



GENERATOR TYPE ECO 40-1L/4

Document : **DS025A/1**

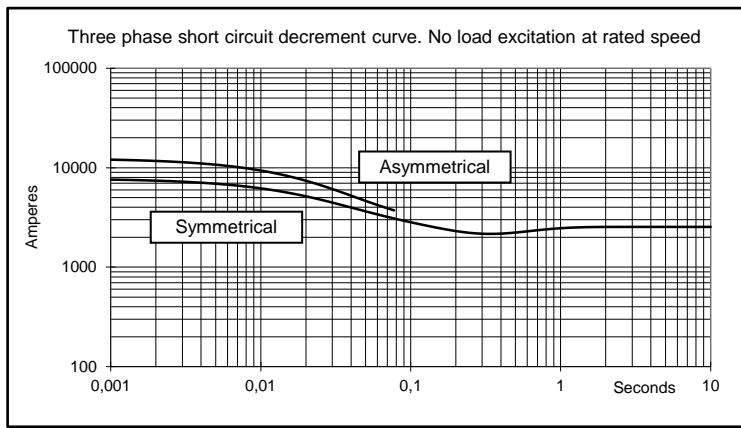
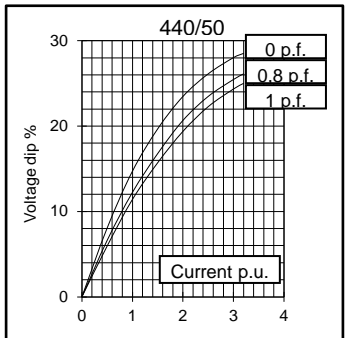
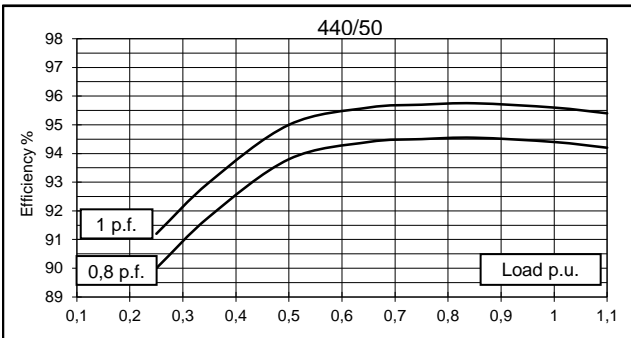
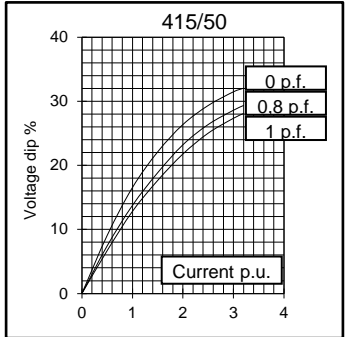
