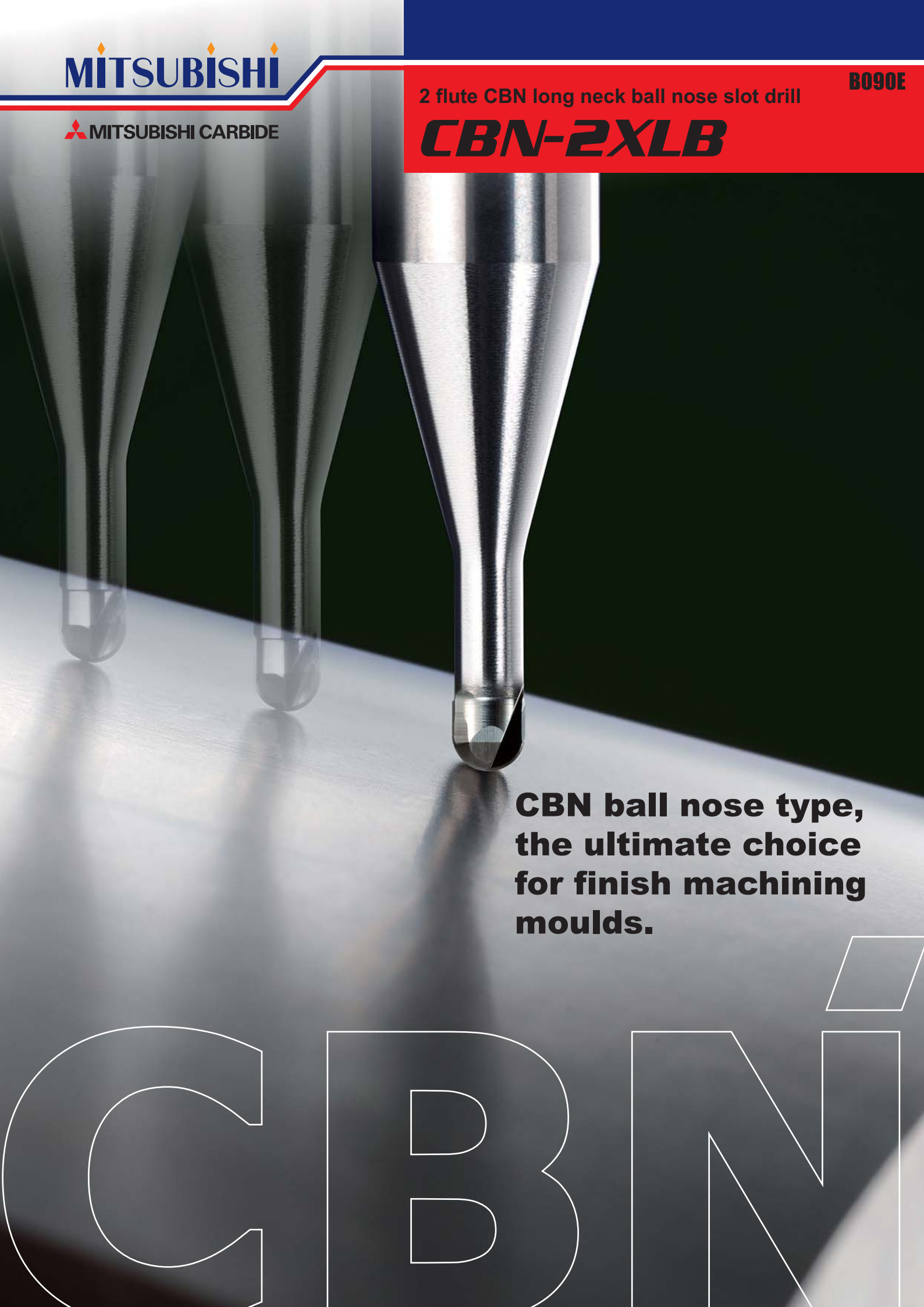
MITSUBISHI

MITSUBISHI CARBIDE

B090E

2 flute CBN long neck ball nose slot drill

CBN-2XLB



CBN ball nose type, the ultimate choice for finish machining moulds.

