



GENERATOR TYPE ECP 3-2S/4

Document : DS149A/1

issue 002 date 29/04/2014

| Electrical Characteristics | | | | | | | | | | |
|--------------------------------------|----------------|--|---|------|-------|-------|----------------|-------|-------|------|
| Frequency | Hz | 50 | | | | 60 | | | | |
| Voltage (series star) | V | 380 | 400 | 415 | 440 | 415 | 440 | 460 | 480 | |
| Rated power class H | kVA | 8 | 8 | 8 | 6,8 | 9 | 9,6 | 9,6 | 9,6 | |
| | kW | 6,4 | 6,4 | 6,4 | 5,4 | 7,2 | 7,7 | 7,7 | 7,7 | |
| Rated power class F | kVA | 7,5 | 7,5 | 7,5 | 6,4 | 7,5 | 9 | 9 | 9 | |
| | kW | 6 | 6 | 6 | 5,1 | 6 | 7,2 | 7,2 | 7,2 | |
| Regulation with | DSR | ±1 % with any power factor and speed variations between -5% +30% | | | | | | | | |
| Insulation class | | H | | | | | | | | |
| Execution | | Brushless | | | | | | | | |
| Stator winding | | 12 ends | | | | | | | | |
| Rotor | | without damping cage | | | | | | | | |
| Efficiencies class H | 4/4 | % | 83,6 | 83,7 | 83,4 | 83,2 | 84,7 | 85,2 | 85,3 | 85,4 |
| (see graph. for details) | 3/4 | % | 84,4 | 84,7 | 84,6 | 84,3 | 85,7 | 85,9 | 86,1 | 86,3 |
| | 2/4 | % | 80,3 | 80,4 | 80,4 | 80,1 | 81,6 | 81,7 | 81,8 | 81,9 |
| | 1/4 | % | 75,5 | 75,6 | 75,4 | 74,9 | 76,8 | 76,6 | 76,7 | 77 |
| Reactances (f. l.cl. F) | Xd | % | 201,7 | 182 | 169,1 | 127,9 | 228,3 | 216,6 | 198,2 | 182 |
| | Xd' | % | 18,2 | 16,4 | 15,2 | 11,5 | 20,6 | 19,5 | 17,9 | 16,4 |
| | Xd'' | % | 13,1 | 11,8 | 11 | 8,3 | 14,8 | 14 | 12,8 | 11,8 |
| | Xq | % | 66,6 | 60,1 | 55,8 | 42,2 | 75,4 | 71,5 | 65,4 | 60,1 |
| | Xq' | % | 66,6 | 60,1 | 55,8 | 42,2 | 75,4 | 71,5 | 65,4 | 60,1 |
| | Xq'' | % | 71,2 | 64,3 | 59,7 | 45,2 | 80,6 | 76,5 | 70 | 64,3 |
| | X ₂ | % | 18,0 | 16,2 | 15,1 | 11,4 | 20,3 | 19,3 | 17,6 | 16,2 |
| | X ₀ | % | 6,3 | 5,7 | 5,3 | 4 | 7,1 | 6,8 | 6,2 | 5,7 |
| Short Circuit Ratio | Kcc | | 0,66 | 0,8 | 0,99 | 1,61 | 0,53 | 0,61 | 0,66 | 0,8 |
| Time Constants | Td' | sec. | 0,017 | | | | | | | |
| | Td'' | sec. | 0,011 | | | | | | | |
| | Tdo' | sec. | 0,73 | | | | | | | |
| | Tα | sec. | 0,012 | | | | | | | |
| Short Circuit Current Capacity | | % | >300 | | | | >320 | | | |
| Excitation at no load | Amp. | | 0,25 | 0,29 | 0,32 | 0,35 | 0,2 | 0,23 | 0,25 | 0,27 |
| Excitation at full load | Amp. | | 0,7 | 0,8 | 0,9 | 1 | 0,6 | 0,65 | 0,7 | 0,75 |
| Overload (long-term) | | % | 1 hour in a 6 hours period 110% rated load | | | | | | | |
| Overload per 20 sec. | | % | 300 | | | | | | | |
| Stator Winding Resistance (20°C) | Ω | | 0,636 | | | | | | | |
| Rotor Winding Resistance (20°C) | Ω | | 7,141 | | | | | | | |
| Exciter Resistance (20 °C) | Ω | | Rotor : 1,453 | | | | Stator : 15,71 | | | |
| Heat dissipation at f.l.cl.H | W | | 1256 | 1246 | 1274 | 1098 | 1301 | 1334 | 1324 | 1313 |
| Telephone Interference | | | THF < 2% | | | | TIF < 45 | | | |
| Radio interference | | | EN61000-6-3, EN61000-6-2. For others standards apply to factory | | | | | | | |
| Waveform Distors.(THD) at f. load | LL/LN % | | 2,8 / 2,4 | | | | | | | |
| Waveform Distors.(THD) at no load | LL/LN % | | 2,7 / 2,5 | | | | | | | |
| Mechanical characteristics | | | | | | | | | | |
| Protection | | | IP 23 (other protection on request) | | | | | | | |
| DE bearing | | | 6308-2RS | | | | | | | |
| NDE bearing | | | 6305-2RS | | | | | | | |
| Weight of wound stator assembly | kg | | 19,4 | | | | | | | |
| Weight of wound rotor assembly | kg | | 14,7 | | | | | | | |
| Weight of complete generator | kg | | 65 | | | | | | | |
| Maximun overspeed | rpm | | 2250 | | | | | | | |
| Unbalanced magnetic pull at f.l.cl.F | kN/mm | | 2,8 | | | | | | | |
| Cooling air requirement | m³/min | | 3,5 | | | | 4,1 | | | |
| Inertia Constant (H) | sec. | | 0,092 | | | | 0,111 | | | |
| Noise level at 1m/7m | dB(A) | | 72 / 58 | | | | 78 / 60 | | | |

