MITSUBISHI MATERIALS

GW Series

CUTTING OFF & GROOVING SYSTEM

TOOL NEWS **B225A**

Simplified Efficiency

GW Series

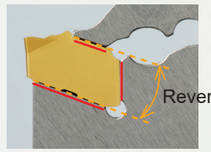
Simplicity & convenience.
Introducing a new kind of cutting off & grooving system that maximizes usability without sacrificing machining performance.

Easy to Utilize Configuration that Improves Tool Handling

Clamp

Simple insert clamping method offering high rigidity.

To prevent the insert from being pulled out during machining a reverse taper angle has been designed from the front of the insert. Additionally the design also includes 3 large locating faces between the insert and the blade offering increased cutting edge reliability. The blade itself is made from a special alloy steel to suit this application.
In respect to insert indexing, a unique wrench is supplied to ensure ease when changing the insert.

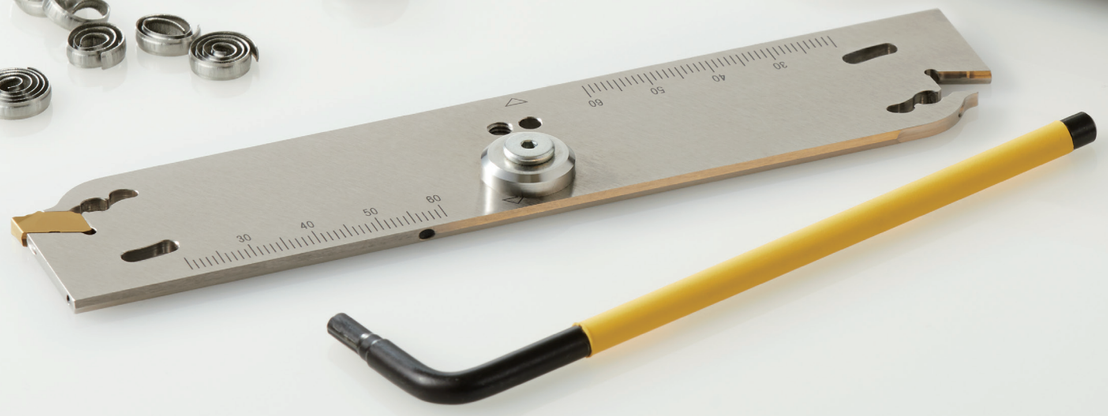


Reverse Taper Angle

Voice of Developer

Just how easy is it to set an insert?

With the use of a unique wrench, it is possible to locate and remove the insert with one simple action making it easier for use in the workplace.



Through Coolant Blade

Increased wear resistance due to the use of 2 through coolant ejection holes.

2 through coolant holes supply the coolant to both the rake and flank face, leading to effective cutting edge cooling and increased wear resistance.
Additionally this blade can also be used for both low pressure and high pressure coolant (1000 PSI).

Voice of Developer

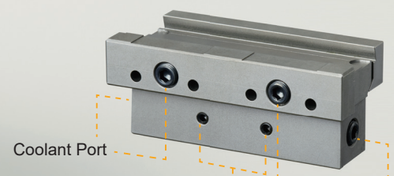
How is it possible to reduce heat generation?

The 2 coolant holes used in the blade are capable of using high coolant pressures of up (1000 PSI). This is achieved by using as large as possible through coolant hole diameter. The ejection holes are located close to the cutting edge to improve the cutting edge cooling effect and increasing wear resistance.

Coolant Ports

Flexible set up possible with the use of 6 coolant ports.

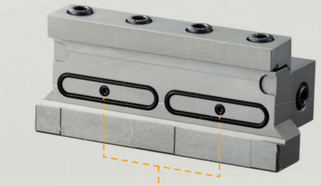
There are 6 coolant ports designed into the tool block. This makes it easier for the end user to set up the tool block and blade to a configuration that suits their needs. If necessary it is also possible to use coolant hose. The ejection type coolant also improves cutting edge cooling and chip evacuation.



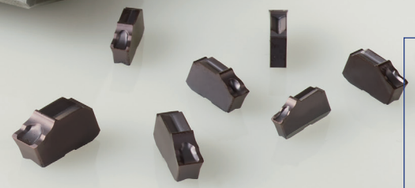
Coolant Port

Coolant Port
(For Square Shank Adapter)

Coolant Port



Coolant Outlet



Voice of Developer

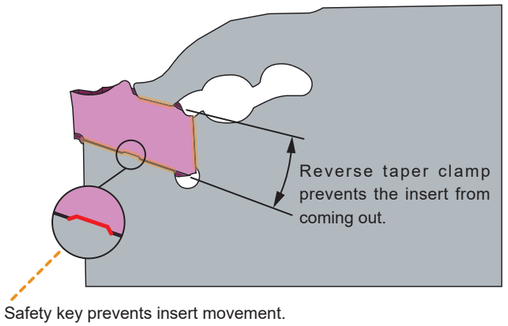
Possible set up to suit the requirements of the workplace environment.

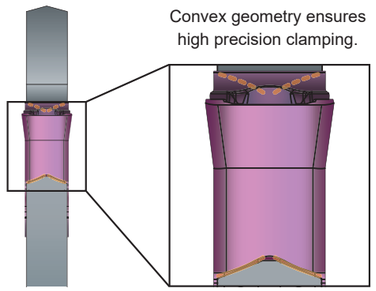
One of the objectives of this product is to respond to the customers complaints that “the product did not fit and could not be used”. Starting with the coolant outlet that prevents leaks even when oil quantity or overhangs change. Everything from the material and the shape of the O-ring, to the length of the hose has been tailored to the effective use in the workplace.

