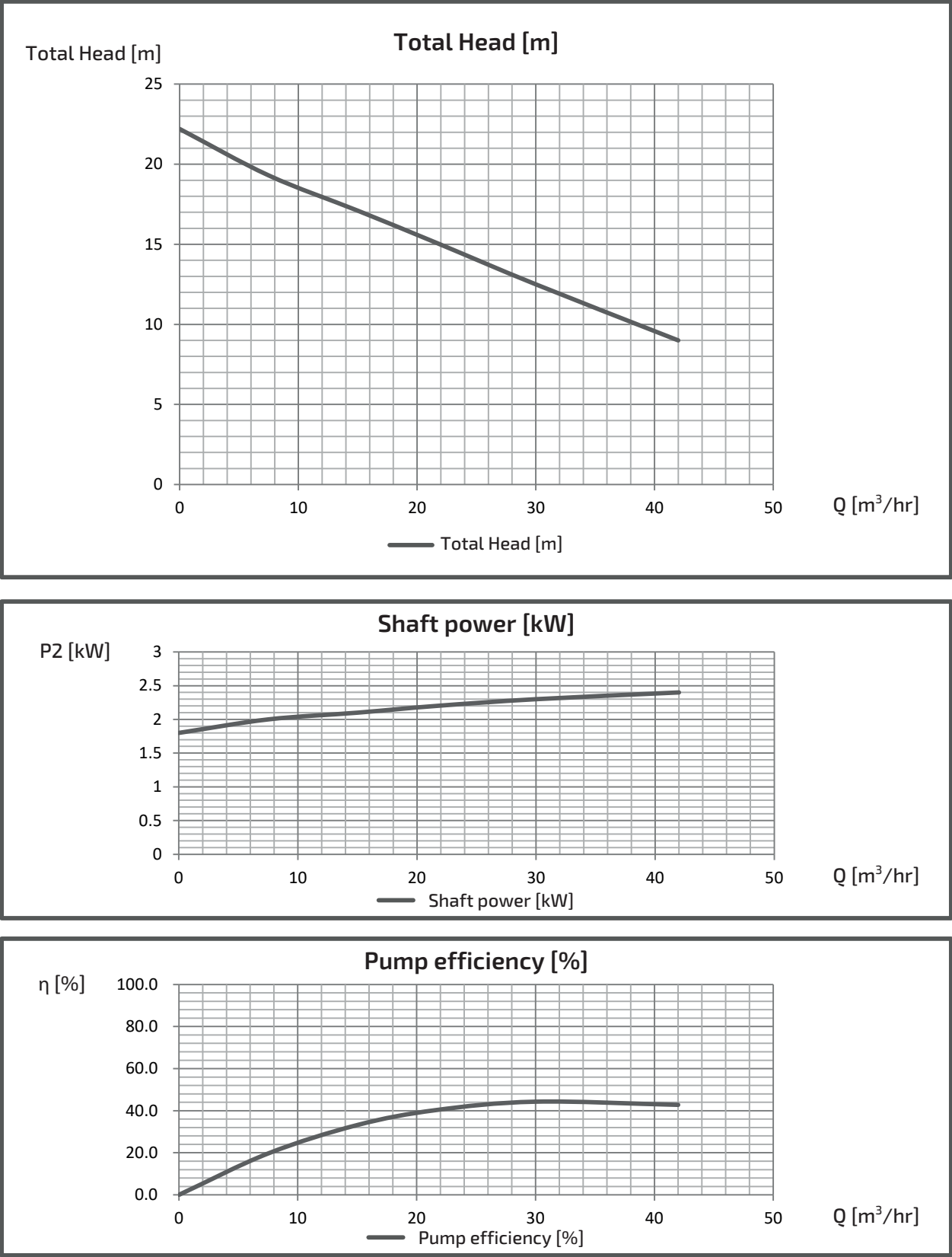
■ PERFORMANCE CURVES



# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-655-2.2T4