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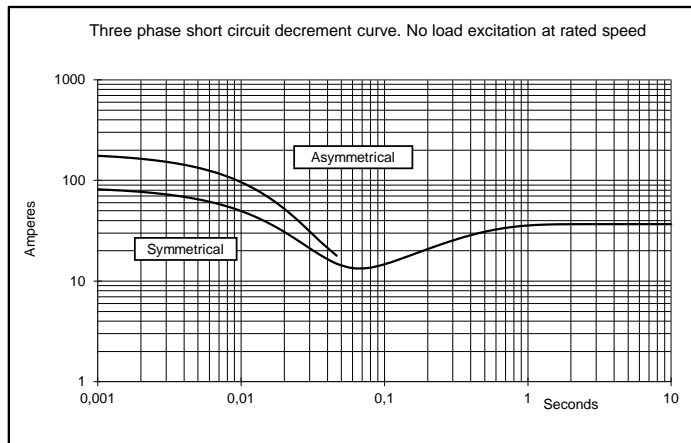
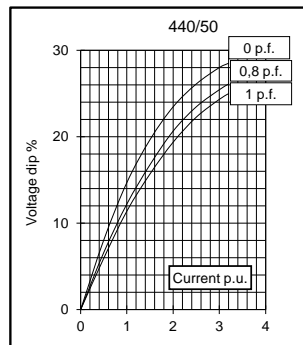
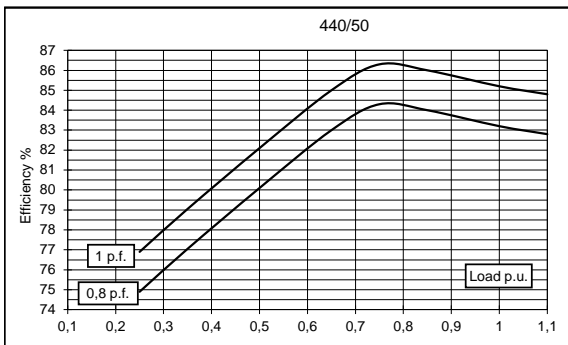
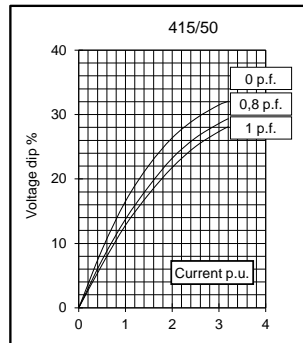
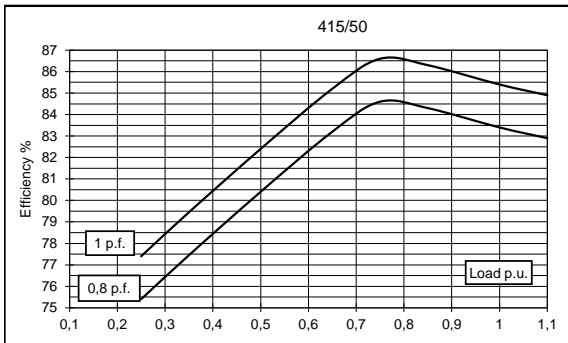
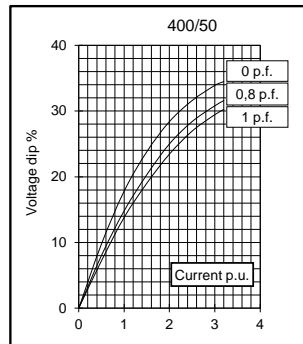
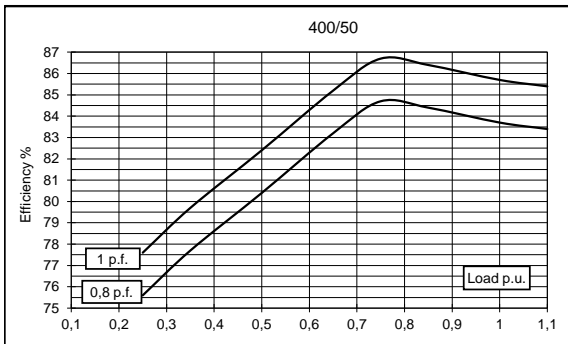
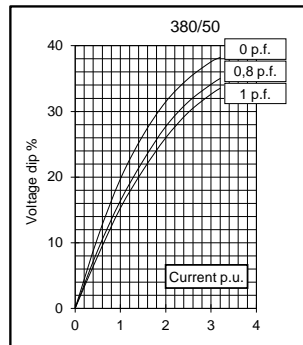
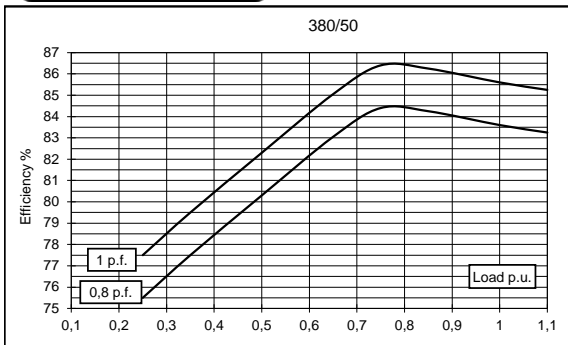