Clamp Mechanism

Simple Insert Clamping Method Offering High Rigidity

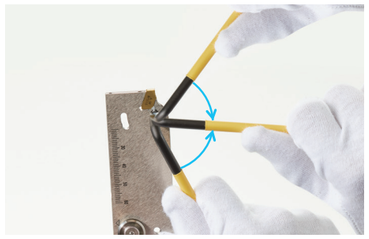
Highly Reliable Insert Clamping

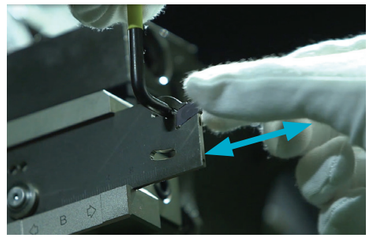




Easy Insert Indexing

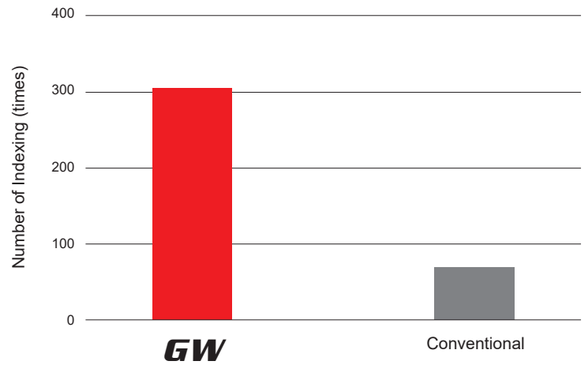
The inserts can be indexed easily with a one action movement of the wrench.





Excellent Clamp Durability

High clamp durability when compared to a conventional tool.



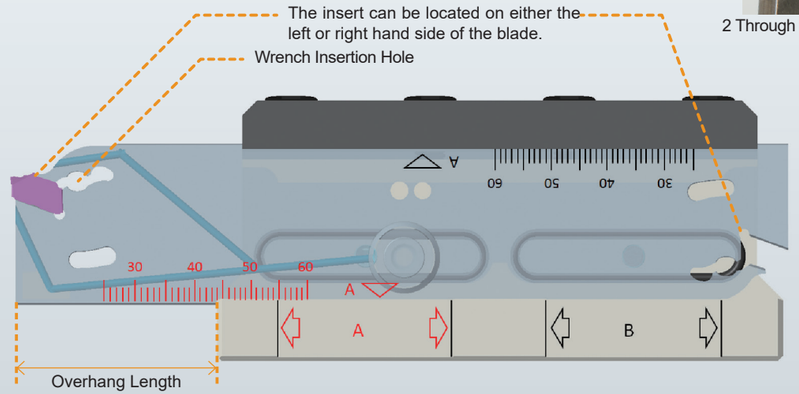
*Based on a .118 inch width insert.

Internal Coolant

Suitable for Various Set Ups Improving Tool Handling

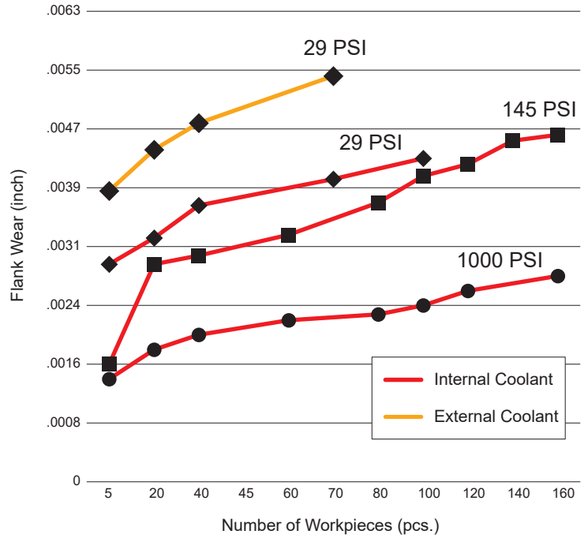
A scale is marked on the blade to make it easier to set the correct overhang length, as long as the arrow of the blade is set up with an overhang length that is within the band on the tool block then through coolant is possible.
The blade is possible to use with both external or through coolant.

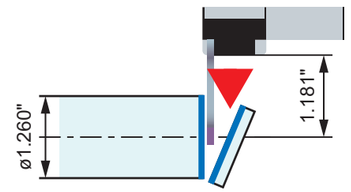

2 Through Coolant Holes



Effects of Through Coolant

Cutting Off



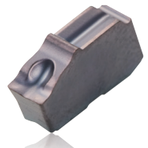


<Cutting Conditions>
Work Material : AISI 304 (ø1.260 inch)
Insert : GW1M0300F030N-GW (VP20RT)
Grooving Width CW=.118 inch
Cutting Speed : vc=590 SFM
Feed per Rev. : f=.006 IPR
ø.394 inch<.001 IPR
Overhang Length : 1.181 inch

Chip Breaker

Breaker System Offering Excellent Chip Disposal Properties

Low Feeds



GS **Breaker**

Medium Feeds

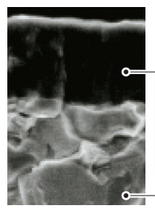
Neutral　Right Hand / Left Hand

GM **Breaker**

Insert Grades

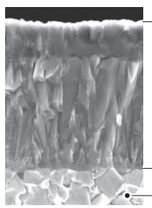
Work Material / Machining Condition	P Steels	M Stainless Steels	K Cast Irons	S Heat Resistant Alloys / Titanium Alloys
Stable ↑ Machining Condition ↓ Unstable	MY5015	VP10RT	MY5015	VP10RT
	VP10RT		VP10RT	
	VP20RT	VP20RT	VP20RT	VP20RT
	VP30RT	VP30RT		

VP20RT (1st Recommendation)



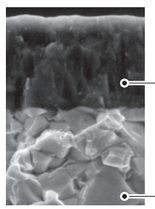
- PVD coated grade suitable for a wide range of applications. The combination of a special tough cemented carbide substrate with MIRACLE coating provides an excellent balance of wear and fracture resistance.

