

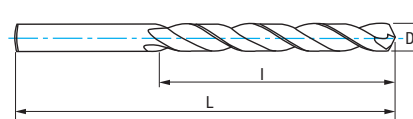
# BROCA MANGO CILÍNDRICO MATERIALES DUROS. SERIE CORTA

Ref.

Hard Materials Straight Shank Drill Bit. Jobber Series

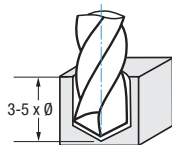
Foret queue cylindrique matériaux durs. Série courte

**PROFESSIONAL**



|                     |   |              |          |                         |  |  |  |   |              |
|---------------------|---|--------------|----------|-------------------------|--|--|--|---|--------------|
| <b>HSSE</b><br>5%Co | <b>HSSE</b><br>5%Co +<br><b>TIALSIN</b> | DIN<br>338 N | <br>135° | DIN<br>1412 C<br>≥ 2 mm |  | <b>Ambar</b><br>Gold Finish<br>Finition Or | <b>Rectificado</b><br>Ground<br>Taillé meulé | <b>A.R.I.*</b> Alto Rendimiento Intensivo<br><b>I.H.P.*</b> Intensive High Performance<br><b>H.P.I.*</b> Haute Performance Intensif | Tol. D<br>h8 |
|---------------------|---|--------------|----------|-------------------------|--|--|--|---|--------------|

|  |  |  |
|--|--|--|
|  |  | <b>x3,5</b><br>Resistencia al desgaste<br>Wear Resistance<br>Résistant à l'usure |
|--|--|--|





$$r.p.m. = \frac{Vc \times 1.000}{\pi \times \phi}$$

$$Vf (mm/min.) = r.p.m. \times f$$

| Material |      | Vc (m/min) |         | Avances f/rev. (mm/rev) - Feed - Pas |       |       |       |       |       |       |       |       |       |
|----------|------|------------|---------|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Grupo    | Sub. | 5% Co      | TIALSIN | Ø 2                                  | Ø 3   | Ø 4   | Ø 5   | Ø 6   | Ø 8   | Ø 10  | Ø 12  | Ø 16  | Ø 20  |
| P        | P.3  | 8-15       | 12-20   | 0,020                                | 0,035 | 0,045 | 0,050 | 0,060 | 0,070 | 0,090 | 0,100 | 0,120 | 0,160 |
|          | P.5  | 8-12       | 12-17   | 0,030                                | 0,040 | 0,050 | 0,060 | 0,070 | 0,090 | 0,100 | 0,120 | 0,150 | 0,170 |
| S        |      | 10-15      | 14-20   | 0,020                                | 0,030 | 0,040 | 0,050 | 0,060 | 0,070 | 0,080 | 0,100 | 0,120 | 0,140 |