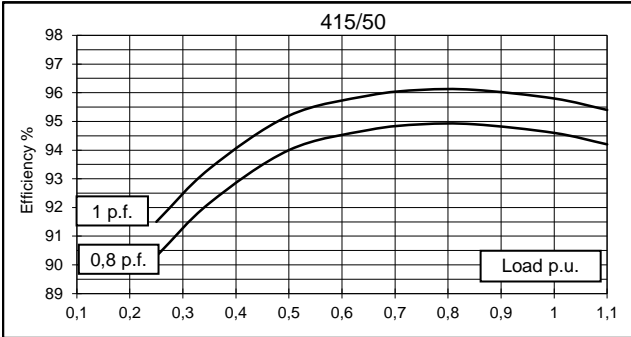
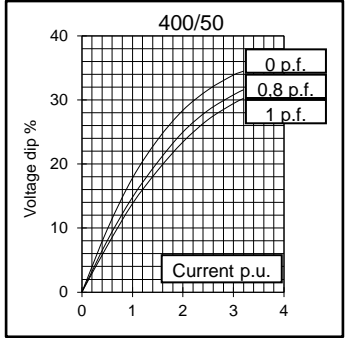
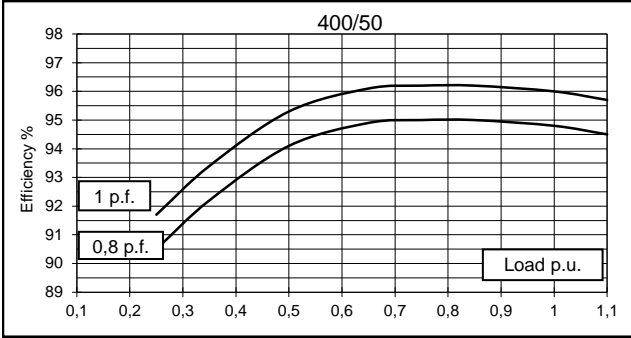
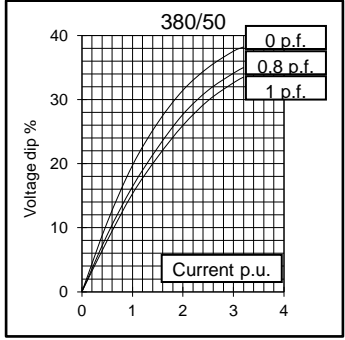
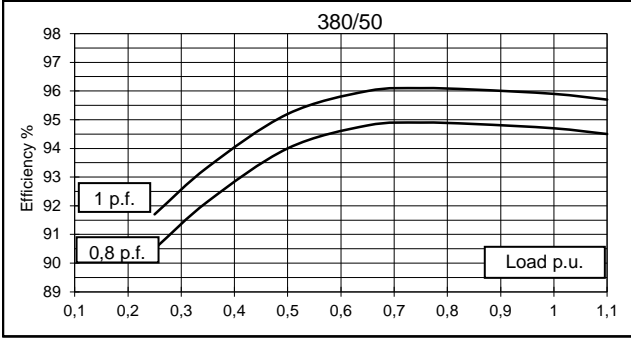
issue 010 date 21/03/2014