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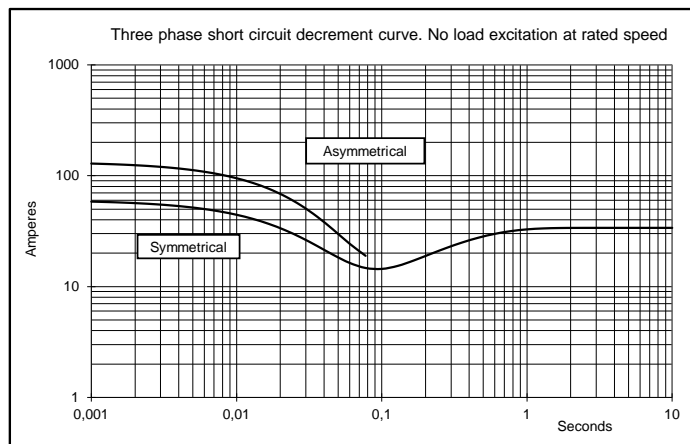
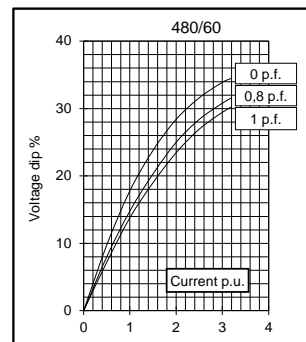
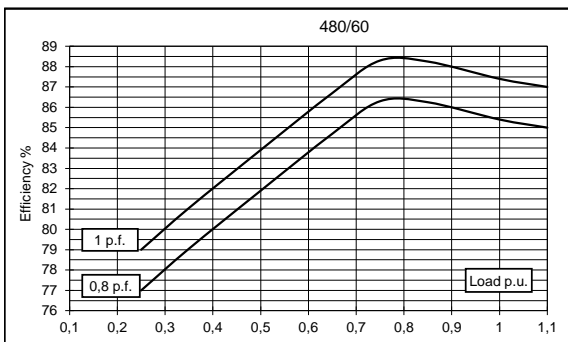
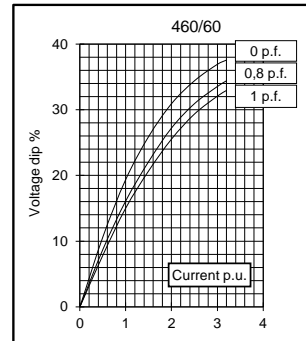
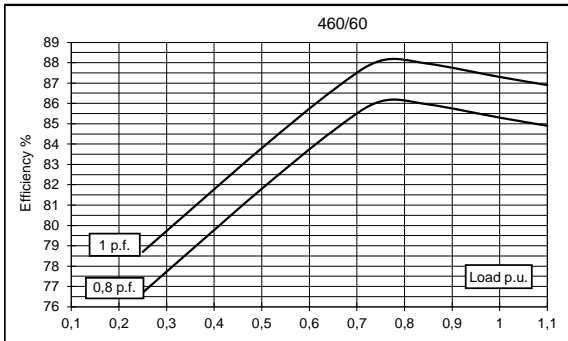
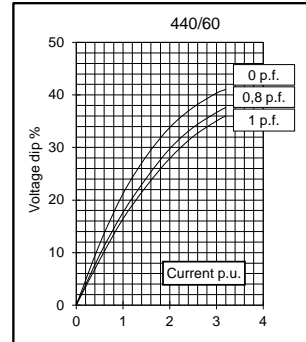
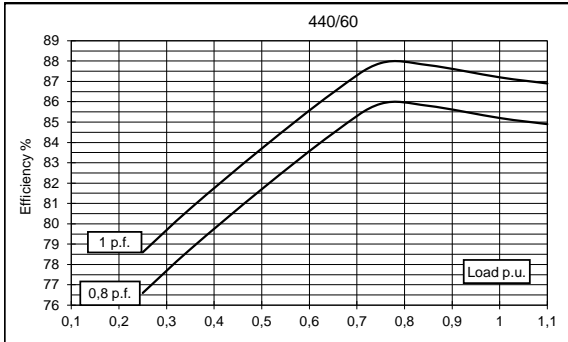
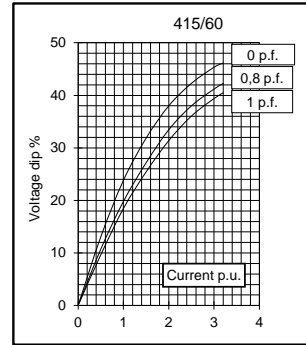
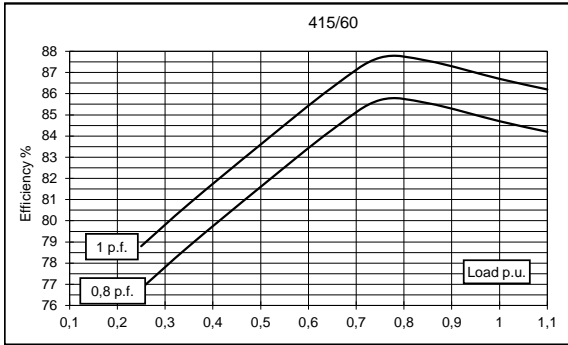
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50 Hz



