

# T-UVN Series

Variable Volume Vane Uni-pump  
Size: 8, 16, 26cm³/rev  
Max. Pressure up to 80Bar

Revised 09.2024



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## Features

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- **Energy efficient high performance:**

All the performance of a vane pump, right from the low pressure range, is enhanced even further by eliminating the external drain and optimizing the pressure balance, creating a design that generates little heat. The result is a pump that contributes to the energy efficiency of the mother machine, as well as to process precision.

- **Lightweight, compact design:**

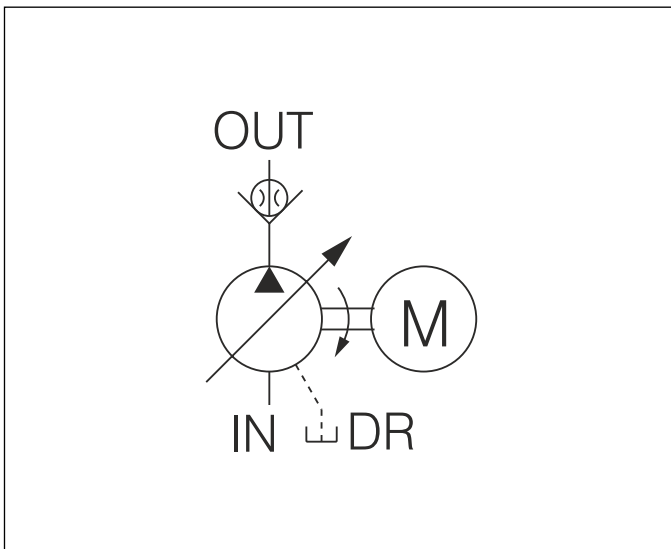
The pump and motor are designed for exclusive uni pump use, making them lightweight, compact, easy to handle, and suitable for a wide range of applications.

- **Low noise, long life:**

The pump and motor shaft are linked by a joint, which minimizes noise by eliminating the effects of shaft vibration and an off-center shaft. The coupling is constructed to allow constant lubrication for friction-free long life.

## Symbol

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### Ordering code

|                                              | T-UVN | 1   | A   | 1   | A | 4   | 1.5 | 4 | 12 |                                                               |
|----------------------------------------------|-------|-----|-----|-----|---|-----|-----|---|----|---------------------------------------------------------------|
| T-UVN Series Uni-pump                        |       |     |     |     |   |     |     |   |    | Design number                                                 |
| Pump Size<br>VDN-1B                          |       | = 1 |     |     |   |     |     |   |    | Number of motor poles 4P                                      |
| Foot type mounting                           |       |     | = A |     |   |     |     |   |    | Motor output (kW) *Power supply<br>AC200V-50/60Hz AC220V-60Hz |
| Discharge rate (At N=1800min <sup>-1</sup> ) |       |     |     |     |   |     |     |   |    | 0.75 kW                                                       |
| 14.5 l/min                                   |       |     | = 0 |     |   |     |     |   |    | 1.5kW                                                         |
| 29 l/min                                     |       |     | = 1 |     |   |     |     |   |    | 2.2kW                                                         |
| Flow Characteristics                         |       |     |     |     |   |     |     |   |    | Pressure adjustment range                                     |
| Constant discharge type                      |       |     |     | = A |   |     |     |   |    | 1.5 to 4.0MPa                                                 |
|                                              |       |     |     |     |   | 2 = |     |   |    | 3.5 to 6.0MPa                                                 |
|                                              |       |     |     |     |   | 3 = |     |   |    | 5.5 to 8.0MPa                                                 |
|                                              |       |     |     |     |   | 4 = |     |   |    |                                                               |

