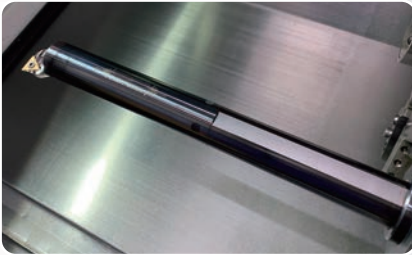


# Smart Damper™ for Internal Boring

New anti-vibration mechanism offers superb vibration dampening performance  
Suppresses chattering for large diameter bars of L/D=8



\*Smart Damper™ is a registered trademark of BIG DAISHOWA Co., Ltd.

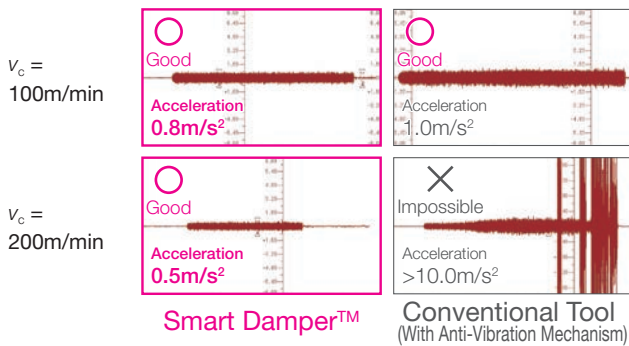


■ **Features**

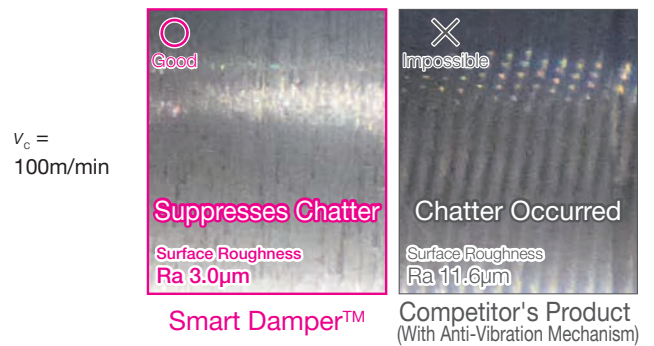
- Adopts a special damper mechanism to suppress chattering for large diameter bars with long overhang of L/D=5 to 8.
- Replaceable heads enable a wide selection of positive and negative inserts.
- Internal coolant supply improves chip evacuation and tool life.

■ **Cutting Performance**

Overhang Amount 6D Vibration during Machining



Overhang Amount 9D\* Surface Roughness during Machining



Work Material: S45C (Work Dia.  $\phi 40$  up) Holder:  $\phi 32$  Shank Insert: TPMT160404N-SU Cutting Conditions:  $f = 0.1\text{mm/rev}$   $a_p = 0.2\text{mm}$  Dry

\*Machining performed with 9D overhang was for anti-vibration performance evaluation only; to prevent tool deflection, use up to a maximum of 8D.

■ **Smart Damper™ Combination Examples**

Indexable Head

For Positive Inserts	For Negative Inserts
SCLC Type SCLP Type	DCLN Type
SDUC Type SDQC Type	DDUN Type
STUP Type	DTFN Type
SVUB Type SVQB Type	

Smart Damper™ Body

S-SDB3240L320 Shank Dia.:  $\phi 32\text{mm}$  LF: 320mm  
 S-SDB4050L410 Shank Dia.:  $\phi 40\text{mm}$  LF: 410mm

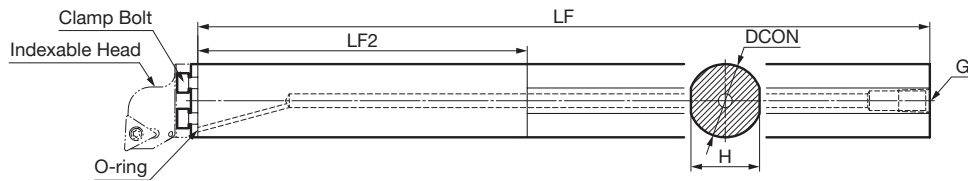
Indexable heads can be selected to suit machining applications

\*Smart Damper™ is a registered trademark of BIG DAISHOWA Co., Ltd.