MY5015



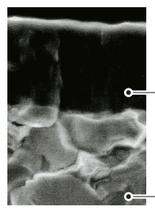
- MY5015 is a CVD coated grade with excellent wear resistance even at high temperatures. It provides longer tool life when machining cast and ductile cast irons. Also suitable for high speed continuous cutting of steels.

VP10RT



- PVD coated grade with a cemented carbide substrate harder than VP20RT. For use on difficult-to-cut materials and for extending tool life.

VP30RT



- A combination of a tough, special cemented carbide substrate and MIRACLE coating. Ideal for heavy interrupted cutting of stainless and general steels.

Identification of GW Series

Insert / Blade / Tool Block

● Insert

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
GW	1	M	0300	F	030	R	05	G	M

①Series Description

②Number of Teeth

1	1 Edge Type

③Peripheral

M	Sintered

④Groove Width

0200	.079 inch 2.00mm
0300	.118 inch 3.00mm
0400	.157 inch 4.00mm
0500	.197 inch 5.00mm

⑤Seat Size *1

D	.079 inch 2.00mm
F	.118 inch 3.00mm
G	.157 inch 4.00mm
H	.197 inch 5.00mm

⑥Corner Radius

010	.004 inch
:	:
040	.016 inch

⑦Hand

N	Neutral
R	Right
L	Left

⑧Handed Angle

05	5°

⑨Application 1

G	Grooving/Cutting Off

⑩Application 2

S	Low Feeds
M	Medium Feeds

● Blade

①	②	③	④	⑤		⑥	⑦		⑧
GW	B32	N	A	2	-	F	60	-	C

①Series Description

②Blade Size *2

B26
B32

③Hand

N	Neutral

④Blade Geometry

A	Standard Type

⑤No. of Corners

2	2 Corner

⑥Seat Size *3

D	.079 inch 2.00mm
F	.118 inch 3.00mm
G	.157 inch 4.00mm
H	.197 inch 5.00mm

⑦Max. Groove Depth

36	1.417 inch
60	2.362 inch

⑧Coolant Hole

Standard	Without Coolant Hole
C	With Coolant Hole

● Tool Block

	①	②	③	④		⑤		⑥
(Inch)	GW	TB	N	US12	-	B32	-	C
(Metric)				2525				

①Series Description

②Tool Block

③Hand

N	Neutral

④Shank Size (H x W)

Inch		Metric	
US12	.750" × .750"	2020	20mm × 20mm
US16	1.000" × 1.000"	2525	25mm × 25mm

⑤Blade Size *4

B26
B32

⑥Coolant Hole

Standard	Without Coolant Hole
C	With Coolant Hole

*1 Select seat size with the same symbol as that of blade.
*2 Select blade size with the same symbol as that of tool block.
*3 Select seat size with the same symbol of the insert.
*4 Select blade size with the same symbol as that of blade.

GW Blade

- Simple insert clamping method offering high rigidity.
- The blade is possible to use with both external or through coolant.
- Groove Depth CW .079－.197 inch

GW — For External Cutting Off / Grooving

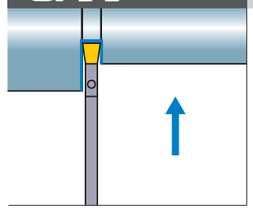


Fig.1

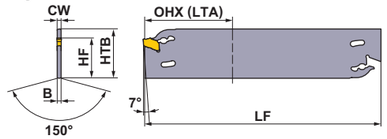
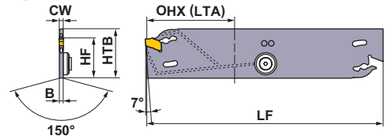


Fig.2



Without Coolant Hole

(inch)

Seat Size	CW	⁎1 CUTDIA	Order Number	Stock	⁎2 OHN	⁎3 OHX (LTA)	B	LF	HTB	HF	Fig.	Insert Type	Wrench	Tool Block Type
D	.079	2.835	GWB26NA2-D36	●	.630	1.417	.061	4.331	1.024	.843	1	GW1M0200D	GWY39L	GWTBN-B26
		4.724	GWB32NA2-D60	●	.630	2.362	.061	5.906	1.260	.984	1	GW1M0200D	GWY39L	GWTBN-B32
F	.118	2.835	GWB26NA2-F36	●	.630	1.417	.096	4.331	1.024	.843	1	GW1M0300F	GWY39L	GWTBN-B26
		4.724	GWB32NA2-F60	●	.630	2.362	.096	5.906	1.260	.984	1	GW1M0300F	GWY39L	GWTBN-B32
G	.157	2.835	GWB26NA2-G36	●	.748	1.417	.132	4.331	1.024	.843	1	GW1M0400G	GWY39L	GWTBN-B26
		4.724	GWB32NA2-G60	●	.748	2.362	.132	5.906	1.260	.984	1	GW1M0400G	GWY39L	GWTBN-B32
H	.197	2.835	GWB26NA2-H36	●	.748	1.417	.167	4.331	1.024	.843	1	GW1M0500H	GWY39L	GWTBN-B26
		4.724	GWB32NA2-H60	●	.748	2.362	.167	5.906	1.260	.984	1	GW1M0500H	GWY39L	GWTBN-B32

