

# HIGH PERFORMANCE VANE PUMP T7QEC

T7QEC \* - 066 - 022 1 R 00 - A 1 -

## Series

Y- Metric port connection, Omit for UNC

## Cam ring for "P1"

Volumetric displacement  $\text{cm}^3/\text{rev}$  ( $\text{in}^3/\text{rev}$ )

|                     |                     |
|---------------------|---------------------|
| 042 = 132.3 (8.07)  | 062 = 196.7 (12.00) |
| 045 = 142.4 (8.69)  | 066 = 213.3 (13.02) |
| 050 = 158.5 (9.67)  | 072 = 227.1 (13.86) |
| 052 = 164.8 (10.06) | 085 = 269.8 (16.46) |
| 057 = 183.2 (11.18) |                     |

## Cam ring for "P2"

Volumetric displacement  $\text{cm}^3/\text{rev}$  ( $\text{in}^3/\text{rev}$ )

|                            |                            |
|----------------------------|----------------------------|
| *003/B03/Y03 = 10.8 (0.66) | 015/B15/Y15 = 50.5 (3.08)  |
| 005/B05/Y05 = 17.2 (1.05)  | 017/B17/Y17 = 58.3 (3.56)  |
| 006/B06/Y06 = 21.3 (1.30)  | 020/B20/Y20 = 63.8 (3.89)  |
| 008/B08/Y08 = 26.4 (1.61)  | 022/B22/Y22 = 70.3 (4.29)  |
| 010/B10/Y10 = 34.1 (2.08)  | 025/B25/Y25 = 79.3 (4.84)  |
| 012/B12/Y12 = 37.1 (2.26)  | 028/B28/Y28 = 88.8 (5.42)  |
| 014/B14/Y14 = 46.0 (2.81)  | 031/B31/Y31 = 100.0 (6.10) |

\*'0' - Uni - directional 'B' - Bi - directional 'Y' - Bi - directional for cold start

## Modifications

### Seal class

- 1 - S1 (for mineral oil)
- 4 - S4 (for fire resistant fluids)
- 5 - S5 (for mineral oil and fire resistant fluids)

## Design letter

Porting combination (see page BM-1-5)  
00 - standard

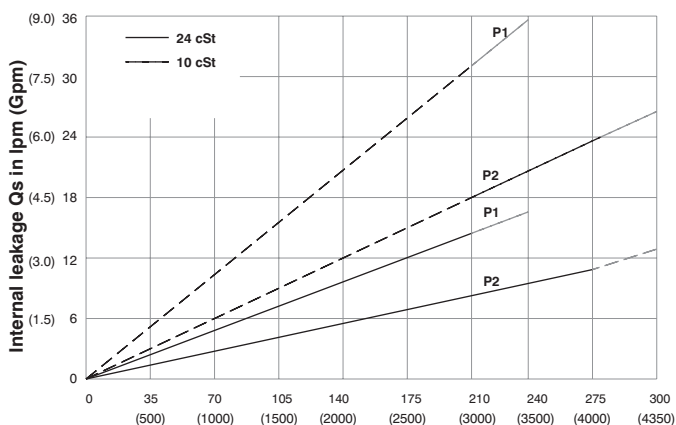
## Direction of rotation (view on shaft end)

- R - clockwise
- L - counter-clockwise

## Type of shaft

- 1 - keyed (SAE CC)
- 2 - keyed (no SAE)
- 3 - splined (SAE C)
- 4 - splined (SAE CC)