| D mm | L mm | I mm |    | N° Art. 5% Co | €    | N° Art. TIALSIN | €    |
|------|------|------|----|---------------|------|-----------------|------|
| 0,50 | 22   | 6    | 10 | 37442         | 1,92 |                 |      |
| 0,60 | 27   | 7    | 10 | 37443         | 2,45 |                 |      |
| 0,70 | 28   | 9    | 10 | 37444         | 2,45 |                 |      |
| 0,75 | 28   | 9    | 10 | 37445         | 1,75 |                 |      |
| 0,80 | 30   | 10   | 10 | 37446         | 1,83 |                 |      |
| 0,90 | 32   | 11   | 10 | 37447         | 1,83 |                 |      |
| 1,00 | 34   | 12   | 10 | 27309         | 1,41 | 12897           | 2,97 |
| 1,10 | 36   | 14   | 10 | 20107         | 1,74 | 17722           | 3,35 |
| 1,20 | 38   | 16   | 10 | 28861         | 1,73 | 17723           | 3,31 |
| 1,25 | 38   | 16   | 10 | 20112         | 1,67 | 17724           | 3,22 |
| 1,30 | 38   | 16   | 10 | 20116         | 1,73 | 17725           | 3,31 |
| 1,40 | 40   | 18   | 10 | 20125         | 1,73 | 17726           | 3,31 |
| 1,50 | 40   | 18   | 10 | 27170         | 1,36 | 12898           | 2,90 |
| 1,60 | 43   | 20   | 10 | 20133         | 1,73 | 17727           | 3,34 |
| 1,70 | 43   | 20   | 10 | 20142         | 1,73 | 17728           | 3,31 |
| 1,75 | 46   | 22   | 10 | 20146         | 1,67 | 17729           | 3,22 |
| 1,80 | 46   | 22   | 10 | 20151         | 1,73 | 17730           | 3,31 |
| 1,90 | 46   | 22   | 10 | 20155         | 1,73 | 17731           | 3,34 |
| 2,00 | 49   | 24   | 10 | 19247         | 1,40 | 12899           | 3,03 |
| 2,10 | 49   | 24   | 10 | 20161         | 1,65 | 17732           | 3,08 |
| 2,20 | 53   | 27   | 10 | 20166         | 1,65 | 17734           | 3,08 |
| 2,25 | 53   | 27   | 10 | 20170         | 1,58 | 17735           | 3,04 |
| 2,30 | 53   | 27   | 10 | 20175         | 1,65 | 17736           | 3,11 |
| 2,40 | 57   | 30   | 10 | 20184         | 1,65 | 17737           | 3,11 |
| 2,50 | 57   | 30   | 10 | 19251         | 1,28 | 12900           | 2,75 |
| 2,60 | 57   | 30   | 10 | 20199         | 1,60 | 17738           | 3,05 |
| 2,65 | 57   | 30   | 10 | 80109         | 1,60 |                 |      |
| 2,70 | 61   | 33   | 10 | 20203         | 1,60 | 17739           | 3,05 |
| 2,75 | 61   | 33   | 10 | 19262         | 1,58 | 17740           | 3,04 |
| 2,80 | 61   | 33   | 10 | 20209         | 1,60 | 17741           | 3,06 |
| 2,90 | 61   | 33   | 10 | 20214         | 1,60 | 17742           | 3,06 |
| 3,00 | 61   | 33   | 10 | 19256         | 1,26 | 12901           | 2,70 |
| 3,05 | 65   | 36   | 10 | 79847         | 1,71 |                 |      |
| 3,10 | 65   | 36   | 10 | 20220         | 1,53 | 12882           | 3,41 |
| 3,15 | 65   | 36   | 10 | 79848         | 1,71 |                 |      |
| 3,20 | 65   | 36   | 10 | 20224         | 1,53 | 17226           | 3,41 |
| 3,25 | 65   | 36   | 10 | 19259         | 1,53 | 12883           | 3,41 |
| 3,30 | 65   | 36   | 10 | 20230         | 1,53 | 12884           | 3,41 |
| 3,40 | 70   | 39   | 10 | 20235         | 1,60 | 12885           | 3,54 |
| 3,50 | 70   | 39   | 10 | 19268         | 1,52 | 12902           | 3,40 |
| 3,60 | 70   | 39   | 10 | 20241         | 1,92 | 17743           | 3,79 |
| 3,70 | 70   | 39   | 10 | 20245         | 1,92 | 17744           | 3,79 |