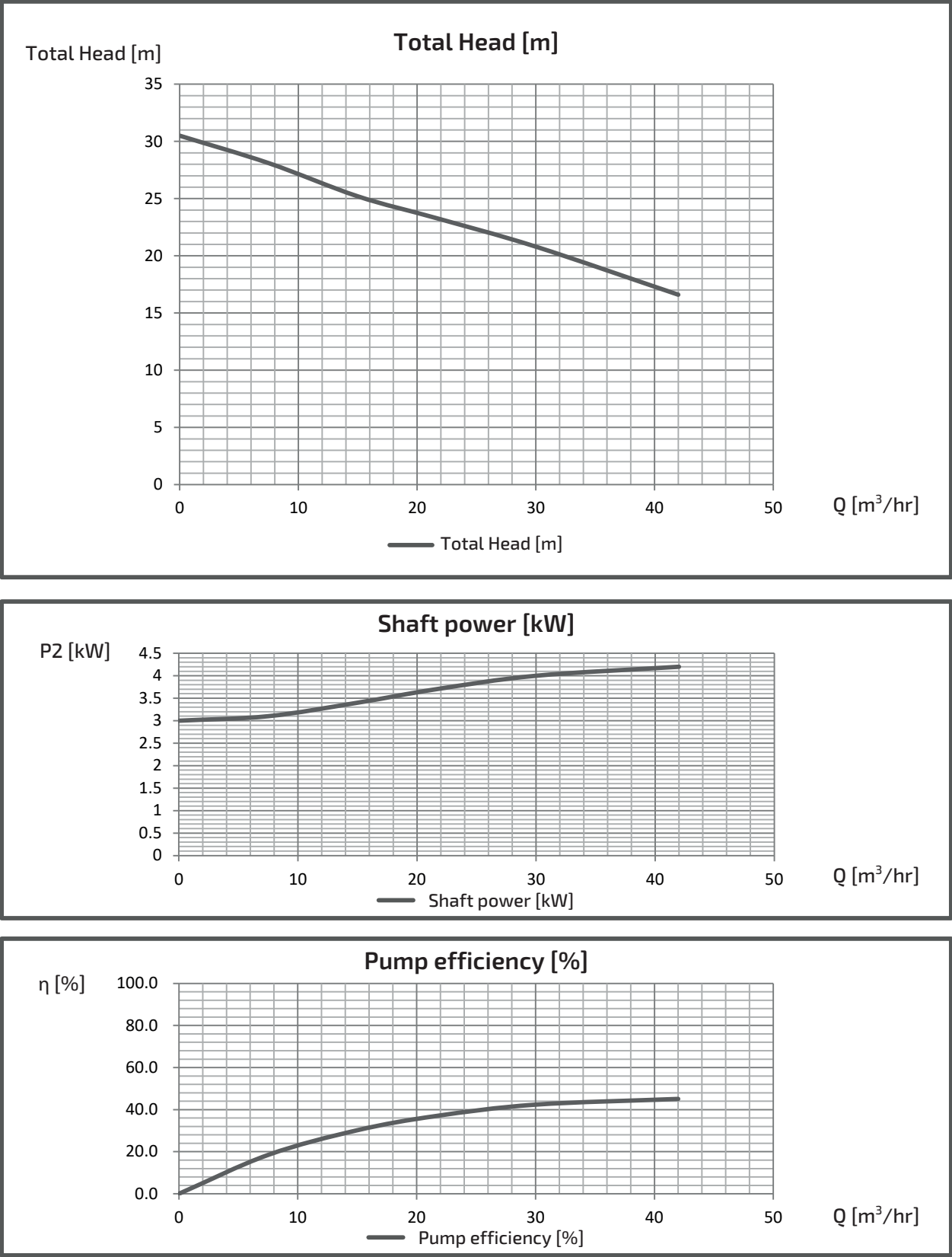
■ PERFORMANCE CURVES



# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-655-3.7T4