With Coolant Hole

(inch)

Seat Size	CW	⁎1 CUTDIA	Order Number	Stock	⁎2 OHN	⁎3 OHX (LTA)	B	LF	HTB	HF	Fig.	Insert Type	Wrench	Tool Block Type
D	.079	2.835	GWB26NA2-D36-C	●	.630	1.417	.061	4.331	1.024	.843	2	GW1M0200D	GWY39L	GWTBN-B26-C
		4.724	GWB32NA2-D60-C	●	.630	2.362	.061	5.906	1.260	.984	2	GW1M0200D	GWY39L	GWTBN-B32-C
F	.118	2.835	GWB26NA2-F36-C	●	.630	1.417	.096	4.331	1.024	.843	2	GW1M0300F	GWY39L	GWTBN-B26-C
		4.724	GWB32NA2-F60-C	●	.630	2.362	.096	5.906	1.260	.984	2	GW1M0300F	GWY39L	GWTBN-B32-C
G	.157	2.835	GWB26NA2-G36-C	●	.748	1.417	.132	4.331	1.024	.843	2	GW1M0400G	GWY39L	GWTBN-B26-C
		4.724	GWB32NA2-G60-C	●	.748	2.362	.132	5.906	1.260	.984	2	GW1M0400G	GWY39L	GWTBN-B32-C
H	.197	2.835	GWB26NA2-H36-C	●	.748	1.417	.167	4.331	1.024	.843	2	GW1M0500H	GWY39L	GWTBN-B26-C
		4.724	GWB32NA2-H60-C	●	.748	2.362	.167	5.906	1.260	.984	2	GW1M0500H	GWY39L	GWTBN-B32-C

⁎1 CUTDIA : Maximum Cut Off Diameter　⁎2 OHN : Minimum Overhang Length　⁎3 OHX(LTA) : Maximum Overhang Length

⁎ Recommended Maximum Coolant Pressure 1000PSI

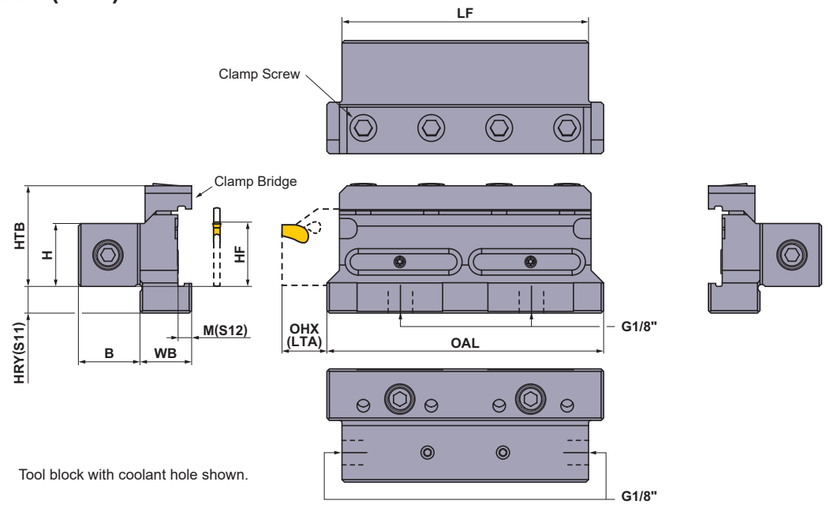
Spare Parts for Blades with Coolant Hole

(inch)

Order Number	CW	① ② Washer	Clamp Screw	Plug Wrench
GWB26NA2-D36-C	.079	①GWW04038	GW04005F	HKY20R
GWB32NA2-D60-C	.079	①GWW04038	GW04005F	HKY20R
GWB26NA2-F36-C	.118	①GWW04038	GW04005F	HKY20R
GWB32NA2-F60-C	.118	①GWW04038	GW04005F	HKY20R
GWB26NA2-G36-C	.157	②GWW04026	GW04005F	HKY20R
GWB32NA2-G60-C	.157	②GWW04026	GW04005F	HKY20R
GWB26NA2-H36-C	.197	②GWW04026	GW04005F	HKY20R
GWB32NA2-H60-C	.197	②GWW04026	GW04005F	HKY20R

● : Inventory maintained.

Tool Block (Inch)



Tool block with coolant hole shown.

Without Coolant Hole

(inch)

Order Number	Stock	H	HF	HTB	HRY (S11)	B	WB	M (S12)	LF	OAL	① ② Clamp Bridge	Clamp Screw	Wrench
GWTBNUS12-B26	●	.750	.750	1.28	.470	.730	.790	.200	2.950	3.350	①GWCW1	HSC06020	HKY50R
GWTBNUS12-B32	●	.750	.750	1.34	.650	.730	.810	.220	3.940	4.330	②GWCW2	HSC06020	HKY50R
GWTBNUS16-B26	●	1.000	1.000	1.53	.220	.980	.790	.200	2.950	3.350	①GWCW1	HSC06020	HKY50R
GWTBNUS16-B32	●	1.000	1.000	1.59	.400	.980	.810	.220	3.940	4.330	②GWCW2	HSC06020	HKY50R

With Coolant Hole

(inch)

