



GENERATOR TYPE ECP 34-2L/4

Document : **DS015A/1**

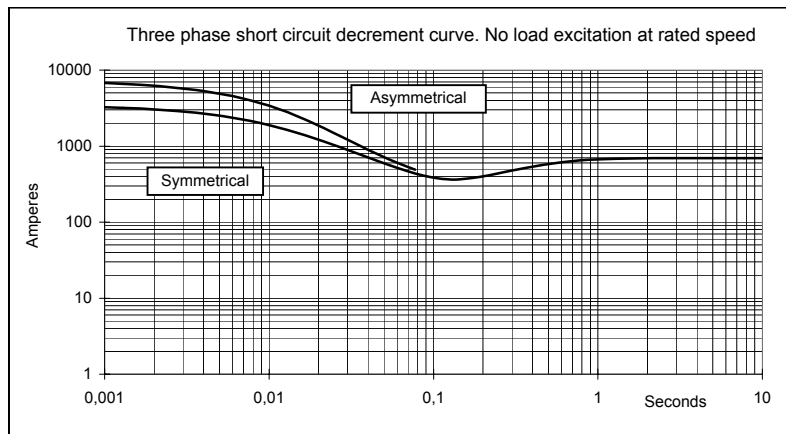
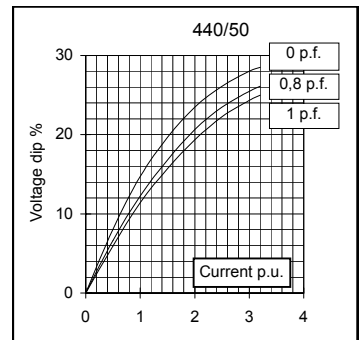
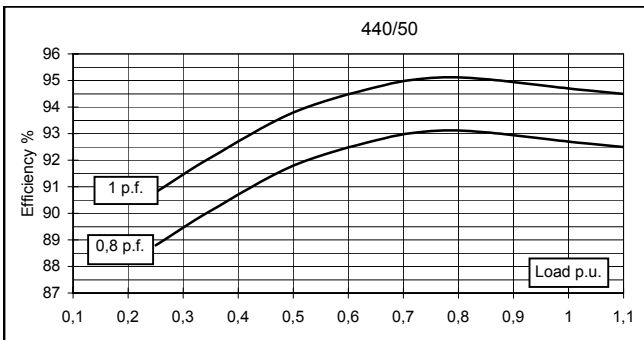
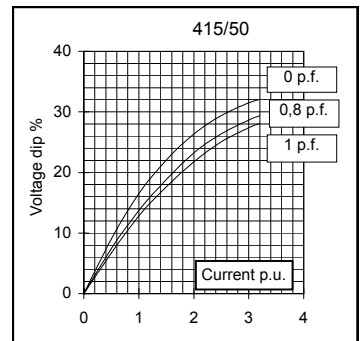