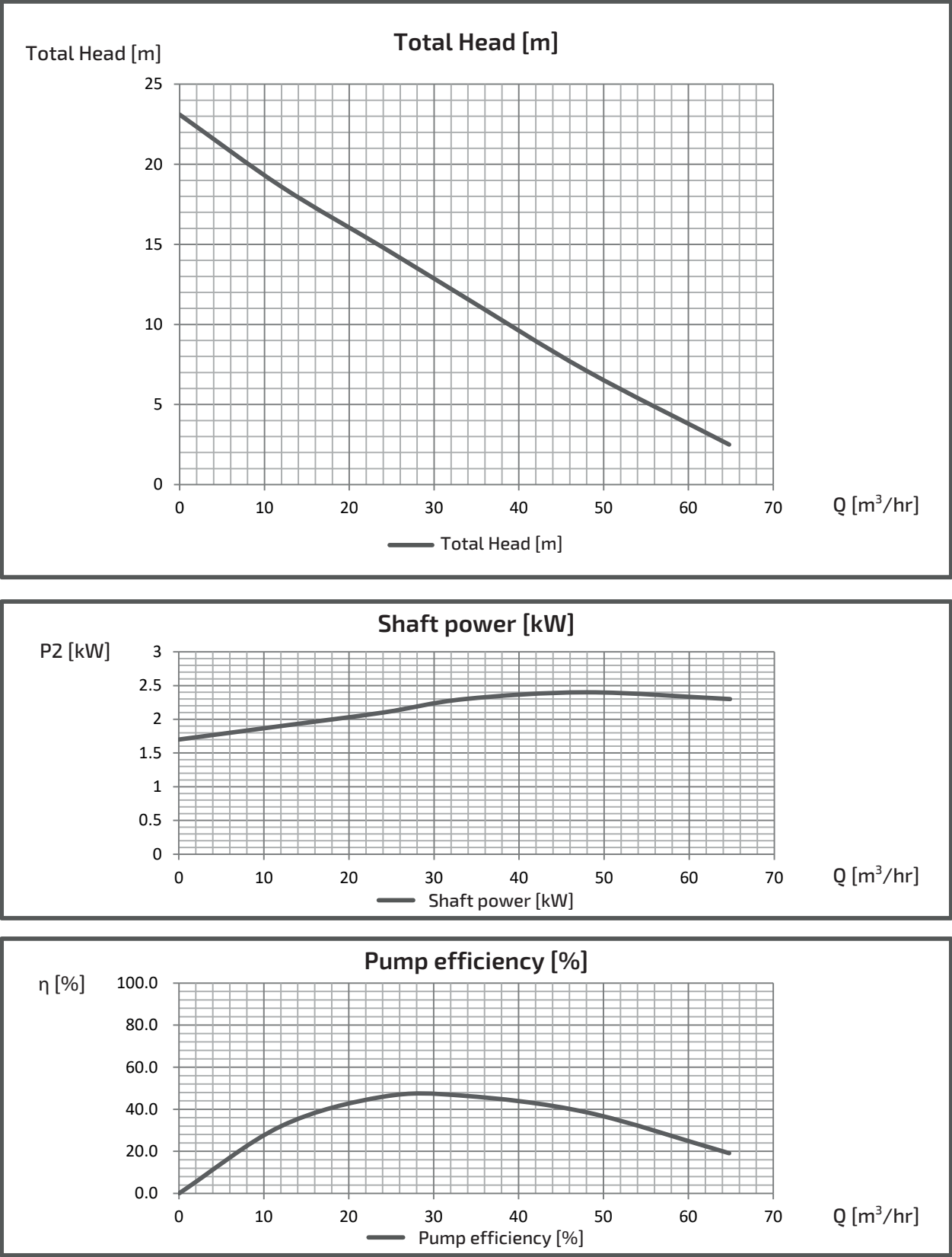
## ■ PERFORMANCE CURVES



# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-805-2.2T4

