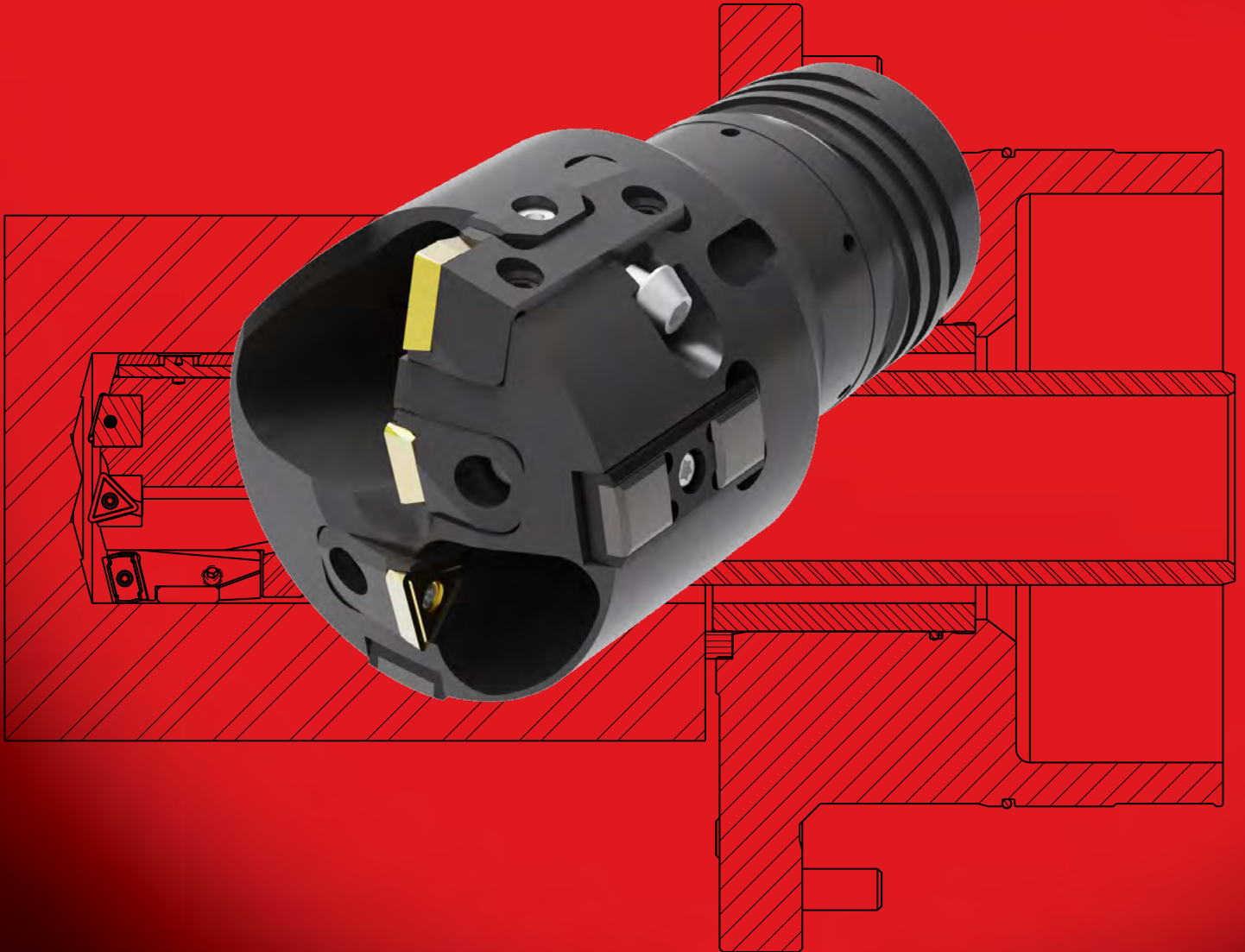




TRUEDEX SOLID DRILLING TOOLS

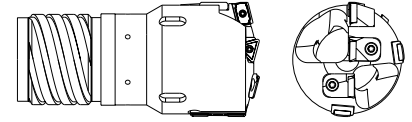
Diameter range 63.50 mm – 183.90 mm (2.500 in – 7.240 in)



TrueDex

Diameter Range: 63.50 mm – 183.90 mm (2.500 in – 7.240 in)