Order Number	Stock	H	HF	HTB	HRY (S11)	B	WB	M (S12)	LF	OAL	① ② Clamp Bridge	Clamp Screw	Wrench
GWTBNUS12-B26-C	●	.750	.750	1.28	.470	.730	.790	.200	2.950	3.350	①GWCW1	HSC06020	HKY50R
GWTBNUS12-B32-C	●	.750	.750	1.34	.650	.730	.810	.220	3.940	4.330	②GWCW2	HSC06020	HKY50R
GWTBNUS16-B26-C	●	1.000	1.000	1.53	.220	.980	.790	.200	2.950	3.350	①GWCW1	HSC06020	HKY50R
GWTBNUS16-B32-C	●	1.000	1.000	1.59	.400	.980	.810	.220	3.940	4.330	②GWCW2	HSC06020	HKY50R

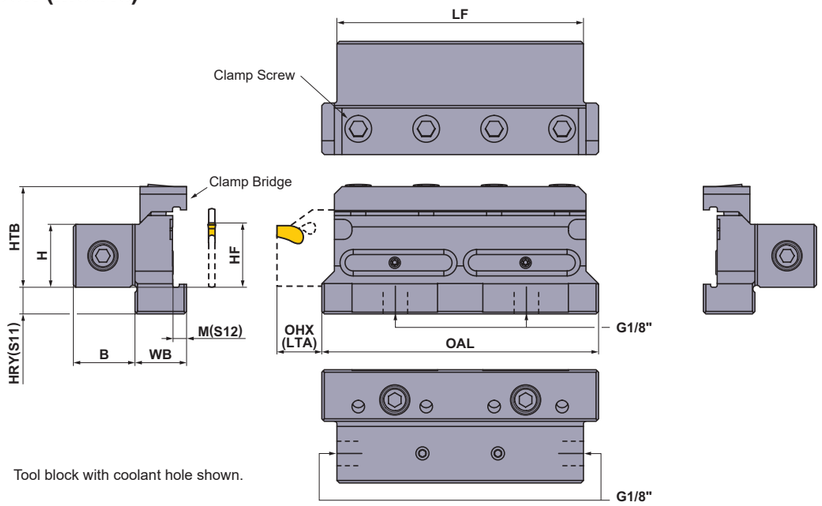
⁎ Recommended Maximum Coolant Pressure 1000 PSI

⁎ Clamp Torque (lbf-in) : HSC06020=62

Spare Parts for Tool Block with Coolant Hole

Order Number	① ② O-ring	Plug	Plug	Wrench	Plug	Wrench
GWTBNUS12-B26-C	①ORGW332N9	HGJ-PT1/8	HSD05004S	HKY25R	CS300590T	TKY08R
GWTBNUS12-B32-C	②ORGW457N9	HGJ-PT1/8	HSD05004S	HKY25R	CS300590T	TKY08R
GWTBNUS16-B26-C	①ORGW332N9	HGJ-PT1/8	HSD05004S	HKY25R	CS300590T	TKY08R
GWTBNUS16-B32-C	②ORGW457N9	HGJ-PT1/8	HSD05004S	HKY25R	CS300590T	TKY08R

Tool Block (Metric)



Tool block with coolant hole shown.

Without Coolant Hole (mm)

Order Number	Stock	H	HF	HTB	HRY (S11)	B	WB	M (S12)	LF	OAL	Clamp Bridge	Clamp Screw	Wrench
GWTBN2020-B26	★	20	20	33.5	11	19.5	20.0	5.0	75	85	①GWCW1	HSC06020	HKY50R
GWTBN2020-B32	★	20	20	35.0	15.6	19.5	20.5	5.5	100	110	②GWCW2	HSC06020	HKY50R
GWTBN2525-B26	★	25	25	38.5	6	24.5	20.0	5.0	75	85	①GWCW1	HSC06020	HKY50R
GWTBN2525-B32	★	25	25	40.0	10.6	24.5	20.5	5.5	100	110	②GWCW2	HSC06020	HKY50R

With Coolant Hole (mm)

Order Number	Stock	H	HF	HTB	HRY (S11)	B	WB	M (S12)	LF	OAL	Clamp Bridge	Clamp Screw	Wrench
GWTBN2020-B26-C	★	20	20	33.5	11	19.5	20.0	5.0	75	85	①GWCW1	HSC06020	HKY50R
GWTBN2020-B32-C	★	20	20	35.0	15.6	19.5	20.5	5.5	100	110	②GWCW2	HSC06020	HKY50R
GWTBN2525-B26-C	★	25	25	38.5	6	24.5	20.0	5.0	75	85	①GWCW1	HSC06020	HKY50R
GWTBN2525-B32-C	★	25	25	40.0	10.6	24.5	20.5	5.5	100	110	②GWCW2	HSC06020	HKY50R

★ Recommended Maximum Coolant Pressure 7MPa
★ Clamp Torque (N • m) : HSC06020=7.0

Spare Parts for Tool Block with Coolant Hole

Order Number	O-ring	Plug	Plug	Wrench	Plug	Wrench
GWTBN2020-B26-C	①ORGW332N9	HGJ-PT1/8	HSD05004S	HKY25R	CS300590T	TKY08R
GWTBN2020-B32-C	②ORGW457N9	HGJ-PT1/8	HSD05004S	HKY25R	CS300590T	TKY08R
GWTBN2525-B26-C	①ORGW332N9	HGJ-PT1/8	HSD05004S	HKY25R	CS300590T	TKY08R
GWTBN2525-B32-C	②ORGW457N9	HGJ-PT1/8	HSD05004S	HKY25R	CS300590T	TKY08R

★ : Inventory maintained in Japan.

