

WHERE
VALUE MEETS
EXCELLENCE.



X-DRILL

SYMX

INTRODUCTORY OFFER

» Valid until *December 31, 2024*

W/G DRILL

Mix & Match
promotion

▸ Purchase _____

50 SYMX
INSERTS

▸ & Receive _____

a X-Drill Body
at no charge

Limited time and availability offer.
This offer is only available in Canada.

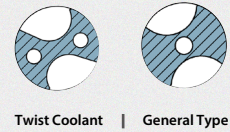
Valid through participating US distributors only.
Some restrictions may apply.



X-Drill / SYMX Features

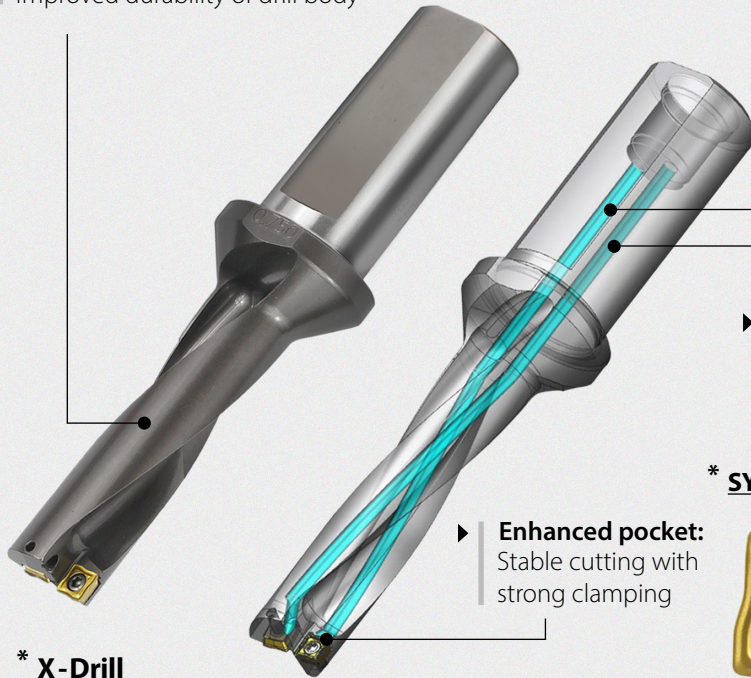
- ▶ **High hardness and optimized material application:**
Improved durability of drill body

- ▶ **Twisted Coolant Channels:**
Wide chip flutes for improved chip evacuation
Reinforced holder rigidity with a larger web thickness

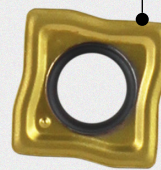


- ▶ **Wave shaped 4 cutting edges:**
Utilizes all four corners effectivity

- ▶ **Optimal chip breaker:**
Improved chip evacuation capability



* **SYMX**



YG 713



YG 613

- ▶ **Enhanced pocket:**
Stable cutting with strong clamping

* **X-Drill**

▼ Performance Test

	X-Drill	General Drill
Chip Formation		
Hole Surface Quality		

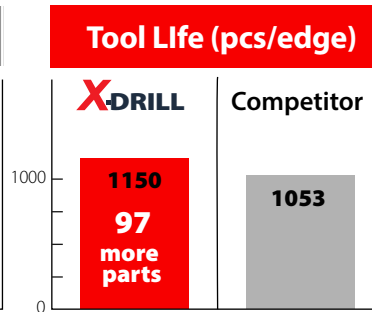
X-Drill / SYMX Success Story

CASE 1

Test Insert	SYMX060204 YG713	Component	Bush (General Machining)
Test Holder	YGSP4-180S25-06	Work-Piece	8620 Alloy steel

Cutting Conditions

Vc	Fn	Ap	Diameter	Coolant
180m/min	0.1 mm/rev	38mm	18mm	WET
591 SFM	0.004 inch/rev	1.496"	0.709"	

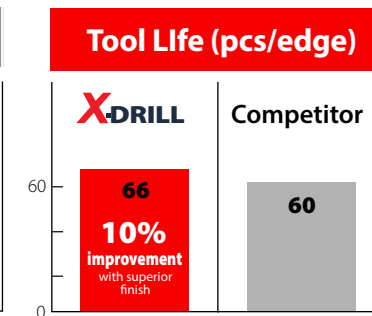


CASE 2

Test Insert	SYMX060204 YG713	Component	Gear
Test Holder	YGSP4-190S25-06	Work-Piece	Alloy Steel