Drill Head Part Numbering Code Example: Metric: TDM#####M413 Imperial: TD#####M413



| TD | | M##### | | M | | 4 | | 13 | |
|----------------|------|-----------------------------|--------|-------------------|------|---------------|------|--------------------------------------|------|
| TrueDex Prefix | | Bore Size | | Connection Type | | Thread Starts | | Connection Size | |
| Description | Code | Description | Code | Description | Code | Description | Code | Description | Code |
| TrueDex | TD | Size in Metric (###.### mm) | M##### | Male / External | M | Four-Start | 4 | 63.50 - 64.99 mm 2.500 - 2.559 in | 13 |
| | | Size in Imperial ###.### in | ##### | Female / Internal | F | Single-Start | 1 | | |

Connection Size Numbering Code

| Bore Size Range | 63.50-64.99 mm | 63.50-65.00 mm | 65.00 - 67.00 mm | 67.00 - 73.00 mm | 73.00- 80.00 mm | 80.00 - 87.00 mm | 87.00 - 100.00 mm | 100.00 - 112.00 mm | 112.00 - 124.00 mm | 124.00 - 136.00 mm | 136.00 - 148.00 mm | 148.00 - 160.00 mm | 160.00 - 171.90 mm | 172.00 - 183.90 mm |
|-----------------|----------------|------------------|------------------|------------------|------------------|------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | 2.500-2.559 in | 2.500 - 2.559 in | 2.559 - 2.637 in | 2.638 - 2.873 in | 2.874 - 3.149 in | 3.150 - 3.424 in | 3.425 - 3.936 in | 3.937 - 4.408 in | 4.409 - 4.881 in | 4.882 - 5.353 in | 5.354 - 5.826 in | 5.827 - 6.298 in | 6.299 - 6.767 in | 6.772-7.240 in |
| Code | 13 | 13E | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |

