



GENERATOR TYPE ECP 34-1L/2

Document : **DS067A/1**

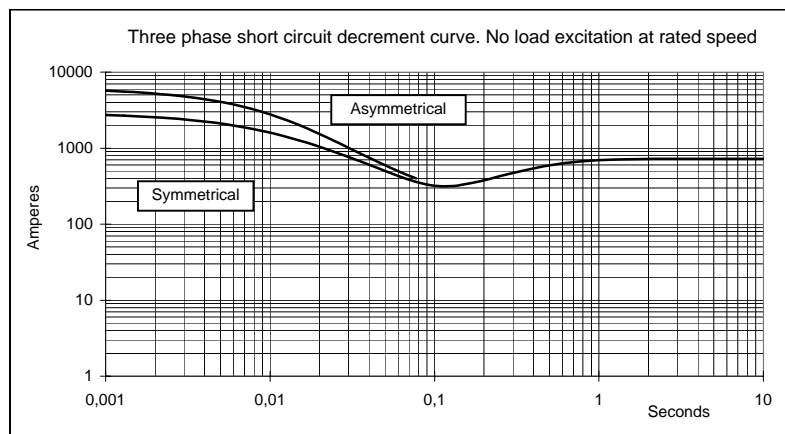
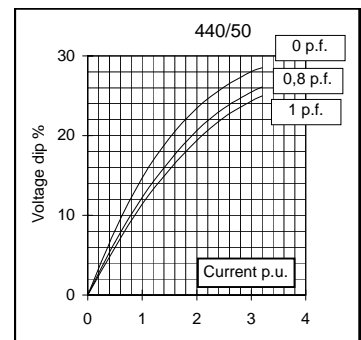
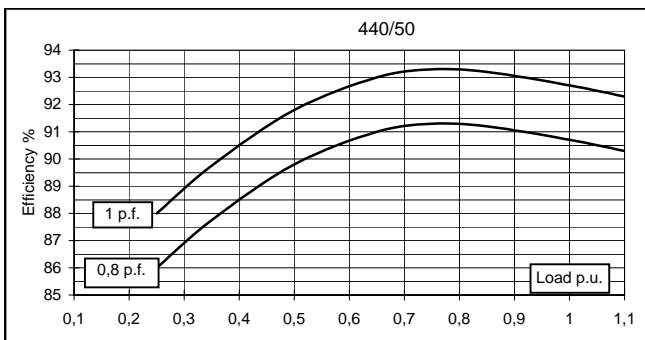
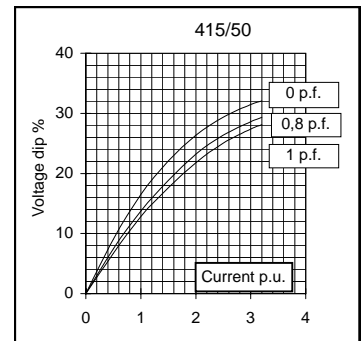