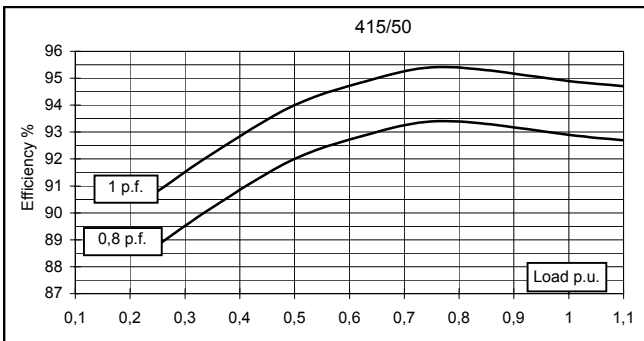
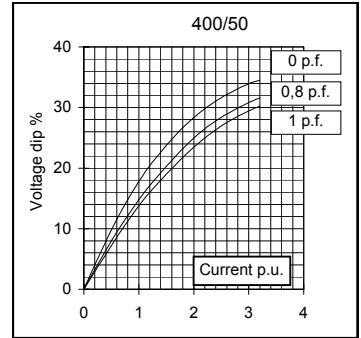
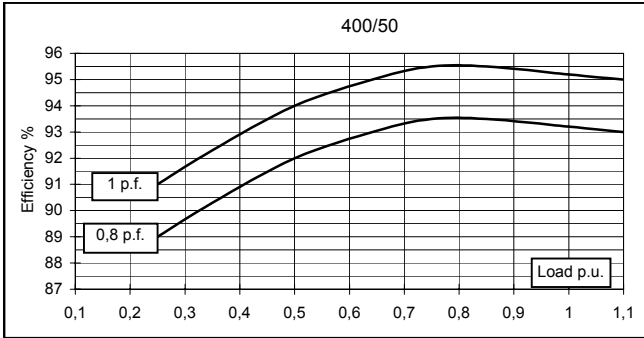
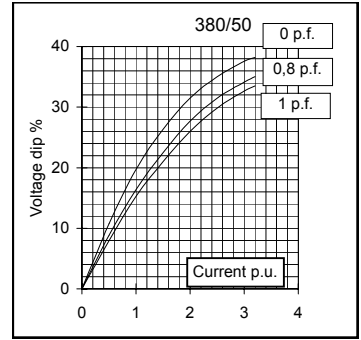
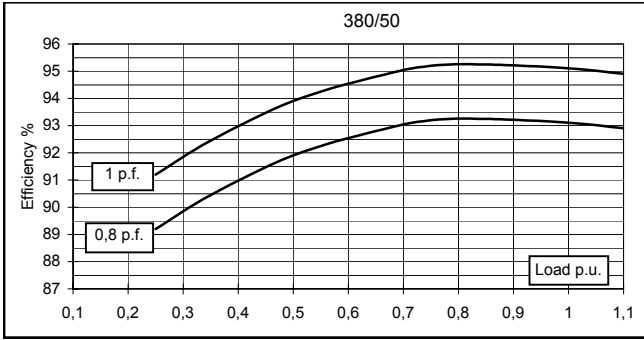
issue 002 date 01/06/2011