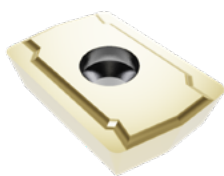
| Drill Ø | Item Code | Drill Tube | Dimensions | | Item Code | | | | | | |
|--------------------|---------------|-------------------------------------------------|------------|----------|-----------------------------|---|------------------------------|--------------|------------------------------|---|-------------------------------|
| 'D' | | | Tube OD | L | Peripheral | | Center | Intermediate | Guide Pad | | |
| 63.50 - 64.99 mm | TDM#####M413 | 13 (Single Tube can be ordered as a special) | 56 mm | 115 mm | CTTDN13P R430.30-1516-16 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 1 | GPS1435D0650TE 800-14 D065 |
| 2.500 - 2.559 in | TD#####M413 | | 2.205 in | 4.527 in | | | | | | | |
| 63.50 - 65.00 mm | TDM#####M413E | 13E | 56 mm | 115 mm | CTTDN13P R430.30-1516-16 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 1 | GPS1435D0650TE 800-14 D065 |
| 2.500 - 2.559 in | TD#####M413E | | 2.204 in | 4.527 in | | | | | | | |
| 63.50 - 65.00 mm | TDM#####M414 | 14 | 56 mm | 150 mm | CTTDN13P R430.30-1516-16 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 1 | GPS1435D0650TE 800-14 D065 |
| 2.500 - 2.559 in | TD#####M414 | | 2.204 in | 1.968 in | | | | | | | |
| 65.01 - 74.99 mm | TDM#####M415 | 15 | 62 mm | 150 mm | CTTDN13P R430.30-1516-16 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 1 | GPS1435D0650TE 800-14 D065 |
| 2.559 - 2.952 in | TD#####M415 | | 2.440 in | 1.968 in | | | | | | | |
| 75.00 - 79.99 mm | TDM#####M416 | 16 | 68 mm | 160 mm | CTTDN18P R430.28-1822-22 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 1 | GPS1435D0750TE 800-16 D075 |
| 2.953 - 3.149 in | TD#####M416 | | 2.677 in | 6.299 in | | | | | | | |
| 80.00 - 84.99 mm | TDM#####M417 | 17 | 75 mm | 190 mm | CTTDN18P R430.28-1822-22 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 1 | GPS1435D0750TE 800-16 D075 |
| 3.150 - 3.346 in | TD#####M417 | | 2.952 in | 7.480 in | | | | | | | |
| 85.00 - 88.89 mm | TDM#####M417 | 17 | 75 mm | 190 mm | CTTDN18P R430.28-1822-22 | 1 | CTTDT22MC L430.31-1522-22 | 1 | CTTDT16MI R430.30-1216-16 | 1 | GPS1435D0850TE 800-16 D085 |
| 3.346 - 3.500 in | TD#####M417 | | 2.952 in | 7.480 in | | | | | | | |
| 88.90 - 94.99 mm | TDM#####M418 | 18 | 82 mm | 190 mm | CTTDN18P R430.28-1822-22 | 1 | CTTDT22MC L430.31-1522-22 | 1 | CTTDT16MI R430.30-1216-16 | 1 | GPS1435D0850TE 800-16 D085 |
| 3.500 - 3.740 in | TD#####M418 | | 3.228 in | 7.480 in | | | | | | | |
| 95.00 - 99.99 mm | TDM#####M418 | 18 | 82 mm | 190 mm | CTTDN18P R430.28-1822-22 | 1 | CTTDT22MC L430.31-1522-22 | 1 | CTTDT22MI R430.30-1522-22 | 1 | GPS1435D0850TE 800-16 D085 |
| 3.740 - 3.937 in | TD#####M418 | | 3.228 in | 7.480 in | | | | | | | |
| 100.00 - 107.94 mm | TDM#####M419 | 19 | 94 mm | 195 mm | CTTDN18P R430.28-1822-22 | 1 | CTTDT22MC L430.31-1522-22 | 1 | CTTDT22MI R430.30-1522-22 | 1 | GPS2050D1000TE 800-20 D100 |
| 3.937 - 4.250 in | TD#####M419 | | 7.700 in | 7.677 in | | | | | | | |
| 107.95 - 114.29 mm | TDM#####M419 | 19 | 94 mm | 195 mm | CTTDN13P R430.30-1516-16 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 3 | GPS2050D1100TE 800-22 D110 |
| 4.250 - 4.500 in | TD#####M419 | | 7.700 in | 7.677 in | | | | | | | |
| 114.30 - 119.99 mm | TDM#####M420 | 20 | 106 mm | 220 mm | CTTDN13P R430.30-1516-16 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 3 | GPS2050D1100TE 800-22 D110 |
| 4.500 - 4.724 in | TD#####M420 | | 4.173 in | 8.661 in | | | | | | | |
| 120.00 - 120.64 mm | TDM#####M420 | 20 | 106 mm | 220 mm | CTTDN13P R430.30-1516-16 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 3 | GPS2050D1200TE 800-10A |
| 4.724 - 4.750 in | TD#####M420 | | 4.173 in | 8.661 in | | | | | | | |
| 120.65 - 124.99 mm | TDM#####M420 | 20 | 106 mm | 220 mm | CTTDN13P R430.28-1822-22 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 3 | GPS2050D1200TE 800-24 D120 |
| 4.750 - 4.921 in | TD#####M420 | | 4.173 in | 8.661 in | | | | | | | |
| 125.00 - 130.00 mm | TDM#####M421 | 21 | 118 mm | 220 mm | CTTDN18P R430.28-1822-22 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 3 | GPS2050D1200TE 800-24 D120 |
| 4.921 - 5.118 in | TD#####M421 | | 4.465 in | 8.661 in | | | | | | | |
| 130.01 - 139.99 mm | TDM#####M421 | 21 | 118 mm | 220 mm | CTTDN18P R430.28-1822-22 | 1 | CTTDT16MC L430.31-1216-16 | 1 | CTTDT16MI R430.30-1216-16 | 3 | GPS2050D1300TE 800-26 D130 |
| 5.119 - 5.511 in | TD#####M421 | | 4.465 in | 8.661 in | | | | | | | |

Additional Sizes up to 183.90 mm (7.240 in) are available and made to order.

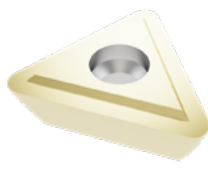
Sandvik Coromant part number shown in Red