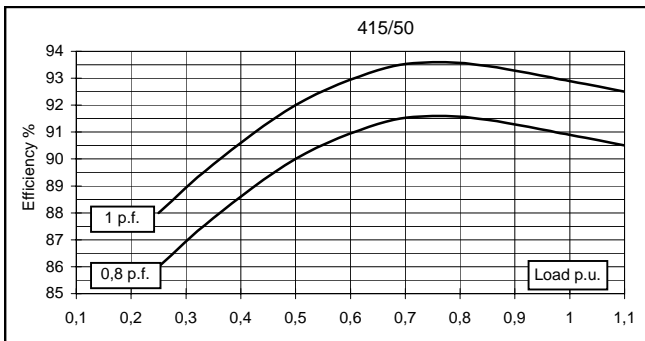
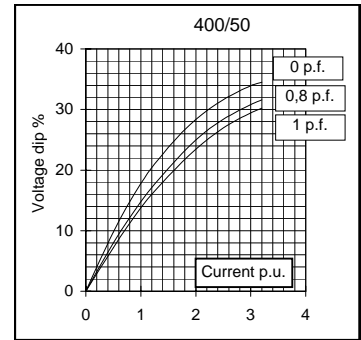
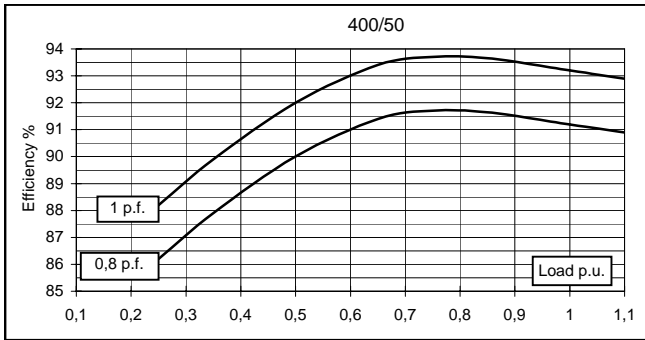
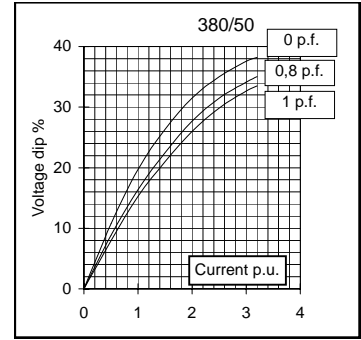
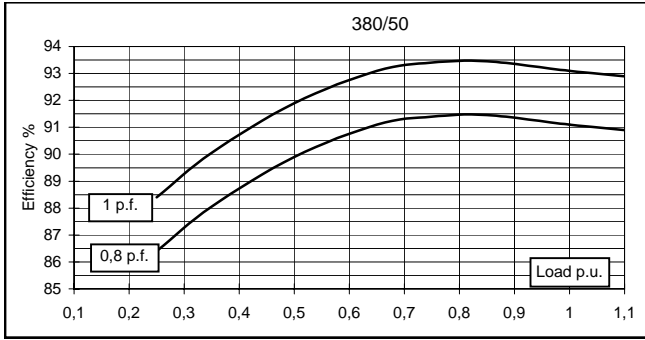
issue 001 date 02/04/2009