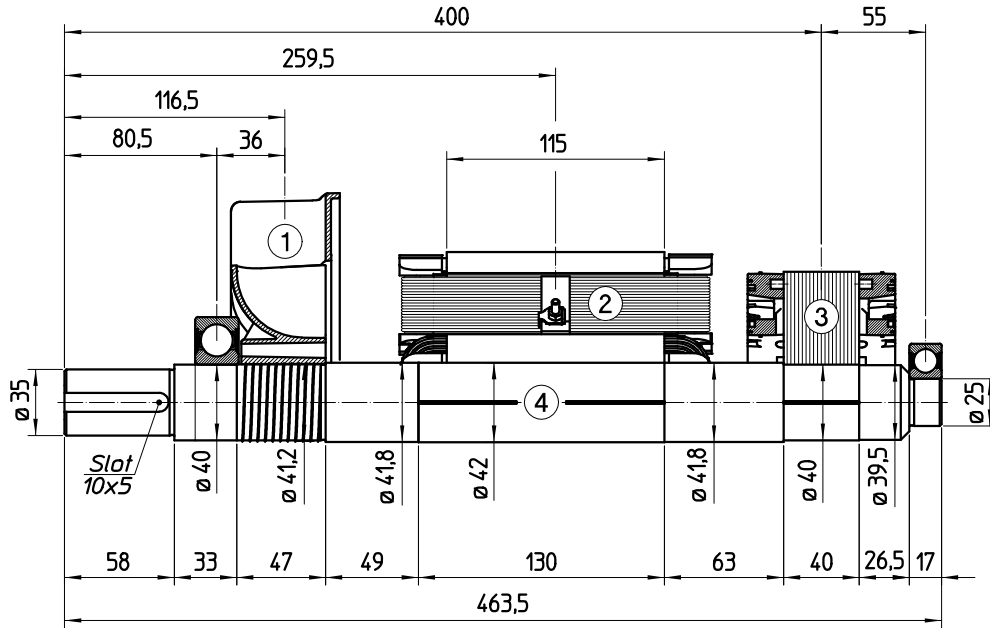
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60 Hz