Cartridges and Inserts

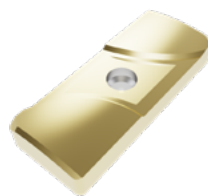
| Peripheral Cartridge | | | | | | |
|------------------------------|------------------------------------|-------------------------|-------------------------|------------------------|----------------------|-------------------------|
| Item code | Insert | Insert Screw | Cartridge Screw | Pad | Pad Screw | Set Screw |
| CTTDN13P R430.28-1516-16 | BTTDN13PGU1TE R424.9-13T3308-22 | PHSM1154 5513 020-24 | PHSM1180 430.21-825 | PPF1018 5636 030-01 | PHSM662 154.3-835 | PHSM596 3214 010-357 |
| | BTTDN13PLU1TE R424.9-13T3308-23 | | | | | |
| CTTDN18P R430.28-1822-22 | BBTTDN18PGU1TE R424.9-180608-22 | PHSM1159 5513 020-25 | PHSM1180 430.21-825 | PPF1220 5636-030-02 | PHSM662 154.3-835 | PHSM596 3214 010-357 |
| | BTTDN18PLU1TE R424.9-180608-23 | | | | | |
| Central Cartridge | | | | | | |
| Item code | Insert | Insert Screw | Cartridge Screw | | | |
| CTTDT16MC L430.31-1216-16 | BTTDT16MGU1TE TPMT 16T312R-22 | PHSM1159 5513 020-25 | PHSM1160 5513 020-26 | | | |
| | BTTDT16MLU1TE TPMT 16T312TR-23 | | | | | |
| CTTDT22MC L430.31-1522-22 | BTTDT22MGU1TE TPMT 220612R-22 | PHSM1160 5513 020-26 | | | | |
| | BTTDT22MLU1TE TPMT 220612TR-23 | | | | | |
| Intermediate Cartridge | | | | | | |
| Item code | Insert | Insert Screw | Cartridge Screw | | | |
| CTTDT16MI R430.30-1216-16 | BTTDT16MGU1TE TPMT 16T312R-22 | PHSM1159 5513 020-25 | PHSM1160 5513 020-26 | | | |
| | BTTDT16MLU1TE TPMT 16T312TR-23 | | | | | |
| CTTDT22MI R430.30-1522-22 | BTTDT22MGU1TE TPMT 220612R-22 | PHSM1160 5513 020-26 | | | | |
| | BTTDT22MLU1TE TPMT 220612TR-23 | | | | | |



Peripheral Insert



Central & Intermediate Insert



Solid Carbide Guide Pad



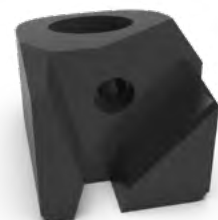
Braze carbide Guide Pad



Peripheral Cartridge



Intermediate Cartridge



Central Cartridge

Guide Pad Sizes

| Guide Pads | | | |
|--------------------|----------------------------------|--------------------------|-------------------------|
| Diameter | Item code | Description | Guide Pad Screw |
| 63.50-74.99 mm | GPS1435D0650TE 800-14 D065 | SOLID CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 75.00-84.99 mm | GPS1435D0750TE 800-16 D075 | SOLID CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 85.00-99.99 mm | GPS1435D0850TE 800-18 D085 | SOLID CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 100.00-109.99 mm | GPS2050D1000TE 800-20 D100 | SOLID CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 110.00-119.99 mm | GPS2050D1100TE 800-22 D110 | SOLID CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 120.00-129.99 mm | GPS2050D1200TE 800-24 D120 | SOLID CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| Separator | | | |
| 65.00 - 69.99 mm | GPB1435D0650 430.32-12 D65.0 | BRAZED CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 70.00 - 74.99 mm | GPB1435D0700 430.32-12 D70.0 | BRAZED CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 75.00 - 79.99 mm | GPB1435D0750 430.32-12 D75.0 | BRAZED CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 80.00 - 84.99 mm | GPB1435D0800 430.32-12 D80.0 | BRAZED CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 85.00 - 89.99 mm | GPB1435D0850 430.32-12 D85.0 | BRAZED CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 90.00 - 94.99 mm | GPB1435D0900 430.32-12 D90.0 | BRAZED CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 95.00 - 99.99 mm | GPB1435D0950 430.32-12 D95.0 | BRAZED CARBIDE GUIDE PAD | PHSM1158 5513 020-01 |
| 100.00 - 104.99 mm | GPB2050D1000 430.32-16 D100.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 105.00 - 109.99 mm | GPB2050D1050 430.32-16 D105.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 110.00 - 114.99 mm | GPB2050D1100 430.32-16 D110.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 115.00 - 119.99 mm | GPB2050D1150 430.32-16 D115.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 120.00 - 124.99 mm | GPB2050D1200 430.32-16 D120.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 125.00 - 129.99 mm | GPB2050D1250 430.32-16 D125.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 130.00 - 139.99 mm | GPB2050D1300 430.32-16 D130.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 140.00 - 149.99 mm | GPB2050D1400 430.32-16 D140.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 150.00 - 159.00 mm | GPB2050D1500 430.32-16 D150.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 160.00 - 169.99 mm | GPB2050D1600 430.32-16 D160.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 170.00 - 179.99 mm | GPB2050D1700 430.32-16 D170.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |
| 180.00 - 189.99 mm | GPB2050D1800 430.32-16 D180.0 | BRAZED CARBIDE GUIDE PAD | PHSM1160 5513 020-26 |