| Electrical Characteristics | | | | | | | | | | |
|--------------------------------------|---------------------|---|--|-------|-------|-------|----------------|-------|-------|-------|
| Frequency | Hz | 50 | | | | 60 | | | | |
| Voltage (series star) | V | 380 | 400 | 415 | 440 | 415 | 440 | 460 | 480 | |
| Rated power class H | kVA | 156 | 156 | 156 | 130 | 160 | 174 | 187 | 187 | |
| | kW | 125 | 125 | 125 | 104 | 128 | 139 | 150 | 150 | |
| Rated power class F | kVA | 140 | 140 | 140 | 115 | 145 | 156 | 169 | 169 | |
| | kW | 112 | 112 | 112 | 92 | 116 | 125 | 135 | 135 | |
| Regulation with | SR7/2 | ±1,5% 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 | % | 91,1 | 91,2 | 90,9 | 90,7 | 92,1 | 92,6 | 92,7 | 92,8 |
| (see graph. for details) | 3/4 | % | 91,4 | 91,7 | 91,6 | 91,3 | 92,9 | 93,1 | 93,2 | 93,4 |
| | 2/4 | % | 89,9 | 90 | 90 | 89,8 | 91,3 | 91,4 | 91,5 | 91,6 |
| | 1/4 | % | 86,4 | 86,2 | 86 | 86 | 88 | 88 | 88 | 87,8 |
| Reactances (f. l.cl. F) | Xd | % | 429,9 | 388 | 360,5 | 267,2 | 444,1 | 429,7 | 422,5 | 388 |
| | Xd' | % | 17,0 | 15,3 | 14,2 | 10,5 | 17,5 | 16,9 | 16,7 | 15,3 |
| | Xd'' | % | 8,5 | 7,7 | 7,2 | 5,3 | 8,8 | 8,5 | 8,4 | 7,7 |
| | Xq | % | 165,8 | 149,6 | 139,0 | 103,0 | 171,2 | 165,7 | 162,9 | 149,6 |
| | Xq' | % | 165,8 | 149,6 | 139,0 | 103,0 | 171,2 | 165,7 | 162,9 | 149,6 |
| | Xq'' | % | 25,3 | 22,8 | 21,2 | 15,7 | 26,1 | 25,2 | 24,8 | 22,8 |
| | X ₂ | % | 20,8 | 18,8 | 17,5 | 12,9 | 21,5 | 20,8 | 20,5 | 18,8 |
| | X ₀ | % | 3,3 | 3,0 | 2,8 | 2,1 | 3,4 | 3,3 | 3,3 | 3,0 |
| Short Circuit Ratio | Kcc | | 0,19 | 0,20 | 0,21 | 0,22 | 0,17 | 0,18 | 0,19 | 0,20 |
| Time Constants | Td' | sec. | 0,0354 | | | | | | | |
| | Td'' | sec. | 0,0086 | | | | | | | |
| | Tdo' | sec. | 1,30 | | | | | | | |
| | Tα | sec. | 0,0195 | | | | | | | |
| Short Circuit Current Capacity | | % | >300 | | | | >350 | | | |
| Excitation at no load | Amp. | | 0,3 | 0,41 | 0,45 | 0,6 | 0,22 | 0,25 | 0,3 | 0,37 |
| Excitation at full load | Amp. | | 3 | 3,2 | 3,4 | 3,3 | 3,3 | 3,2 | 3 | 3,1 |
| Overload (long-term) | | % | 1 hour in a 6 hours period 110% rated load | | | | | | | |
| Overload per 20 sec. | | % | 300 | | | | | | | |
| Stator Winding Resistance (20°C) | Ω | | 0,013 | | | | | | | |
| Rotor Winding Resistance (20°C) | Ω | | 1,906 | | | | | | | |
| Exciter Resistance (20 °C) | Ω | | Rotor : 0,410 | | | | Stator : 15,28 | | | |
| Heat dissipation at f.l.cl.H | W | | 12192 | 12042 | 12494 | 10664 | 10979 | 11124 | 11781 | 11607 |
| Telephone Interference | | | THF < 2% | | | | TIF < 40 | | | |
| Radio interference | | | EN60034-1. For others standards apply to factory | | | | | | | |
| Waveform Distors.(THD) at f. load | LL/LN % | | 3,1 / 4,9 | | | | | | | |
| Waveform Distors.(THD) at no load | LL/LN % | | 3,6 / 4,8 | | | | | | | |
| Mechanical characteristics | | | | | | | | | | |
| Protection | | | IP 21 (other protection on request) | | | | | | | |
| DE bearing | | | 6314.2Z | | | | | | | |
| NDE bearing | | | 6311.2RS | | | | | | | |
| Weight of wound stator assembly | kg | | 193 | | | | | | | |
| Weight of wound rotor assembly | kg | | 117,3 | | | | | | | |
| Weight of complete generator | kg | | 456 | | | | | | | |
| Maximun overspeed | rpm | | 4300 | | | | | | | |
| Unbalanced magnetic pull at f.l.cl.F | kN/mm | | 4,4 | | | | | | | |
| Cooling air requirement | m ³ /min | | 35,4 | | | | 42 | | | |
| Inertia Constant (H) | sec. | | 0,051 | | | | 0,061 | | | |
| Noise level at 1m/7m | dB(A) | | 92/79 | | | | 96/82 | | | |