Cutting Conditions

Vc	Fn	Ap	Diameter	Coolant
110m/min	0.1 mm/rev	60mm	18mm	WET
361 SFM	0.004 inch/rev	2.362"	0.788"	

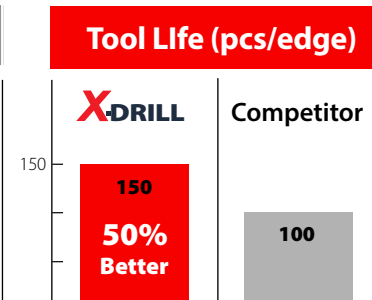


CASE 3

Test Insert	SYMX060204 YG713	Component	Mold Base
Test Holder	YGSP2-200S25-06	Work-Piece	S355 Carbon steel

Cutting Conditions

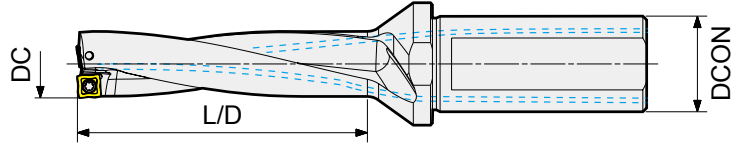
Vc	Fn	Ap	Diameter	Coolant
250m/min	0.1 mm/rev	28mm	19mm	WET
240m/min	0.07 mm/rev			
820 SFM	0.004" mm/rev	1.102"	0.748"	
787 SFM	0.003" mm/rev			



X-Drill / SYMX Introductory Offer

>> Mix & Match Promotion

Purchase 50 SYMX inserts
& Receive a X-Drill Body at no charge



INSERTS				DRILL BODY								
SERIES	Qty	EDP #	Grade	Qty	EDP #	L/D	DC	DCON				
SYMX 05	x 50	32000097	YG713	x 1	37001067	2	.563	.75				
				x 1	37001083	3	.563	.75				
				x 1	37001099	4	.563	.75				
				x 1	37001115	5	.563	.75				
				x 1	37001068	2	.594	.75				
				x 1	37001084	3	.594	.75				
				x 1	37001100	4	.594	.75				
				x 1	37001116	5	.594	.75				
				x 1	37001069	2	.625	.75				
				x 1	37001085	3	.625	.75				
				x 1	37001101	4	.625	.75				
				x 1	37001117	5	.625	.75				
				x 1	37001070	2	.656	.75				
				x 1	37001086	3	.656	.75				
				x 1	37001102	4	.656	.75				
				x 1	37001118	5	.656	.75				
				PLUG (DCON 0.75)				38000001 PLUG M12 - 1/8				
				SCREW				18000252 TP062004 - GS				
WRENCH				18000262 TPWFTP06								

SYMX 06	x 50	32000093	YG713	x 1	37000870	2	.689	1.00				
				x 1	37000875	3	.689	1.00				
				x 1	37000885	5	.689	1.00				
				x 1	37000871	2	.719	1.00				
				x 1	37000876	3	.719	1.00				
				x 1	37000886	5	.719	1.00				
				x 1	37000872	2	.750	1.00				
				x 1	37000877	3	.750	1.00				
				x 1	37000882	4	.750	1.00				
				x 1	37000887	5	.750	1.00				
				x 1	37000873	2	.781	1.00				
				x 1	37000878	3	.781	1.00				
				x 1	37000888	5	.781	1.00				
				x 1	37000874	2	.813	1.00				
				x 1	37000879	3	.813	1.00				
				x 1	37000889	5	.813	1.00				
				PLUG (DCON 1.0)				38000002 PLUG M14 - 1/8				
				SCREW				18000253 TP072205 - GS				
WRENCH				18000001 TPWFTP07								

INSERTS				DRILL BODY								
SERIES	Qty	EDP #	Grade	Qty	EDP #	L/D	DC	DCON				
SYMX 07	x 50	32000099	YG713	x 1	37001071	2	.843	1.00				
				x 1	37001087	3	.843	1.00				
				x 1	37001103	4	.843	1.00				
				x 1	37001119	5	.843	1.00				
				x 1	37001072	2	.875	1.00				
				x 1	37001088	3	.875	1.00				
				x 1	37001104	4	.875	1.00				
				x 1	37001120	5	.875	1.00				
				x 1	37001073	2	.906	1.00				
				x 1	37001089	3	.906	1.00				
				x 1	37001105	4	.906	1.00				
				x 1	37001121	5	.906	1.00				
				PLUG (DCON 1.0)				38000002 PLUG M14 - 1/8				
				SCREW				18000253 TP072205 - GS				
				WRENCH				18000001 TPWFTP07				

