



**GENERATOR TYPE ECO 43-2LN/4**

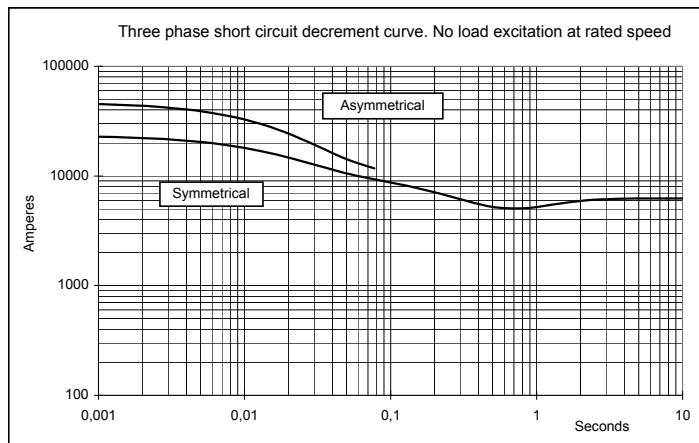
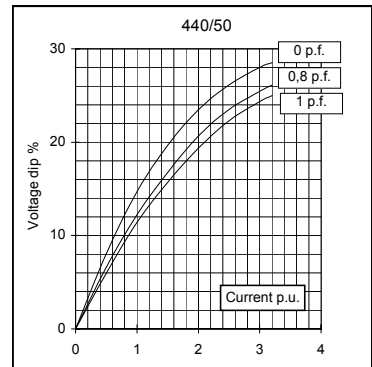
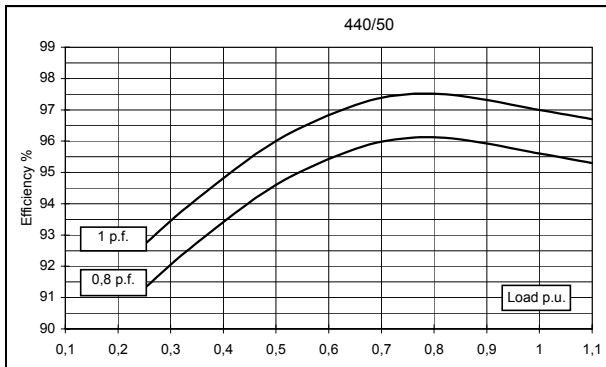
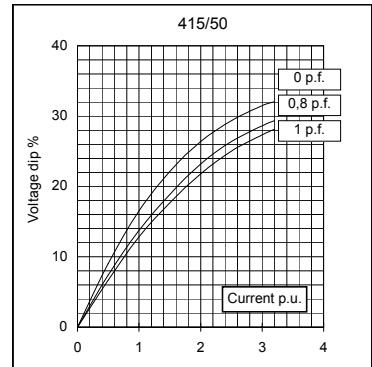
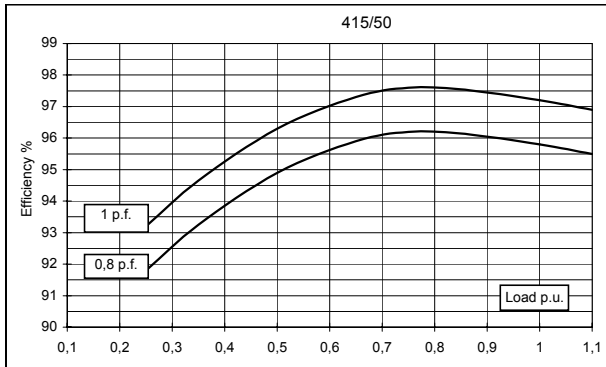
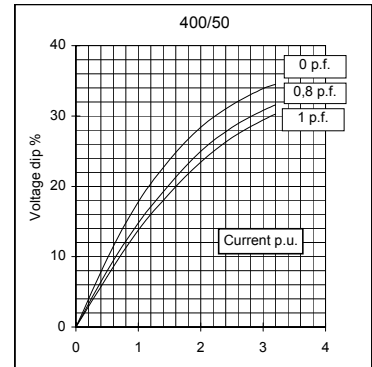
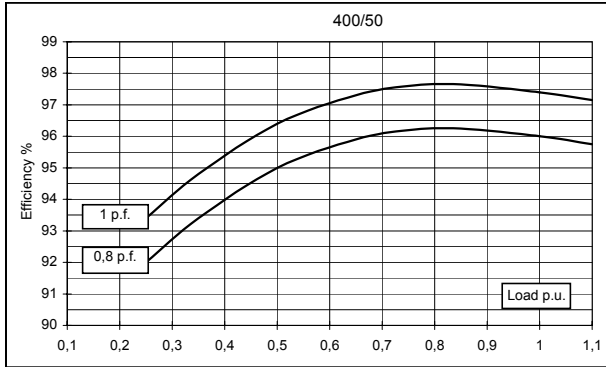
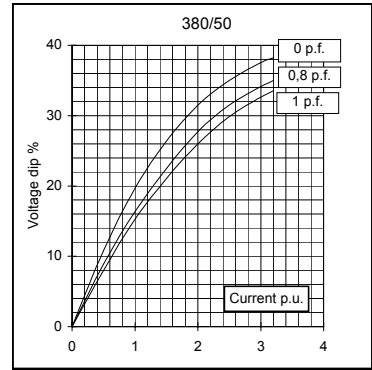
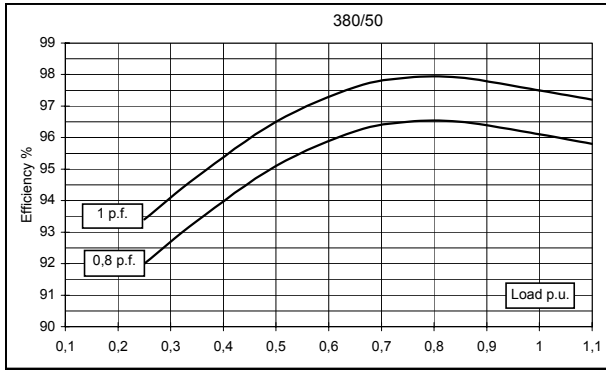
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| <b>Electrical Characteristics</b>     |                |   |   |       |       |       |                |       |       |       |
|---------------------------------------|----------------|---|---|-------|-------|-------|----------------|-------|-------|-------|
| Frequency                             | Hz             | 50  |   |       |       | 60    |                |       |       |       |
| Voltage (parallel star)               | V              | 380   | 400   | 415   | 440   | 415   | 440            | 460   | 480   |       |
| Rated power class H                   | kVA            | 1300  | 1300  | 1300  | 1235  | 1451  | 1482           | 1560  | 1560  |       |
|                                       | kW             | 1040  | 1040  | 1040  | 988   | 1161  | 1186           | 1248  | 1248  |       |
| Rated power class F                   | kVA            | 1200  | 1200  | 1200  | 1140  | 1339  | 1368           | 1440  | 1440  |       |
|                                       | kW             | 960   | 960   | 960   | 912   | 1071  | 1094           | 1152  | 1152  |       |
| Regulation with                       | DSR            | ±1% with any power factor and speed variations between -5% +30% |   |       |       |       |                |       |       |       |
| Insulation class                      |                | H   |   |       |       |       |                |       |       |       |
| Execution                             |                | Brushless   |   |       |       |       |                |       |       |       |
| Stator winding                        |                | 12 ends   |   |       |       |       |                |       |       |       |
| Rotor                                 |                | with damping cage   |   |       |       |       |                |       |       |       |
| Efficiencies class H                  | 4/4            | %   | 96,1  | 96    | 95,8  | 95,6  | 95,8           | 96,3  | 96,5  | 96,4  |
| (see graph. for details)              | 3/4            | %   | 96,5  | 96,2  | 96,2  | 96,1  | 96,1           | 96,3  | 96,7  | 96,5  |
|                                       | 2/4            | %   | 95,1  | 95    | 94,9  | 94,6  | 95             | 95,1  | 95,3  | 95,2  |
|                                       | 1/4            | %   | 92  | 92    | 91,8  | 91,3  | 92,5           | 92,5  | 92,5  | 92,5  |