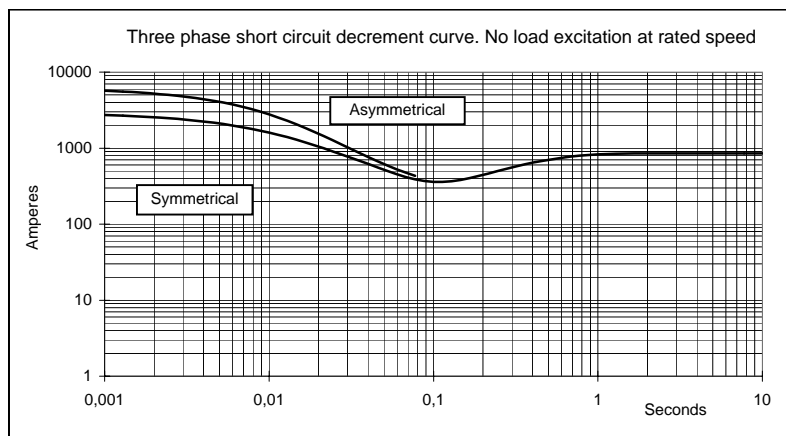
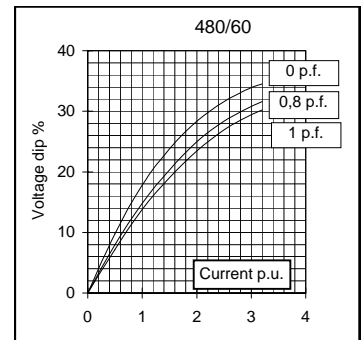
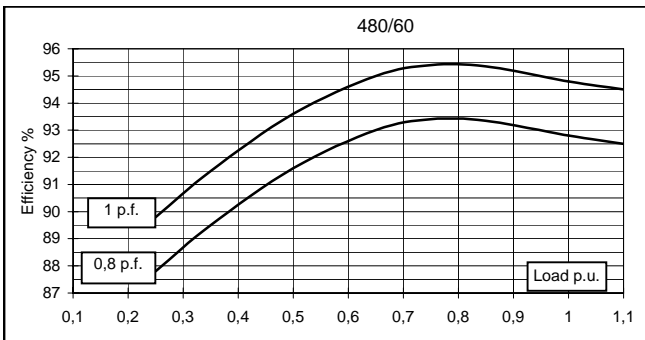
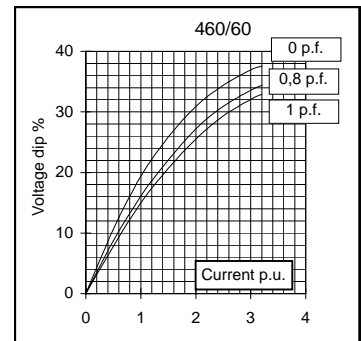
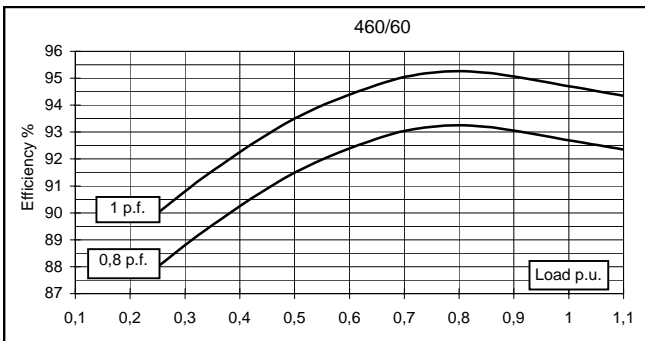
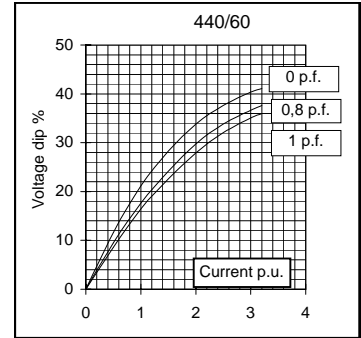