SYMX 08	x 50	32000101	YG713	x 1	37001074	2	.937	1.25
				x 1	37001090	3	.937	1.25
				x 1	37001106	4	.937	1.25
				x 1	37001122	5	.937	1.25
				x 1	37001075	2	.969	1.25
				x 1	37001091	3	.969	1.25
				x 1	37001107	4	.969	1.25
				x 1	37001123	5	.969	1.25
				x 1	37001076	2	.984	1.25
				x 1	37001092	3	.984	1.25
				x 1	37001108	4	.984	1.25
				x 1	37001124	5	.984	1.25
				x 1	37001077	2	1.000	1.25
				x 1	37001093	3	1.000	1.25
				x 1	37001109	4	1.000	1.25
				x 1	37001125	5	1.000	1.25
				x 1	37001078	2	1.031	1.25
				x 1	37001094	3	1.031	1.25
x 1	37001110	4	1.031	1.25				
x 1	37001126	5	1.031	1.25				
x 1	37001079	2	1.063	1.25				
x 1	37001095	3	1.063	1.25				
x 1	37001111	4	1.063	1.25				
x 1	37001127	5	1.063	1.25				
PLUG (DCON 1.25)				38000003 PLUG M22 - 1/4				
SCREW				18000261 TP072506 - GS				
WRENCH				18000001 TPWFTP07				



X-Drill / SYMX Recommended Cutting Speed & Feed - Imperial

Multiple Applications :



Slopes



Steps



Curved



Stacked / Interrupted

Unit : Imperial

ISO	Material	VDI	Vc (SFM)		Feed (in/rev)			
					L/D 2, 3, 4 x D		L/D 5 x D	
			YG713	YG613	Ø .689 - .750	Ø .781 - .813	Ø .689 - .750	Ø .781 - .813
P	Non-alloy steel	1 - 5	660 - 985	330 - 690	.0015 - .005	.0015 - .006	.0015 - .004	.0015 - .005
	Low alloy steel	6 - 9	560 - 885	230 - 590	.0025 - .006	.003 - .008	.0025 - .005	.003 - .006
	High alloy steel	10 - 11	280 - 475	130 - 295	.025 - .005	.003 - .006	.0025 - .004	.003 - .005
M	Ferritic & Martensitic stainless steel	12 - 13	460 - 720	230 - 590	.0025 - .005	.0025 - .006	.0025 - .004	.0025 - .005
	Austenitic stainless steel	14	425 - 820	230 - 660	.0025 - .005	.0025 - .006	.0025 - .004	.0025 - .005
K	Grey cast iron	15 - 16	390 - 850	-	.003 - .007	.003 - .007	.003 - .0055	.003 - .006
	Nodular cast iron	17 - 18	425 - 755	-	.003 - .007	.003 - .007	.003 - .0055	.003 - .006
	Malleable cast iron	19 - 20	-	-	-	-	-	-
N	Non-ferrous metals (Aluminum)	21 - 30	-	-	-	-	-	-
S	Super alloys & Titanium	31 - 37	-	-	-	-	-	-
H	Hardened steel	38 - 41	100 - 165	65 - 130	.002 - .0035	.002 - .004	.002 - .003	.002 - .0035

Grades

	P		M		K		H	
	Central	Peripheral	Central	Peripheral	Central	Peripheral	Central	Peripheral
1 st Choice Grade	YG713	YG713	YG613	YG613	YG713	YG713	YG713	YG713
2 nd Choice Grade	YG613	YG613	YG713	YG713	YG613	YG613	-	-

* **YG613** is an alternative grade when fixture and machine conditions are unstable

X-Drill / SYMX Recommended Cutting Speed & Feed - Metric

Multiple Applications :