| Electrical Characteristics | | | | | | | | | | |
|--------------------------------------|----------------|---|---|-------|-------|-------|----------------|-------|-------|-------|
| Frequency | Hz | 50 | | | | 60 | | | | |
| Voltage (series star) | V | 380 | 400 | 415 | 440 | 415 | 440 | 460 | 480 | |
| Rated power class H | kVA | 150 | 150 | 150 | 125 | 150 | 170 | 180 | 180 | |
| | kW | 120 | 120 | 120 | 100 | 120 | 136 | 144 | 144 | |
| Rated power class F | kVA | 136 | 136 | 136 | 113 | 132 | 150 | 163 | 163 | |
| | kW | 109 | 109 | 109 | 90,4 | 106 | 120 | 130 | 130 | |
| 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 | % | 93,1 | 93,2 | 92,9 | 92,7 | 94,3 | 94,8 | 94,9 | 95 |
| (see graph. for details) | 3/4 | % | 93,2 | 93,5 | 93,4 | 93,1 | 94,7 | 94,9 | 95 | 95,2 |
| | 2/4 | % | 91,9 | 92 | 92 | 91,8 | 93,5 | 93,6 | 93,7 | 93,8 |
| | 1/4 | % | 89,2 | 89 | 88,8 | 88,8 | 90,2 | 90,2 | 90,2 | 90 |
| Reactances (f. l.cl. F) | Xd | % | 265,9 | 240 | 223,0 | 165,3 | 267,6 | 269,8 | 261,3 | 240 |
| | Xd' | % | 16,4 | 14,8 | 13,7 | 10,2 | 16,5 | 16,6 | 16,1 | 14,8 |
| | Xd'' | % | 6,9 | 6,2 | 5,8 | 4,3 | 6,9 | 7,0 | 6,8 | 6,2 |
| | Xq | % | 135,3 | 122,1 | 113,4 | 84,1 | 136,1 | 137,2 | 132,9 | 122,1 |
| | Xq' | % | 135,3 | 122,1 | 113,4 | 84,1 | 136,1 | 137,2 | 132,9 | 122,1 |
| | Xq'' | % | 29,4 | 26,5 | 24,6 | 18,3 | 29,5 | 29,8 | 28,9 | 26,5 |
| | X ₂ | % | 18,3 | 16,5 | 15,3 | 11,4 | 18,4 | 18,5 | 18,0 | 16,5 |
| | X ₀ | % | 2,8 | 2,5 | 2,3 | 1,7 | 2,8 | 2,8 | 2,7 | 2,5 |
| Short Circuit Ratio | Kcc | | 0,40 | 0,48 | 0,55 | 0,91 | 0,30 | 0,35 | 0,40 | 0,48 |
| Time Constants | Td' | sec. | 0,0401 | | | | | | | |
| | Td'' | sec. | 0,0095 | | | | | | | |
| | Tdo' | sec. | 1,90 | | | | | | | |
| | Tα | sec. | 0,017 | | | | | | | |
| Short Circuit Current Capacity | | % | >300 | | | | >350 | | | |
| Excitation at no load | Amp. | | 0,3 | 0,4 | 0,5 | 0,7 | 0,2 | 0,3 | 0,4 | 0,5 |
| Excitation at full load | Amp. | | 2,3 | 2,4 | 2,5 | 2,7 | 2,1 | 2,3 | 2,4 | 2,6 |
| Overload (long-term) | | % | 1 hour in a 6 hours period 110% rated load | | | | | | | |
| Overload per 20 sec. | | % | 300 | | | | | | | |
| Stator Winding Resistance (20°C) | Ω | | 0,015 | | | | | | | |
| Rotor Winding Resistance (20°C) | Ω | | 3,577 | | | | | | | |
| Exciter Resistance (20 °C) | Ω | | Rotor : 0,410 | | | | Stator : 15,28 | | | |
| Heat dissipation at f.l.cl.H | W | | 8894 | 8755 | 9171 | 7875 | 7253 | 7460 | 7739 | 7579 |
| 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 % | | 1,7 / 1,8 | | | | | | | |
| Waveform Distors.(THD) at no load | LL/LN % | | 2,3 / 2,4 | | | | | | | |
| Mechanical characteristics | | | | | | | | | | |
| Protection | | | IP 21 (other protection on request) | | | | | | | |
| DE bearing | | | 6314.2RS | | | | | | | |
| NDE bearing | | | 6311.2RS | | | | | | | |
| Weight of wound stator assembly | kg | | 168 | | | | | | | |
| Weight of wound rotor assembly | kg | | 106 | | | | | | | |
| Weight of complete generator | kg | | 491 | | | | | | | |
| Maximun overspeed | rpm | | 2250 | | | | | | | |
| Unbalanced magnetic pull at f.l.cl.F | kN/mm | | 5,6 | | | | | | | |
| Cooling air requirement | m³/min | | 19,3 | | | | 23 | | | |
| Inertia Constant (H) | sec. | | 0,098 | | | | 0,117 | | | |
| Noise level at 1m/7m | dB(A) | | 79 / 65 | | | | 83 / 69 | | | |