# For Internal Boring Smart Damper™



Fig 1



## Smart Damper™ Body

## Parts

Dimensions (mm)

Cat. No.	Stock	Diameter DCON	Overall Length LF	Length LF2	Height H	Shank G	Indexable Head Group No.	Weight (kg)	Fig	Dimensions (mm)			
										Clamp Bolt	Wrench (For Hex Socket)	O-ring	
<b>S-SDB3240L320</b>	●	32	320	144	30	Rc1/4	1	2.3	1	BX0510	<b>3.0</b>	LH040	SS020
<b>S-SDB4050L410</b>	●	40	410	170	37	Rc3/8	2	4.5	1	BX0610	<b>5.2</b>	LH050	SS020

Refer to the user's manual for methods of mounting indexable heads. Indexable heads are not included with the Smart Damper™ body. **Indexable Heads P4 to P7**

Because the anti-vibration mechanism is built in, clamping to the LF2 dimension may disrupt dampening functions.

The indexable head is not included in the weight.

Three clamp bolts and two O-rings (including one spare) are included.

Fig 1

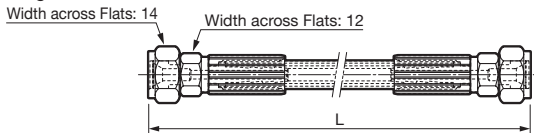


Fig 1

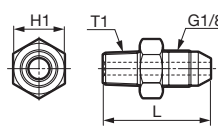
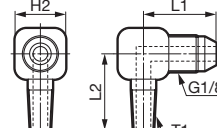


Fig 2



## Parts (Hose)

Dimensions (mm)

Cat. No.	Stock	L	Screw Standard	Screw Standard	Fig
<b>J-HOSE-G1/8-G1/8-200</b>	●	200	G1/8	G1/8	1
<b>J-HOSE-G1/8-G1/8-300</b>	●	300	G1/8	G1/8	1

Hoses are sold separately.

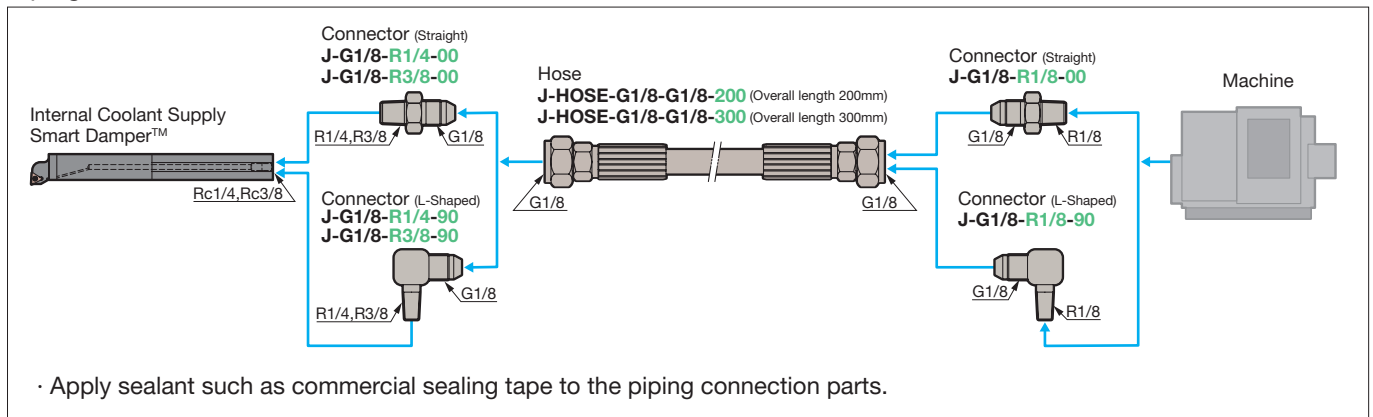
## Parts (Connector)