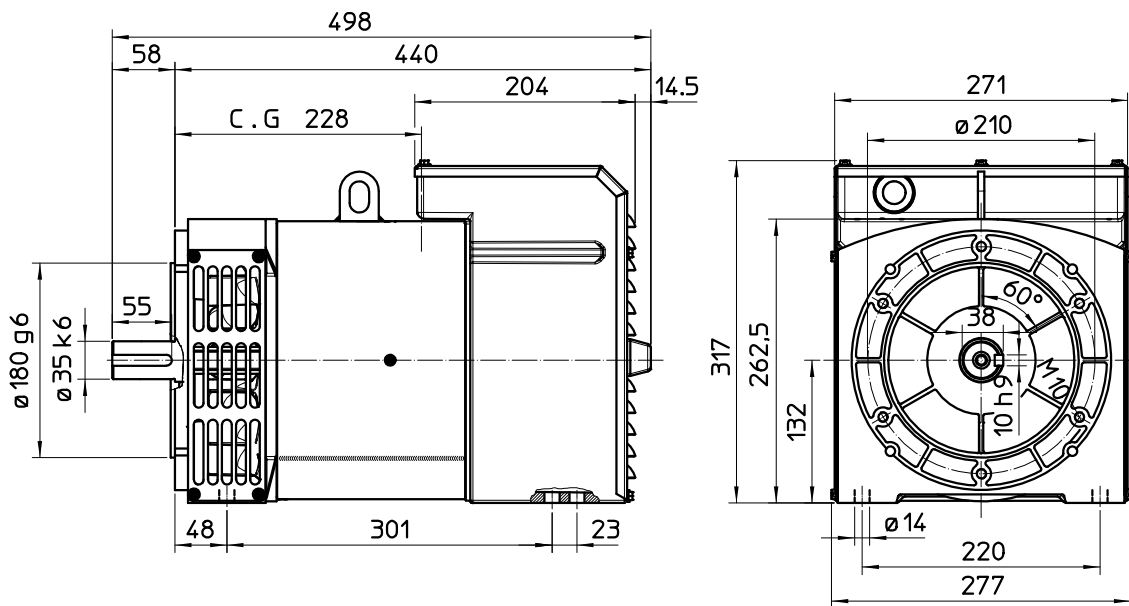
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TWO BEARING MOMENTS OF INERTIA

