

GOLD DUTY

HB CHIPBREAKER for semi heavy turning

Insert Styles:

Double-sided, CNMX553 / 554

Double-sided, SNMX553 / 554

Holders:

- HCLNR/L, HSDNN, HSKNR/L Styles
- 1" and 1 1/4", External Shanks
- Also compatible with standard P-Type holders (requires use of special seat)

Feed Rates:

.012~.032 ipr (0.3~0.8mm/rev)

Cutting Depths:

.060~.315 inches (1.5~8.0mm)

Grades:

TT8115

TT8125

Applications:

- General purpose external & face turning operations
- Increased material removal rates in lower HP machines
- Medium to rough machining where improved surface finish is needed
- Ideal for automotive components & general machining operations



Ingersoll introduces a revolutionary new concept for general turning applications. CNMX and SNMX inserts with an HB chip breaker deliver low cutting forces and better surface finish in medium to rough machining compared to equivalent CNMG/SNMG inserts.

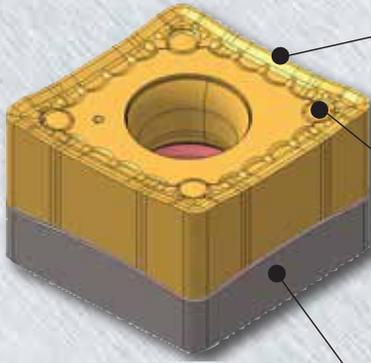
With its optimized configuration, the HB chip breaker geometry provides steady chip evacuation and prolonged tool life with a stable seating configuration. Four rest pads on the top and bottom sides of the insert allow the cutting edge to be positioned above the top surface of the insert, resulting in lower cutting forces and excellent chip flow even at large depths of cut.

Unlike most lever-lock holders, the exclusive lever found on Ingersoll's new H-Type holders provides multi-directional clamping force and outstanding stability. The result is a fast indexing clamping system which eliminates the need for a top clamp that often wears out due to interference with the chips.

Customers will experience improved surface quality and higher productivity through this exciting & exclusive alternative to traditional general turning operations...yet another example of Ingersoll's commitment to R&D.

GOLD DUTY

FEATURES

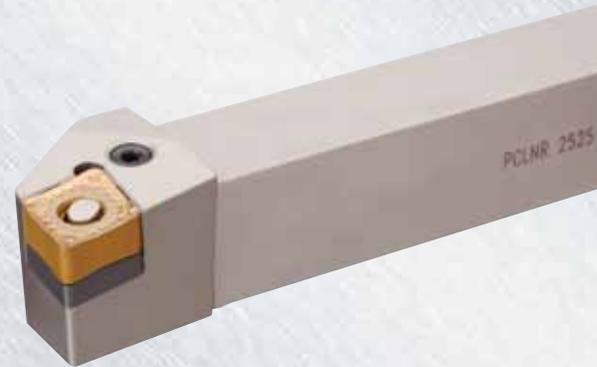


- Double-sided semi-heavy turning insert
 - ✓ Low cutting force
 - ✓ Optimized chipbreaker suitable for semi heavy machining

- Stable contact surface with four rest pads
 - ✓ Unique seat contact with large convex surface



- Exclusive seat
 - ✓ 3 dimensional geometry
 - ✓ Exchangeable with ISO Standard P-type holders

