



MICRODEX SOLID DRILLING TOOLS

Diameter Range 15.00 mm – 28.00 mm (0.590 in – 1.102 in)



Drill Heads and Drill Tubes

Sunnen's MicroDex deep hole drilling heads, inserts and pads are designed to provide close diameter tolerances and high surface finish. With ideal machine part setup conditions, .003" per/ft tool centerline deviation is attainable.

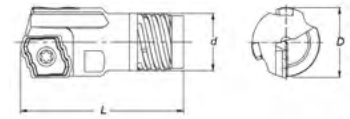
The MicroDex line is an economical and simple to use replacement for traditional brazed drill heads.



MicroDex Single Tube System

Diameter Range 15.00 mm – 28.00 mm (0.590 in – 1.102 in)

Drill Head Part Numbering Code Example: Metric: MDM#####M401 Imperial: MD#####M401



MD		M02000		M		4		01	
Microdex Prefix		Bore Size		Connection Type		Thread Starts		Connection Size	
Description	Code	Description	Code	Description	Code	Description	Code	Description	Code
MicroDex	MD	Size in Metric (###.## mm)	M#####	Male / External	M	Four-Start	4	range()	01
		Size in Imperial ##.### in	#####	Female / Internal	F	Single-Start	1		

Connection Size Numbering Code

Bore Size Range	12.60 - 13.60 mm	13.61 - 14.60 mm	14.61 - 15.59 mm	15.60 - 16.70 mm	16.71 - 17.70 mm	17.71 - 18.90 mm	18.91 - 20.0 mm	20.00 - 21.80 mm	21.81 - 24.10 mm	24.11 - 26.40 mm	26.41 - 28.7 mm
	0.496 - 0.535 in	0.536 - 0.575 in	0.576 - 0.614 in	0.615 - 0.657 in	0.658 - 0.697 in	0.697 - 0.744 in	0.744 - 0.787 in	0.787 - 0.858 in	0.859 - 0.948 in	0.949 - 1.039 in	1.04 - 1.129 in
Code	97	98	99	00	01	01	02	02	03	03	04

Drill Ø	Item Code	Drill Tube	Dimensions		Components	
'D'			d'	'L'	Insert	Pad
15.00 - 16.00	MDM#####M497	97	12.6 mm	60 mm	BTMDN08P	GPS0618D0140
.590 - .629 in	MD#####M497		.496 in	2.36 in		
16.01 - 17.00 mm	MDM#####M498	98	13.6 mm	60 mm	BTMDN09P	GPS0618D0150
.630 - .669 in	MD#####M498		.535 in	2.36 in		
17.01 - 18.00 mm	MDM#####M499	99	14.5 mm	60 mm	BTMDN09P	GPS0618D0150
.670 - .708 in	MD#####M499		.571 in	2.36 in		
18.01 - 19.00 mm	MDM#####M400	00	15.5 mm	61 mm	BTMDN10P	GPS0618D0170
.709 - .748 in	MD#####M400		.610 in	2.40 in		
19.01 - 20.00 mm	MDM#####M401	01	16.0 mm	61 mm	BTMDN10P	GPS0618D0170
.749 - .787 in	MD#####M401		.630 in	2.40 in		
20.01 - 21.00 mm	MDM#####M401	01	16.0 mm	61 mm	BTMDN11P	GPS0618D0190
.788 - .826 in	MD#####M401		.630 in	2.40 in		
21.01 - 22.00 mm	MDM#####M402	02	18.0 mm	61 mm	BTMDN11P	GPS0618D0190
.827 - .866 in	MD#####M402		.709 in	2.40 in		
23.01 - 23.00 mm	MDM#####M402	02	18.0 mm	65 mm	BTMDN13P	GPS0618D0210
.867 - .905 in	MD#####M402		.709 in	2.56 in		
23.01 - 25.00 mm	MDM#####M403	03	19.5 mm	65 mm	BTMDN13P	GPS0618D0210
.906 - .984 in	MD#####M403		.768 in	2.56 in		
25.01 - 26.50 mm	MDM#####M403	03	19.5 mm	68 mm	BTMDN14P	GPS0618D0240
.985 - 1.043 in	MD#####M403		.768 in	2.68 in		
26.51 - 28.00 mm	MDM#####M404	04	21.0 mm	68 mm	BTMDN14P	GPS0618D0240
1.044 - 1.102 in	MD#####M404		.827 in	2.68 in		