Dimensions (mm)

Cat. No.	Stock	Screw Standard	T1	L	L1	L2	H1	H2	Fig
<b>J-G1/8-R1/4-00</b>	●	R1/4	34	—	—	—	<b>14</b>	—	1
<b>J-G1/8-R1/8-00</b>	●	R1/8	29	—	—	—	14	—	1
<b>J-G1/8-R3/8-00</b>	●	R3/8	36	—	—	—	19	—	1
<b>J-G1/8-R1/4-90</b>	●	R1/4	—	<b>22</b>	<b>25</b>	—	—	<b>17</b>	2
<b>J-G1/8-R1/8-90</b>	●	R1/8	—	20	21	—	14	—	2
<b>J-G1/8-R3/8-90</b>	●	R3/8	—	<b>23</b>	<b>30</b>	—	—	<b>19</b>	2

Connectors are sold separately.

## Piping Method for Hoses and Connectors



## Identification Code (Smart Damper™ Body)

**S-SDB 32 40 L320**

Connection Method: S, Shank Dia.: 32, Min. Bore Dia.: 40, Overall Length: L320

## Identification Code (Indexable Head)

**SDB 32 - SCLCR09T3 - 40**

Connection Method: SDB, Compatible Shank Dia.: 32, (Conforms to boring bar ISO standard classification): SCLCR09T3, Min. Bore Dia.: 40

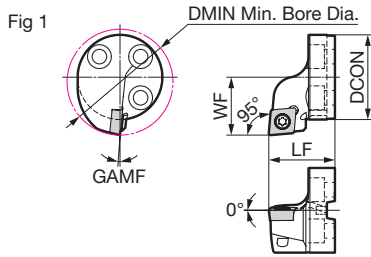
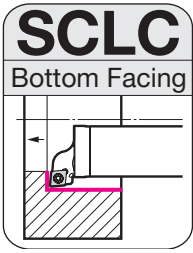
\*Smart Damper™ is a registered trademark of BIG DAISHOWA Co., Ltd.

Note: The parts (connector) dimensions in red have been changed from the 2021-2022 General Catalogue, but the products themselves remain the same. ● mark: Standard stocked item (N·m) Recommended Tightening Torque (N·m)

# For Internal Boring Smart Damper™



Internal Boring  
Screw-on, Internal Coolant Supply



## Indexable Heads (For Positive Inserts)

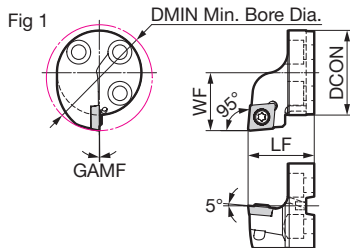
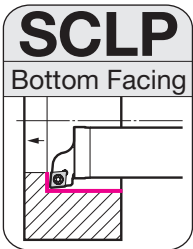
## Parts

Cat. No.	Stock		Min. Bore Dia.	Diameter		Overall Length	Cutting Edge Distance	Rake Angle		Applicable Inserts	Smart Damper™ Group No.	Fig	Flat Insert Screw		Wrench
	R	L		DMIN	DCON			LF	WF				GAMF	Cat. No.	
<b>SDB32-SCLC R/L09T3-40</b>	●	●	40	32	25	22	-6°			CC□□09T3	1	1	BFTX0409N	3.4	TRX15
<b>SDB40-SCLC R/L09T3-50</b>	●	●	50	40	25	27	-2°				2	1			

Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts. Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
\*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.