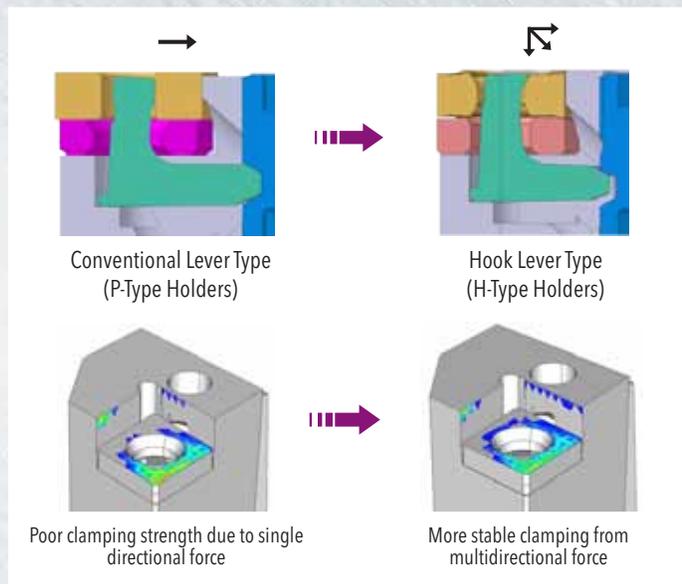


Contact Surface

CLAMPING FEATURES OF INSERT

Quick change lever lock system with rigid clamping force

(Increased clamping force due to hooked lever design)



GOLD DUTY

REPLACEMENT SEATS FOR ISO LEVER LOCKING HOLDERS (P-TYPE HOLDERS)

Ingersoll offers several replacement seats that are exchangeable with ISO Lever Lock Holders. However, for best performance, Ingersoll recommends that the HB insert be used with its exclusive H-type holder to maximize tool life.

Description	Shape	Seat for H-type Holder	Seat for ISO Lever Lock (P-type) Holder
CNMX 55_		LSC 54-NX	LSC 53-NX LSC 53-NXS
SNMX 55_		LSS 54-NX	LSS 53-NX LSS 53-NXS

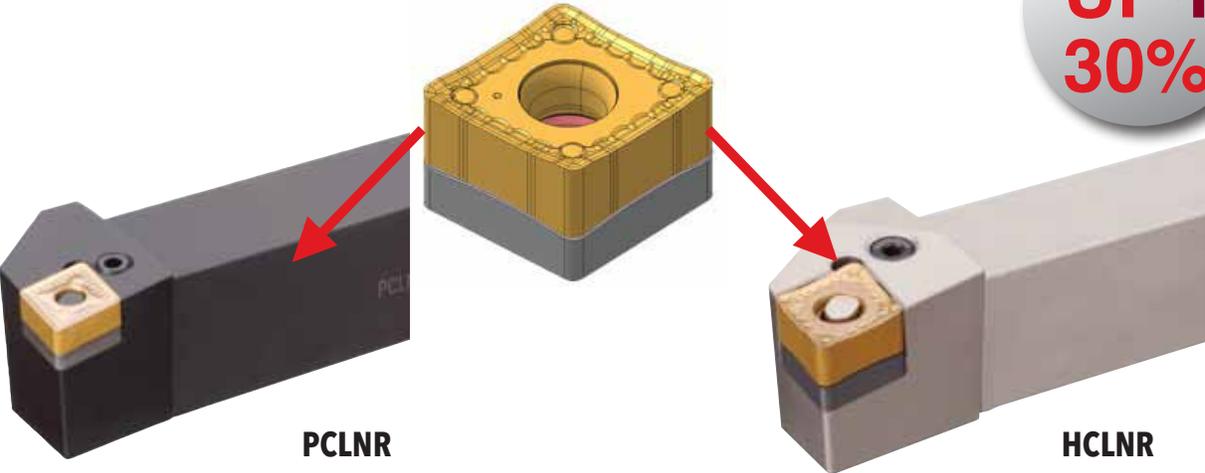
LSC 53-NX: Same IC as Insert IC
LSC 53-NXS: Slightly smaller size than Insert IC