MicroDex Spare Parts



Insert

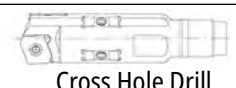
Insert	
Insert	Insert Screw
BTMDN08P	PHSM1326
BTMDN09P	PHSM1326
BTMDN10P	PHSM1328
BTMDN11P	PHSM1329
BTMDN13P	PHSM1330
BTMDN14P	PHSM1330



Support Pad

Support Pad	
Solid Pad	Pad Screw
GPS0618D0140	PHSM1327
GPS0618D0150	PHSM1327
GPS0618D0170	PHSM1327
GPS0618D0190	PHSM1327
GPS0618D0210	PHSM1327
GPS0618D0240	PHSM1327

Note: Tools in all sizes are available on special order with two rows of guide pads for cross-hole drilling applications. Please call Customer Service at 800-325-3670 for ordering details.



Cross Hole Drill

MicroDex - Feed & Speed

P M K N S TE

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/TE	260-330	.004-.012
	1045, 1050, 1335	Non-hardened 0.25-0.55% C	304 500	125-225	-G/TE	260-330	.004-.012
	1055, 1060	Non-hardened 0.55-0.80% C	316 100	150-250	-G/TE	260-330	.004-.012
	1095	High carbon steel, annealed	336 400	180-275	-G/TE	260-330	.004-.012
	4140, 52100, 8620	Low alloy steel Non hardened	304 500	150-260	-G/TE	230-330	.004-.012
	4140, 52100, 8620	Hardened and tempered	402 400	220-450	-G/TE	200-330	.004-.012
	D3, H13, A2	High alloy steel Annealed	362 500	150-250	-G/TE	200-330	.004-.012
	M3, M35	Annealed HSS	398 750	150-250	-G/TE	200-330	.004-.012
	D3, H13, A2	Hardened tool steel	543 750	250-350	-G/TE	200-330	.004-.012
	D3, H13, A2	Hardened steel, others	580 000	250-450	-G/TE	200-330	.004-.012
	1018, 1045, 1055	Castings Unalloyed	261 000	90-225	-G/TE	165-330	.004-.012
	4140, 52100, 8620	Low alloyed (alloying elements < 5%)	2304 500	150-250	-G/TE	165-330	.004-.012
M	403, 405, 410	Rolled/forged Ferritic/Martensitic, non hardened	333 500	150-270	-G/TE	165-300	.004-.012
	15-5, 17-4	Corrosion Resistance	350.000	277-352	-G/TE	128-190	.004-.012
	304, 316, 318	Austenitic	377 000	150-270	-G/TE	165-300	.004-.012
K	32510	Malleable Ferritic	137 750	110-145	-G/TE	260-330	.004-.012
	40010, 50005	Pearlitic	159 500	150-270	-G/TE	260-330	.004-.012
	Class 20, 25, 30	Grey Low tensile strength	159 500	150-220	-G/TE	200-330	.004-.012
	Class 45, 50, 60	High tensile strength	187 050	200-330	-G/TE	200-330	.004-.012
N	60-40-18, 80-55-56	Nodular Ferritic	152 250	125-230	-G/TE	165-330	.004-.012
	100-70-03	Pearlitic	253 750	200-300	-G/TE	165-330	.004-.012
	7075, 2024, 7010	Aluminium alloys Wrought or wrought and coldworked, non- aging	72 500	30-100	-G/TE	210-600	.004-.012
	7075, 2024, 7010	Wrought or wrought and aged	116 000	30-150	-G/TE	210-600	.004-.012
	7075, 2024, 7010	Cast, non aging	108 750	40-100	-G/TE	210-600	.004-.012
	7075, 2024, 7010	Cast or cast and aged	130 500	70-140	-G/TE	210-600	.004-.012
S	Copper	Copper and copper alloys Free cutting alloys (Pb > 1%)	101 500	70-160	-G/TE	210-600	.004-.012
	Copper	Brass and leaded alloys (Pb < 1%)	101 500	50-200	-G/TE	210-600	.004-.012
	330	Iron base Annealed or solution treated	435 000	180-230	-G/TE	65-210	.004-.012
	Waspaloy, Inconel	Nickel base Annealed or solution treated	481 400	140-300	-G/TE	65-210	.004-.012
	Air Resistant 213, Jetallloy 209	Cobalt alloys Annealed or solution treated	478 500	180-230	-G/TE	65-210	.004-.012
	Ti6Al4V	Titanium Alfa-, near Alfa- and Alfa + Beta alloys annealed	242 875	600-1100	-G/TE	100-330	.004-.012