| Electrical Characteristics | | | | | | | | | | |
|--------------------------------------|----------------|---|-------|-------|-------|---------------|-------|-------|-------|------|
| Frequency | Hz | 50 | | | | 60 | | | | |
| Voltage (parallel star) | V | 380 | 400 | 415 | 440 | 415 | 440 | 460 | 480 | |
| Rated power class H | kVA | 550 | 550 | 540 | 500 | 570 | 630 | 660 | 660 | |
| | kW | 440 | 440 | 432 | 400 | 456 | 504 | 528 | 528 | |
| Rated power class F | kVA | 500 | 500 | 490 | 454 | 515 | 570 | 600 | 600 | |
| | kW | 400 | 400 | 392 | 363 | 412 | 456 | 480 | 480 | |
| Regulation with | DER1 | ±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 | % | 94,7 | 94,8 | 94,6 | 94,4 | 95,3 | 95,6 | 95,7 | 95,8 |
| (see graph. for details) | 3/4 | % | 94,9 | 95 | 94,9 | 94,5 | 95,5 | 95,7 | 95,8 | 96 |
| | 2/4 | % | 94 | 94,1 | 94 | 93,8 | 94,7 | 94,8 | 94,9 | 95,1 |
| | 1/4 | % | 90,5 | 90,5 | 90,3 | 90 | 91 | 91,1 | 91,1 | 91,3 |
| Reactances (f. l.cl. F) | | | | | | | | | | |
| | Xd | % | 333 | 238 | 161 | 9,1 | 450 | 382 | 333 | 238 |
| | Xd' | % | 20,6 | 19,4 | 18,2 | 17,1 | 22,7 | 21,8 | 20,6 | 19,4 |
| | Xd'' | % | 11,5 | 10,2 | 9,6 | 9,2 | 13,2 | 12,7 | 11,5 | 10,2 |
| | Xq | % | 128 | 112 | 107 | 101 | 149 | 132 | 128 | 112 |
| | Xq' | % | 128 | 112 | 107 | 101 | 149 | 132 | 128 | 112 |
| | Xq'' | % | 25,2 | 24,1 | 22,2 | 21,5 | 27,4 | 26,6 | 25,2 | 24,1 |
| | X ₂ | % | 13,5 | 12,6 | 11,4 | 10,6 | 15,5 | 14,2 | 13,5 | 12,6 |
| | X ₀ | % | 3,1 | 2,8 | 2,6 | 2,5 | 3,4 | 3,2 | 3,1 | 2,8 |
| Short Circuit Ratio | Kcc | | 0,30 | 0,42 | 0,62 | 1,10 | 0,22 | 0,26 | 0,30 | 0,42 |
| Time Constants | Td' | sec. | 0,14 | | | | | | | |
| | Td'' | sec. | 0,021 | | | | | | | |
| | Tdo' | sec. | 2,90 | | | | | | | |
| | Tα | sec. | 0,04 | | | | | | | |
| Short Circuit Current Capacity | | % | >300 | | | | >350 | | | |
| Excitation at no load | Amp. | | 0,5 | 0,7 | 1,1 | 1,3 | 0,4 | 0,5 | 0,6 | 0,7 |
| Excitation at full load | Amp. | | 3,2 | 3,3 | 3,6 | 3,8 | 2,9 | 3 | 3,1 | 3,2 |
| Overload (long-term) | % | 1 hour in a 6 hours period 110% rated load | | | | | | | | |
| Overload per 20 sec. | % | 300 | | | | | | | | |
| Stator Winding Resistance (20°C) | Ω | 0,010 | | | | | | | | |
| Rotor Winding Resistance (20°C) | Ω | 6,025 | | | | | | | | |
| Exciter Resistance (20 °C) | Ω | Rotor : 0,317 | | | | Stator : 8,85 | | | | |
| Heat dissipation at f.l.cl.H | W | 24625 | 24135 | 24660 | 23729 | 22489 | 23197 | 23724 | 23148 | |
| Telephone Interference | | THF < 2% | | | | TIF < 40 | | | | |
| Radio interference | | EN61000-6-3, EN61000-6-2. For others standards apply to factory | | | | | | | | |
| Waveform Distors.(THD) at f. load | LL/LN % | 2,3 / 2,4 | | | | | | | | |
| Waveform Distors.(THD) at no load | LL/LN % | 2,5 / 2,5 | | | | | | | | |
| Mechanical characteristics | | | | | | | | | | |
| Protection | | IP 21 (other protection on request) | | | | | | | | |
| DE bearing | | 6322 | | | | | | | | |
| NDE bearing | | 6318.2RS | | | | | | | | |
| Weight of wound stator assembly | kg | 477 | | | | | | | | |
| Weight of wound rotor assembly | kg | 297,5 | | | | | | | | |
| Weight of complete generator | kg | 1324 | | | | | | | | |
| Maximun overspeed | rpm | 2250 | | | | | | | | |
| Unbalanced magnetic pull at f.l.cl.F | kN/mm | 6,1 | | | | | | | | |
| Cooling air requirement | m³/min | 54 | | | | 64,8 | | | | |
| Inertia Constant (H) | sec. | 0,170 | | | | 0,204 | | | | |
| Noise level at 1m/7m | dB(A) | 94 / 82 | | | | 98 / 88 | | | | |