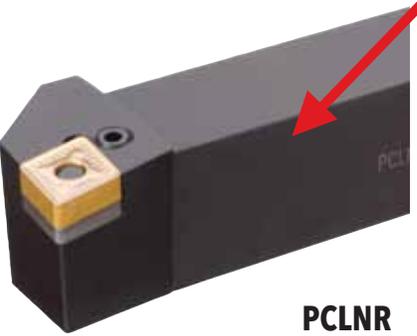
TEST REPORT FOR ISO LEVER TURNING HOLDER (P-TYPE) USING HB INSERT AND SEAT

	Insert	Seats	Tool Life
ISO Lever Lock Holder (PCLNR)	CNMX 553 HB	LSC 53-NXS	6.0 passes
H-type Holder (HCLNR)	CNMX 553 HB	LSC 54-NX	8.5 passes

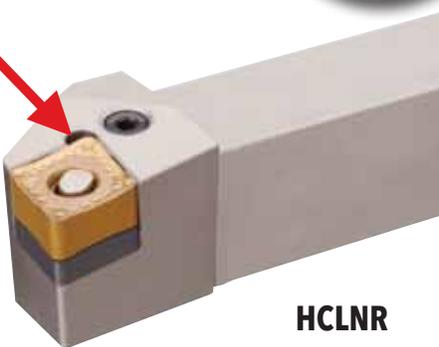
- * Cutting condition: $V_c=550$ sfm, $DOC=.200$ ", $f=.032$ ipr
- * Material: 0.45% carbon steel, 6.0" DIA x 12.5" Long
- * Tested Insert: ISO Lever Lock Holder - CNMX 553 HB (Seat : LSC 53-NXS)
HCLNR HB Holder - CNMX 553 HB (Seat : LSC 54-NX)

Tool life
UP ↑
30%





PCLNR



HCLNR

GOLD DUTY

SURFACE ROUGHNESS & CUTTING FORCE TEST RESULTS

* Cutting conditions

Test 1: 500 sfm, .315" DOC, .020" ipr

Test 2: 500 sfm, .200" DOC, .020" ipr

Test 3: 500 sfm, .200" DOC, .040" ipr

* Material: 0.45% carbon steel

* Work piece length: 25.0", Cutting length: 4.0"

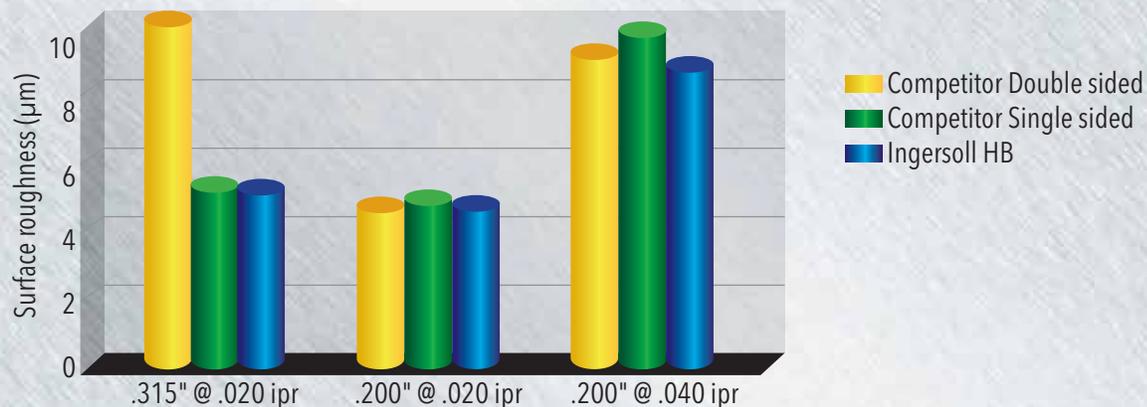
* Tested Insert:
 Competitor Double sided - CNMG 543
 Competitor Single sided - CNMM 543
 Ingersoll - CNMX 553 HB



SURFACE ROUGHNESS (Ra:μm)

	.315" @ .020 ipr	.200" @ .020 ipr	.200" @ .040 ipr
Competitor Double sided (CNMG)	X	4.65	9
Competitor Single sided (CNMM)	5.25	4.9	9.7
Ingersoll HB	5.15	4.6	8.8