CBN

CBN

NEW

CBN2XLB

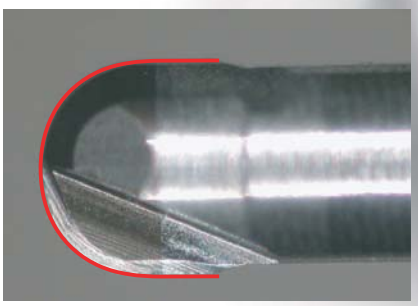
2 flute CBN long neck
ball nose slot drill

CBN ball nose type, the ultimate choice for finish machining of moulds.

The realisation of excellent performance when milling hardened steel over 65HRC.

Feature 1 High precision geometry with good fracture resistance

- CBN material with an edge geometry that has good fracture resistance, long tool life and promotes a smooth chip flow to produce excellent surface finishes.
- Excellent performance over a wide array of machining applications due to the precision, seamless cutting edge geometry.
  Radius tolerance ±5μm, diameter tolerance 0~-10μm.



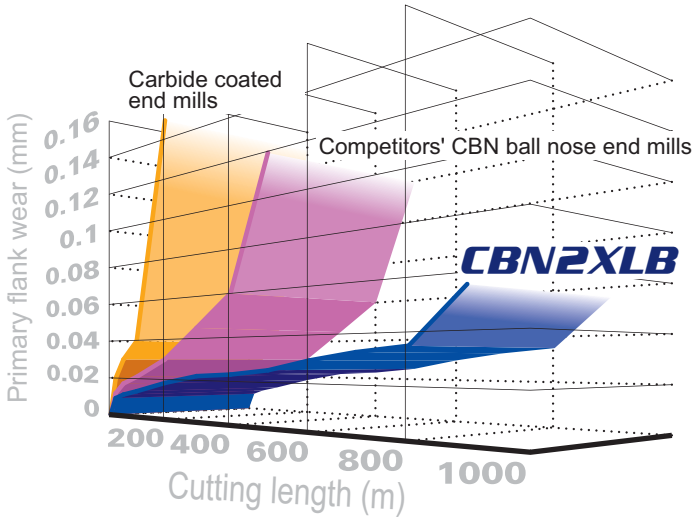
Feature 2 A wide variety of neck lengths

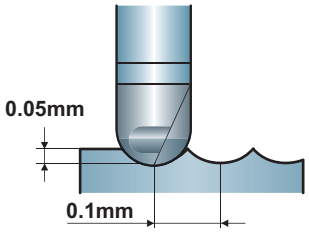
- An original manufacturing method of joining the CBN tip and carbide shank allows a wide variation of neck lengths to be manufactured.
- Different cutting and shank diameters ensures a wide range of tools for various applications.

Long neck type for deep slotting.

Machining Example 1 Finishing of high hardness materials

Long tool life when machining high hardness steel.





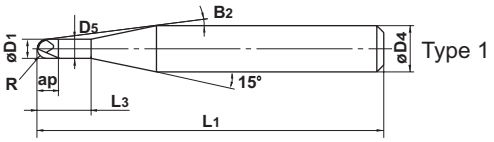
End mill	CBN2XLB R1x5
Work material	X210Cr12 (60HRC)
Revolution	20,000min^{-1} (40m/min)
Feed rate	1,700mm/min (0.04mm/tooth)
Cutting method	Climb cut, Mist blow

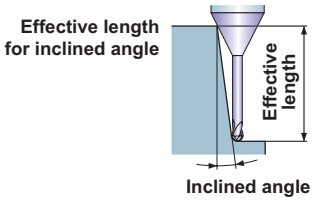
CBN2XLB

Ball nose, Short cut length, 2 flute, Long neck

±0.005

0 — -0.01





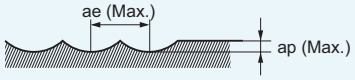
- Solid CBN ball nose. A wide variation of neck lengths available.