NOTE: Brazed Carbide Guide Pads can be coated upon request.
Sandvik Coromant part number shown in Red

TrueDex - Feed & Speed



Inch values

| ISO | ANSI | Material | Specific cutting force kc1 lbs/in ² | Hardness Brinell HB | Geometry / Grade | Cutting speed vc ft/min | Drill diameter, inch |
|-------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------|------------------|----------------------------|------------------------------|
| | | | | | | | ≥ 2.500 |
| | | | | | | | Feed f _n inch/rev |
| P | 1018, 1020, 1215 | Unalloyed steel Non-hardened 0.10-0.25% C | 290 000 | 90-200 | -G/-L/TE | 260-330 | .007-.014 |
| | 1045, 1050, 1335 | Non-hardened 0.25-0.55% C | 304 500 | 125-225 | -G/TE | 260-330 | .007-.014 |
| | 1055, 1060 | Non-hardened 0.55-0.80% C | 316 100 | 150-250 | -G/TE | 260-330 | .007-.014 |
| | 1095 | High carbon steel, annealed | 336 400 | 180-275 | -G/TE | 260-330 | .007-.014 |
| | 4140, 52100, 8620 | Low alloy steel Non hardened | 304 500 | 150-260 | -G/TE | 230-330 | .007-.014 |
| | 4140, 52100, 8620 | Hardened and tempered | 402 400 | 220-450 | -G/TE | 200-330 | .006-.014 |
| | D3, H13, A2 | High alloy steel Annealed | 362 500 | 150-250 | -G/TE | 200-330 | .007-.012 |
| | M3, M35 D3, H13, A2 | Annealed HSS Hardened tool steel | 398 750 543 750 | 150-250 250-350 | -G/TE -G/TE | 200-330 200-330 | .007-.012 .007-.012 |
| | D3, H13, A2 | Hardened steel, others | 580 000 | 250-450 | -G/TE | 200-330 | .007-.012 |
| | 1018, 1045, 1055 | Castings Unalloyed | 261 000 | 90-225 | -G/TE | 165-330 | .006-.012 |
| 4140, 52100, 8620 | Low alloyed (alloying elements < 5%) | 2304 500 | 150-250 | -G/TE | 165-330 | .006-.012 | |
| M | 403, 405, 410 | Rolled/forged Ferritic/Martensitic, non hardened | 333 500 | 150-270 | -G/L/TE | 165-300 | .006-.014 |
| | 15-5, 17-4 | Corrosion Resistance | 350 000 | 277-352 | -L/TE | 128-190 | .008-.013 |
| | 304, 316, 318 | Austenitic | 377 000 | 150-270 | -L/TE | 165-300 | .006-.014 |
| K | 32510 40010, 50005 | Malleable Ferritic Pearlitic | 137 750 159 500 | 110-145 150-270 | -G/TE -G/TE | 260-330 260-330 | .007-.012 .007-.012 |
| | Class 20, 25, 30 Class 45, 50, 60 | Grey Low tensile strength High tensile strength | 159 500 187 050 | 150-220 200-330 | -G/TE -G/TE | 200-330 200-330 | .006-.014 .006-.014 |
| | 60-40-18, 80-55-56 100-70-03 | Nodular Ferritic Pearlitic | 152 250 253 750 | 125-230 200-300 | -G/TE -G/TE | 165-330 165-330 | .006-.014 .006-.014 |
| N | 7075, 2024, 7010 | Aluminium alloys Wrought or wrought and coldworked, non- aging | 72 500 | 30-100 | -L/TE | 210-600 | .004-.012 |
| | 7075, 2024, 7010 | Wrought or wrought and aged | 116 000 | 30-150 | -L/TE | 210-600 | .004-.012 |
| | 7075, 2024, 7010 | Cast, non aging | 108 750 | 40-100 | -L/TE | 210-600 | .004-.012 |
| | 7075, 2024, 7010 | Cast or cast and aged | 130 500 | 70-140 | -L/TE | 210-600 | .004-.012 |
| | Copper Copper | Copper and copper alloys Free cutting alloys (Pb > 1%) Brass and leaded alloys (Pb < 1%) | 101 500 101 500 | 70-160 50-200 | -L/TE -L/TE | 210-600 210-600 | .004-.012 .004-.012 |
| S | 330 | Iron base Annealed or solution treated | 435 000 | 180-230 | -G/L/TE | 65-210 | .006-.012 |
| | Waspaloy, Inconel | Nickel base Annealed or solution treated | 481 400 | 140-300 | -L/TE | 65-210 | .006-.012 |
| | Air Resistant 213, Jetalloy 209 | Cobalt alloys Annealed or solution treated | 478 500 | 180-230 | -L/TE | 65-210 | .006-.012 |
| | Ti6Al4V | Titanium Alfa- , near Alfa- and Alfa + Beta alloys annealed | 242 875 | 600-1100 | -L/TE -L/TE | 100-330 100-330 | .006-.012 .006-.012 |