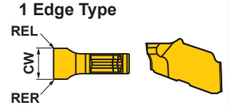
Inserts

(inch)

Application	Order Number	Stock Coating MY5015	VP10RT	VP20RT	VP30RT	CW Width of Cutting Edge inch	CW Width of Cutting Edge mm	CW Tolerance	REL	RER	PSIRR	Geometry
Grooving, Cutting Off	**GW1M0200D020N-GS**		●	●	●	.079	2.00	± .0012	.008	.008	–	REL, CW, RER
	GW1M0300F020N-GS		●	●	●	.118	3.00	± .0012	.008	.008	–	
	GW1M0400G020N-GS		●	●	●	.157	4.00	± .0016	.008	.008	–	
	GW1M0500H030N-GS		●	●	●	.197	5.00	± .0016	.012	.012	–	
	GW1M0200D020N-GM	●	●	●	●	.079	2.00	± .0012	.008	.008	–	
	GW1M0300F030N-GM	●	●	●	●	.118	3.00	± .0012	.012	.012	–	
	GW1M0400G030N-GM	●	●	●	●	.157	4.00	± .0016	.012	.012	–	
	GW1M0500H040N-GM	●	●	●	●	.197	5.00	± .0016	.016	.016	–	
Cutting Off	**GW1M0200D020R05-GM**		●	●	●	.079	2.00	± .0012	.008	.008	.197	REL, CW, RER, PSIRR 5°
	GW1M0200D020L05-GM		●	●	●	.079	2.00	± .0012	.008	.008	.197	
	GW1M0300F030R05-GM		●	●	●	.118	3.00	± .0012	.012	.012	.197	
	GW1M0300F030L05-GM		●	●	●	.118	3.00	± .0012	.012	.012	.197	
	GW1M0400G030R05-GM		●	●	●	.157	4.00	± .0016	.012	.012	.197	
	GW1M0400G030L05-GM		●	●	●	.157	4.00	± .0016	.012	.012	.197	
	GW1M0500H040R05-GM		●	●	●	.197	5.00	± .0016	.016	.016	.197	
	GW1M0500H040L05-GM		●	●	●	.197	5.00	± .0016	.016	.016	.197	Right hand insert shown.

GW Series

(inch)

Geometry		Order Number	Carbide RT9010	Carbide RT9020	Seat Size	CW Groove Width inch	CW Groove Width mm	CW Tolerance	RER/L
1 Edge Type 	NEW	**GW1B0320D020N**	★	★	**D**	.128	3.24	± .0039	.008
	NEW	**GW1B0440F020N**	★	★	**F**	.175	4.44	± .0039	.008
	NEW	**GW1B0540G020N**	★	★	**G**	.214	5.44	± .0039	.008
	NEW	**GW1B0640H020N**	★	★	**H**	.254	6.44	± .0039	.008

Note 1) Blank inserts to be ground by customers before using.
Note 2) Select a seat size with the same symbol as that of the blade and holder.

★ : Inventory maintained in Japan. (10 inserts in one case)

● : Inventory maintained. (10 inserts in one case)

Coolant Hose Kit

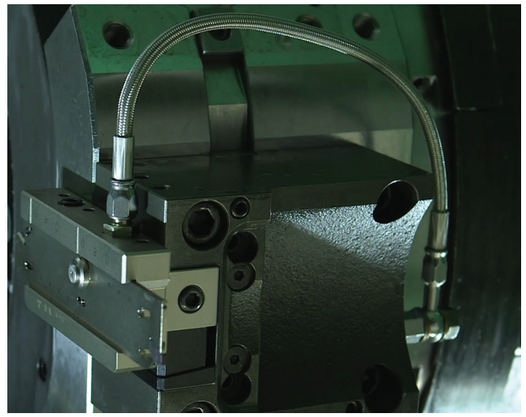
(inch)

Connector Type	Order Number	Stock	Hose Length	Kit Details								
				Hose	Banjo Adapter		Banjo Bolt		Adapter		Washer	
				Code No.	Code No.	QTY.	Code No.	QTY.	Code No.	QTY.	Code No.	QTY.
Straight	**CS-1/8-150SS**	●	5.91	HOSE-1/8-150	—	—	—	—	AD-G1/8	2	WA-M10	2
Straight	**CS-1/8-200SS**	●	7.87	HOSE-1/8-200	—	—	—	—	AD-G1/8	2	WA-M10	2
Straight	**CS-1/8-250SS**	●	9.84	HOSE-1/8-250	—	—	—	—	AD-G1/8	2	WA-M10	2
Straight	**CS-1/8-300SS**	●	11.81	HOSE-1/8-300	—	—	—	—	AD-G1/8	2	WA-M10	2
Elbow Straight	**CS-1/8-150BS**	●	5.91	HOSE-1/8-150	AD-BM10	1	BB-G1/8	1	AD-G1/8	1	WA-M10	3
Elbow Straight	**CS-1/8-200BS**	●	7.87	HOSE-1/8-200	AD-BM10	1	BB-G1/8	1	AD-G1/8	1	WA-M10	3
Elbow Straight	**CS-1/8-250BS**	●	9.84	HOSE-1/8-250	AD-BM10	1	BB-G1/8	1	AD-G1/8	1	WA-M10	3
Elbow Straight	**CS-1/8-300BS**	●	11.81	HOSE-1/8-300	AD-BM10	1	BB-G1/8	1	AD-G1/8	1	WA-M10	3
Elbow	**CS-1/8-150BB**	●	5.91	HOSE-1/8-150	AD-BM10	2	BB-G1/8	2	—	—	WA-M10	4
Elbow	**CS-1/8-200BB**	●	7.87	HOSE-1/8-200	AD-BM10	2	BB-G1/8	2	—	—	WA-M10	4
Elbow	**CS-1/8-250BB**	●	9.84	HOSE-1/8-250	AD-BM10	2	BB-G1/8	2	—	—	WA-M10	4
Elbow	**CS-1/8-300BB**	●	11.81	HOSE-1/8-300	AD-BM10	2	BB-G1/8	2	—	—	WA-M10	4