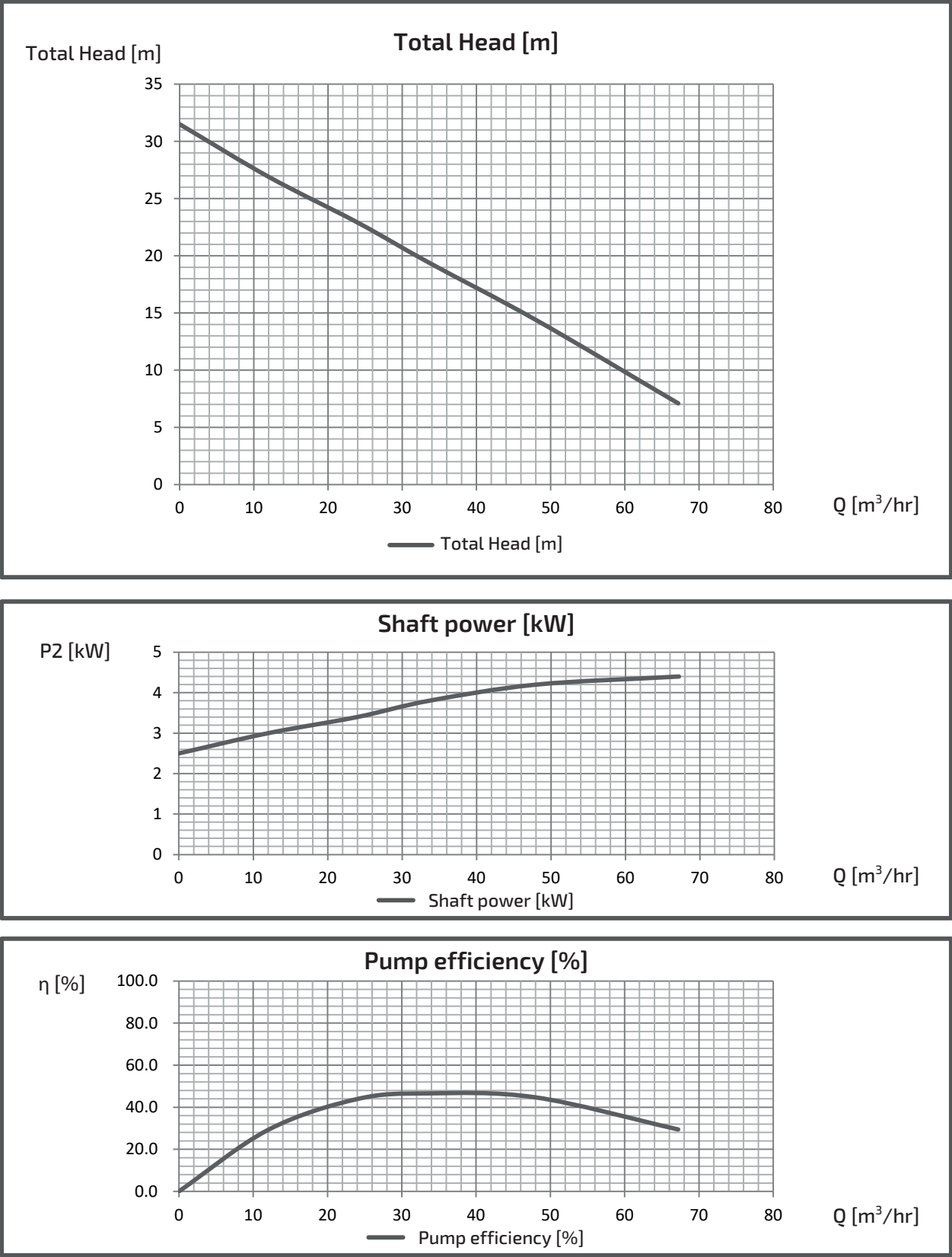
■ PERFORMANCE CURVES



# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-805-3.7T4