All technical data are to be considered as a reference and they can be modified without any notice.

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50 Hz

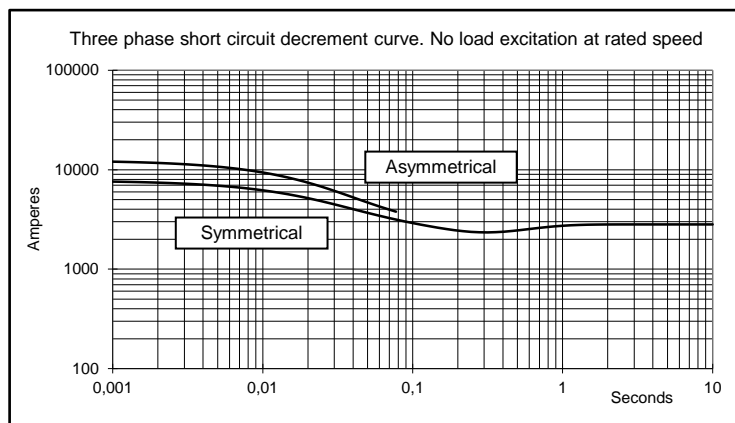
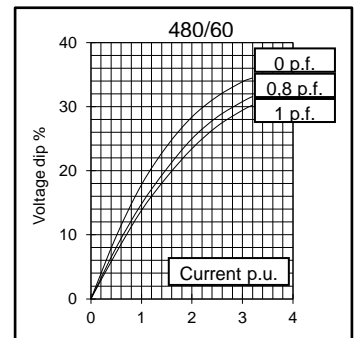
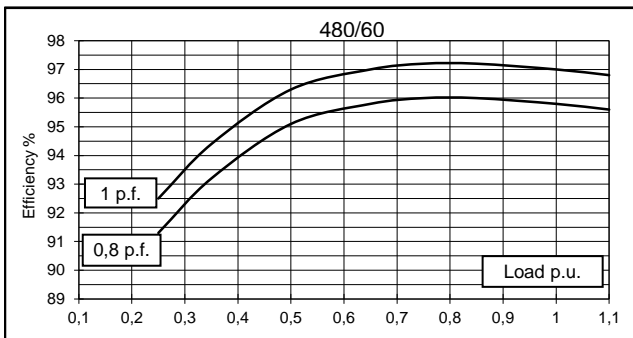
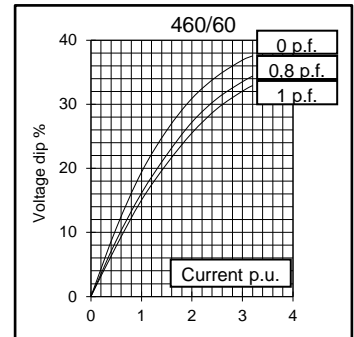
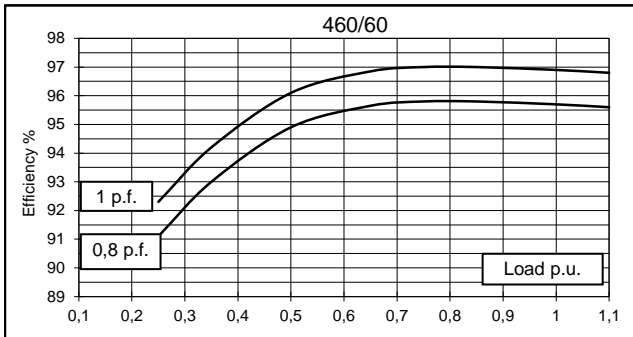
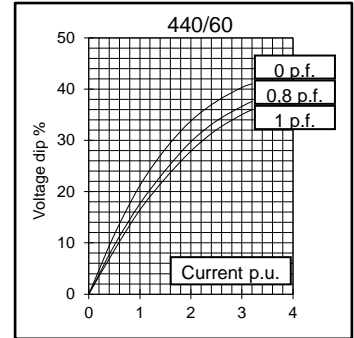
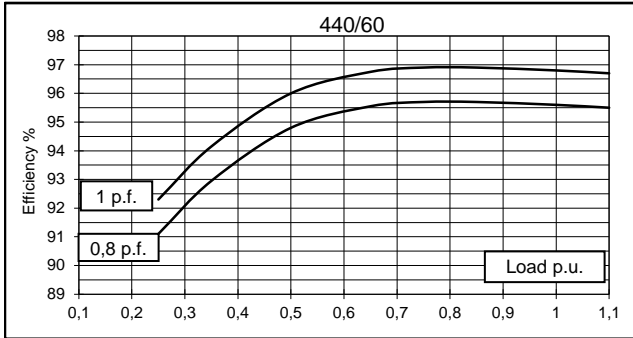
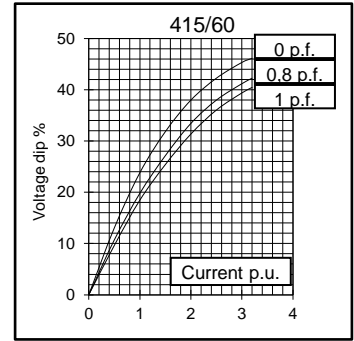
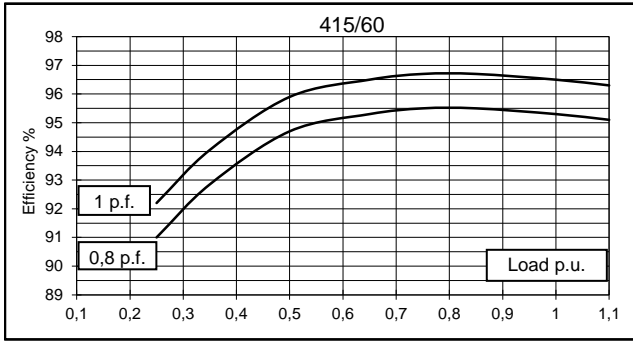