| T-UVN                                                                        | 1 | A                 | 2                                                               | A | 3 | 3.7 | A | E | 4 | * | 30 |
|------------------------------------------------------------------------------|---|-------------------|-----------------------------------------------------------------|---|---|-----|---|---|---|---|----|
| T-UVN Series Uni-pump                                                        |   |                   |                                                                 |   |   |     |   |   |   |   |    |
| Pump Size<br>VDN-1B                                                          |   | = 1               | Design number                                                   |   |   |     |   |   |   |   |    |
| Foot type mounting                                                           |   | = A               | Voltage symbol                                                  |   |   |     |   |   |   |   |    |
| Discharge rate (At N=1800min <sup>-1</sup> )<br>46 l/min                     |   | = 2               | Number of motor poles 4P                                        |   |   |     |   |   |   |   |    |
| Flow Characteristics<br>Constant discharge type                              |   | = A               | Special processes<br>No code = Standard<br>E = Tropicalization  |   |   |     |   |   |   |   |    |
| Pressure adjustment range<br>2.0 to 4.0MPa<br>3.5 to 6.0MPa<br>5.5 to 7.0MPa |   | = 2<br>= 3<br>= 4 | Terminal box position<br>No code = B terminal<br>A = A terminal |   |   |     |   |   |   |   |    |
|                                                                              |   |                   | Motor output<br>2.2 = 2.2 kW<br>3.7 = 3.7 kW                    |   |   |     |   |   |   |   |    |

## Specifications

| Model No.                                         | Pump Capacity<br>(cm <sup>3</sup> /rev) | Pressure Adjustment range<br>(Bar) | No-load Discharge rate l/min |      |
|---------------------------------------------------|-----------------------------------------|------------------------------------|------------------------------|------|
|                                                   |                                         |                                    | 50Hz                         | 60Hz |
| T-UVN-1A-0A2- <sup>0.7</sup> <sub>1.5</sub> -4-12 | 8.1                                     | 15 ~ 40                            | 12                           | 14.5 |
| T-UVN-1A-0A3- <sup>0.7</sup> <sub>1.5</sub> -4-12 |                                         | 35 ~ 60                            |                              |      |
| T-UVN-1A-0A4- <sup>0.7</sup> <sub>1.5</sub> -4-12 |                                         | 55 ~ 80                            |                              |      |
| T-UVN-1A-1A2- <sup>1.5</sup> <sub>2.2</sub> -4-12 | 16.1                                    | 15 ~ 40                            | 24                           | 29   |
| T-UVN-1A-1A3- <sup>1.5</sup> <sub>2.2</sub> -4-12 |                                         | 35 ~ 60                            |                              |      |
| T-UVN-1A-1A4- <sup>1.5</sup> <sub>2.2</sub> -4-12 |                                         | 55 ~ 80                            |                              |      |
| T-UVN-1A-2A2- <sup>2.2</sup> <sub>3.7</sub> -4-30 | 26.0                                    | 20 ~ 40                            | 39                           | 46   |
| T-UVN-1A-2A3- <sup>2.2</sup> <sub>3.7</sub> -4-30 |                                         | 35 ~ 60                            |                              |      |
| T-UVN-1A-2A4-3.7-4-30                             |                                         | 55 ~ 70                            |                              |      |

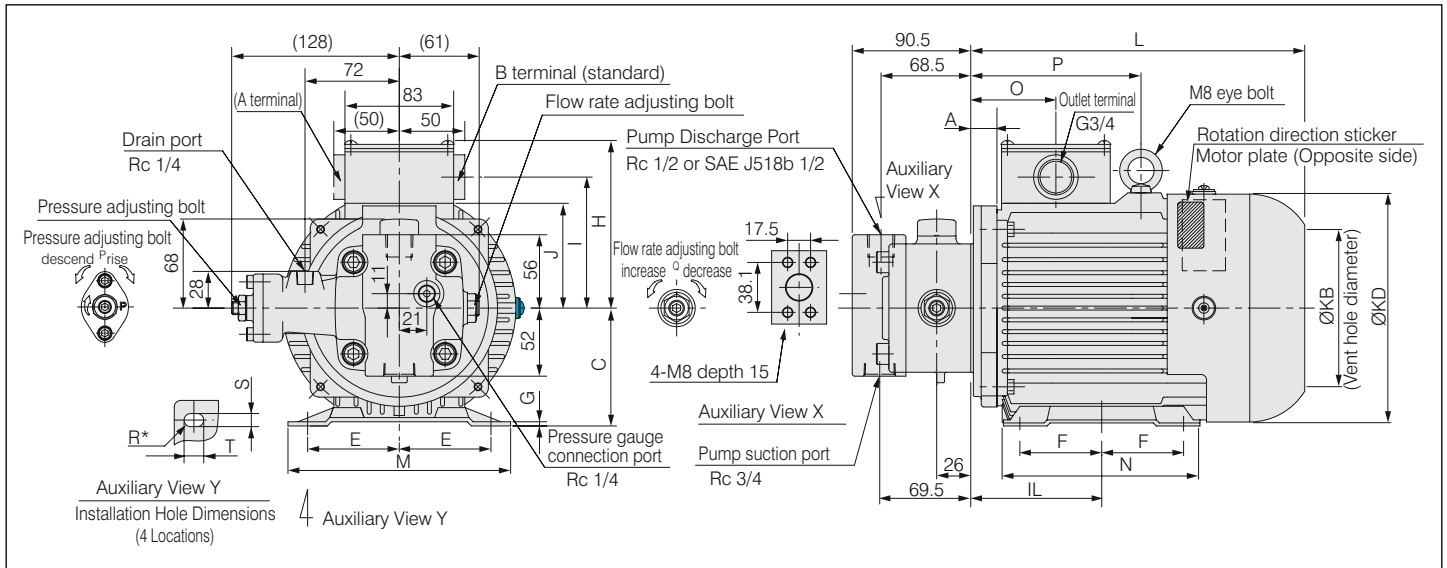
Note1) Contact your agent for combinations other than those noted above.