| <b>Reactances (f. l.c.l. F)</b>       |                |   |   |       |       |       |                |       |       |       |
|                                       | Xd             | %   | 416,6   | 376   | 349,3 | 295,2 | 467,7          | 425,1 | 409,4 | 376   |
|                                       | Xd'            | %   | 19,7  | 17,8  | 16,5  | 14    | 22,1           | 20,1  | 19,38 | 17,8  |
|                                       | Xd''           | %   | 9,3   | 8,4   | 7,8   | 6,6   | 10,4           | 9,5   | 9,15  | 8,4   |
|                                       | Xq             | %   | 192,8   | 174   | 161,6 | 136,6 | 216,4          | 196,7 | 189,5 | 174   |
|                                       | Xq'            | %   | 192,8   | 174   | 161,6 | 136,6 | 216,4          | 196,7 | 189,5 | 174   |
|                                       | Xq''           | %   | 21,2  | 19,1  | 17,7  | 15    | 23,8           | 21,6  | 20,8  | 19,1  |
|                                       | X <sub>2</sub> | %   | 15,2  | 13,7  | 12,7  | 10,8  | 17,0           | 15,5  | 14,9  | 13,7  |
|                                       | X <sub>0</sub> | %   | 4,3   | 3,9   | 3,6   | 3,1   | 4,9            | 4,4   | 4,25  | 3,9   |
| Short Circuit Ratio                   | Kcc            |   | 0,33  | 0,38  | 0,43  | 0,53  | 0,24           | 0,28  | 0,33  | 0,38  |
| Time Constants                        | Td'            | sec.  | 0,271   |       |       |       |                |       |       |       |
|                                       | Td''           | sec.  | 0,0184  |       |       |       |                |       |       |       |
|                                       | Tdo'           | sec.  | 8,90  |       |       |       |                |       |       |       |
|                                       | Tα             | sec.  | 0,026   |       |       |       |                |       |       |       |
| Short Circuit Current Capacity        |                | %   | >300  |       |       |       | >350           |       |       |       |
| Excitation at no load                 | Amp.           |   | 0,6   | 0,7   | 0,8   | 1     | 0,4            | 0,5   | 0,6   | 0,7   |
| Excitation at full load               | Amp.           |   | 3,2   | 3,3   | 3,4   | 3,5   | 2,9            | 3     | 3,1   | 3,3   |
| Overload (long-term)                  |                | %   | 1 hour in a 6 hours period 110% rated load                      |       |       |       |                |       |       |       |
| Overload per 20 sec.                  |                | %   | 300   |       |       |       |                |       |       |       |