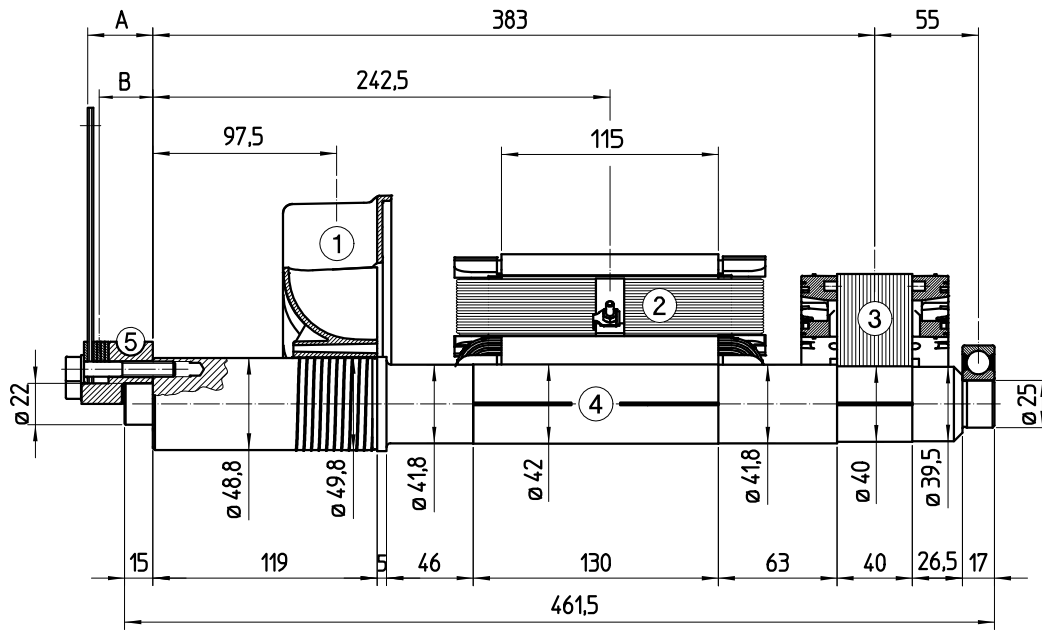


| POS. | COMPONENT | WEIGHT (kg) | J (kgm ²) |
|-------|------------|-------------|-----------------------|
| 1 | FAN | 0,4 | 0,00206 |
| 2 | MAIN ROTOR | 14,7 | 0,04548 |
| 3 | EX. ROTOR | 4,2 | 0,01086 |
| 4 | SHAFT | 4,5 | 0,00093 |
| TOTAL | | 23,8 | 0,05933 |