Note2) Due to the change of designs from 11 to 12, 20 to 30, the color of paint is changed to black.



## Unit Dimensions

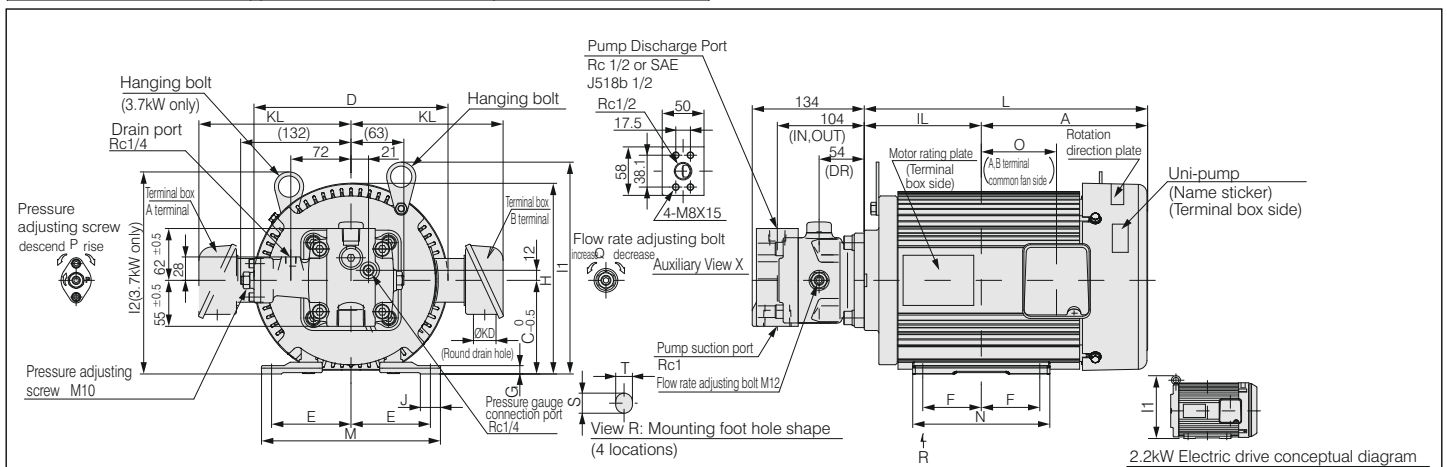
(Dimensions in mm)



| Model No.                          | Output - Poles (kW-4P) | Motor Dimensions (mm) |     |     |     |      |      |     |     |    |     |     |     |       |    |     |    |     |     | Weight kg |
|------------------------------------|------------------------|-----------------------|-----|-----|-----|------|------|-----|-----|----|-----|-----|-----|-------|----|-----|----|-----|-----|-----------|
|                                    |                        | A                     | IL  | C   | ØKD | E    | F    | G   | H   | J  | L   | M   | N   | T×S   | R* | ØKB | O  | P   | I   |           |
| TUVN-1A- <sup>0</sup> A*-0.7*-4-12 | 0.75-4                 | 20                    | 90  | 80  | 157 | 62.5 | 50   | 2.3 | 120 | 72 | 230 | 155 | 120 | 15x10 | R5 | 110 | 65 | 130 | 92  | 19        |
| TUVN-1A- <sup>0</sup> A*-1.5*-4-12 | 1.5-4                  | 20                    | 100 | 90  | 175 | 70   | 62.5 | 3.2 | 128 | 80 | 255 | 170 | 150 | 15x10 | R5 | 120 | 65 | 130 | 100 | 23        |
| TUVN-1A- <sup>0</sup> A*-2.2*-4-12 | 2.2-4                  | 20                    | 110 | 100 | 195 | 80   | 70   | 3.2 | 138 | 90 | 285 | 200 | 165 | 17x12 | R6 | 134 | 65 | 135 | 110 | 30        |