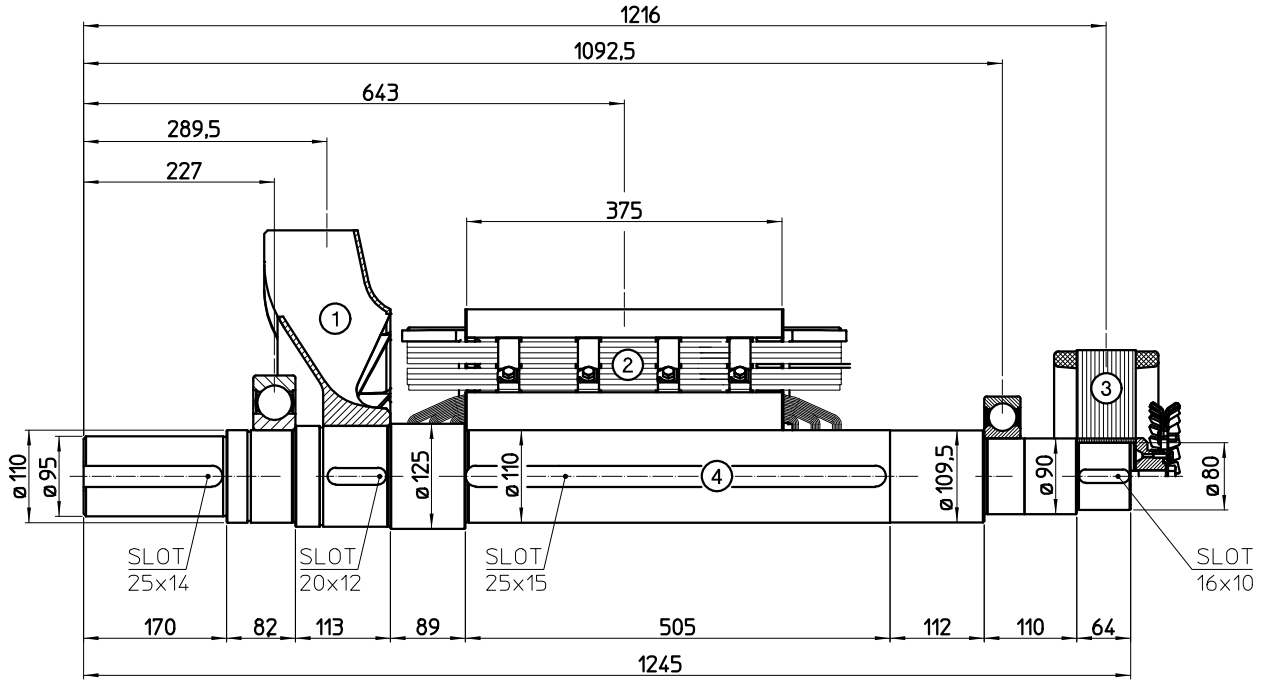
GENERATOR TYPE ECO 40-1L/4

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 issue 009 date : 21/03/2014