Internal Boring  
Screw-on, Internal Coolant Supply



## Indexable Heads (For Positive Inserts)

## Parts

Cat. No.	Stock		Min. Bore Dia.	Diameter		Overall Length	Cutting Edge Distance	Rake Angle		Applicable Inserts	Smart Damper™ Group No.	Fig	Flat Insert Screw		Wrench
	R	L		DMIN	DCON			LF	WF				GAMF	Cat. No.	
<b>SDB32-SCLP R/L0903-40</b>	●		40	32	25	22	0°			C□□0903	1	1	BFTX0409N	3.4	TRX15
<b>SDB40-SCLP R/L0903-50</b>	●		50	40	25	27	0°				2	1			

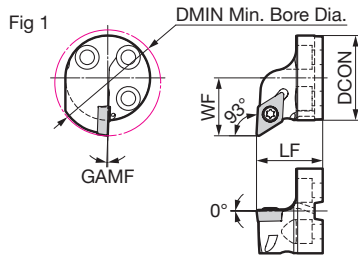
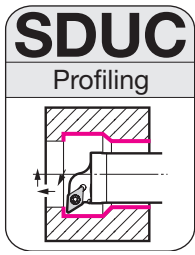
Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts. Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
\*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.

\*Smart Damper™ is a registered trademark of BIG DAISHOWA Co., Ltd. Refer to the chapter on "Indexable Inserts" in the General Catalogue for applicable inserts.

Note: The rake angles in red have been changed from the 2021-2022 General Catalogue. ● mark: Standard stocked item Blank: Made-to-order item Recommended Tightening Torque (N·m)



Internal Boring  
 Screw-on, Internal Coolant Supply



Indexable Heads (For Positive Inserts)

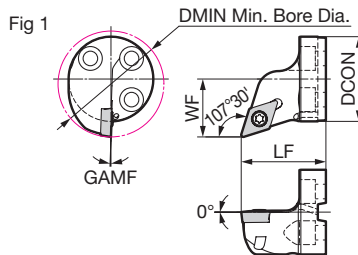
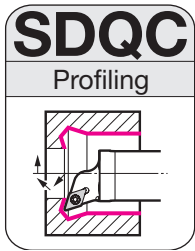
Parts Dimensions (mm)

Cat. No.	Stock		Min. Bore Dia.	Diameter	Overall Length	Cutting Edge Distance	Rake Angle	Applicable Inserts	Smart Damper™ Group No.	Fig	Flat Insert Screw		Wrench
	R	L									DMIN	DCON	
<b>SDB32-SDUC R/L11T3-40</b>	●	●	40	32	25	22	-2°	DC□□11T3	1	1	BFTX0409N	3.4	TRX15
<b>SDB40-SDUC R/L11T3-50</b>	●	●	50	40	25	27	0°		2	1			

Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts. Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
 \*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.



Internal Boring  
 Screw-on, Internal Coolant Supply



Indexable Heads (For Positive Inserts)

Parts Dimensions (mm)

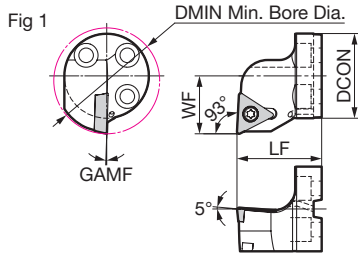
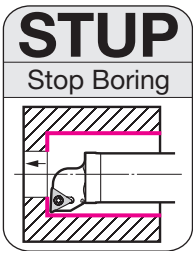
Cat. No.	Stock		Min. Bore Dia.	Diameter	Overall Length	Cutting Edge Distance	Rake Angle	Applicable Inserts	Smart Damper™ Group No.	Fig	Flat Insert Screw		Wrench
	R	L									DMIN	DCON	
<b>SDB32-SDQC R/L11T3-40</b>	●	●	40	32	32	22	-2°	DC□□11T3	1	1	BFTX0409N	3.4	TRX15
<b>SDB40-SDQC R/L11T3-50</b>	●	●	50	40	32	27	0°		2	1			

Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts. Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
 \*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.