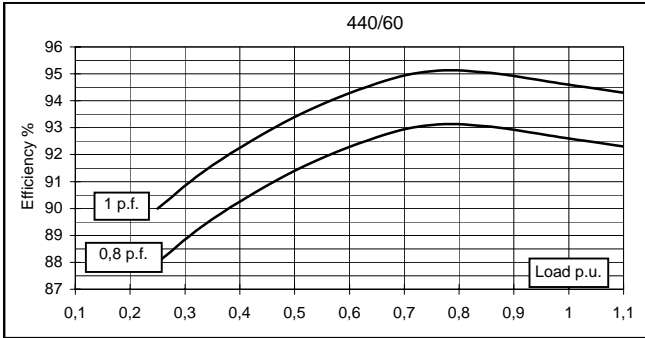
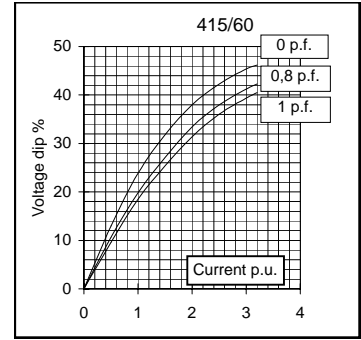
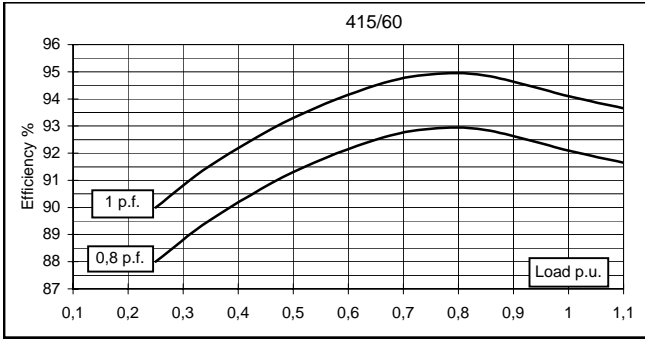
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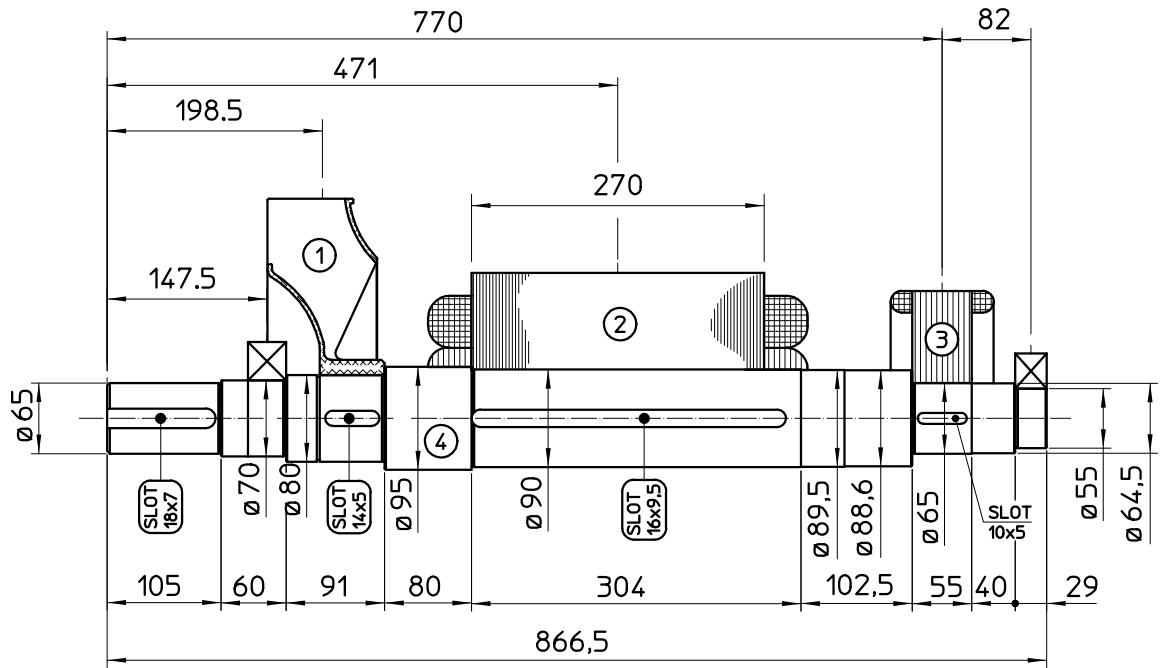
50 Hz