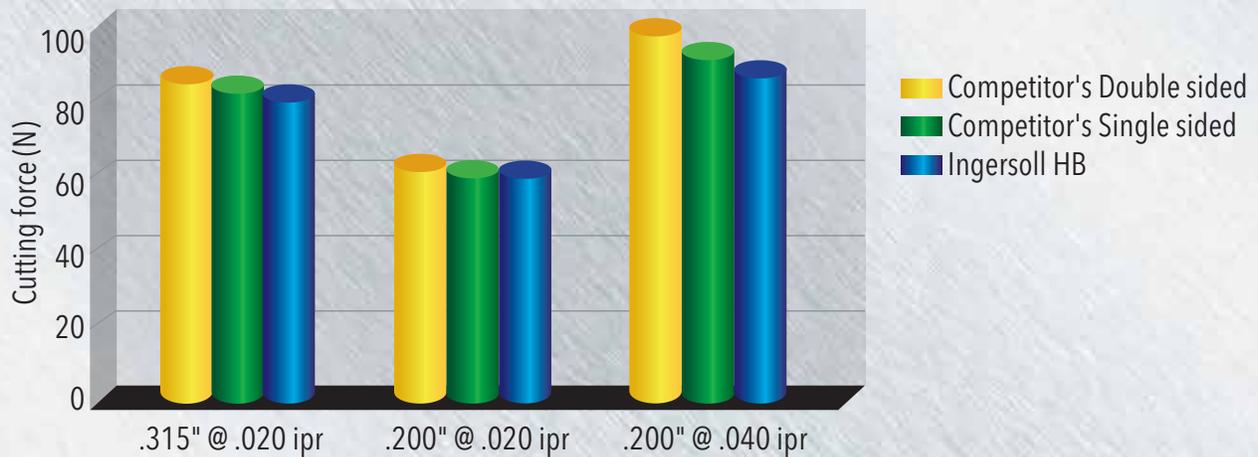
* Under the same cutting condition, HB chipbreaker results in the best surface finish.



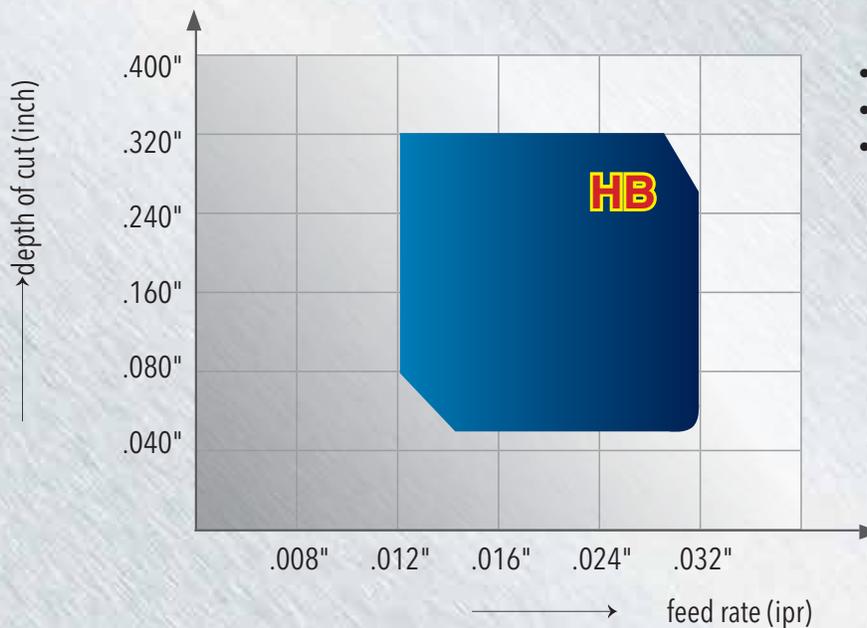
GOLD DUTY

CUTTING FORCE (LOAD METER)