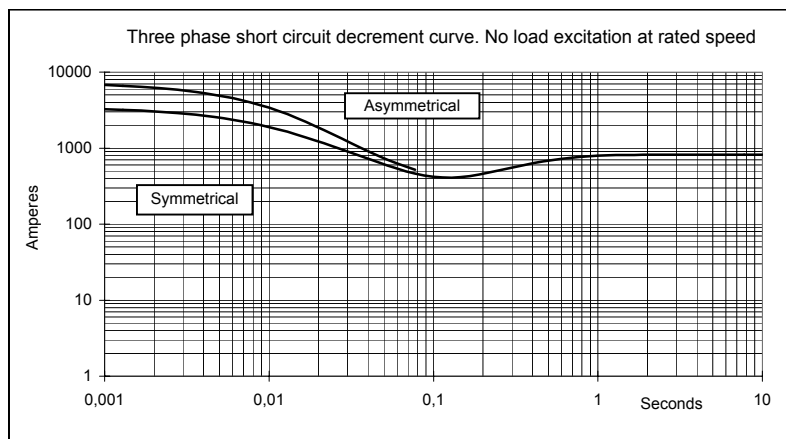
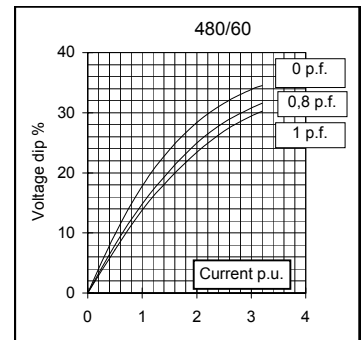
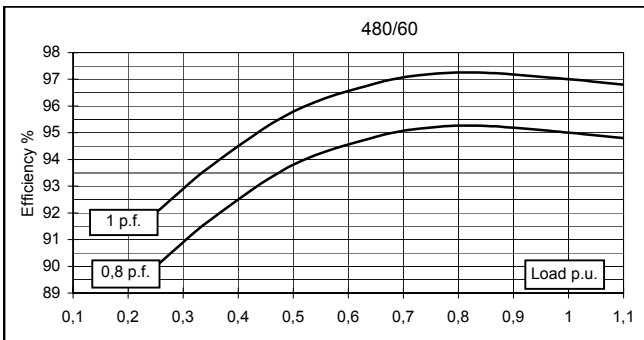
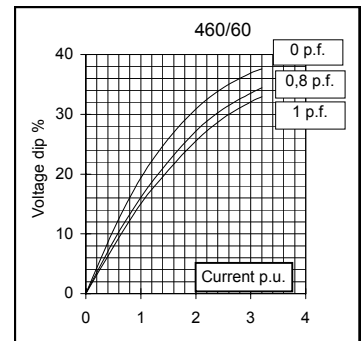
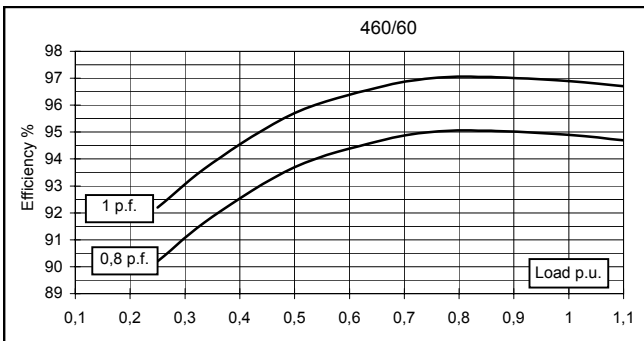
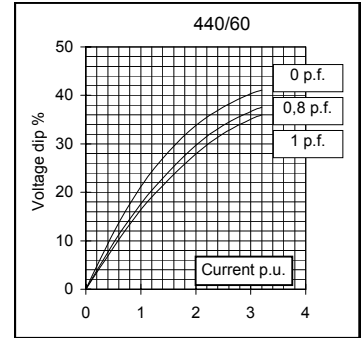