### • Pump Capacity And Motor Output Category Combinations

|     | 0.75kW | 1.5kW |
|-----|--------|-------|
| 0A* | K      | K     |
| 1A* |        | K     |



| Model No.              | Output - Poles (kW-4P) | Motor Dimensions (mm) |     |     |     |    |    |    |     |     |     |    |     |     |     |       |     |     | Frame No. | Weight kg |    |
|------------------------|------------------------|-----------------------|-----|-----|-----|----|----|----|-----|-----|-----|----|-----|-----|-----|-------|-----|-----|-----------|-----------|----|
|                        |                        | A                     | IL  | C   | D   | E  | F  | G  | H   | I1  | I2  | J  | L   | M   | N   | SXT   | ØKD | KL  |           |           | O  |
| TUVN-1A-2A*-2.2**-4-30 | 2.2                    | 179                   | 133 | 100 | 206 | 80 | 70 | 7  | 203 | 226 | -   | 39 | 312 | 206 | 170 | 14x12 | 27  | 153 | 83        | 100L      | 46 |
| TUVN-1A-2A*-3.7**-4-30 | 3.7                    | 199                   | 140 | 112 | 233 | 95 | 70 | 10 | 228 | 253 | 242 | 24 | 339 | 214 | 164 | 14x12 | 27  | 182 | 90        | 112M      | 50 |

1. Standard drive motor is the fully enclosed fan-cooled E type.
2. Standard voltage for drive motor is 200 VAC, 50/60 Hz or 220 VAC, 60 Hz.
3. Standard terminal box is B terminal (right side viewed from pump).



## Characteristics

Characteristics of drive motor for uni pump (domestic standard 3 rating)

T-UVN-1A-0A\*

| Output kW | Poles | Model Number                                                               | Voltage [V] | Frequency [Hz] | Current rating [A] | RPM rating [min <sup>-1</sup> ] | Heat Resistance |
|-----------|-------|----------------------------------------------------------------------------|-------------|----------------|--------------------|---------------------------------|-----------------|
| 0.75      | 4     | The drive motor is specialized for the unipump and is not a specific model | 200         | 50             | 4.3                | 1440                            | E               |
|           |       |                                                                            | 200         | 60             | 3.6                | 1730                            |                 |
|           |       |                                                                            | 220         | 60             | 3.6                | 1745                            |                 |
| 1.5       | 4     |                                                                            | 200         | 50             | 7.3                | 1440                            | E               |
|           |       |                                                                            | 200         | 60             | 6.4                | 1730                            |                 |
|           |       |                                                                            | 220         | 60             | 6.2                | 1740                            |                 |
| 2.2       | 4     |                                                                            | 200         | 50             | 10.3               | 1450                            | E               |
|           |       |                                                                            | 200         | 60             | 9.2                | 1745                            |                 |
|           |       |                                                                            | 220         | 60             | 8.9                | 1755                            |                 |

T-UVN-1A-2A\*

| Output kW | Poles | Model Number  | Voltage [V] | Frequency [Hz] | Current rating [A] | RPM rating [min <sup>-1</sup> ] | Heat Resistance |
|-----------|-------|---------------|-------------|----------------|--------------------|---------------------------------|-----------------|
| 2.2       | 4     | VAEA-1A4*22-B | 200         | 50             | 9.5                | 1440                            | F               |
|           |       |               | 200         | 60             | 8.8                | 1750                            |                 |
|           |       |               | 220         | 60             | 8.5                | 1760                            |                 |
| 3.7       | 4     | VAEA-1A4*37-B | 200         | 50             | 15.4               | 1460                            | F               |
|           |       |               | 200         | 60             | 14.3               | 1760                            |                 |
|           |       |               | 220         | 60             | 13.5               | 1760                            |                 |