\*Smart Damper™ is a registered trademark of BIG DAISHOWA Co., Ltd. Refer to the chapter on "Indexable Inserts" in the General Catalogue for applicable inserts.

● mark: Standard stocked item Recommended Tightening Torque (N·m)

# For Internal Boring Smart Damper™



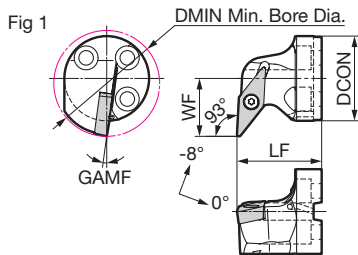
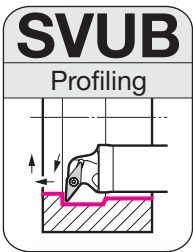
Internal Boring  
Screw-on, Internal Coolant Supply

## Indexable Heads (For Positive Inserts)

## Parts

Cat. No.	Stock		Min. Bore Dia.	Diameter	Overall Length	Cutting Edge Distance	Rake Angle	Applicable Inserts	Smart Damper™ Group No.	Fig	Dimensions (mm)		
	R	L									Flat Insert Screw	Wrench	
<b>SDB32-STUP R/L1103-40</b>	●	●	40	32	25	22	-2°	TP□□1103	1	1	BFTX0307N	2.0	TRX10
<b>SDB40-STUP R/L1103-50</b>	●	●	50	40	25	27	0°		2	1			
<b>SDB32-STUP R/L1604-40</b>	●	●	40	32	32	22	-2°	TP□□1604	1	1	BFTX0409N	3.4	TRX15
<b>SDB40-STUP R/L1604-50</b>	●	●	50	40	32	27	0°		2	1			

Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts. Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
\*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.



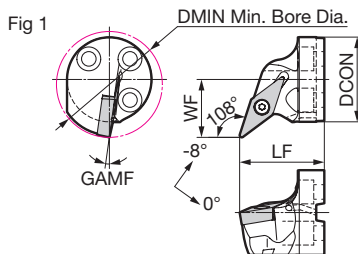
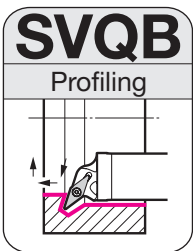
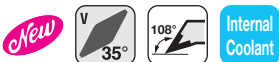
Internal Boring  
Screw-on, Internal Coolant Supply

## Indexable Heads (For Positive Inserts)

## Parts

Cat. No.	Stock		Min. Bore Dia.	Diameter	Overall Length	Cutting Edge Distance	Rake Angle	Applicable Inserts	Smart Damper™ Group No.	Fig	Dimensions (mm)		
	R	L									Flat Insert Screw	Wrench	
<b>SDB32-SVUB R/L1604-40</b>	●		40	32	32	22	(-7.5°)	VB□□1604	1	1	BFTX03508N	2.0	TRX10
<b>SDB40-SVUB R/L1604-50</b>	●		50	40	32	27	(-7.5°)		2	1			

Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts. Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
\*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.



Internal Boring  
Screw-on, Internal Coolant Supply

## Indexable Heads (For Positive Inserts)

## Parts

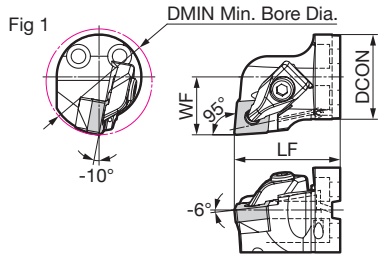
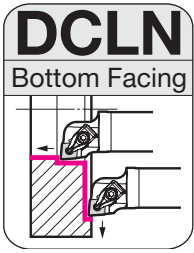
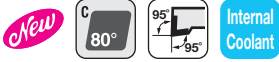
Cat. No.	Stock		Min. Bore Dia.	Diameter	Overall Length	Cutting Edge Distance	Rake Angle	Applicable Inserts	Smart Damper™ Group No.	Fig	Dimensions (mm)		
	R	L									Flat Insert Screw	Wrench	
<b>SDB32-SVQB R/L1604-40</b>	●		40	32	32	22	(-6.5°)	VB□□1604	1	1	BFTX03508N	2.0	TRX10
<b>SDB40-SVQB R/L1604-50</b>	●		50	40	32	27	(-6.5°)		2	1			

Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts. Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
\*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.