	.315" @ .020 ipr	.200" @ .020 ipr	.200" @ .040 ipr
Competitor's Double sided (CNMG)	83.4	61.2	96
Competitor's Single sided (CNMM)	80.3	58.4	90
Ingersoll HB	79.2	58.4	87.6



CHIP BREAKING RANGE



- Insert: CNMX 553 HB
- Cutting speed: 500 sfm
- Material: 0.45% Carbon Steel

GOLD DUTY

TEST REPORTS

Test 1

Part name	Cylinder Liner	
Material	0.45% Carbon Steel	
Cutting speed (sfm)	130 sfm	
Feed (ipr)	.023 ipr	
Depth of cut (inch)	.200"	
Operation:	External	
Tool life		
Competitor	A Company (CNMM)	80%
Ingersoll	CNMX 553 HB, TT8115	100%

Test 2

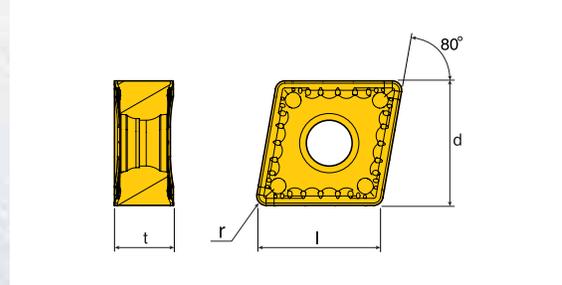
Part name	Roller	
Material	0.45% Carbon Steel	
Cutting speed (sfm)	500 sfm	
Feed (ipr)	.020 ipr	
Depth of cut (inch)	.275"	
Operation:	External	
Tool life		
Competitor	B Company (CNMG)	40min
Ingersoll	CNMX 553 HB, TT8115	48min

Test 3

Part name	Ring	
Material	Alloy Steel	
Cutting speed (sfm)	590 sfm	
Feed (ipr)	.016-.018 ipr	
Depth of cut (inch)	.160"	
Operation:	External	
Tool life		
Competitor	C Company (CNMG)	1pass/corner
Ingersoll	CNMX 553 HB, TT8115	2pass/corner

GOLD DUTY

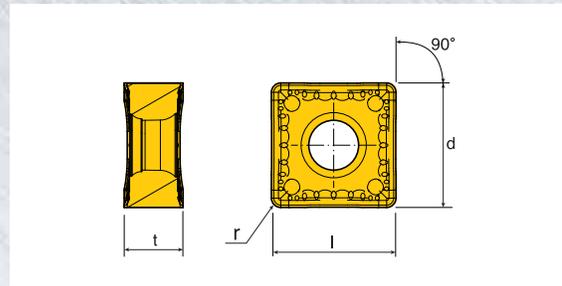
■ CNMX HB



ANSI Designation	ISO Designation	feed (ipr)	ap (inch)	Dimensions (inch)				Grade	TT8115	TT8125	TT5080
				l	d	t	r				
CNMX 553 HB	CNMX 160712 HB	.012-.031	.060-.315	.583	.625	.272	.047	●	●	●	●
CNMX 554 HB	CNMX 160716 HB	.012-.031	.060-.315	.567	.625	.272	.063	●	●		

● = P ● = M ● = K ● = N ● = S ○ = H

■ SNMX HB

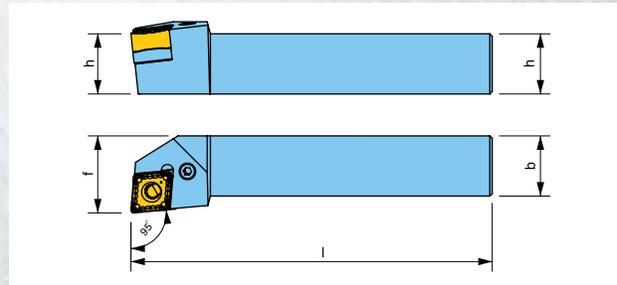


ANSI Designation	ISO Designation	feed (ipr)	ap (inch)	Dimensions (inch)				Grade	TT8115	TT8125
				l	d	t	r			
SNMX 553 HB	SNMX 150712 HB	.012-.031	.060-.315	.583	.625	.272	.047	●	●	
SNMX 554 HB	SNMX 150716 HB	.012-.031	.060-.315	.567	.625	.272	.063	●	●	