MicroDex - Feed & Speed

P M K N S TE

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/TE	80-100	0.10-0.30
	1045, 1050, 1335	Non-hardened 0.25-0.55% C	1600	125-225	-G/TE	80-100	0.10-0.30
	1055, 1060	Non-hardened 0.55-0.80% C	1700	150-250	-G/TE	80-100	0.10-0.30
	1095	High carbon steel, annealed	1800	180-275	-G/TE	80-100	0.10-0.30
	4140, 52100, 8620	Low alloy steel Non hardened	1700	150-260	-G/TE	70-100	0.10-0.30
	4140, 52100, 8620	Hardened and tempered	1900	220-450	-G/TE	60-100	0.10-0.30
	D3, H13, A2	High alloy steel Annealed	1950	150-250	-G/TE	70-100	0.10-0.30
	M3, M35 D3, H13, A2	Annealed HSS Hardened tool steel	2150 2900	150-250 250-350	-G/TE -G/TE	70-100 60-100	0.10-0.30 0.10-0.30
	D3, H13, A2	Hardened steel, others	3100	250-450	-G/TE	60-100	0.10-0.30
	1018, 1045, 1055	Castings Unalloyed	1400	90-225	-G/TE	50-100	0.10-0.30
	4140, 52100, 8620	Low alloyed (alloying elements < 5%)	1600	150-250	-G/TE	50-100	0.10-0.30
M	403, 405, 410	Rolled/forged Ferritic/Martensitic, non hardened	1800	150-270	-G/TE	50-90	0.10-0.30
	16-5, 17-4	Corrosion Resistance	1900	277-352	-G/TE	39-58	0.10-0.30
	304, 316, 318	Austenitic	1950	150-275	-G/TE	50-90	0.10-0.30
K	32510 40010, 50005	Malleable Ferritic Pearlitic	790 900	110-145 150-270	-G/TE -G/TE	80-100 80-100	0.10-0.30 0.10-0.30
	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	0.10-0.30 0.10-0.30
	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	0.10-0.30 0.10-0.30
N	7075, 2024, 7010	Aluminium alloys Wrought or wrought and cold-worked, non-aging	400	30-100	-G/TE	65-130	0.10-0.30
	7075, 2024, 7010		650	30-150	-G/TE	65-130	0.10-0.30
	7075, 2024, 7010	Wrought or wrought and aged	600	40-100	-G/TE	65-130	0.10-0.30
	7075, 2024, 7010	Cast, non aging	700	70-140	-G/TE	65-130	0.10-0.30
	7075, 2024, 7010	Cast or cast and aged					
	Copper Copper	Copper and copper alloys Free cutting alloys (Pb > 1%) Brass and leaded alloys (Pb < 1%)	550 550	70-160 50-200	-G/TE -G/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/TE	20-65	0.10-0.30
	Waspaloy, Inconel	Nickel base Annealed or solution treated	2650	140-300	-G/TE	20-65	0.10-0.30
	Air Resistant 213, Jetalloy 209	Cobalt alloys Annealed or solution treated	2700	180-230	-G/TE	20-65	0.10-0.30
	Ti6Al4V	Titanium Alfa- , near Alfa- and Alfa + Beta alloys annealed	1400	600-1100	-G/TE -G/TE	30-60 30-100	0.10-0.30 0.10-0.30

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.