| Stator Winding Resistance (20°C)      | Ω              |   | 0,0058  |       |       |       |                |       |       |       |
| Rotor Winding Resistance (20°C)       | Ω              |   | 2,800   |       |       |       |                |       |       |       |
| Exciter Resistance (20 °C)            | Ω              |   | Rotor : 0,130   |       |       |       | Stator : 10,63 |       |       |       |
| Heat dissipation at f.l.c.l.H         | W              |   | 42206   | 43333 | 45595 | 45473 | 50891          | 45553 | 45264 | 46606 |
| Telephone Interference                |                |   | THF < 2%  |       |       |       | TIF < 40       |       |       |       |
| Radio interference                    |                |   | EN61000-6-3, EN61000-6-1. For others standards apply to factory |       |       |       |                |       |       |       |
| Waveform Distors.(THD) at f. load     | LL/LN %        |   | 1,5 / 1,5   |       |       |       |                |       |       |       |
| Waveform Distors.(THD) at no load     | LL/LN %        |   | 2,4 / 2,4   |       |       |       |                |       |       |       |
| <b>Mechanical characteristics</b>     |                |   |   |       |       |       |                |       |       |       |
| Protection                            |                |   | IP 21 (other protection on request)                             |       |       |       |                |       |       |       |
| DE bearing                            |                |   | 6324  |       |       |       |                |       |       |       |
| NDE bearing                           |                |   | 6322  |       |       |       |                |       |       |       |
| Weight of wound stator assembly       | kg             |   | 979   |       |       |       |                |       |       |       |
| Weight of wound rotor assembly        | kg             |   | 759   |       |       |       |                |       |       |       |
| Weight of complete generator          | kg             |   | 2660  |       |       |       |                |       |       |       |
| Maximun overspeed                     | rpm            |   | 2250  |       |       |       |                |       |       |       |
| Unbalanced magnetic pull at f.l.c.l.F | kN/mm          |   | 5,9   |       |       |       |                |       |       |       |
| Cooling air requirement               | m³/min         |   | 90  |       |       |       | 108            |       |       |       |
| Inertia Constant (H)                  | sec.           |   | 0,243   |       |       |       | 0,292          |       |       |       |
| Noise level at 1m/7m                  | dB(A)          |   | 95 / 84   |       |       |       | 99 / 89        |       |       |       |