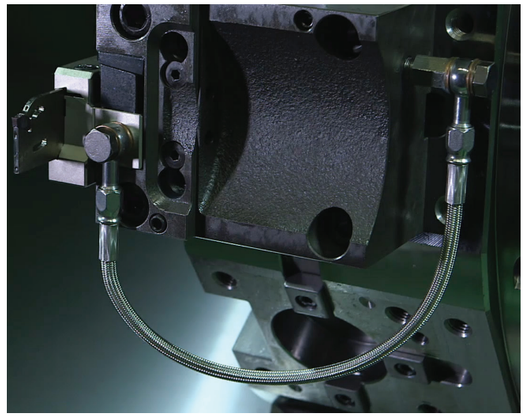
Connection Screw Size = G1/8"

Mounting Example

Elbow Straight Type



Elbow Type



● : Inventory maintained.

Memo

Recommended Cutting Conditions

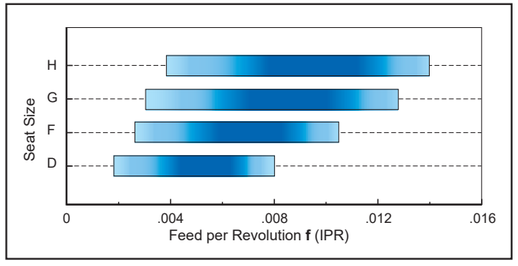
Cutting Speed

	Work Material	Properties	Grade	Cutting Speed **vc** (SFM) 165 330 490 655 820 985
P	Mild Steels	≤160HB	VP20RT	330–785
			VP10RT	360–820
	Carbon Steels Alloy Steels	160–280HB	VP20RT	260–655
			VP10RT	295–690
			VP30RT	195–590
			MY5015	360–820
		≥280HB	VP20RT	195–525
			VP10RT	230–560
			VP30RT	130–460
			MY5015	295–690
M	Stainless Steels	≤270HB	VP20RT	195–590
			VP10RT	230–620
			VP30RT	130–525
K	Gray Cast Irons	Tensile Strength ≤300MPa	VP20RT	260–655
			VP10RT	295–690
			MY5015	460–985
	Ductile Cast Irons	Tensile Strength ≤800MPa	VP20RT	195–525
			VP10RT	230–560
			MY5015	295–690
S	Heat Resistant Alloys Titanium Alloys	–	VP20RT	100–195
			VP10RT	130–230

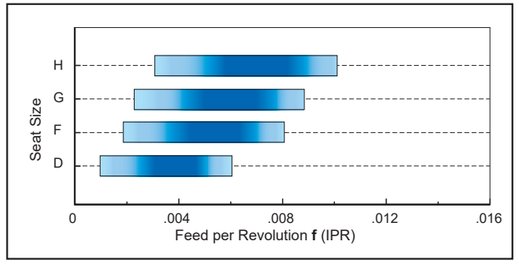
(Note 1) VP20RT is the first recommended grade for materials.
(Note 2) For VP10RT, VP20RT, VP30RT and MY5015, wet cutting is recommended.

Feed per Revolution

GM Breaker



GS Breaker

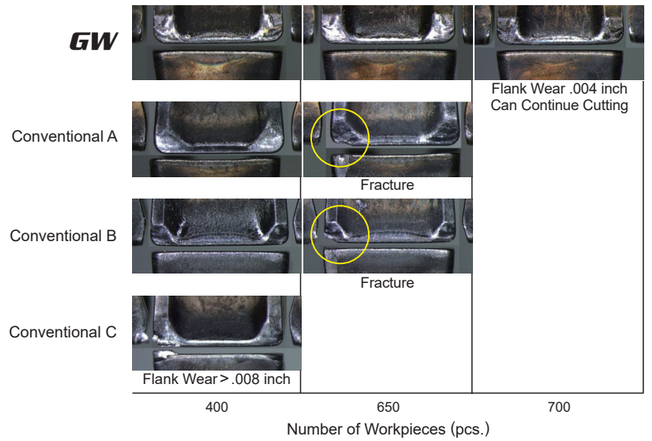


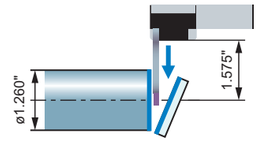
Chip Breaker	Feed per Revolution **f** (IPR)			
	Seat Size D	Seat Size F	Seat Size G	Seat Size H
GM Breaker	.002–.008	.003–.010	.003–.013	.004–.014
GS Breaker	.001–.006	.002–.008	.002–.009	.003–.010

Cutting Performance

Cutting Off of Alloy Steel (AISI 4140)

No abnormal cutting edge damage, possible to extend tool life.