| D mm | L mm | I mm |    | N° Art. 5% Co | €    | N° Art. TIALSIN | €    |
|------|------|------|----|---------------|------|-----------------|------|
| 3,75 | 70   | 39   | 10 | 19269         | 1,79 |                 |      |
| 3,80 | 75   | 43   | 10 | 20251         | 1,92 | 17746           | 3,79 |
| 3,90 | 75   | 43   | 10 | 20256         | 1,92 | 17748           | 3,79 |
| 4,00 | 75   | 43   | 10 | 19286         | 1,61 | 12903           | 3,51 |
| 4,05 | 75   | 43   | 10 | 18949         | 2,01 |                 |      |
| 4,10 | 75   | 43   | 10 | 20265         | 1,79 | 12886           | 3,68 |
| 4,15 | 75   | 43   | 10 | 65326         | 2,01 |                 |      |
| 4,20 | 75   | 43   | 10 | 20269         | 1,79 | 12887           | 3,68 |
| 4,25 | 75   | 43   | 10 | 19271         | 1,79 | 12888           | 3,68 |
| 4,30 | 80   | 47   | 10 | 20278         | 1,92 | 12931           | 3,71 |
| 4,40 | 80   | 47   | 10 | 20283         | 1,92 | 17749           | 3,71 |
| 4,50 | 80   | 47   | 10 | 19274         | 1,86 | 12904           | 3,72 |
| 4,60 | 80   | 47   | 10 | 20289         | 2,13 | 17750           | 4,00 |
| 4,70 | 80   | 47   | 10 | 20293         | 2,13 | 17752           | 4,01 |
| 4,75 | 80   | 47   | 10 | 20298         | 2,01 | 17753           | 3,89 |
| 4,80 | 86   | 52   | 10 | 20302         | 2,13 | 17754           | 4,00 |
| 4,90 | 86   | 52   | 10 | 20311         | 2,13 | 17755           | 4,00 |
| 5,00 | 86   | 52   | 10 | 19277         | 1,94 | 12905           | 3,82 |
| 5,05 | 86   | 52   | 10 | 76128         | 2,59 |                 |      |
| 5,10 | 86   | 52   | 10 | 20320         | 2,31 | 12891           | 4,08 |
| 5,15 | 86   | 52   | 10 | 79849         | 2,59 |                 |      |
| 5,20 | 86   | 52   | 10 | 20328         | 2,31 | 17757           | 4,18 |
| 5,25 | 86   | 52   | 10 | 19280         | 2,29 | 12893           | 4,12 |
| 5,30 | 86   | 52   | 10 | 20340         | 2,31 | 17756           | 4,18 |
| 5,40 | 93   | 57   | 10 | 20349         | 2,31 | 17758           | 4,18 |
| 5,50 | 93   | 57   | 10 | 19290         | 2,45 | 12906           | 4,31 |
| 5,60 | 93   | 57   | 10 | 20361         | 2,92 | 17759           | 4,79 |
| 5,70 | 93   | 57   | 10 | 20370         | 2,92 | 17760           | 4,79 |
| 5,75 | 93   | 57   | 10 | 20379         | 2,76 |                 |      |
| 5,80 | 93   | 57   | 10 | 20388         | 2,92 | 17762           | 4,79 |
| 5,90 | 93   | 57   | 10 | 20397         | 2,92 | 17763           | 4,79 |
| 6,00 | 93   | 57   | 10 | 19301         | 2,63 | 12907           | 4,45 |
| 6,05 | 101  | 63   | 10 | 79855         | 3,64 |                 |      |
| 6,10 | 101  | 63   | 10 | 20415         | 3,24 | 17764           | 8,54 |
| 6,15 | 101  | 63   | 10 | 79856         | 3,64 |                 |      |
| 6,20 | 101  | 63   | 10 | 20424         | 3,24 | 17765           | 8,54 |
| 6,25 | 101  | 63   | 10 | 20433         | 3,06 |                 |      |
| 6,30 | 101  | 63   | 10 | 20442         | 3,24 | 17767           | 8,54 |
| 6,35 | 101  | 63   | 10 | 79858         | 3,24 |                 |      |
| 6,40 | 101  | 63   | 10 | 20451         | 3,24 | 17768           | 8,54 |
| 6,45 | 101  | 63   | 10 | 64140         | 3,24 |                 |      |
| 6,50 | 101  | 63   | 10 | 27290         | 3,13 | 12908           | 8,25 |