Unit : mm

Order Number	R	D1	ap	L3	D5	B2	L1	D4	N	Stock	Type	Effective length for inclined angle			
												30'	1°	2°	3°
CBN2XLBR0050N025S04	0.5	1	0.8	2.5	0.94	10.5°	51	4	2	★	1	3.0	3.1	3.3	3.6
R0050N025S06	0.5	1	0.8	2.5	0.94	11.9°	51	6	2	★	1	3.0	3.1	3.3	3.6
R0050N040S04	0.5	1	0.8	4	0.94	8.9°	51	4	2	★	1	4.6	4.7	5.1	5.4
R0050N040S06	0.5	1	0.8	4	0.94	10.6°	51	6	2	★	1	4.6	4.7	5.1	5.4
R0100N050S04	1	2	1.5	5	1.9	6.9°	52	4	2	★	1	5.7	5.9	6.2	6.7
R0100N050S06	1	2	1.5	5	1.9	9.4°	52	6	2	★	1	5.7	5.9	6.2	6.7
R0100N080S04	1	2	1.5	8	1.9	5.1°	52	4	2	★	1	8.8	9.1	9.7	10.4
R0100N080S06	1	2	1.5	8	1.9	7.6°	52	6	2	★	1	8.8	9.1	9.7	10.4

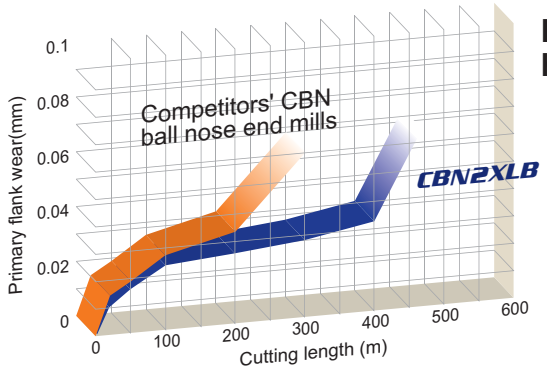
★ : Inventory maintained in Japan..

Cutting conditions

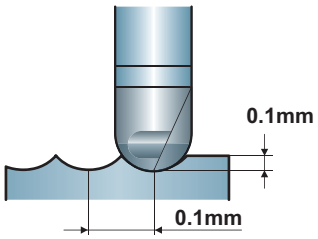
Work material	Hardened steel (—55HRC) W.Nr. 1.2344(H13) etc.				Hardened steel (55—62HRC) X210Cr12, X20Cr13 etc.				Hardened steel (62—70HRC) S6-5-2 etc.			
R (mm)	Revolution (min^{-1})	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)	Revolution (min^{-1})	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)	Revolution (min^{-1})	Feed rate (mm/min)	Depth of cut ap (mm)	Depth of cut ae (mm)
R0.5	50,000	3,000	0.03	0.06	50,000	2,000	0.03	0.05	50,000	2,000	0.02	0.03
R1	50,000	4,000	0.05	0.1	50,000	3,000	0.04	0.07	50,000	3,000	0.03	0.05
Depth of cut												

1) The above table shows maximum cutting conditions. Please control the pick feed (ae) according to the surface finish required.
2) Oil mist coolant is recommended
3) If the spindle speed is insufficient, the revolution and the feed rate should be reduced proportionately.