## Performance curves

T-UVN-1A-\*A\*-\*4-12

Operating Fluid: ISO VG 32

Oil temperature: 40°C

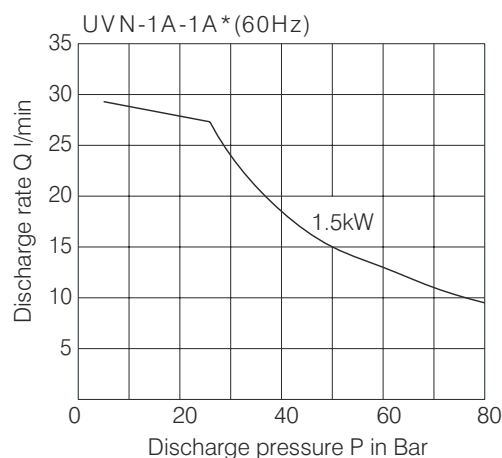
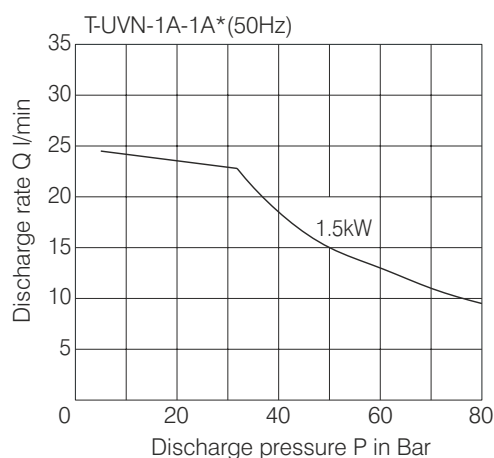
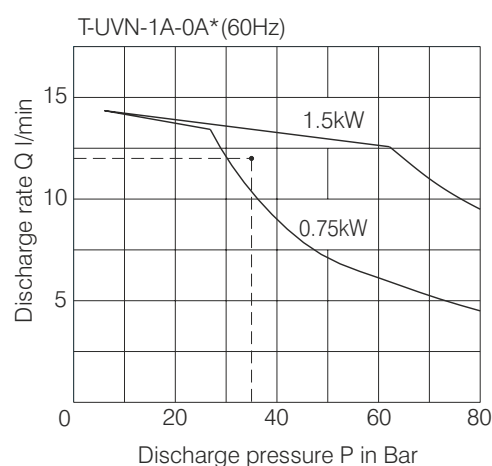
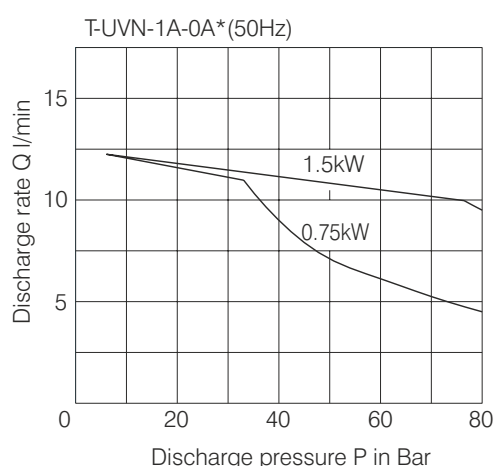
### • Motor selection curves:

The area under a motor output curve in the graph below is the operating range for that motor under the rated output for that motor.

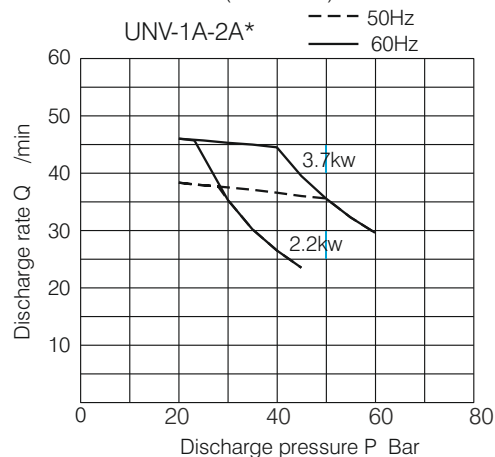
**Example:** To find the motor that can produce pressure of 35Bar and a discharge rate of 12l/min.