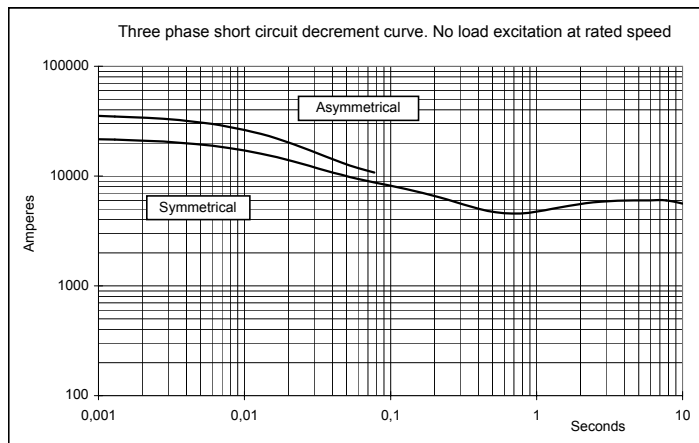
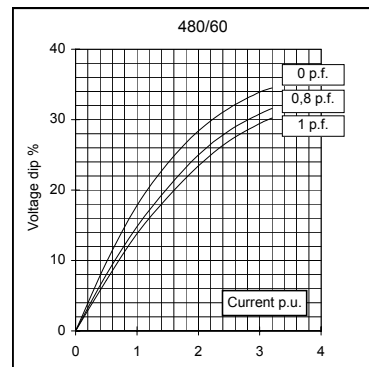
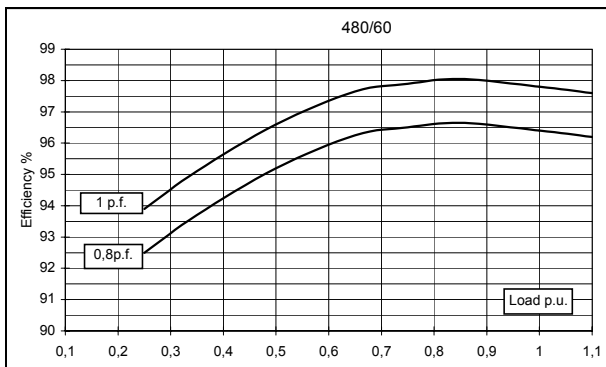
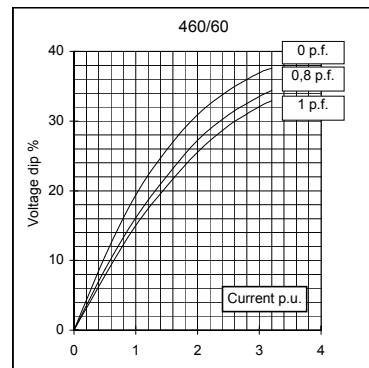
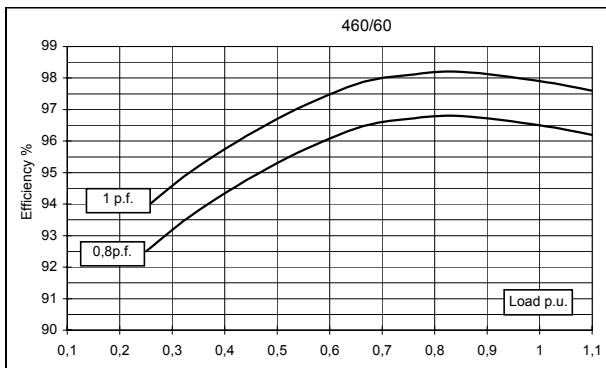
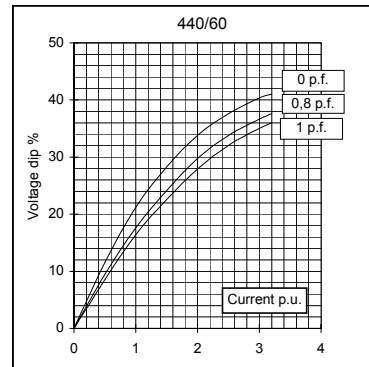