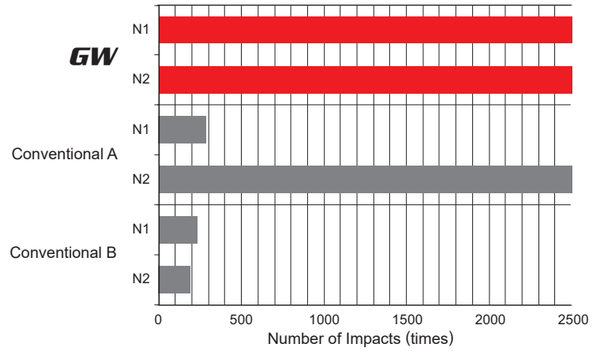


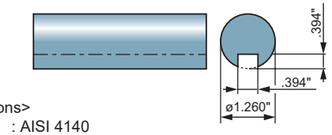


<Cutting Conditions>
Work Material : AISI 4140
Insert : GW1M0300F030N-GM (MY5015)
Grooving Width CW .118 inch
Cutting Speed : vc = 560 SFM
Feed per Rev. : f = .006 IPR
ø.394 inch < .001 IPR
Overhang Length : 1.575 inch
Cutting Mode : Internal Coolant 145 PSI

*Tool Life Criteria : Flank wear up to .008 inch or fracture.

Interrupted Cutting Off of Alloy Steel (AISI 4140)



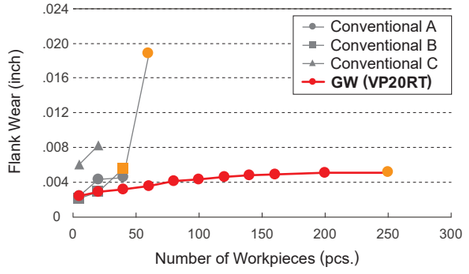


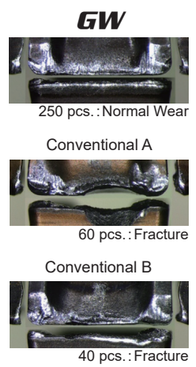
<Cutting Conditions>
Work Material : AISI 4140
Insert : GW1M0300F030N-GM (VP30RT)
Grooving Width CW .118 inch
Cutting Speed : vc = 395 SFM
Feed per Rev. : f = .008 IPR
ø.394 inch < .001 IPR
Overhang Length : 1.181 inch
Cutting Mode : Internal Coolant 145 PSI

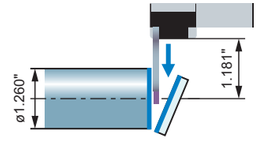
*Tool Life Criteria : Fracture or breakage.

Cutting Off of Stainless Steel (AISI 304)

No abnormal cutting edge damage, 4 times longer tool life was achieved.



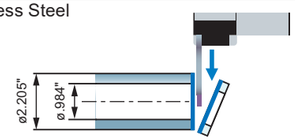
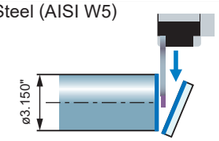
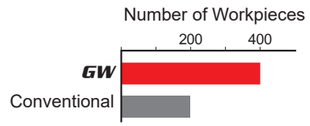
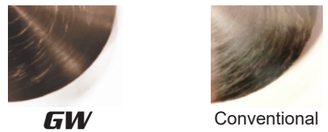
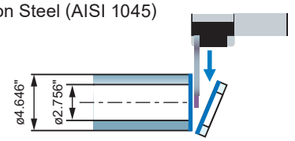
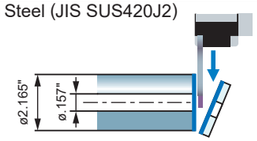
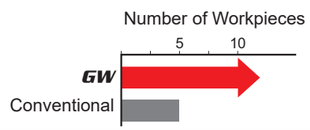
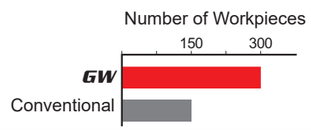




<Cutting Conditions>
Work Material : AISI 304
Insert : GW1M0300F030N-GM (VP20RT)
Grooving Width CW .118 inch
Cutting Speed : vc = 590 SFM
Feed per Rev. : f = .006 IPR
ø.394 inch < .001 IPR
Overhang Length : 1.181 inch
Cutting Mode : Internal Coolant 145 PSI

*Tool Life Criteria : Flank wear up to .008 inch or fracture.

Application Examples

Insert		GW1M0300F030N-GM(VP20RT)	GW1M0300F030N-GM(VP20RT)
Workpiece		Stainless Steel 	Carbon Tool Steel (AISI W5) 
Component		Machine Parts	Machine Parts
Cutting Method		Cutting Off	Cutting Off
Cutting Conditions	Cutting Speed **vc** (SFM)	525	590
	Feed per Rev. **f** (IPR)	.004	.005
Cutting Mode		Internal Coolant (290 PSI)	Internal Coolant (72.5 PSI)
Results		As compared to the conventional item, double the tool life was achieved. Additionally due to the use of the unique wrench tool handling was improved. 	A good surface finish was obtained due to smooth chip evacuation when compared to the conventional item. 
Insert		GW1M0300F030N-GM(VP30RT)	GW1M0300F030N-GM(VP20RT)
Workpiece		Carbon Steel (AISI 1045) 	Stainless Steel (JIS SUS420J2) 
Component		Machine Tool Parts	Machine Parts
Cutting Method		Cutting Off	Cutting Off
Cutting Conditions	Cutting Speed **vc** (SFM)	330	360
	Feed per Rev. **f** (IPR)	.004	.002
Cutting Mode		External Coolant	Internal Coolant
Results		While the conventional item, broke during machining, the GW was able to machine more than double the number of workpieces. 	As compared to the conventional item double the number of workpieces was achieved. 

The above application examples are customer's applications, so it can be different from the recommended conditions.

Memo

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FOR YOUR SAFETY

- Don't handle inserts and chips without gloves.
- Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage.
- Please use safety covers and wear safety glasses.
- When using compounded cutting oils, please take fire precautions.
- When attaching inserts or spare parts, please use only the correct wrench or driver.
- When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

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