60 Hz

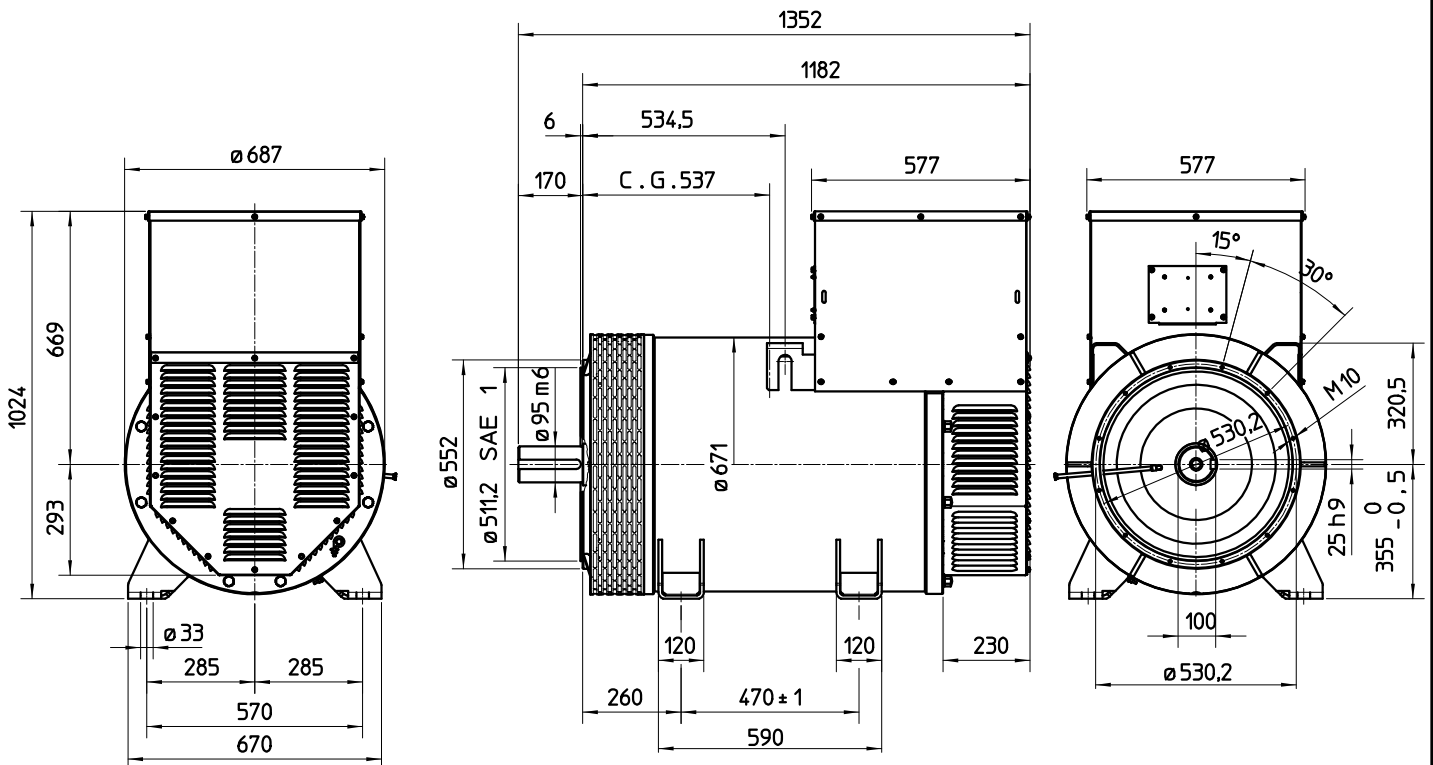


TWO BEARING MOMENTS OF INERTIA



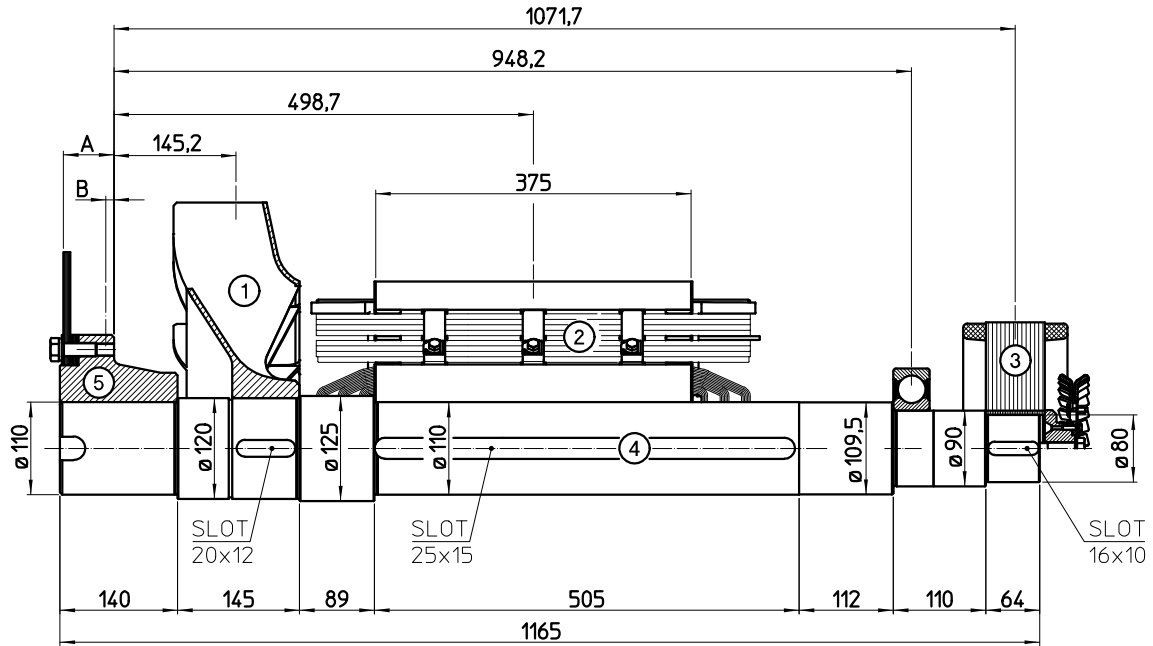
| COMPONENT | WEIGHT kg | J kgm ² |
|--------------|-----------|--------------------|
| 1 FAN | 10,2 | 0,335 |
| 2 MAIN ROTOR | 297,5 | 6,332 |
| 3 EX. ROTOR | 35 | 0,562 |
| 4 SHAFT | 85,7 | 0,127 |
| TOTAL | 428,4 | 7,356 |