TWO BEARING DIMENSIONS



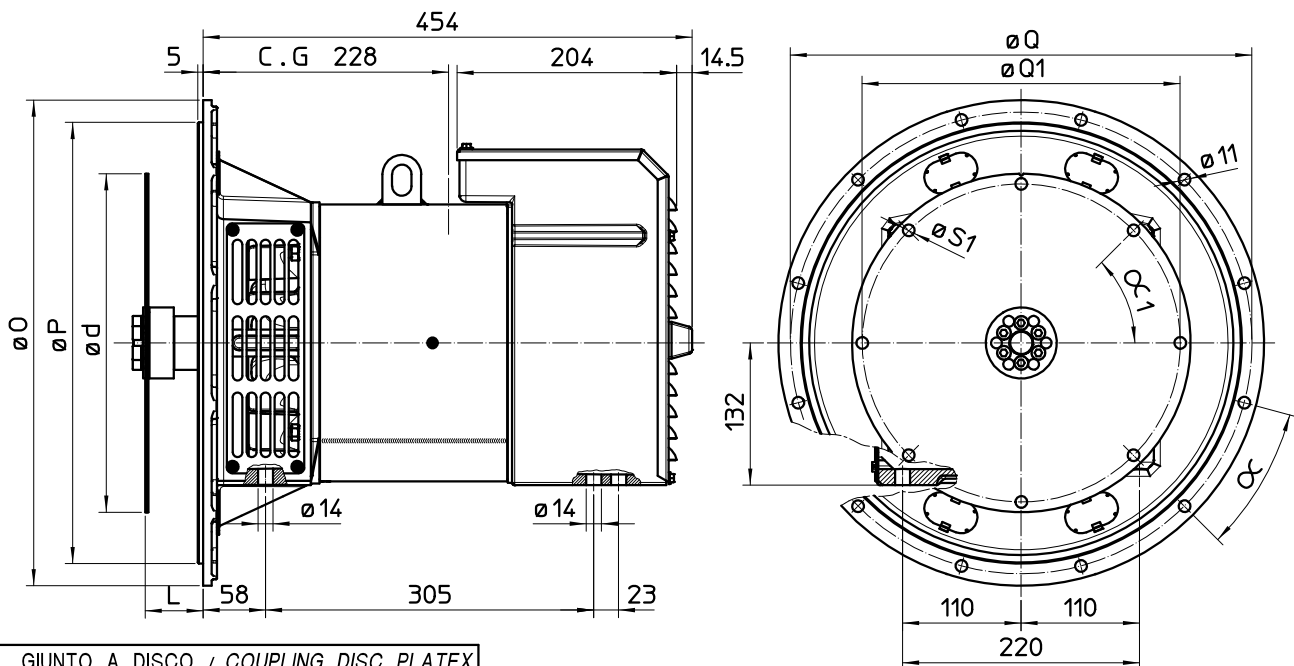
SINGLE BEARING MOMENTS OF INERTIA



| POS. | COMPONENT | WEIGHT (kg) | J (kgm ²) |
|-------|------------|-------------|-----------------------|
| 1 | FAN | 0,4 | 0,00206 |
| 2 | MAIN ROTOR | 14,7 | 0,04548 |
| 3 | EX. ROTOR | 4,2 | 0,01086 |
| 4 | SHAFT | 5,1 | 0,00123 |
| TOTAL | | 24,4 | 0,05963 |

| SAE N° | SHAFTS COUPLING FLEX PLATE | | WEIGHT kg | J kgm ² |
|--------|----------------------------|------|-----------|--------------------|
| | A | B | | |
| 6 1/2 | 3 | 1,5 | 1,00 | 0,00495 |
| 7 1/2 | 3 | 1,5 | 1,20 | 0,00769 |
| 8 | 34,6 | 29,5 | 1,75 | 0,01114 |
| 10 | 26,6 | 23,5 | 2,14 | 0,02220 |
| 11 1/2 | 13 | 11 | 2,60 | 0,03524 |

SINGLE BEARING DIMENSIONS



| GIUNTO A DISCO / COUPLING DISC PLATEX | | | | | | |
|---------------------------------------|------|--------|--------|---------------------|----|----------------|
| SAE | L | d | Q1 | Fori N° Holes N° | S1 | α ₁ |
| 6 ‡ | 30,2 | 215,9 | 200 | 6 | 9 | 60° |
| 7 ‡ | 30,2 | 241,3 | 222,25 | 8 | 9 | 45° |
| 8 | 62 | 263,52 | 244,47 | 6 | 11 | 60° |
| 10 | 53,8 | 314,52 | 295,27 | 8 | 11 | 45° |
| 11 ‡ | 39,6 | 352,42 | 333,37 | 8 | 11 | 45° |

| FLANGIE / FLANGE | | | | | |
|------------------|-----|-------|--------|---------------------|--------|
| SAE | O | P | Q | Fori N° Holes N° | α |
| 6 | 308 | 266,7 | 285,75 | 8 | 22°30' |
| 5 | 356 | 314,3 | 333,4 | 8 | 22°30' |
| 4 | 403 | 362 | 381 | 12 | 15° |
| 3 | 451 | 409,6 | 428,6 | 12 | 15° |

C.G.= GRAVITY CENTER