TrueDex - Feed & Speed



Metric values

| ISO | ANSI | Material | Specific cutting force kc1 N/mm ² | Hardness Brinell HB | Geometry / Grade | Cutting speed vc m/min | Drill diameter, mm |
|-------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------|------------------|---------------------------|----------------------------|
| | | | | | | | ≥ 63.50 |
| | | | | | | | Feed f _n , mm/r |
| P | 1018, 1020, 1215 | Unalloyed steel Non-hardened 0.10-0.25% C | 1500 | 90-200 | -G/-L/TE | 80-100 | 0.18-0.35 |
| | 1045, 1050, 1335 | Non-hardened 0.25-0.55% C | 1600 | 125-225 | -G/TE | 80-100 | 0.18-0.35 |
| | 1055, 1060 | Non-hardened 0.55-0.80% C | 1700 | 150-250 | -G/TE | 80-100 | 0.18-0.35 |
| | 1095 | High carbon steel, annealed | 1800 | 180-275 | -G/TE | 80-100 | 0.18-0.35 |
| | 4140, 52100, 8620 | Low alloy steel Non hardened | 1700 | 150-260 | -G/TE | 70-100 | 0.18-0.35 |
| | 4140, 52100, 8620 | Hardened and tempered | 1900 | 220-450 | -G/TE | 60-100 | 0.18-0.35 |
| | D3, H13, A2 | High alloy steel Annealed | 1950 | 150-250 | -G/TE | 70-100 | 0.18-0.30 |
| | M3, M35 D3, H13, A2 | Annealed HSS Hardened tool steel | 2150 2900 | 150-250 250-350 | -G/TE -G/TE | 70-100 60-100 | 0.18-0.30 0.16-0.30 |
| | D3, H13, A2 | Hardened steel, others | 3100 | 250-450 | -G/TE | 60-100 | 0.16-0.30 |
| | 1018, 1045, 1055 | Castings Unalloyed | 1400 | 90-225 | -G/TE | 50-100 | 0.15-0.30 |
| 4140, 52100, 8620 | Low alloyed (alloying elements < 5%) | 1600 | 150-250 | -G/TE | 50-100 | 0.15-0.30 | |
| M | 403, 405, 410 | Rolled/forged Ferritic/Martensitic, non hardened | 1800 | 150-270 | -G/L/TE | 50-90 | 0.15-0.30 |
| | 16-5, 17-4 | Corrosion Resistance | 1900 | 277-352 | -L/TE | 39-58 | 0.20-0.33 |
| | 304, 316, 318 | Austenitic | 1950 | 150-275 | -L/TE | 50-90 | 0.15-0.30 |
| K | 32510 40010, 50005 | Malleable Ferritic Pearlitic | 790 900 | 110-145 150-270 | -G/TE -G/TE | 80-100 80-100 | 0.18-0.30 0.18-0.30 |
| | Class 20, 25, 30 Class 45, 50, 60 | Grey Low tensile strength High tensile strength | 890 1100 | 150-220 200-330 | -G/TE -G/TE | 60-100 60-100 | 0.16-0.35 0.16-0.35 |
| | 60-40-18, 80-55-56 100-70-03 | Nodular Ferritic Pearlitic | 900 1350 | 125-230 200-300 | -G/TE -G/TE | 50-100 50-100 | 0.16-0.35 0.16-0.35 |
| N | 7075, 2024, 7010 | Aluminium alloys Wrought or wrought and coldworked, non- aging | 400 | 30-100 | -L/TE | 65-130 | 0.10-0.30 |
| | 7075, 2024, 7010 | Wrought or wrought and aged | 650 | 30-150 | -L/TE | 65-130 | 0.10-0.30 |
| | 7075, 2024, 7010 | Cast, non aging | 600 | 40-100 | -L/TE | 65-130 | 0.10-0.30 |
| | 7075, 2024, 7010 | Cast or cast and aged | 700 | 70-140 | -L/TE | 65-130 | 0.10-0.30 |
| | Copper Copper | Copper and copper alloys Free cutting alloys (Pb > 1%) Brass and leaded alloys (Pb < 1%) | 550 550 | 70-160 50-200 | -L/TE -L/TE | 65-130 65-130 | 0.10-0.30 0.10-0.30 |
| S | 330 | Iron base Annealed or solution treated | 2400 | 180-230 | -G/TES | 20-65 | 0.15-0.30 |
| | Waspaloy, Inconel | Nickel base Annealed or solution treated | 2650 | 140-300 | -L/TES | 20-65 | 0.15-0.30 |
| | Air Resistant 213, Jetallloy 209 | Cobalt alloys Annealed or solution treated | 2700 | 180-230 | -L/TES | 20-65 | 0.15-0.30 |
| | Ti6Al4V | Titanium Alfa-, near Alfa- and Alfa + Beta alloys annealed | 1400 | 600-1100 | -L/TES -L/TES | 30-60 30-100 | 0.15-0.30 0.15-0.30 |