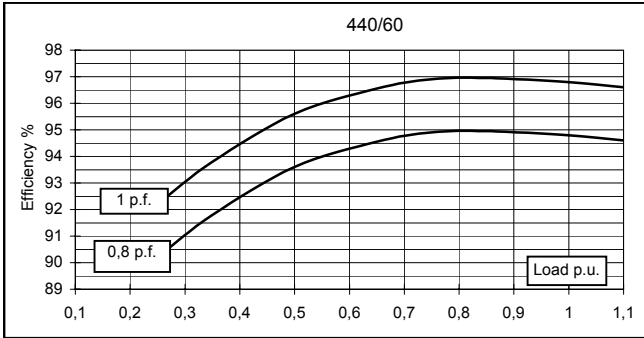
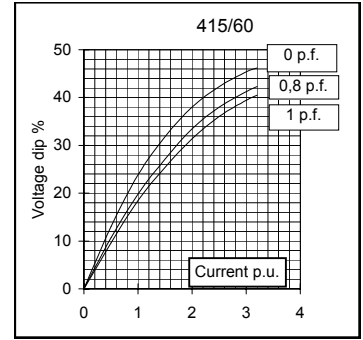
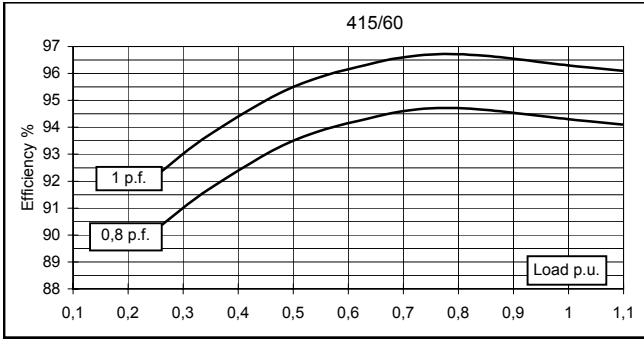
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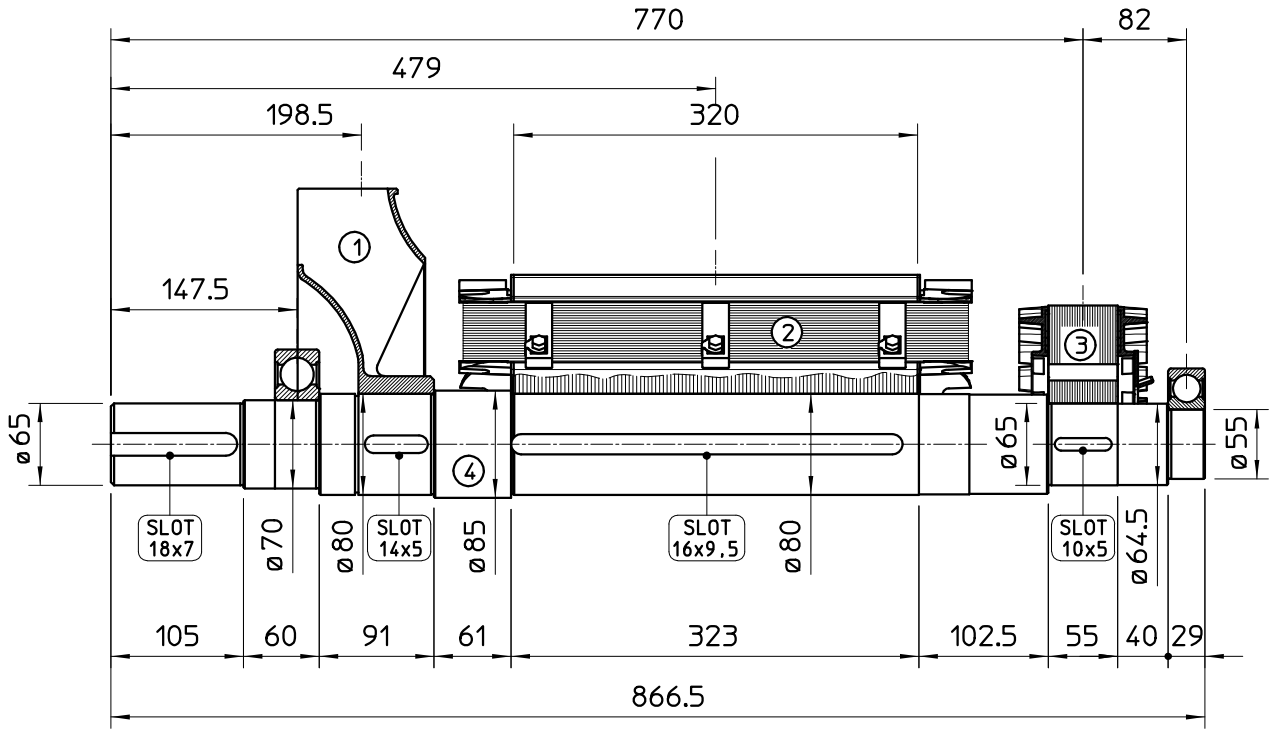
50 Hz