60 Hz

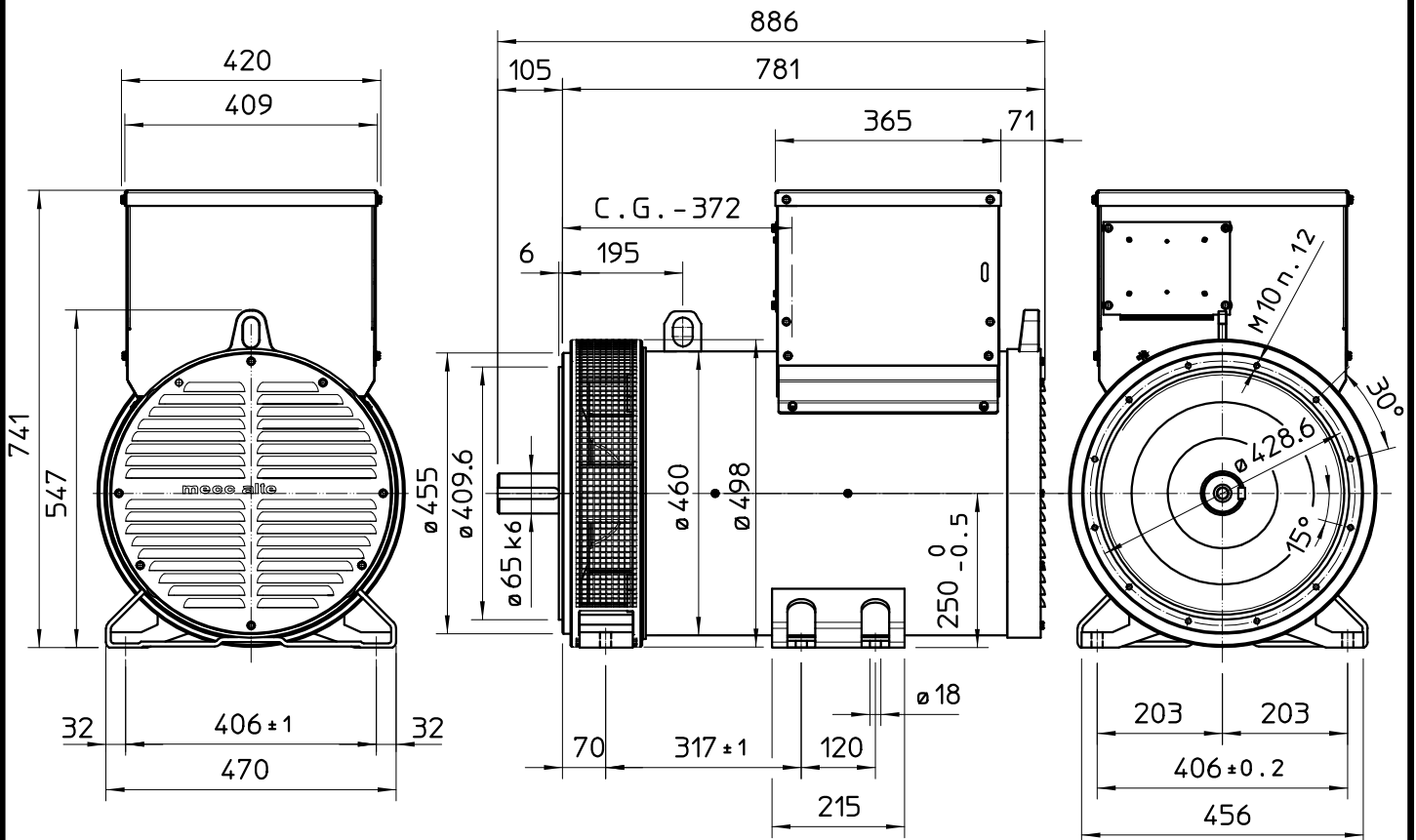


TWO BEARING MOMENTS OF INERTIA



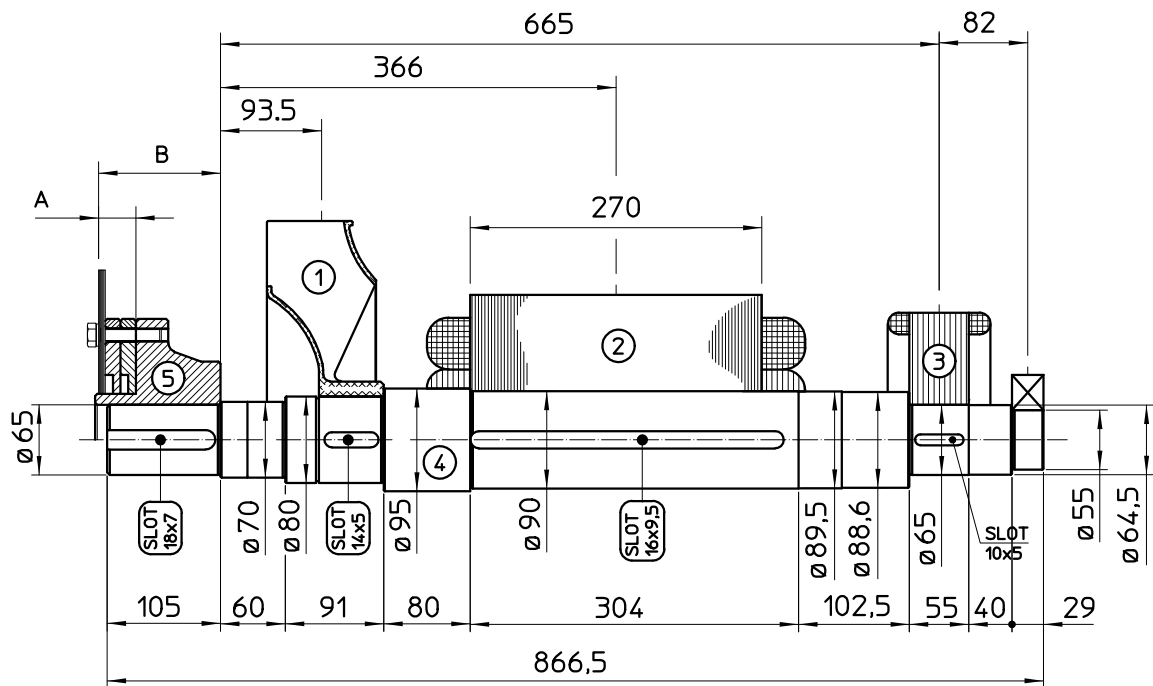
| | COMPONENT | WEIGHT kg | J kgm ² |
|---|------------|-----------|--------------------|
| 1 | FAN | 3,3 | 0.0451 |
| 2 | MAIN ROTOR | 65 | 0.479 |
| 3 | EX. ROTOR | 14,5 | 0.0874 |
| 4 | SHAFT | 34,5 | 0.0313 |
| | TOTAL | 117,3 | 0.6428 |