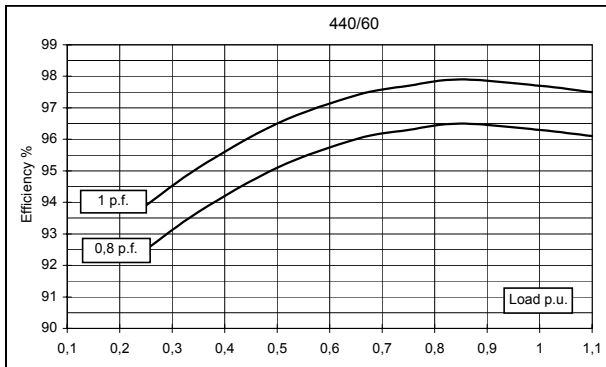
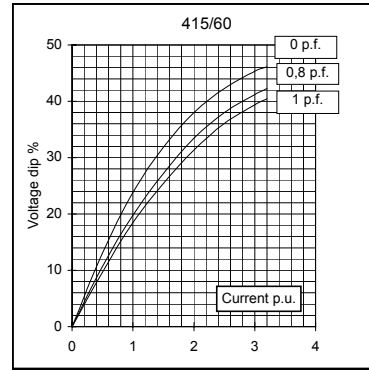
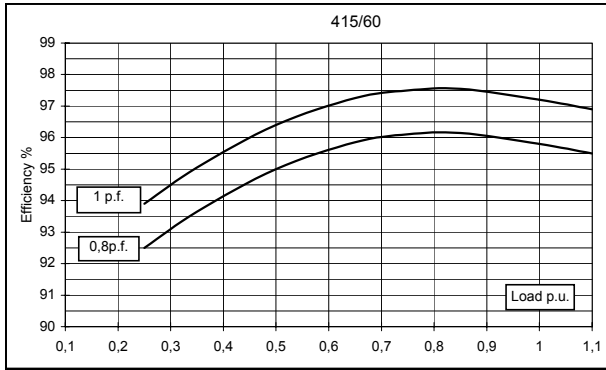
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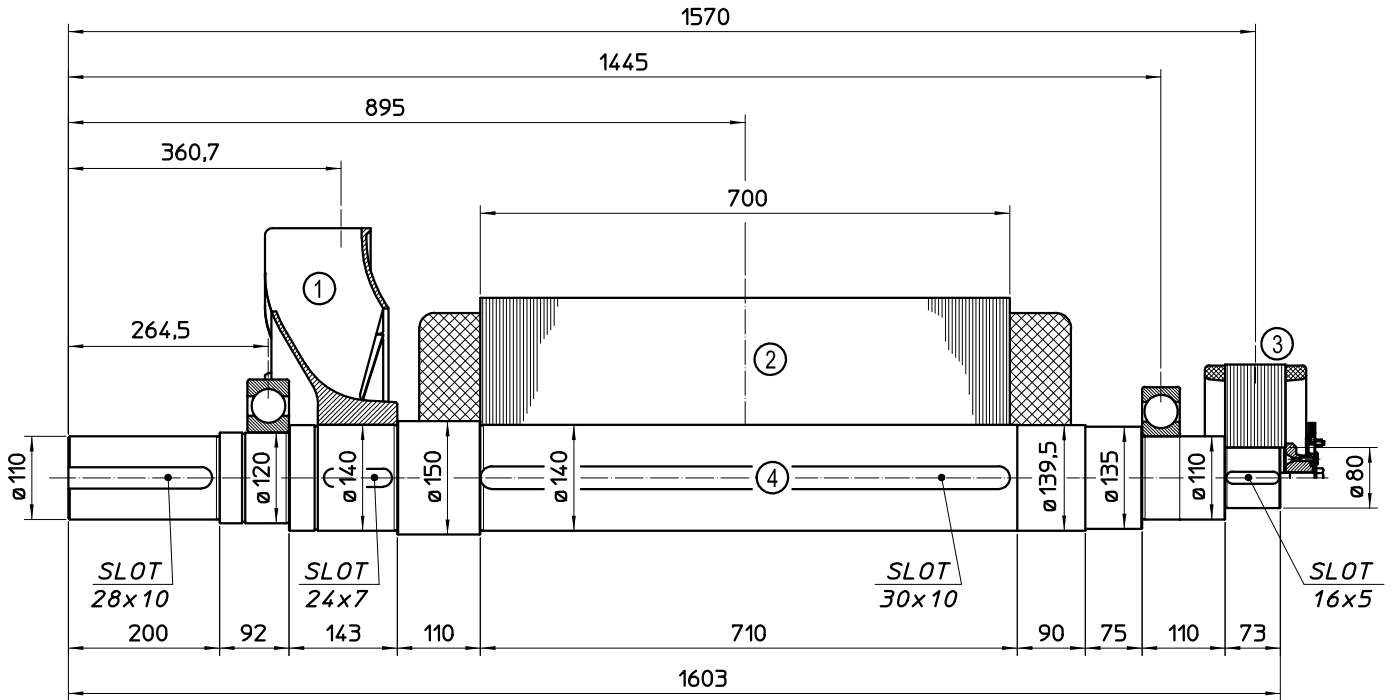
**50 Hz**