TWO BEARING DIMENSIONS



C.G.= GRAVITY CENTER

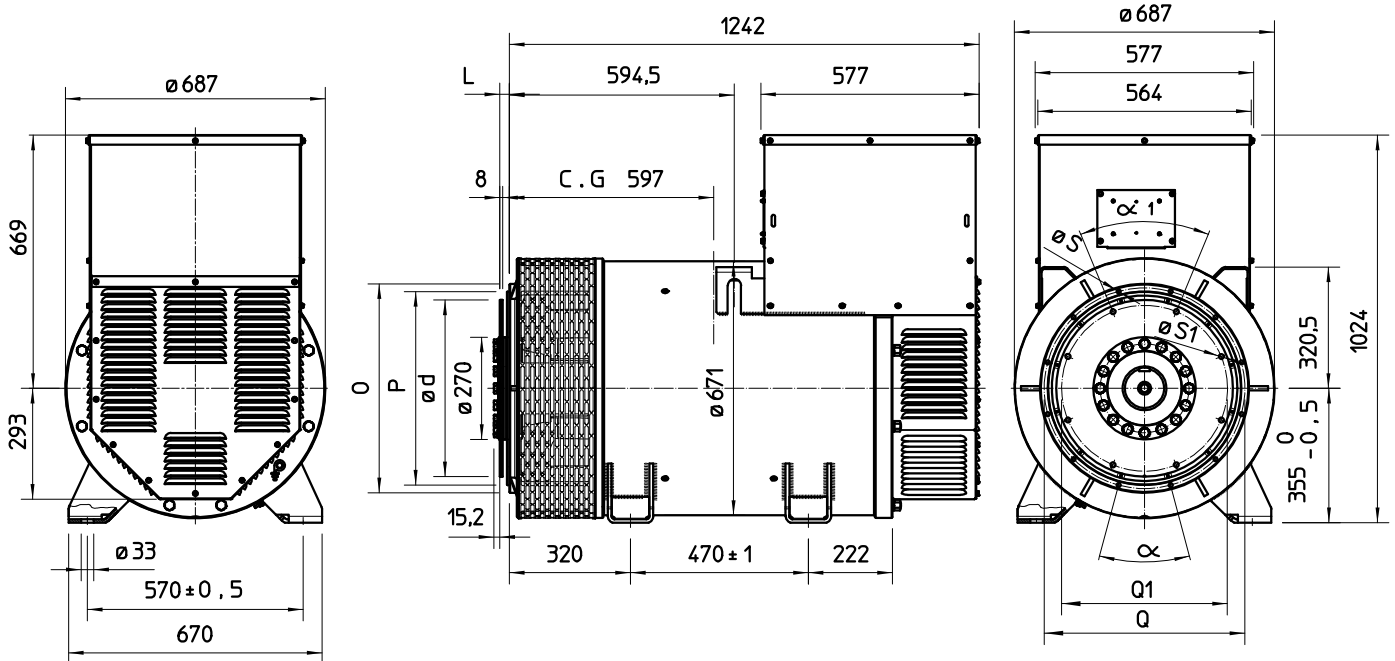
SINGLE BEARING MOMENTS OF INERTIA



| COMPONENT | WEIGHT kg | J kgm ² |
|--------------|-----------|--------------------|
| 1 FAN | 10,2 | 0,335 |
| 2 MAIN ROTOR | 297,5 | 6,332 |
| 3 EX. ROTOR | 35 | 0,562 |
| 4 SHAFT | 84,2 | 0,129 |
| TOTAL | 426,9 | 7,358 |

| Sae No | SHAFTS COUPLING FLEX PLATE | | | |
|--------|----------------------------|-----|-----------|--------------------|
| | A | B | WEIGHT kg | J kgm ² |
| 14 | 60 | 9,6 | 41,4 | 0,511 |
| 18 | 50 | 6,6 | 45,1 | 0,858 |

SINGLE BEARING DIMENSIONS



| SAE N. | FLANGIA / FLANGE BRIDE / FLANSCH | | | | | |
|--------|----------------------------------|-------|-------|---------|----|-------|
| | O | P | Q | N. FORI | S | α |
| 1 | 552 | 511,2 | 530,2 | 12 | 11 | 30° |
| 1/2 | 648 | 584,2 | 619,1 | 12 | 14 | 30° |
| 0 | 711 | 647,7 | 679,5 | 16 | 14 | 22,5° |
| 00 | 883 | 787,4 | 850,9 | 16 | 14 | 22,5° |

| VOL. N. | GIUNTI A DISCHI / DISC COUPLING DISQUE DE MONOPALIER / SCHEIBENKUPPLUNG | | | | | |
|---------|---|--------|--------|---------|----|-----|
| | L | d | Q1 | N. FORI | S1 | α1 |
| 14 | 25,4 | 466,72 | 438,15 | 8 | 14 | 45° |
| 18 | 15,7 | 571,5 | 542,92 | 6 | 17 | 60° |

C.G.= GRAVITY CENTER