TWO BEARING DIMENSIONS



C.G. = GRAVITY CENTER

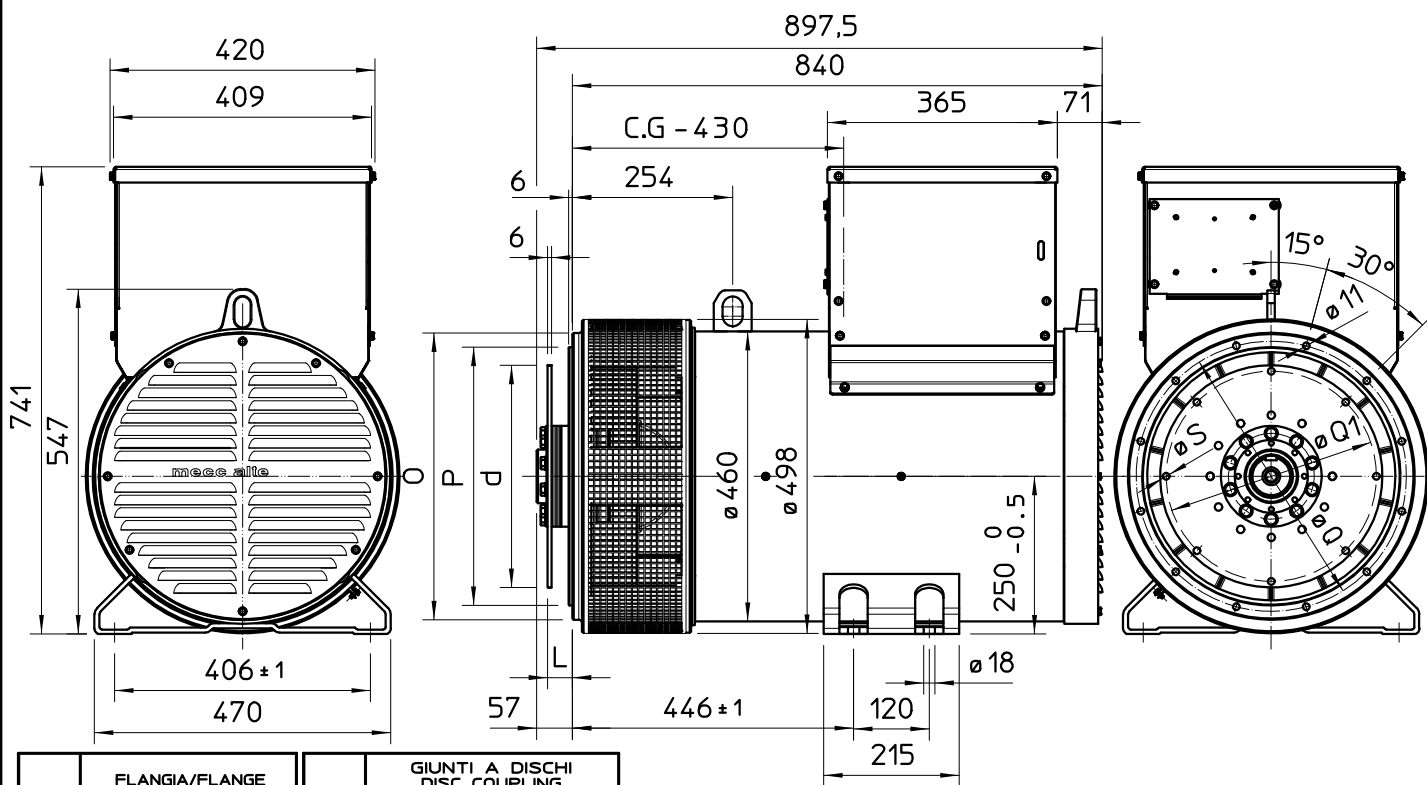
SINGLE BEARING MOMENTS OF INERTIA



| | COMPONENT | WEIGHT kg | J kgm ² |
|---|------------|-----------|--------------------|
| 1 | FAN | 3,3 | 0,0451 |
| 2 | MAIN ROTOR | 65 | 0,479 |
| 3 | EX. ROTOR | 14,5 | 0,0874 |
| 4 | SHAFT | 34,5 | 0,0313 |
| | TOTAL | 117,3 | 0,6428 |

| SAE No | SHAFTS COUPLING FLEX PLATE | | | |
|--------|----------------------------|-------|-----------|--------------------|
| | A | B | WEIGHT kg | J kgm ² |
| 5 | | | | |
| 10 | 46,5 | 112,8 | 20,5 | 0,1342 |
| 11,5 | 37,3 | 98,6 | 19,3 | 0,1512 |
| 14 | 27,4 | 84,4 | 21,1 | 0,2752 |

SINGLE BEARING DIMENSIONS



| SAE Z. | FLANGIA/FLANGE BRIDE/FLANSCH | | | | SAE Z. | GIUNTI A DISCHI DISC COUPLING DISQUE DE MONOPALIER SCHEIBENKUPPLUNG | | | | |
|--------|---------------------------------|-------|-------|------------|--------|--|--------|--------|------------|----|
| | O | P | Q | N. fori | | L | d | Q1 | N. fori | S |
| 3 | 451 | 409,6 | 428,6 | 12 | 10 | 53,8 | 314,32 | 295,27 | 8 | 11 |
| 2 | 489 | 447,7 | 466,7 | 12 | 11 1/2 | 39,6 | 352,42 | 333,37 | 8 | 11 |
| 1 | 552 | 511,2 | 530,2 | 12 | 14 | 25,4 | 466,72 | 438,15 | 8 | 14 |

C.G. = GRAVITY CENTER