\*Smart Damper™ is a registered trademark of BIG DAISHOWA Co., Ltd. Refer to the chapter on "Indexable Inserts" in the General Catalogue for applicable inserts.

● mark: Standard stocked item Blank: Made-to-order item (N·m) Recommended Tightening Torque (N·m)

# For Internal Boring Smart Damper™



Internal Boring  
Internal Coolant Supply Double Clamp

● Feed direction of applicable inserts differs for DCLN Type according to machining application.

For Internal Boring  
Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts.  
Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
For Facing  
Right-handed (R) tool holders are compatible with right-handed (R) or neutral (N) inserts.  
Left-handed (L) tool holders are compatible with left-handed (L) or neutral (N) inserts.

## Indexable Heads (For Negative Inserts)

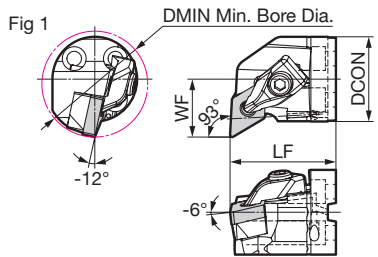
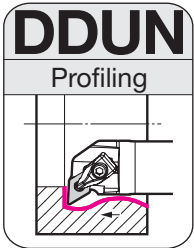
## Parts

Dimensions (mm)

Cat. No.	Stock		Min. Bore Dia.	Diameter	Overall Length	Cutting Edge Distance	Applicable Inserts	Smart Damper™ Group No.	Fig	Dimensions (mm)					
	R	L								DMIN	DCON	LF	WF	Clamp Set	Shim
SDB32-DCLN R/L1204-40	●	●	40	32	40	22	CN□□1204	1	1	SCP-2	5.0	CNS1204B	BFTX0409N	LH040	LH025
SDB40-DCLN R/L1204-50	●	●	50	40	40	27		2	1						

\*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.

Clamp Set Parts P8



Internal Boring  
Internal Coolant Supply Double Clamp

## Indexable Heads (For Negative Inserts)

## Parts

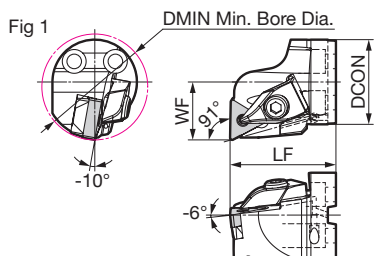
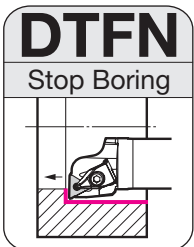
Dimensions (mm)

Cat. No.	Stock		Min. Bore Dia.	Diameter	Overall Length	Cutting Edge Distance	Applicable Inserts	Smart Damper™ Group No.	Fig	Dimensions (mm)					
	R	L								DMIN	DCON	LF	WF	Clamp Set	Shim
SDB32-DDUN R/L1504-40	●	●	40	32	40	22	DN□□1504	1	1	SCP-2	5.0	DNS1504B	BFTX0409N	LH040	LH025
SDB40-DDUN R/L1504-50	●	●	50	40	40	27		2	1						

Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts.  
Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.

\*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.