### • Selection Process:

Since the intersection of the two broken lines from a pressure of 35Bar and discharge rate of 12l/min intersect in the area under the 1.5kW curve, it means that a 1.5kW motor should be used.



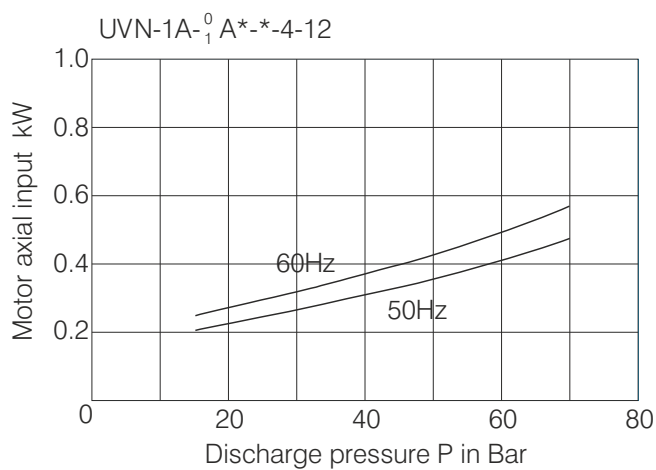
Motor selection curves (26cm³/rev)



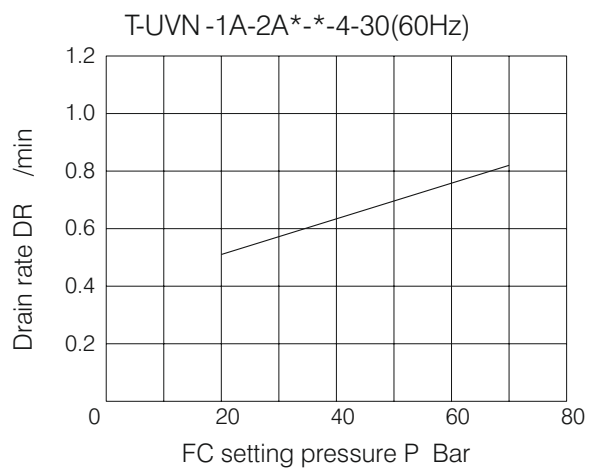
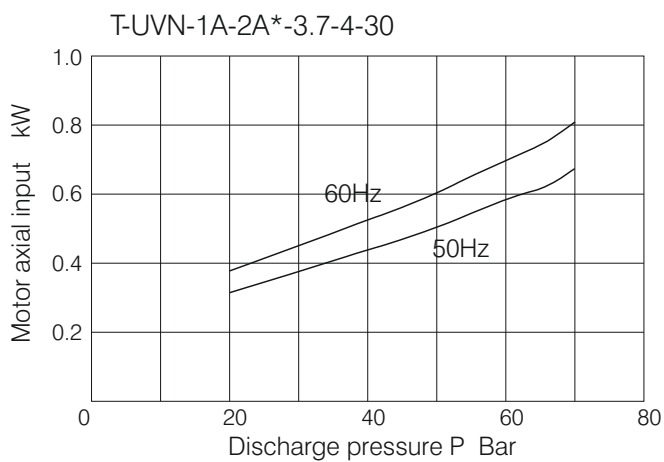
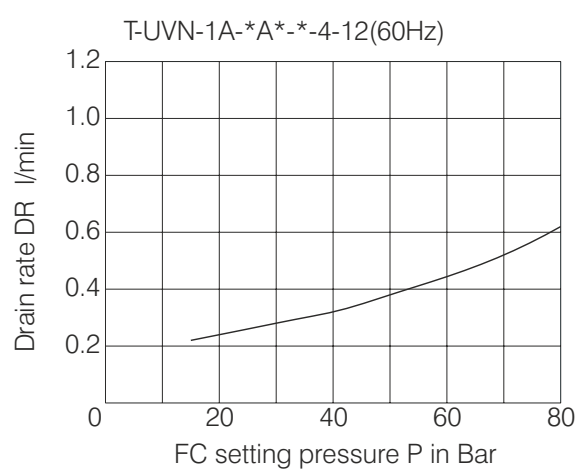