**60 Hz**

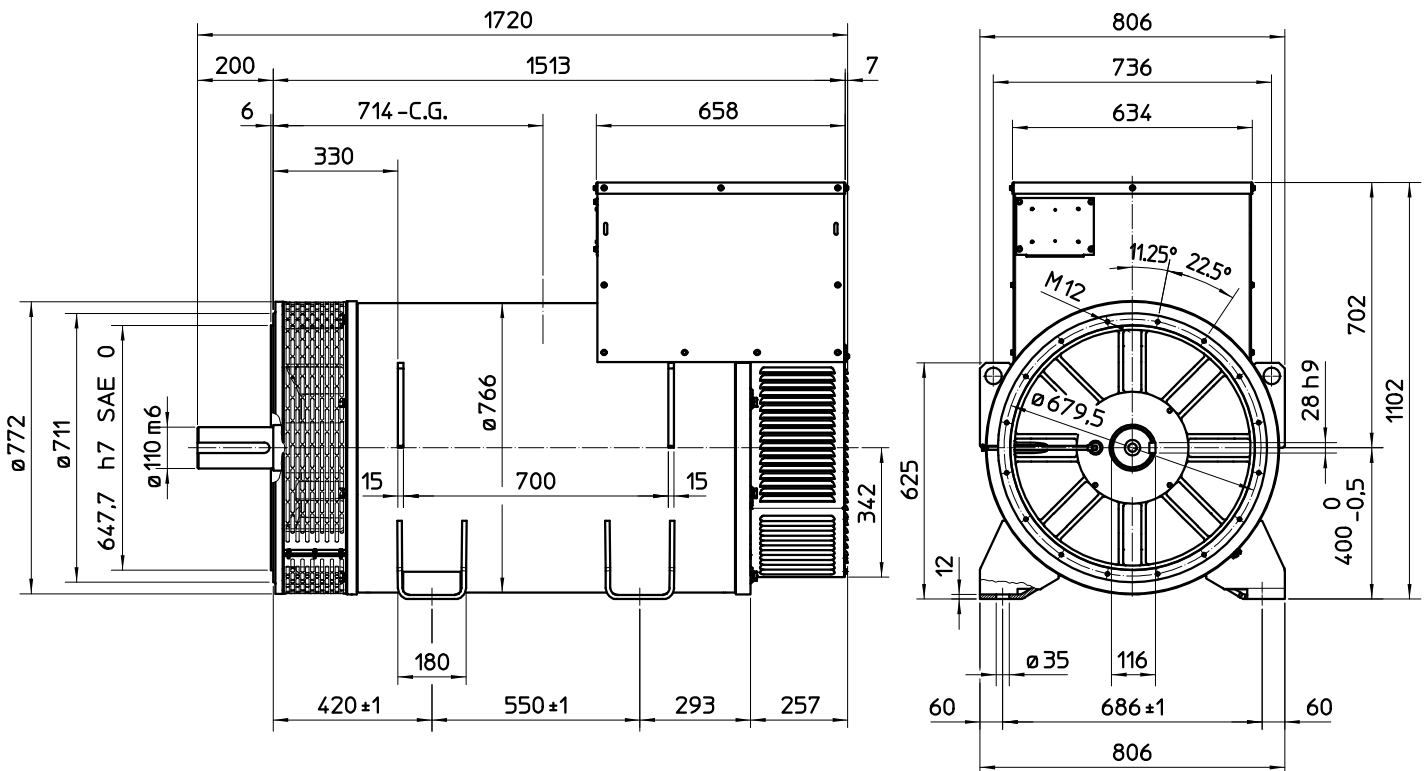


### TWO BEARING MOMENTS OF INERTIA



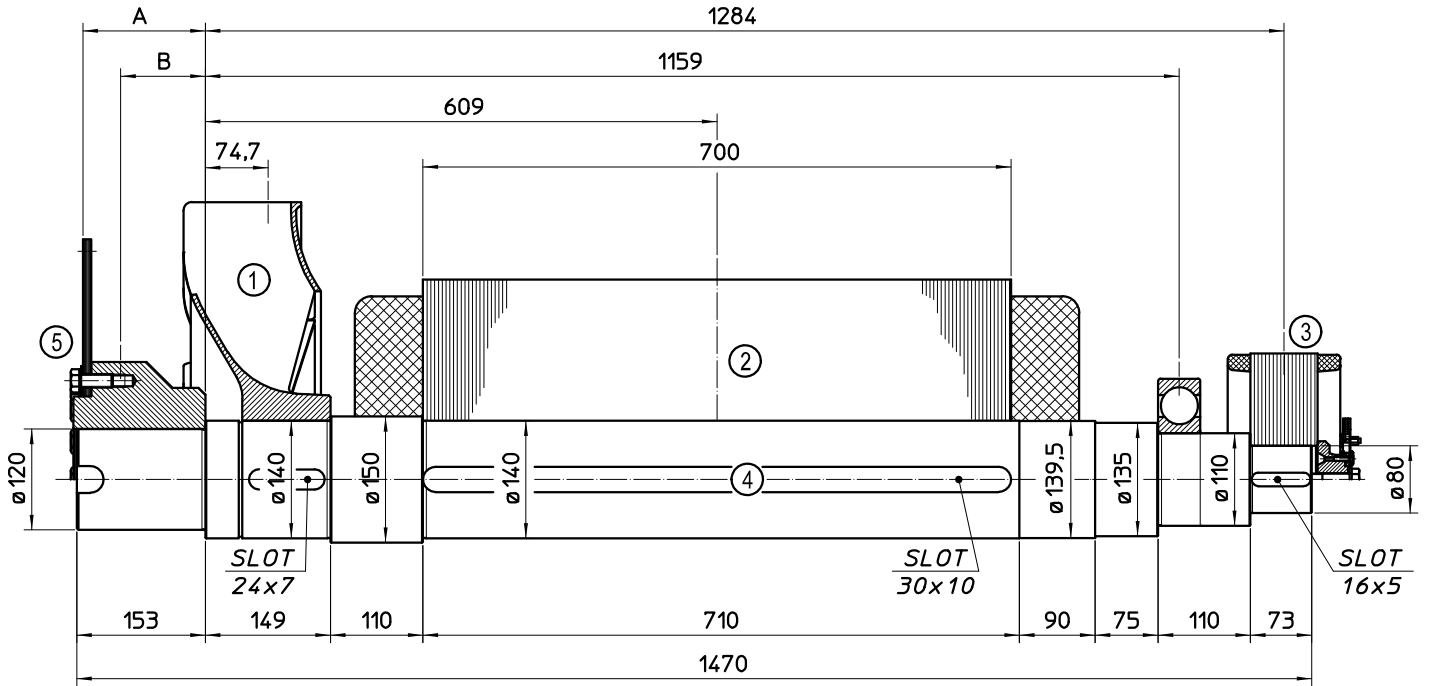
| POS.  | COMPONENT  | WEIGHT (kg) | J (kgm <sup>2</sup> ) |
|-------|------------|-------------|-----------------------|
| 1     | FAN        | 16.3        | 0.646                 |
| 2     | MAIN ROTOR | 759         | 23.351                |
| 3     | EX. ROTOR  | 40          | 0.629                 |
| 4     | SHAFT      | 171.3       | 0.485                 |
| TOTAL |            | 986.6       | 25.111                |