| D<br>mm | L<br>mm | I<br>mm |  | N° Art.<br>5% Co | €     | N° Art.<br>TIALSIN | €     | D<br>mm           | L<br>mm | I<br>mm |  | N° Art.<br>5% Co | €     | N° Art.<br>TIALSIN | €     |
|---------|---------|---------|---|------------------|-------|--------------------|-------|-------------------|---------|---------|---|------------------|-------|--------------------|-------|
| 6,60    | 101     | 63      | 10  | 20466            | 3,89  | 17769              | 8,97  | 10,70             | 142     | 94      | 5   | 27693            | 12,65 |                    |       |
| 6,70    | 101     | 63      | 10  | 20475            | 3,89  | 17770              | 8,97  | 10,75             | 142     | 94      | 5   | 27696            | 13,12 |                    |       |
| 6,75    | 109     | 69      | 10  | 20481            | 3,66  | 12894              | 8,72  | 10,80             | 142     | 94      | 5   | 27699            | 12,65 | 17812              | 24,94 |
| 6,80    | 109     | 69      | 10  | 20488            | 3,66  | 12895              | 8,72  | 10,90             | 142     | 94      | 5   | 27702            | 12,65 |                    |       |
| 6,90    | 109     | 69      | 10  | 20493            | 3,89  | 17771              | 9,19  | 11,00             | 142     | 94      | 5   | 27705            | 10,13 | 12919              | 22,54 |
| 7,00    | 109     | 69      | 10  | 19305            | 3,42  | 12909              | 8,71  | 11,10             | 142     | 94      | 5   | 27708            | 14,39 |                    |       |
| 7,10    | 109     | 69      | 10  | 20499            | 4,95  | 17773              | 10,24 | 11,20             | 142     | 94      | 5   | 27711            | 14,39 |                    |       |
| 7,20    | 109     | 69      | 10  | 20503            | 4,95  | 17774              | 10,24 | 11,25             | 142     | 94      | 5   | 27714            | 14,94 | 17816              | 26,77 |
| 7,25    | 109     | 69      | 10  | 20508            | 4,65  |                    |       | 11,30             | 142     | 94      | 5   | 27717            | 14,39 |                    |       |
| 7,30    | 109     | 69      | 10  | 20512            | 4,95  | 17776              | 10,24 | 11,40             | 142     | 94      | 5   | 27720            | 14,39 |                    |       |
| 7,40    | 109     | 69      | 10  | 20517            | 4,95  | 17777              | 10,24 | 11,50             | 142     | 94      | 5   | 19307            | 12,11 | 12932              | 23,92 |
| 7,50    | 109     | 69      | 10  | 19292            | 3,66  | 12910              | 8,94  | 11,60             | 142     | 94      | 5   | 27724            | 14,88 |                    |       |
| 7,60    | 117     | 75      | 10  | 20523            | 5,98  | 17778              | 11,25 | 11,70             | 142     | 94      | 5   | 27727            | 14,88 |                    |       |
| 7,70    | 117     | 75      | 10  | 20527            | 5,98  | 17779              | 11,25 | 11,75             | 142     | 94      | 5   | 27730            | 15,45 |                    |       |
| 7,75    | 117     | 75      | 10  | 20532            | 5,64  |                    |       | 11,80             | 142     | 94      | 5   | 27733            | 14,88 |                    |       |
| 7,80    | 117     | 75      | 10  | 20536            | 5,98  | 17781              | 11,25 | 11,90             | 151     | 101     | 5   | 27736            | 14,88 |                    |       |
| 7,90    | 117     | 75      | 10  | 20541            | 5,98  | 17782              | 11,25 | 12,00             | 151     | 101     | 5   | 19311            | 12,94 | 12920              | 24,74 |
| 8,00    | 117     | 75      | 10  | 20208            | 4,28  | 12911              | 9,53  | 12,10             | 151     | 101     | 5   | 27742            | 17,26 |                    |       |
| 8,10    | 117     | 75      | 10  | 22734            | 5,70  | 17783              | 10,96 | 12,20             | 151     | 101     | 5   | 27745            | 17,26 |                    |       |
| 8,20    | 117     | 75      | 10  | 22737            | 5,70  | 17784              | 10,96 | 12,25             | 151     | 101     | 5   | 19313            | 17,91 |                    |       |
| 8,25    | 117     | 75      | 10  | 22740            | 5,38  |                    |       | 12,30             | 151     | 101     | 5   | 27749            | 17,26 |                    |       |
| 8,30    | 117     | 75      | 10  | 22743            | 5,70  | 17786              | 11,87 | 12,40             | 151     | 101     | 5   | 27752            | 17,26 |                    |       |
| 8,40    | 117     | 75      | 10  | 22746            | 5,70  | 17787              | 10,96 | 12,50             | 151     | 101     | 5   | 27755            | 15,77 | 12921              | 30,57 |
| 8,50    | 117     | 75      | 10  | 19298            | 4,44  | 12912              | 10,62 | 12,60             | 151     | 101     | 5   | 27758            | 18,01 |                    |       |