Machining Example 2 High hardness materials machining (Depth of cut 0.10mm)



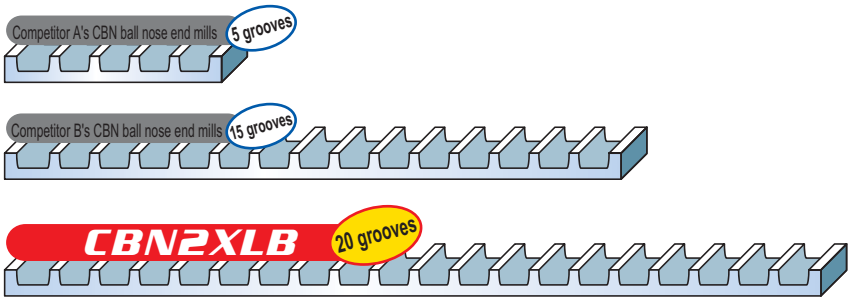
Excellent wear resistance under high-intensity conditions

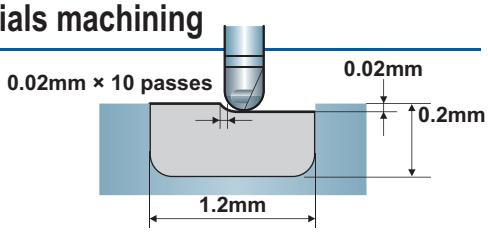


End mill	CBN2XLB R1x5
Work material	X210Cr12 (60HRC)
Revolution	20,000min^{-1} (55m/min)
Feed rate	1,700mm/min (0.04mm/tooth)
Cutting method	Climb cut, Mist blow

Machining Example 3 High hardness materials machining

Tool damage prevented therefore longer tool life achieved

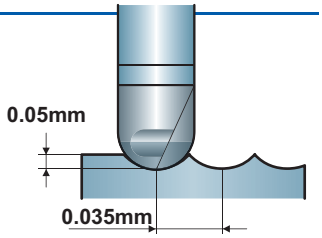




End mill	CBN2XLB R0.5x2.5
Work material	X210Cr12(60HRC)
Revolution	40,000min^{-1}(100m/min)
Feed rate	2,000mm/min(0.025mm/tooth)
Cutting method	Up cut & climb cut, Mist blow

Machining Example 4 Finishing of moulds

A reduction of the number of tools needed for finishing moulds. Subsequent polishing operation reduced due to improvement in the finished machined surface.



End mill	CBN2XLB R0.5x2.5
Work material	Mould (HRC56)
Revolution	20,000min^{-1} (63m/min)
Feed rate	2,000mm/min (0.05mm/tooth)
Cutting method	Mist blow

MITSUBISHI
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www.mitsubishicarbide.com

MMC HARTMETALL GmbH
Comeniusstr. 2, 40670 Meerbusch, Germany
Tel. +49-2159-91890 Fax +49-2159-918966
e-mail marketing@mmchg.de

MMC HARDMETAL U.K. LTD.
Mitsubishi House, Galena Close, Tamworth, B77 4AS, U.K.
Tel. +44-1827-312312 Fax +44-1827-312314
e-mail sales@mitsubishicarbide.co.uk

MMC METAL FRANCE S.A.R.L.
6, rue Jacques Monod, 91893 Orsay Cedex, France
Tel. +33-1-69 35 53 53 Fax +33-1-69 35 53 50
e-mail mmfsales@mmc-metal-france.fr

MITSUBISHI MATERIALS ESPAÑA, S.A.
C/Emperador 2, 46136 Museros, Valencia, Spain
Tel. +34-96-144-1711 Fax +34-96-144-3786
e-mail mme@mmevalencia.com

MMC ITALIA S.r.l.
V.le delle Industrie 20/5, 20020 Arese (Mi)
Tel. +39-02 93 77 03 1 Fax +39-02 93 58 90 93
e-mail info@mmc-italia.it

MMC HARDMETAL POLAND Sp. z o.o.
Armii Karjowej 61, Wroclaw, Poland
Tel. +48-71-3351-620 Fax +48-71-3351-620
e-mail mmc@mhpl.pl

MITSUBISHI HARDMETAL RUSSIA OOO LTD.
ul. Bolschaja Pochtovaja, d.36, str.1 105082 Moscow, Russia
Tel. +007-095-72558-85 Fax +007-095-72558-85
e-mail mmc-moscow@lescom.ru

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