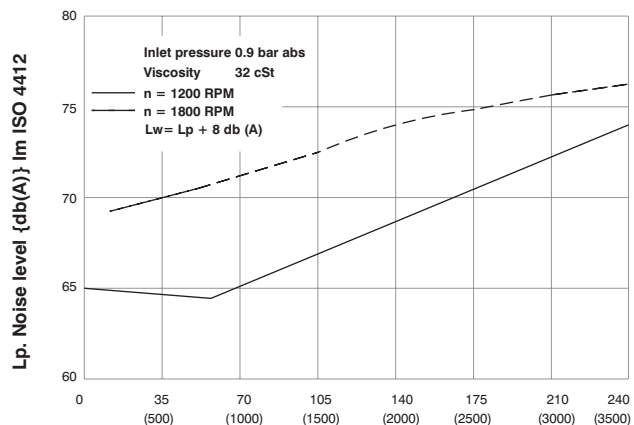
## INTERNAL LEAKAGE ( TYPICAL )



Do not operate pump more than 5 seconds at any speed or viscosity if internal leakage is more than 50% of theoretical flow. Total leakage is the sum of each section loss at its operating conditions.

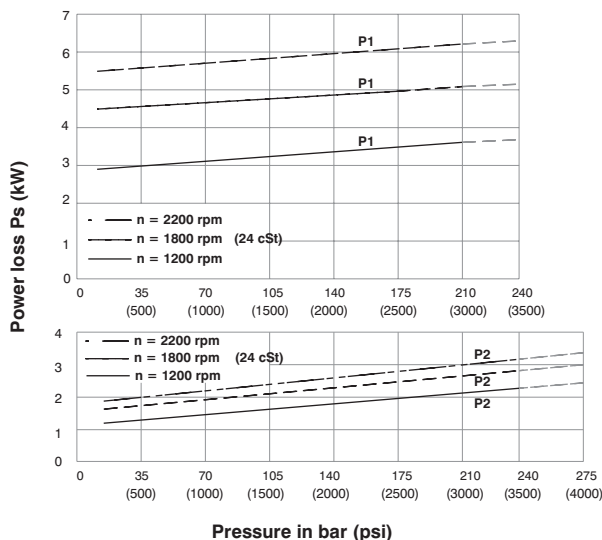
## NOISE LEVEL ( TYPICAL )

VT7QEC- 050-022



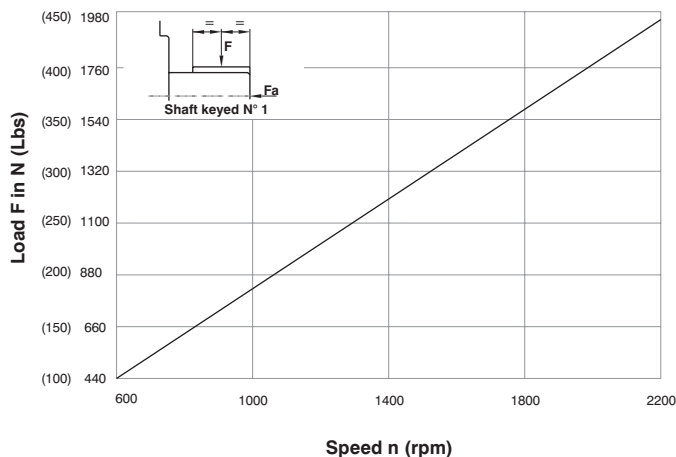
Double pump noise level is given with each section discharging at the pressure noted on the curve.