Slopes



Steps



Curved



Stacked / Interrupted

Unit : Metric

ISO	Material	VDI	Vc (m/min)		Feed (mm/rev)			
					L/D 2, 3, 4 x D		L/D 5 x D	
			YG713	YG613	Ø 17 - 19	Ø 20	Ø 17 - 19	Ø 20
P	Non-alloy steel	1 - 5	200 - 300	100 - 210	0.04 - 0.12	0.04 - 0.16	0.04 - 0.10	0.04 - 0.12
	Low alloy steel	6 - 9	170 - 270	70 - 180	0.06 - 0.16	0.08 - 0.20	0.06 - 0.12	0.08 - 0.16
	High alloy steel	10 - 11	85 - 145	40 - 90	0.06 - 0.12	0.08 - 0.16	0.06 - 0.10	0.08 - 0.12
M	Ferritic & Martensitic stainless steel	12 - 13	140 - 220	70 - 180	0.06 - 0.12	0.06 - 0.16	0.06 - 0.10	0.06 - 0.12
	Austenitic stainless steel	14	130 - 250	70 - 200	0.06 - 0.12	0.06 - 0.16	0.06 - 0.10	0.06 - 0.12
K	Grey cast iron	15 - 16	120 - 260	-	0.08 - 0.18	0.08 - 0.18	0.08 - 0.14	0.08 - 0.16
	Nodular cast iron	17 - 18	130 - 230	-	0.08 - 0.18	0.08 - 0.18	0.08 - 0.14	0.08 - 0.16
	Malleable cast iron	19 - 20	-	-	-	-	-	-
N	Non-ferrous metals (Aluminum)	21 - 30	-	-	-	-	-	-
S	Super alloys & Titanium	31 - 37	-	-	-	-	-	-
H	Hardened steel	38 - 41	30 - 50	20 - 40	0.05 - 0.09	0.05 - 0.1	0.05 - 0.08	0.05 - 0.09

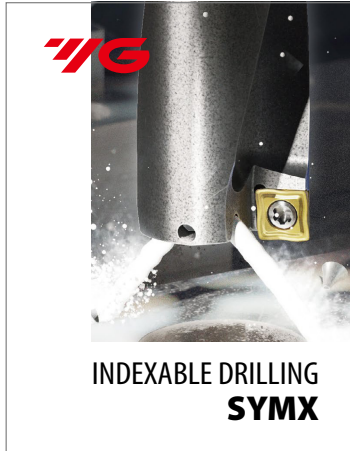
Grades

	P		M		K		H	
	Central	Peripheral	Central	Peripheral	Central	Peripheral	Central	Peripheral
1 st Choice Grade	YG713	YG713	YG613	YG613	YG713	YG713	YG713	YG713
2 nd Choice Grade	YG613	YG613	YG713	YG713	YG613	YG613	-	-

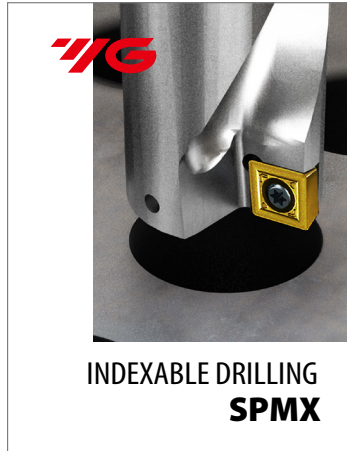
* **YG613** is an alternative grade when fixture and machine conditions are unstable

YG-1 Drill Catalogues

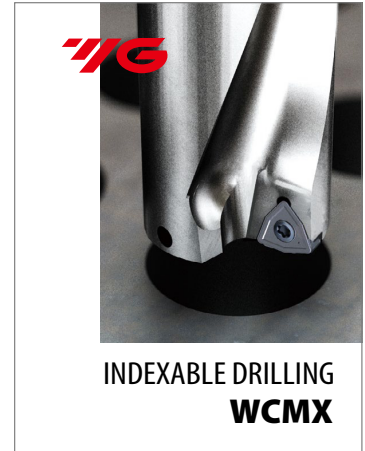
Available at
yg1usa.com



INDEXABLE X-DRILL
(YU-IT24)



INDEXABLE SQUARE DRILL
(YU-IT24)



INDEXABLE TRIANGONAL DRILL
(YU-IT24)



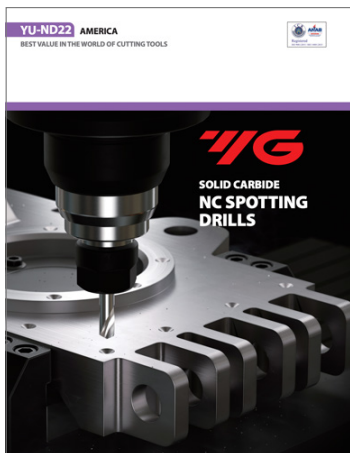
SPADE DRILLS



i-ONE DRILLS



DREAM DRILLS CARBIDE



NC SPOTTING DRILLS



COMBINATION DRILLS &
COUNTER SINK



COMPOSITE DRILLS

TURNING

PARTING & GROOVING

MILLING

DRILLING

YG-1 ROTARY TOOLING

HYDRAULIC
CHUCK (Power E)



SHELL MILL
ARBOR



END MILL
HOLDER



SK SLIM
CHUCK



ER COLLET
CHUCK



SHRINK FIT
HOLDER



POWER MILLING
CHUCK



TAPPING ER
CHUCK



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