Sunnen's SHDD Series Deep Hole Drills

Easy-to-use, efficient, heavy-duty



- **Available in three standard models**
 - 2-meter maximum part length (SHDD-2500)
 - 4-meter maximum part length (SHDD-4500)
 - 6-meter maximum part length (SHDD-6500)
- Large 394 mm (15.5 in) color HMI with intuitive controls for ease of use.
- Heavy-duty Bosch-Rexroth 55 mm (2.16 in) linear rails for maximum durability.
- Standard safety system with a combination of multiple E-stops, light curtains, interlocked guarding and fencing.
- Standard 67 kw (90 hp) tool motor with headstock drive for optimum power.
- Standard 38 kw (50 HP) workpiece headstock drive (counter rotation).
- Beckhoff servo driven heavy-duty ball screws for tool feed.
 - 80 mm ball screw (3.15 in) SHDD-2500/SHDD-4500
 - 100 mm ball screw (3.84 in) SHDD-6500
- Electrical enclosure air conditioning unit standard to protect critical electronics in high temperature environments.
- Heavy-duty welded base.
- Heavy-duty 3-jaw chucks standard.
- Automatic lubrication system for ball screw, rack and pinion, and linear rails standard.
- Heavy-duty servo rack and pinion driven work piece positioning and clamping.
- Spindle carriage control station for ease of driveshaft installation.
- Sunnen is the complete system supplier ... machines, tools, chip management, cooling systems and cutting fluids.



Sunnen's Deep Hole Drilling Tools

Offering the lowest cost per hole for identical replacements of discontinued Sandvik Tools

Sunnen is committed to designing, manufacturing, and delivering world class deep hole machining tools and systems that meet or exceed customer requirements.

Whether a Single Tube, Double Tube, Gun Drilling or other specialty system is needed, Sunnen has the engineering expertise and manufacturing capabilities to meet any deep hole machining requirements.

Sunnen also offers replacement parts for all of these tools, including inserts, pads, cartridges, shims and screws.



A LEGACY OF EXCELLENCE SINCE 1924.

SUNNEN WORLDWIDE



With world headquarters in St. Louis, Missouri, Sunnen is the largest fully integrated company in the world specializing in precision bore creation, sizing and finishing equipment. A Sunnen solution might include honing, lapping, skiving/roller burnishing or deep hole machining...or a combination of those processes.

Our 13 international subsidiaries and over 40 authorized distributors allow us to deliver top quality Sunnen machines, tools, service and training wherever they are needed around the globe.

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