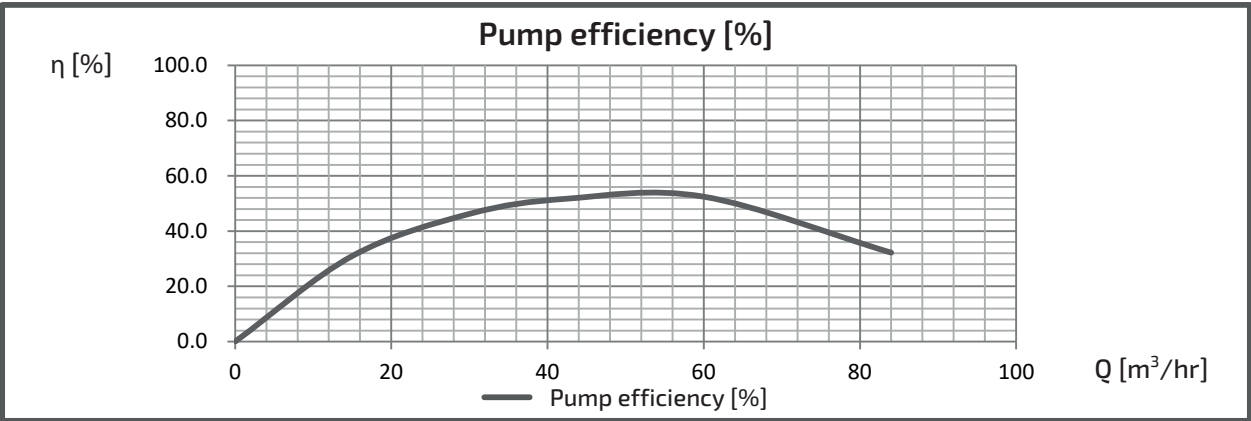
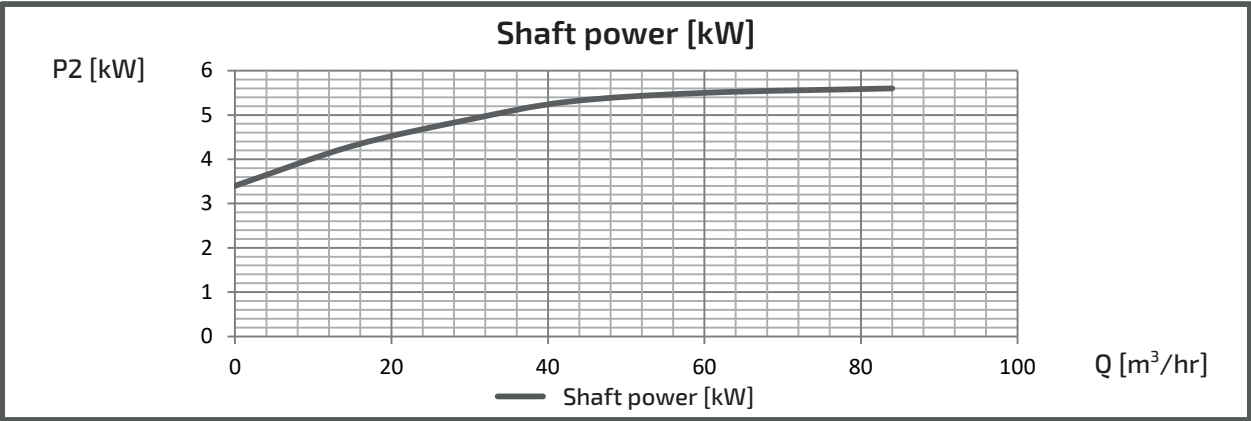
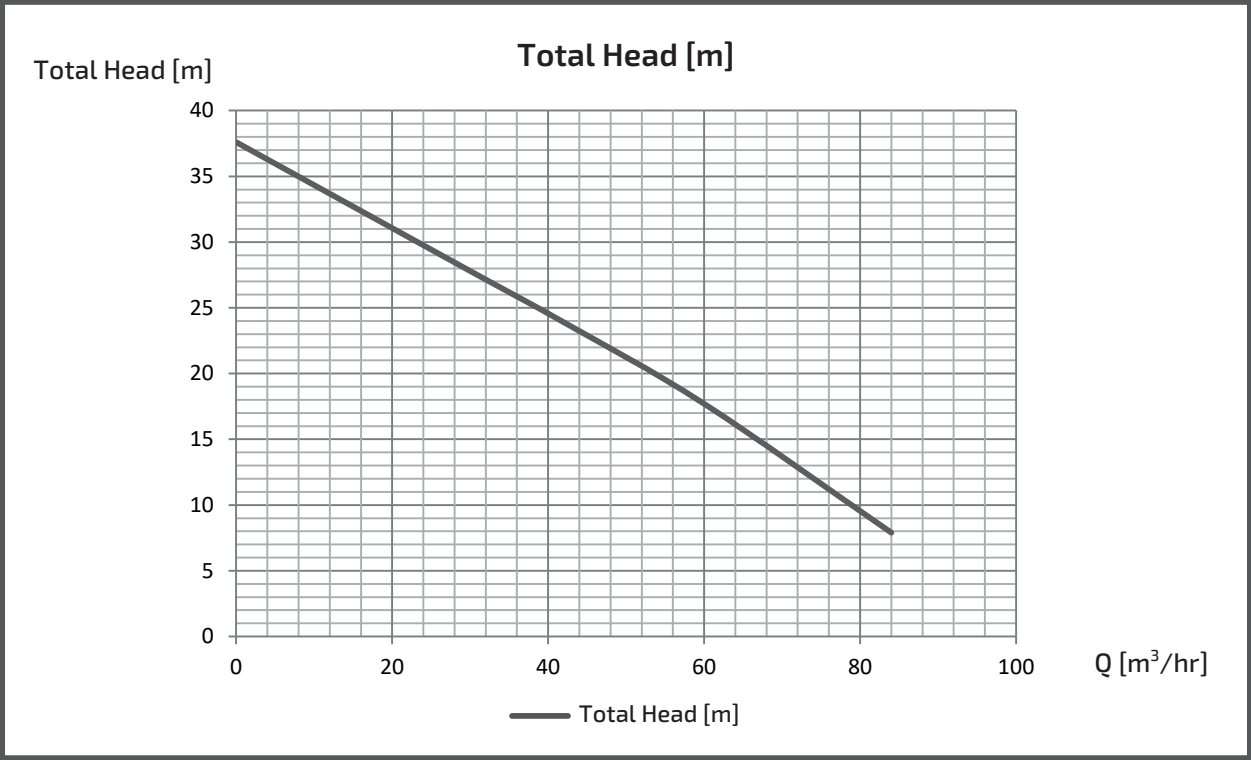
## ■ PERFORMANCE CURVES



# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-805-5.5T4

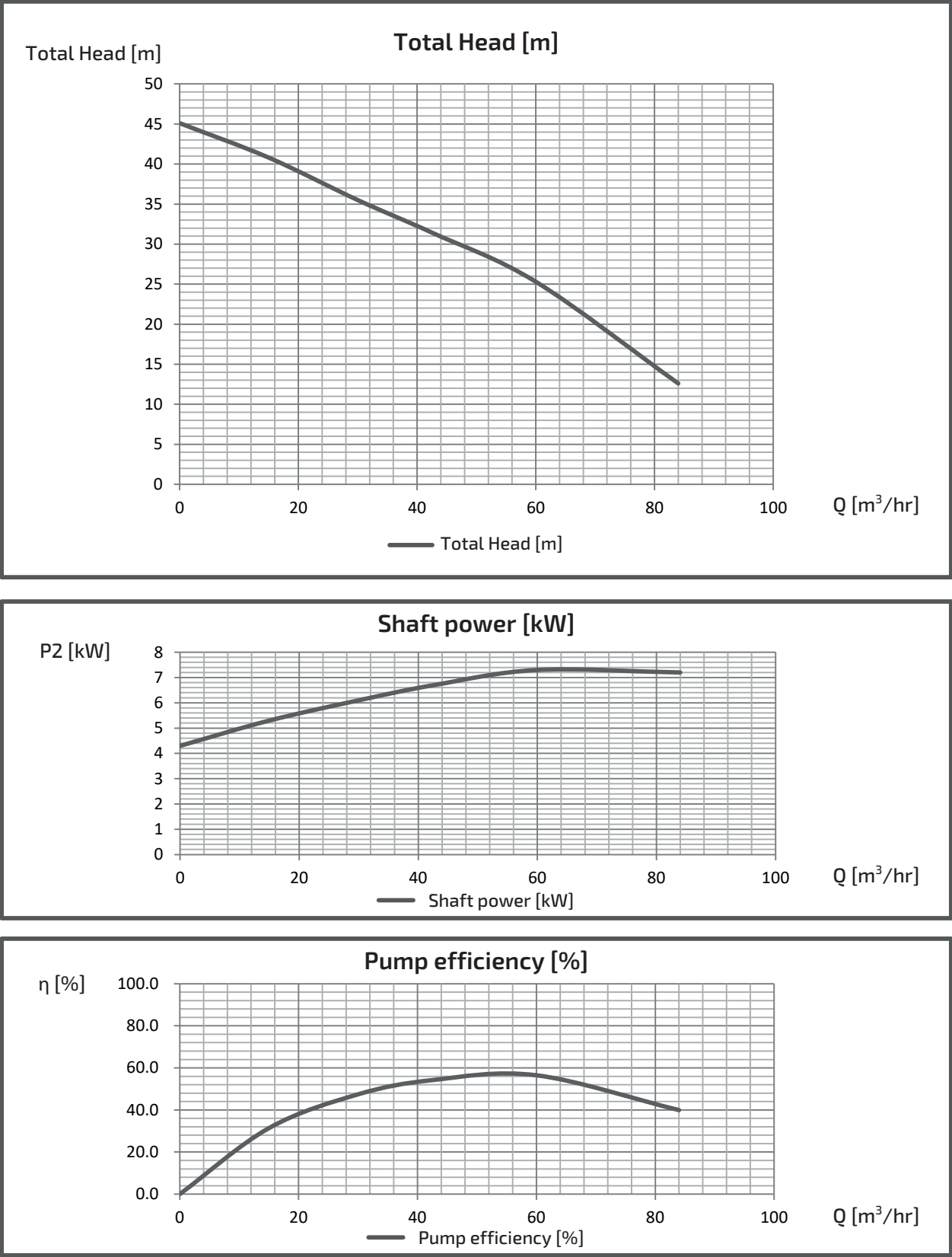
## ■ PERFORMANCE CURVES



# EXPECTED PERFORMANCE CURVE

MODEL : ZUJ(3)-805-7.5T4

■ PERFORMANCE CURVES



# IMPORTANT SAFETY PRECAUTIONS

Always read the manual thoroughly and fully comprehend the contents for safe operation before starting use. Precautions for using products safely and for preventing personal injuries or physical damage are given in the manual.

- Matters falling under the following may not be covered by the warranty: uses out of the specified scope of application, failure to comply with precautions, improper repairs and alterations, matters arising from natural disasters, matters arising from the installation environment (improper power source, foreign objects, sand etc.), non-compliance with laws and regulations or standards pertaining thereto, accidental or intentional damage or injury, replacement of consumable parts, defects due to resale, etc.
- Do not use the product for applications out of the product specifications. Doing so may cause electric shock, fire, water leakage, etc.
- Have spare equipment ready when using pumps for equipment for living things (fish farms, fish tanks, aquariums, etc.) or critical equipment.
- Pump failure may cause lack of oxygen and water quality deterioration, and may affect the lives of the living things.  
When using pumps for equipment for living things (fish farms, fish tanks, aquariums, etc.), do not install the pump in the tank where the living things are put into. The current leakage or sealing liquid leak from the mechanical seal may cause the death of the living things.
- If used to transport food-related items, give due consideration to the materials used. Contamination by foreign objects may occur.
- Avoid using for living things which disagrees with copper alloy. It may affect the lives of the living things.