## HYDROMECHANICAL POWER LOSS ( TYPICAL )



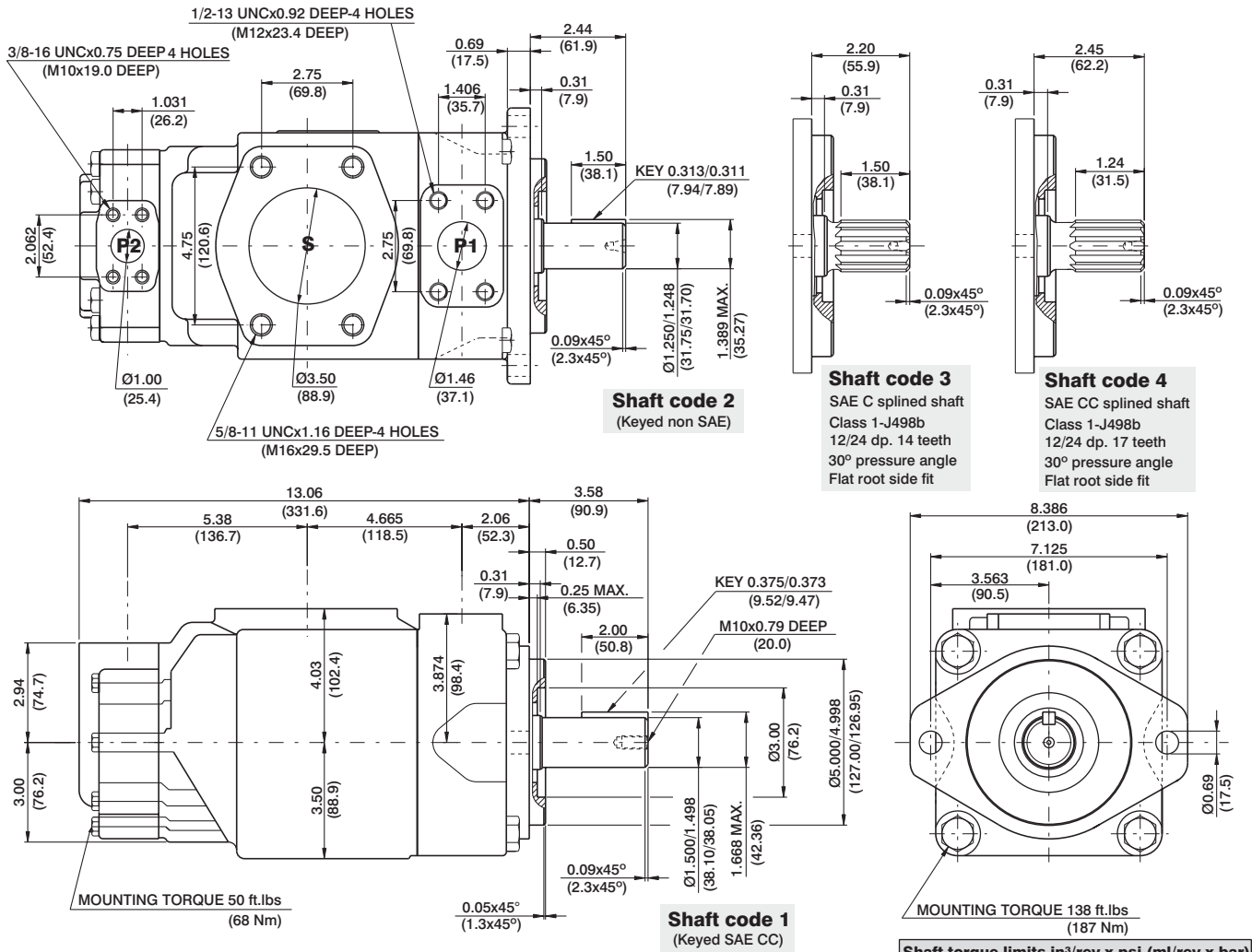
Total hydromechanical power loss is the sum of each section at its operating conditions.

## PERMISSIBLE RADIAL LOAD



Maximum permissible axial load  $F_a = 2000$  N (449 Lbs)

# HIGH PERFORMANCE VANE PUMP T7QEC



| Shaft torque limits in <sup>3</sup> /rev x psi (ml/rev x bar) |                     |
|---------------------------------------------------------------|---------------------|
| Shaft                                                         | Vp x p max. (P1+P2) |
| 1                                                             | 64044 (72306)       |
| 2                                                             | 30638 (34590)       |
| 3                                                             | 54207 (61200)       |
| 4                                                             | 67582 (76376)       |