60 Hz

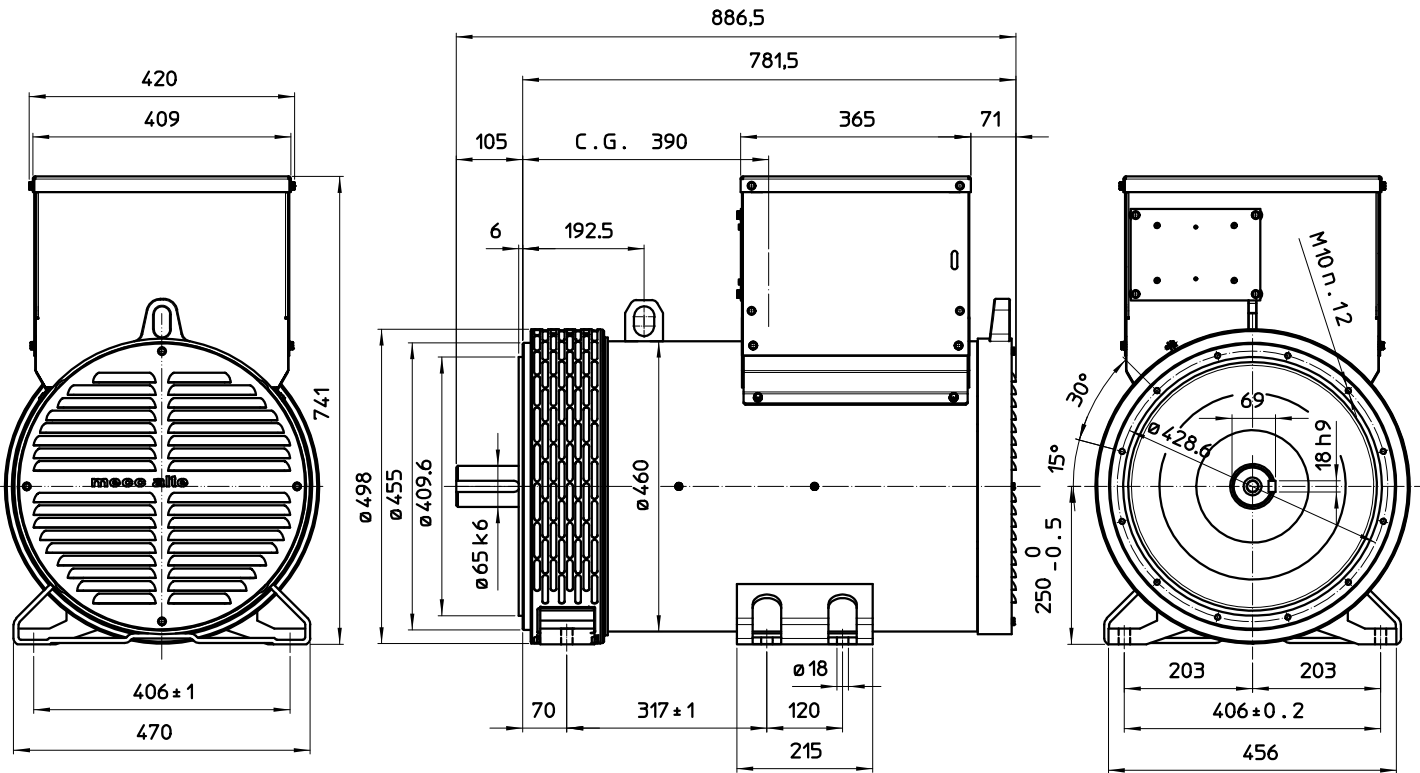


TWO BEARING MOMENTS OF INERTIA



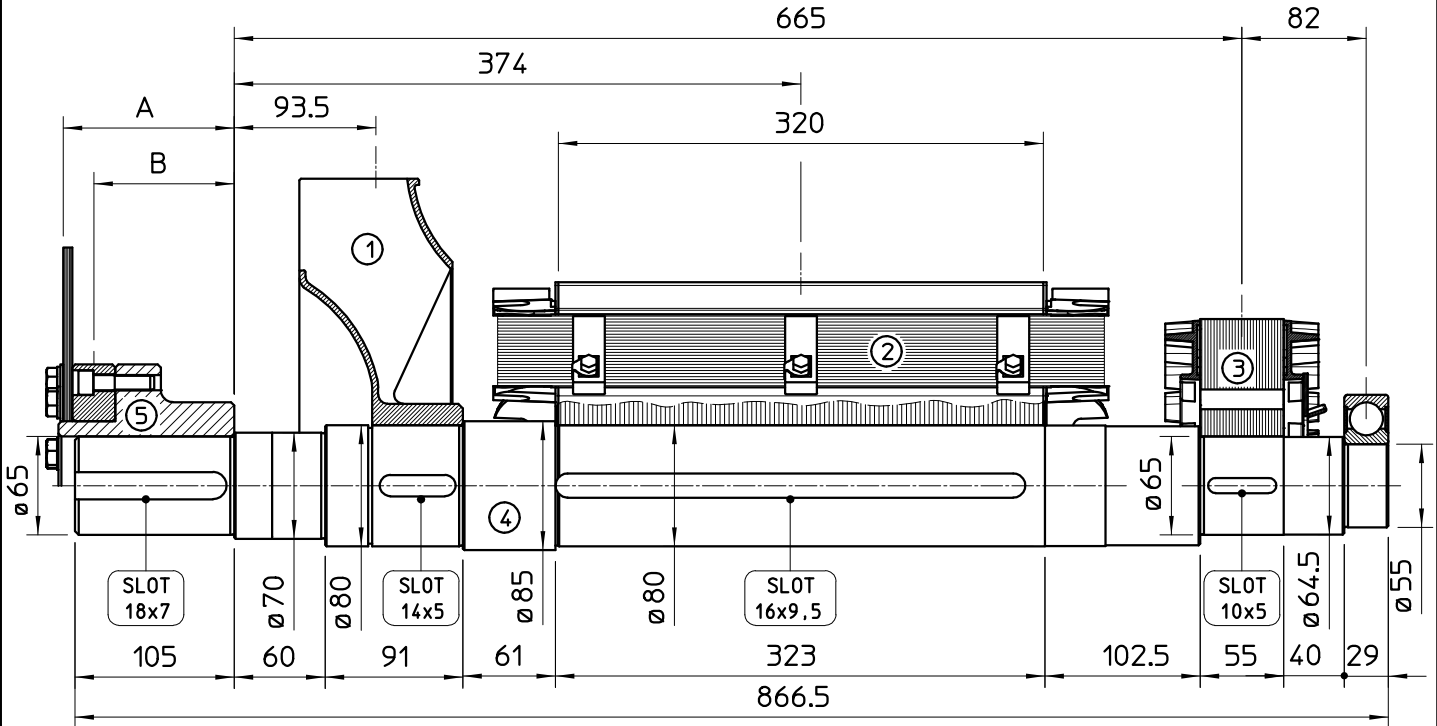
| POS. | COMPONENT | WEIGHT (kg) | J (kgm ²) |
|-------|------------|-------------|-----------------------|
| 1 | FAN | 3.3 | 0.0451 |
| 2 | MAIN ROTOR | 107.3 | 0.9647 |
| 3 | EX. ROTOR | 14.5 | 0.0874 |
| 4 | SHAFT | 29.6 | 0.0218 |
| TOTAL | | 154.7 | 1.119 |

