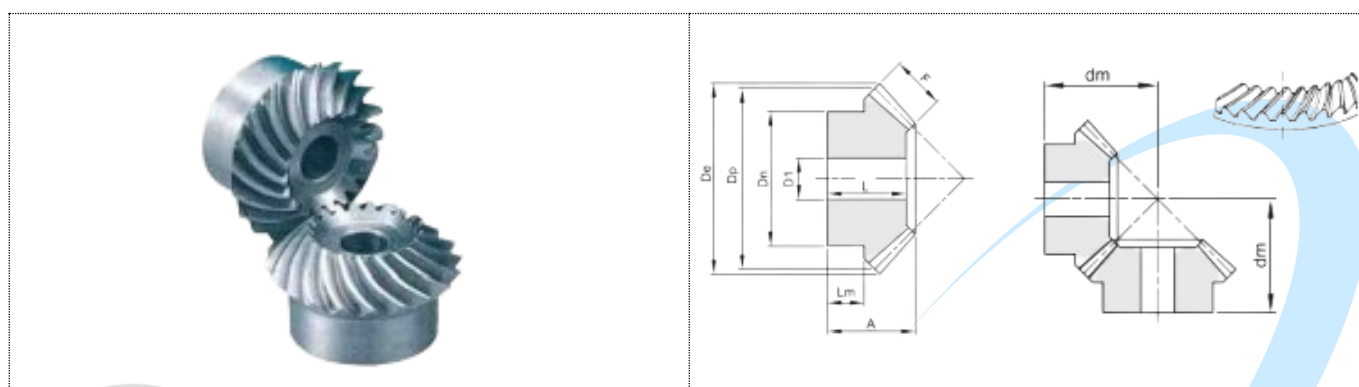



RELAÇÃO 1:1 ENGRENAGEM CÔNICA DE DENTES HELICOIDAIS

- **Material:** Aço SAE 1040
- Ângulo entre eixos 90°
- Ângulo de pressão 20°
- Sem tratamento



| M | Z Nº Dentes | De | Dp | A | F | Dn | D1 | dm | L | Lm |  |
|-----|----------------|------|------|------|----|----|----|----|------|-----|---|
| 2 | 16 | 34,4 | 32,0 | 20,1 | 9 | 25 | 10 | 29 | 17,0 | 9,5 | 0,06 |
| 2 | 20 | 42,4 | 40,0 | 25,2 | 12 | 32 | 10 | 36 | 22,0 | 12 | 0,14 |
| 2 | 25 | 52,4 | 50,0 | 27,6 | 14 | 40 | 12 | 42 | 24,5 | 12 | 0,25 |
| 2 | 30 | 62,4 | 60,0 | 30,1 | 16 | 50 | 12 | 48 | 27,0 | 13 | 0,42 |
| 2,5 | 16 | 43,0 | 40,0 | 25,0 | 10 | 32 | 12 | 37 | 22,0 | 13 | 0,13 |
| 2,5 | 20 | 53,0 | 50,0 | 30,5 | 12 | 40 | 12 | 46 | 27,5 | 16 | 0,27 |
| 2,5 | 25 | 65,5 | 62,5 | 33,3 | 15 | 50 | 15 | 53 | 30,0 | 16 | 0,47 |
| 2,5 | 30 | 78,0 | 75,5 | 35,2 | 18 | 55 | 15 | 59 | 32,0 | 16 | 0,69 |

| | | | | | | | | | | | |
|-----|----|-------|-------|------|----|-----|----|-----|------|------|------|
| 3 | 16 | 51,6 | 48,0 | 29,7 | 12 | 40 | 15 | 44 | 23,0 | 16 | 0,23 |
| 3 | 20 | 63,6 | 60,0 | 34,8 | 18 | 45 | 15 | 51 | 31,0 | 13,5 | 0,41 |
| 3 | 25 | 78,6 | 75,0 | 37,8 | 20 | 55 | 15 | 60 | 34,0 | 16 | 0,72 |
| 3 | 30 | 93,6 | 90,0 | 39,7 | 22 | 60 | 20 | 68 | 36,0 | 19 | 0,99 |
| 3,5 | 16 | 60,2 | 56,0 | 34,3 | 14 | 45 | 15 | 51 | 30,0 | 17,5 | 0,36 |
| 3,5 | 20 | 74,2 | 70,0 | 36,1 | 15 | 55 | 15 | 59 | 31,5 | 19 | 0,62 |
| 3,5 | 25 | 91,7 | 87,5 | 40,5 | 21 | 65 | 20 | 68 | 36,0 | 18 | 1,11 |
| 3,5 | 30 | 109,2 | 105,0 | 41,9 | 24 | 70 | 20 | 76 | 37,5 | 17 | 1,64 |
| 4 | 16 | 68,8 | 64,0 | 36,2 | 15 | 50 | 15 | 56 | 31,0 | 17 | 0,51 |
| 4 | 20 | 84,8 | 80,0 | 37,7 | 17 | 60 | 18 | 64 | 32,5 | 18 | 0,81 |
| 4 | 25 | 104,8 | 100,0 | 40,5 | 21 | 70 | 20 | 74 | 35,2 | 18 | 1,33 |
| 4 | 30 | 124,8 | 120,0 | 43,4 | 25 | 80 | 25 | 84 | 38,1 | 16 | 2,10 |
| 4,5 | 16 | 77,4 | 72,0 | 39,5 | 15 | 55 | 18 | 63 | 33,5 | 18,5 | 0,67 |
| 4,5 | 20 | 95,4 | 90,0 | 43,0 | 20 | 65 | 20 | 72 | 37,0 | 18 | 1,14 |
| 4,5 | 25 | 117,9 | 112,5 | 45,3 | 25 | 75 | 20 | 82 | 39,0 | 18 | 1,87 |
| 4,5 | 30 | 140,4 | 135,0 | 48,2 | 28 | 90 | 25 | 94 | 42,0 | 17 | 2,98 |
| 5 | 16 | 86,0 | 80,0 | 42,1 | 17 | 60 | 20 | 68 | 36,0 | 18 | 0,88 |
| 5 | 20 | 106,0 | 100,0 | 45,0 | 21 | 70 | 20 | 78 | 38,5 | 18,5 | 1,47 |
| 5 | 25 | 131,0 | 125,0 | 48,0 | 26 | 90 | 20 | 90 | 41,5 | 18,5 | 2,67 |
| 5 | 30 | 156,0 | 150,0 | 52,7 | 32 | 110 | 30 | 103 | 46,0 | 18 | 4,25 |