## OPERATING CHARACTERISTICS - TYPICAL (24 cST) (Input power p (KW) for one cartridge only)

| Pressure port | Series | Volumetric Displacement Vp |                      | Flow q & n = 1800 rpm |                        |                        |                     |                        |                        | Input power p & n = 1800 rpm |                        |                        |                     |                        |                        |
|---------------|--------|----------------------------|----------------------|-----------------------|------------------------|------------------------|---------------------|------------------------|------------------------|------------------------------|------------------------|------------------------|---------------------|------------------------|------------------------|
|               |        | in <sup>3</sup> /rev       | cm <sup>3</sup> /rev | p = 0 bar (0 psi)     | p = 140 bar (2000 psi) | p = 240 bar (3500 psi) | p = 7 bar (100 psi) | p = 140 bar (2000 psi) | p = 240 bar (3500 psi) | p = 7 bar (100 psi)          | p = 140 bar (2000 psi) | p = 240 bar (3500 psi) | p = 7 bar (100 psi) | p = 140 bar (2000 psi) | p = 240 bar (3500 psi) |
| P1            | 042    | 8.07                       | 132.2                | 62.92                 | 237.8                  | 60.37                  | 228.2               | 58.52                  | 221.2                  | 8.09                         | 6.03                   | 78.44                  | 58.49               | 133.80                 | 99.77                  |
|               | 045    | 8.70                       | 142.5                | 67.72                 | 255.9                  | 65.17                  | 246.3               | 63.32                  | 239.3                  | 8.37                         | 6.24                   | 84.04                  | 62.66               | 143.60                 | 107.08                 |
|               | 050    | 9.67                       | 158.5                | 75.38                 | 284.9                  | 72.83                  | 275.3               | 70.98                  | 268.3                  | 8.82                         | 6.58                   | 92.97                  | 69.32               | 159.24                 | 118.75                 |
|               | 052    | 10.00                      | 163.8                | 78.37                 | 296.2                  | 75.82                  | 286.6               | 73.97                  | 279.6                  | 8.99                         | 6.70                   | 96.47                  | 71.94               | 165.36                 | 123.31                 |
|               | 054    | 10.43                      | 170.9                | 81.27                 | 307.2                  | 78.72                  | 297.6               | 76.87                  | 290.6                  | 9.17                         | 6.84                   | 99.75                  | 74.38               | 177.46                 | 132.33                 |
|               | 057    | 11.18                      | 183.2                | 87.12                 | 329.3                  | 84.57                  | 319.7               | 82.72                  | 312.7                  | 9.51                         | 7.09                   | 106.57                 | 79.47               | 189.84                 | 141.56                 |
|               | 062    | 12.00                      | 196.6                | 93.54                 | 353.6                  | 90.99                  | 343.9               | 89.14                  | 336.9                  | 9.88                         | 7.37                   | 114.17                 | 85.13               | 196.34                 | 146.41                 |
|               | 066    | 13.00                      | 213.0                | 101.44                | 383.4                  | 98.89                  | 373.8               | 97.04                  | 366.8                  | 10.34                        | 7.71                   | 123.38                 | 92.00               | 212.46                 | 158.43                 |
|               | 072    | 13.86                      | 227.1                | 108.00                | 408.2                  | 105.45                 | 398.6               | 103.60                 | 391.6                  | 10.72                        | 7.99                   | 131.04                 | 97.71               | 225.86                 | 166.42                 |
|               | 085    | 16.40                      | 268.7                | 127.79                | 483.0                  | 126.13 <sup>1)</sup>   | 476.7 <sup>1)</sup> | -                      | -                      | 11.88                        | 8.85                   | 101.66 <sup>1)</sup>   | 75.80 <sup>1)</sup> | -                      | -                      |
| P2            |        |                            |                      | p = 0 bar (0 psi)     | p = 140 bar (2000 psi) | p = 300 bar (4350 psi) | p = 7 bar (100 psi) | p = 140 bar (2000 psi) | p = 300 bar (4350 psi) | p = 7 bar (100 psi)          | p = 140 bar (2000 psi) | p = 300 bar (4350 psi) | p = 7 bar (100 psi) | p = 140 bar (2000 psi) | p = 300 bar (4350 psi) |