● = P ● = M ● = K ● = N ● = S ○ = H

GOLD DUTY

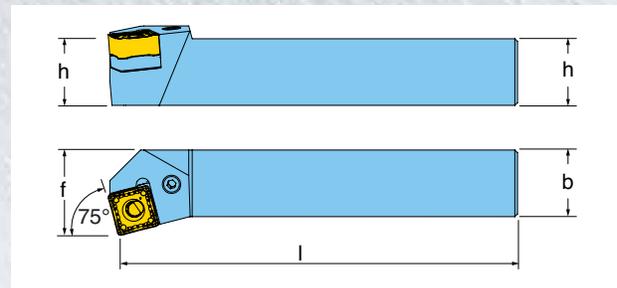
HCLNR/L



DESIGNATION	Dimensions (inch)			
	h	b	l	f
HCLNR/L 16-55D	1.00	1.00	6.0	1.25
HCLNR/L 20-55E	1.25	1.25	7.0	1.50

HARDWARE							
	Insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
HCLNR/L 16-55D	CNMX 55□ HB	LCL 16-NX	LCS 5-L25.5	LSC 54-NX	LSP 5	SPP 5-6	LW 3
HCLNR/L 20-55E	CNMX 55□ HB	LCL 16-NX	LCS 5-L25.5	LSC 54-NX	LSP 5	SPP 5-6	LW 3

HSKNR/L

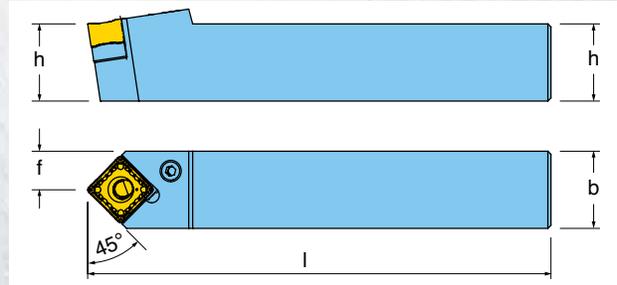


DESIGNATION	Dimensions (inch)			
	h	b	l	f
HSKNR/L 16-55D	1.00	1.00	6.0	1.25
HSKNR/L 20-55E	1.25	1.25	7.0	1.50

HARDWARE							
	Insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
HSKNR/L 16-55D	SNMX 55□ HB	LCL 16-NX	LCS 5-L25.5	LSS 54-NX	LSP 5	SPP 5-6	LW 3
HSKNR/L 20-55E	SNMX 55□ HB	LCL 16-NX	LCS 5-L25.5	LSS 54-NX	LSP 5	SPP 5-6	LW 3

GOLD DUTY

HSDNN



DESIGNATION	Dimensions (inch)			
	h	b	l	f
HSDNN 16-55D	1.00	1.00	6.0	.500
HSDNN 20-55E	1.25	1.25	7.0	.625

HARDWARE							
	Insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench
HSDNN 16-55D	SNMX 55□ HB	LCL 16-NX	LCS 5-L25.5	LSS 54-NX	LSP 5	SPP 5-6	L-W 3
HSDNN 20-55E	SNMX 55□ HB	LCL 16-NX	LCS 5-L25.5	LSS 54-NX	LSP 5	SPP 5-6	L-W 3

AVAILABILITY

In stock

PRICE

Available in the GAL system