TWO BEARING DIMENSIONS



C.G.= GRAVITY CENTER

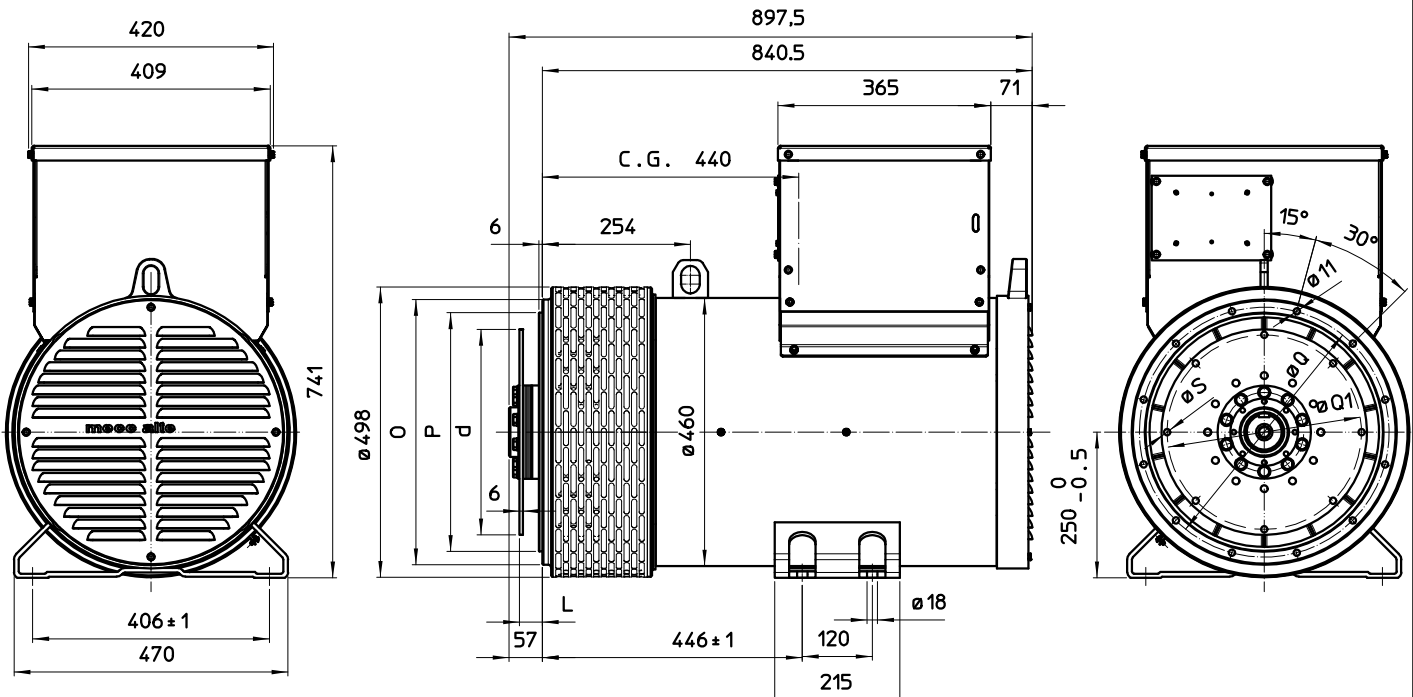
SINGLE BEARING MOMENTS OF INERTIA



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|-------|------------|-------------|-----------------------|
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| 4 | SHAFT | 29.6 | 0.0218 |
| TOTAL | | 154.7 | 1.119 |

| SAE N° | SHAFTS COUPLING FLEX PLATE | | | |
|--------|----------------------------|------|-----------|--------------------|
| | A | B | WEIGHT kg | J kgm ² |
| 10 | 112.8 | 35.6 | 13.5 | 0.0770 |
| 11 1/2 | 98.6 | 71.5 | 12.4 | 0.0956 |
| 14 | 84.4 | 68.6 | 14.8 | 0.2360 |

SINGLE BEARING DIMENSIONS



| SAE N. | GIUNTI A DISCHI DISC COUPLING DISQUE DE MONOPALIER SCHEIBENKUPPLUNG | | | | |
|--------|--|--------|--------|---------|----|
| | L | d | Q1 | N. fori | S |
| 10 | 53,8 | 314,32 | 295,27 | 8 | 11 |
| 11 1/2 | 39,6 | 352,42 | 333,37 | 8 | 11 |
| 14 | 25,4 | 466,72 | 438,15 | 8 | 14 |

| SAE N. | FLANGIA/FLANGE BRIDE/FLANSCH | | | |
|--------|---------------------------------|-------|-------|---------|
| | O | P | Q | N. fori |
| 3 | 451 | 409,6 | 428,6 | 12 |
| 2 | 489 | 447,7 | 466,7 | 12 |
| 1 | 552 | 511,2 | 530,2 | 12 |

C.G.= GRAVITY CENTER