| 8,60    | 125     | 81      | 10  | 22752            | 7,26  | 17788              | 13,33 | 12,70             | 151     | 101     | 5   | 27761            | 18,01 |                    |       |
| 8,70    | 125     | 81      | 10  | 22755            | 7,26  | 17789              | 13,33 | 12,75             | 151     | 101     | 5   | 19316            | 18,72 |                    |       |
| 8,75    | 125     | 81      | 10  | 22758            | 6,86  |                    |       | 12,80             | 151     | 101     | 5   | 27765            | 18,01 |                    |       |
| 8,80    | 125     | 81      | 10  | 22761            | 7,26  | 17791              | 13,33 | 12,90             | 151     | 101     | 5   | 27768            | 18,01 |                    |       |
| 8,90    | 125     | 81      | 10  | 22764            | 7,26  | 17792              | 13,33 | 13,00             | 151     | 101     | 5   | 27771            | 16,15 | 12923              | 31,07 |
| 9,00    | 125     | 81      | 10  | 20358            | 5,67  | 12914              | 11,77 | 13,25             | 160     | 108     | 1   | 27777            | 22,31 |                    |       |
| 9,10    | 125     | 81      | 10  | 22768            | 8,05  | 17794              | 14,14 | 13,50             | 160     | 108     | 1   | 27774            | 17,78 | 12924              | 32,63 |
| 9,20    | 125     | 81      | 10  | 22771            | 8,05  | 17795              | 14,14 | 13,75             | 160     | 108     | 1   | 27780            | 22,31 |                    |       |
| 9,25    | 125     | 81      | 10  | 22774            | 7,57  |                    |       | 14,00             | 160     | 108     | 1   | 27783            | 17,59 | 12927              | 32,44 |
| 9,30    | 125     | 81      | 10  | 22777            | 8,05  | 17797              | 14,14 | 14,25             | 169     | 114     | 1   | 27786            | 29,34 |                    |       |
| 9,40    | 125     | 81      | 10  | 22780            | 8,05  | 17798              | 14,14 | 14,50             | 169     | 114     | 1   | 27789            | 24,93 | 12929              | 39,32 |
| 9,50    | 125     | 81      | 10  | 20545            | 5,89  | 12915              | 11,96 | 14,75             | 169     | 114     | 1   | 27792            | 29,34 |                    |       |
| 9,60    | 133     | 87      | 10  | 22784            | 9,47  | 17799              | 15,55 | 15,00             | 169     | 114     | 1   | 27795            | 25,32 | 12930              | 39,80 |
| 9,70    | 133     | 87      | 10  | 23567            | 9,47  | 17800              | 15,55 | 15,25             | 178     | 120     | 1   | 27798            | 40,49 |                    |       |
| 9,75    | 133     | 87      | 10  | 26697            | 8,93  |                    |       | 15,50             | 178     | 120     | 1   | 27801            | 29,31 | 82202              | 41,04 |
| 9,80    | 133     | 87      | 10  | 26809            | 9,47  | 17802              | 15,55 | 15,75             | 178     | 120     | 1   | 27804            | 40,49 |                    |       |
| 9,90    | 133     | 87      | 10  | 27121            | 9,47  | 17803              | 15,55 | 16,00             | 178     | 120     | 1   | 27807            | 30,37 | 15084              | 42,09 |
| 10,00   | 133     | 87      | 10  | 27291            | 6,48  | 12917              | 12,55 | <b>New!</b> 16,50 | 184     | 125     | 1   | 27811            | 34,70 | 26752              | 48,10 |
| 10,10   | 133     | 87      | 5   | 27318            | 10,87 |                    |       | 17,00             | 184     | 125     | 1   | 27814            | 34,70 | 35437              | 48,09 |
| 10,20   | 133     | 87      | 5   | 27541            | 9,17  | 12896              | 21,62 | 17,50             | 191     | 130     | 1   | 27817            | 38,47 | 35438              | 51,86 |
| 10,25   | 133     | 87      | 5   | 27544            | 11,28 | 17805              | 23,73 | 18,00             | 191     | 130     | 1   | 27820            | 41,88 | 15252              | 55,28 |
| 10,30   | 133     | 87      | 5   | 27585            | 10,87 | 17806              | 23,28 | <b>New!</b> 18,50 | 198     | 135     | 1   | 27823            | 46,27 | 26755              | 59,67 |
| 10,40   | 133     | 87      | 5   | 27682            | 10,87 | 17807              | 23,28 | 19,00             | 198     | 135     | 1   | 27826            | 46,27 |                    |       |
| 10,50   | 133     | 87      | 5   | 27685            | 9,17  | 12918              | 21,62 | <b>New!</b> 19,50 | 205     | 140     | 1   | 27829            | 51,29 | 26757              | 64,69 |
| 10,60   | 133     | 87      | 5   | 27690            | 12,65 |                    |       | <b>New!</b> 20,00 | 205     | 140     | 1   | 27832            | 54,95 | 26742              | 68,35 |

Ref. **1056**



Extra-Corta / Stub / Extra-courte **Pag 94**

Ref. **1036**



Larga / Long / Longue **Pag 99**