|               | 003    | 0.66                       | 10.8                 | 5.14                  | 19.6                   | 3.85                   | 14.6                | --                     | --                     | 2.11                         | 1.57                   | 8.45                   | 6.30                | --                     | --                     |
|               | 005    | 1.05                       | 17.2                 | 8.18                  | 30.9                   | 6.89                   | 26.0                | 4.34                   | 16.44                  | 2.29                         | 1.70                   | 12.00                  | 8.94                | 23.97                  | 17.88                  |
|               | 006    | 1.30                       | 21.3                 | 10.13                 | 38.3                   | 8.84                   | 33.4                | 5.71                   | 21.6                   | 2.40                         | 1.78                   | 14.28                  | 10.64               | 28.96                  | 21.60                  |
|               | 008    | 1.61                       | 26.4                 | 12.55                 | 47.4                   | 11.26                  | 42.6                | 8.12                   | 30.72                  | 2.54                         | 1.89                   | 17.11                  | 12.75               | 35.08                  | 26.16                  |
|               | 010    | 2.08                       | 34.1                 | 16.22                 | 61.3                   | 14.93                  | 56.4                | 11.81                  | 44.64                  | 2.76                         | 2.06                   | 21.38                  | 15.94               | 44.25                  | 33.00                  |
|               | 012    | 2.26                       | 37.1                 | 17.64                 | 66.7                   | 16.35                  | 61.8                | 13.24                  | 50.04                  | 2.84                         | 2.11                   | 23.05                  | 17.18               | 47.47                  | 35.40                  |
|               | 014    | 2.81                       | 46.0                 | 21.88                 | 82.7                   | 20.59                  | 77.8                | 17.46                  | 66.00                  | 3.09                         | 2.30                   | 27.99                  | 20.87               | 58.73                  | 43.80                  |
|               | 015    | 3.08                       | 50.5                 | 23.99                 | 90.7                   | 22.83                  | 86.3                | 19.39                  | 73.32                  | 3.21                         | 2.40                   | 30.30                  | 22.60               | 63.56                  | 47.40                  |
|               | 017    | 3.56                       | 58.3                 | 27.73                 | 104.8                  | 26.44                  | 99.9                | 23.33                  | 88.2                   | 3.43                         | 2.55                   | 34.81                  | 25.95               | 73.54                  | 54.84                  |
|               | 020    | 3.89                       | 63.8                 | 30.34                 | 114.7                  | 29.05                  | 109.8               | 25.93                  | 98.04                  | 3.58                         | 2.66                   | 37.86                  | 28.23               | 80.14                  | 59.76                  |
|               | 022    | 4.29                       | 70.3                 | 33.43                 | 126.4                  | 32.14                  | 121.5               | 29.05 <sup>2)</sup>    | 109.8 <sup>2)</sup>    | 3.76                         | 2.80                   | 41.47                  | 30.92               | 80.94 <sup>2)</sup>    | 60.36 <sup>2)</sup>    |
|               | 025    | 4.84                       | 79.3                 | 37.71                 | 142.5                  | 36.42                  | 137.6               | ---                    | ---                    | 4.01                         | 2.99                   | 46.46                  | 34.64               | ---                    | ---                    |
|               | 028    | 5.42                       | 88.8                 | 42.23                 | 159.6                  | 40.94                  | 154.7               | ---                    | ---                    | 4.27                         | 3.18                   | 51.74                  | 38.58               | ---                    | ---                    |
|               | 031    | 6.10                       | 100.0                | 47.56                 | 179.7                  | 46.27                  | 174.9               | ---                    | ---                    | 4.58                         | 3.41                   | 57.95                  | 43.21               | ---                    | ---                    |

1) 085 = 90 bar (1300 psi) max. int

2) 022 = 240 bar (3500 psi) max. int

-- Not to use because internal leakage greater than 50% of theoretical flow