## Performance curves

Motor power Loss at Full Cutoff

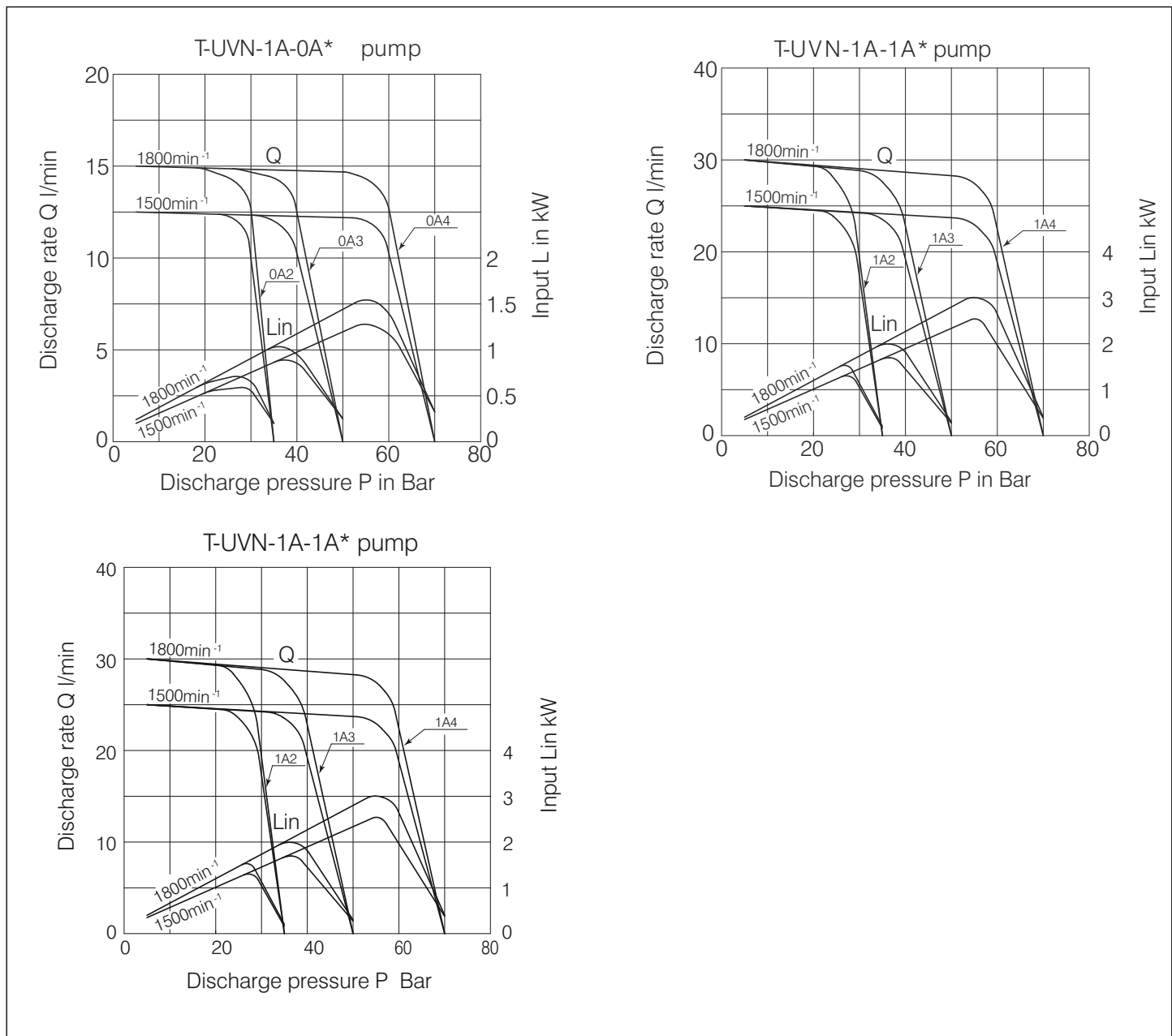


DR Volume a Full Cutoff





## Performance curves



- The pressure – flow rate characteristics are the characteristics for individual T-UVN pumps.
- The pressure and flow rate must be within the output range of the motor.



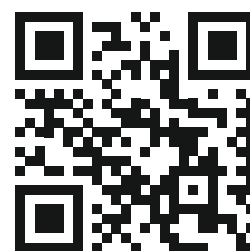


The specified data is for product description purposes only and may not be deemed to be guaranteed unless expressly confirmed in the contract.



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