### TWO BEARING DIMENSIONS



C.G.= GRAVITY CENTER

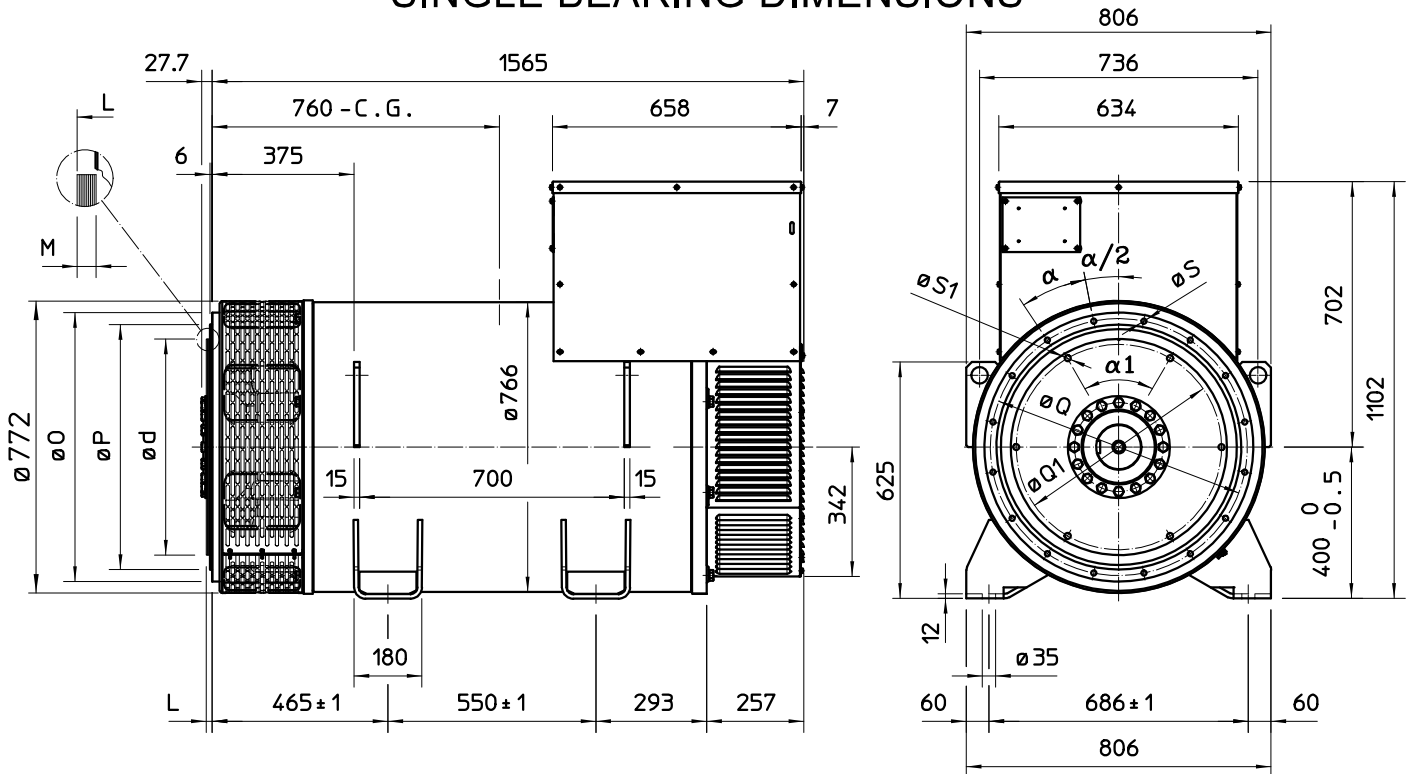
### SINGLE BEARING MOMENTS OF INERTIA



| POS.  | COMPONENT  | WEIGHT (kg) | J (kgm <sup>2</sup> ) |
|-------|------------|-------------|-----------------------|
| 1     | FAN        | 16.3        | 0.646                 |
| 2     | MAIN ROTOR | 759         | 23.351                |
| 3     | EX. ROTOR  | 40          | 0.629                 |
| 4     | SHAFT      | 159.6       | 0.371                 |
| TOTAL |            | 974.9       | 24.997                |

| POS. | COMPONENT                  | SAE N° | A     | B     | WEIGHT (kg) | J (kgm <sup>2</sup> ) |
|------|----------------------------|--------|-------|-------|-------------|-----------------------|
| 5    | SHAFTS COUPLING FLEX PLATE | 14     | 155.7 | 99.5  | 56.3        | 0.824                 |
|      |                            | 18     | 145.7 | 100.7 | 60.8        | 1.244                 |
|      |                            | 21     | 130   | 98.5  | 68.9        | 2.231                 |

### SINGLE BEARING DIMENSIONS



| SAE N° | FLANGE |       |       |    |          |          |
|--------|--------|-------|-------|----|----------|----------|
|        | O      | P     | Q     | S  | HOLES N° | $\alpha$ |
| 1      | 711    | 511.2 | 530.2 | 12 | 12       | 30       |
| 0      | 711    | 647.7 | 679.5 | 14 | 16       | 22.5     |
| 00     | 883    | 787.4 | 850.9 | 14 | 16       | 22.5     |

| SAE N° | DISC COUPLING |      |    |        |      |          |            |
|--------|---------------|------|----|--------|------|----------|------------|
|        | d             | L    | M  | Q1     | S1   | HOLES N° | $\alpha 1$ |
| 14     | 466.72        | 25.4 | 10 | 438.15 | 13.5 | 8        | 45         |
| 18     | 571.5         | 15.7 | 10 | 542.92 | 16.5 | 6        | 60°        |
| 21     | 673.1         | 0    | 12 | 641.35 | 16.5 | 12       | 30°        |

C.G.= GRAVITY CENTER