MicroDex - Replaces Brazed Drill Heads

STS

Diameter Range
15.00 – 28.00 mm
0.590 – 1.102 inch



DirectDex - Replaces CoroDrill 800 series

STS

Diameter Range
25.00 – 65.00 mm
0.984 - 2.559 inch

DTS

Diameter Range
25.00 – 65.00 mm
0.984 - 2.559 inch



FlexiDex - Replaces CoroDrill 801 series

STS

Diameter Range
65.00 mm – 195.99 mm
2.559 in – 7.716 in



TrueDex - Replaces Sandvik 424.10 series

STS

Diameter Range
63.50 mm – 183.90 mm
2.500 in – 7.240 in



CounterDex - Replaces Sandvik 818 series

STS

Diameter Range
35.00 mm – 216.00 mm
1.378 in – 8.503 in

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

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 Designed and Developed Intuitive Control System

Features include:

- Beckhoff PLC with 394 mm (15.5 in) color touchscreen
- All machine functions controlled from the operator station
- Real time graphical display of tool position, tool feed load, spindle loads, and coolant pressure and volume
- Two-button part-to-part mode for high production operation
- Slow start tool feed for setup
- Tool protection function
- USB port for ease of backup
- Metric/inch units screen selectable
- Up to 500 part setups can be saved and retrieved
- Machine diagnostics
- On-screen, multi-language selection



Heavy-Duty Sunnen Designed and Built Coolant System

Features include:

- Modular clean and dirty tanks with 6245 liter (1650 gallon) maximum capacity and 3785 liter (1000 gallon) operating capacity
- Heavy-duty welded construction using 4.75 mm (.187 in) plate with a double wall option available
- High flow 10-micron, four-bag filtration system
- Heavy-duty screw type pump with 757 lpm (200 gpm) max flow and 5.2MPa (750 psig) max pressure
- 70-micron inlet filter
- Standard chiller for hot environments
- Designed for maintainability with multiple level sensors, clean-out ports and instrumentation
- Heavy-duty chip conveyor
- Active coolant level monitoring



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.

Sunnen Products Company

World Headquarters
St. Louis, MO – USA

Phone (314) 781-2100
Fax (314) 781-2268
Toll Free (800) 325-3670
Email sunnen@sunnen.com
www.sunnen.com

Austria – Sunnen Austria GmbH

Phone +43 (0) 5576 74194
Fax +43 (0) 5576 74196
Email sales@sunnen.eu
www.sunnen.at

Belgium – Sunnen Benelux BVBA

Phone +32 38 80 2800
Fax +32 38 44 3901
Email info@sunnen.be
www.sunnen.be

Brazil – Sunnen do Brasil LTDA.

Phone +55 11 4368-4900
Email sunnen@sunnen.com.br
www.sunnen.com.br

Canada – Sunnen Products Company

Phone 844-356-0006
Email canadasales@sunnen.com
www.sunnen.com

China – Shanghai Sunnen Mechanical Co. Ltd.

Phone +86 21 5813 3990
Fax +86 21 5813 2299
Email shsunnen@sunnensh.com
www.sunnensh.com

Czech Republic – Sunnen s.r.o.

Phone +420 383 376 317
Fax +420 383 376 316
Email sunnen@sunnen.cz
www.sunnen.cz

France – Sunnen SAS

Phone +33 01 69 30 0000
Fax +33 01 69 30 1111
Email info@sunnen.fr
www.sunnen.fr

India – Sunnen India Pvt. Ltd.

Phone +91 223 913 6055
Fax +91 223 913 6056
Email sales@sunnen.in
www.sunnen.in

Italy – Sunnen Italia S.r.l.

Phone +39 02 383 417 1
Fax +39 02 383 417 50
Email sunnen@sunnenitalia.com
www.sunnenitalia.com

Poland – Sunnen Polska Sp. z o.o.

Phone +48 22 814 34 29
Fax +48 22 814 34 28
Email sunnen@sunnen.pl
www.sunnen.pl

Russia – Sunnen RUS

Phone +7 495 258 43 43
Fax +7 495 258 91 75
Email sunnen@sunnen-russia.ru
www.sunnen.ru

Switzerland – Sunnen AG

Phone +41 71 649 33 33
Email sales@sunnen.eu
www.sunnen.eu

UK – Sunnen Products Ltd.

Phone +44 1442 39 39 39
Fax +44 1442 39 12 12
Email hemel@sunnen.co.uk

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