- Select a product which is appropriate for your application. Inappropriate use of products may cause accidents.
- Conduct construction in accordance with the applicable laws and regulations (the Technical Standards of Electric Installation, interior wiring regulation, Building Standards Act, Water Supply Law, etc.). Not only does it violate the laws and regulations, but it also may cause injuries due to electric shock, fire, falling and tipping over.
- Do not use in places where people are assumed to get in contact with the product (baths, pools, lakes, etc.). Electric leak may occur and cause electric shock.
- Depending on the equipment, attach a filter etc. appropriate for your application on the discharge side before use, perform thorough flushing to check that there is no contamination. Cutting oil, rubber mold releasing agent, foreign objects etc. from the manufacturing line and cutting oil, foreign objects etc. from the pipeline may contaminate the liquid which is to be handled.
- Do not operate pumps with a specification of 50Hz at 60Hz. It may cause damage due to overpressure or burn damage of motors etc. due to overload. Do not operate pumps with a specification of 60Hz at 50Hz. Pump performance may be reduced.
- Only repair technicians may disassemble, repair, modify the product or replace cables. Defects may cause failure, damage, electrification or fire.
- It is recommended that both periodic and daily inspections be performed in order to ensure that the pump will operate reliably for as long as possible. Failure to perform inspections may lead to pump failure, accidents etc. For periodic inspections, please consult your distributor or our nearest sales office.

## Note

Specifications/Configurations may be altered as a result of improvements and such.  
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