Clamp Set Parts P8



Internal Boring  
Internal Coolant Supply Double Clamp

## Indexable Heads (For Negative Inserts)

## Parts

Dimensions (mm)

Cat. No.	Stock		Min. Bore Dia.	Diameter	Overall Length	Cutting Edge Distance	Applicable Inserts	Smart Damper™ Group No.	Fig	Dimensions (mm)					
	R	L								DMIN	DCON	LF	WF	Clamp Set	Shim
SDB32-DTFN R/L1604-40	●		40	32	40	22	TN□□1604	1	1	SCP-1	5.0	TNS1604B	BFTX0307N	LH040	LH025
SDB40-DTFN R/L1604-50	●		50	40	40	27		2	1						

Right-handed (R) tool holders are compatible with left-handed (L) or neutral (N) inserts.  
Left-handed (L) tool holders are compatible with right-handed (R) or neutral (N) inserts.

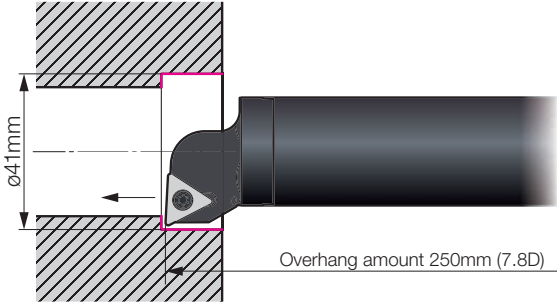
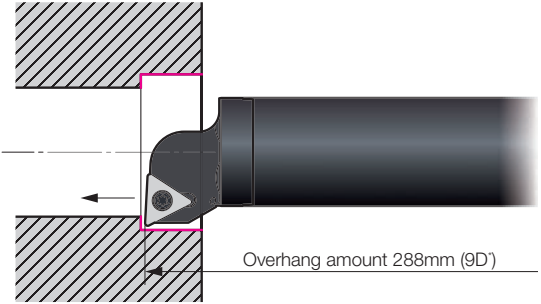
\*Refer to Smart Damper™ body Group Nos. on P3 for applicable Smart Damper™ bodies.

Clamp Set Parts P8




\*Smart Damper™ is a registered trademark of BIG DAISHOWA Co., Ltd. Refer to the chapter on "Indexable Inserts" in the General Catalogue for applicable inserts.

● mark: Standard stocked item Blank: Made-to-order item Recommended Tightening Torque (N-m)

■ Application Examples

SCM435 Component <span style="float: right; border: 1px solid white; padding: 2px;">P</span>	A5056 Component <span style="float: right; border: 1px solid white; padding: 2px;">N</span>
<p>Enables finishing to roughing of steel even with long overhang amount of 7.8D</p>  <p>Overhang amount 250mm (7.8D)</p>	<p>No chatter with overhang amount of 9D*, good surface finish</p>  <p>Overhang amount 288mm (9D)</p> <p><small>*To prevent tool deflection, use up to a normal maximum of 8D.</small></p>
<p>Body: S-SDB3240L320 Head: SDB32-STUPR1604-40            Cutting Conditions: Roughing <math>v_c = 80\text{m/min}</math> <math>f = 0.15\text{mm/rev}</math> <math>a_p = 1.3\text{mm}</math> Wet            Finishing <math>v_c = 150\text{m/min}</math>, <math>f = 0.12\text{mm/rev}</math>, <math>a_p = 0.15\text{mm}</math> Wet</p>	<p>Body: S-SDB3240L320 Head: SDB32-STUPR1604-40            Cutting Conditions: <math>v_c = 200\text{m/min}</math> <math>f = 0.35\text{mm/rev}</math> <math>a_p = 1.0\text{mm}</math> Wet</p>

■ Clamp Set Parts

Applicable Clamp Set Cat. No.	Spring	Cap Screw	 <b>5.0</b>
			
SCP-1	● <small>Stock</small> CSP08	● <small>Stock</small> CP-M5-20-1	<b>5.0</b>
SCP-2	● <small>Stock</small> CSP08	● <small>Stock</small> CP-M5-20-1	

CP-M5-20-1 can also be fastened from the other end of the screw.

\*Smart Damper™ is a registered trademark of BIG DAISHOWA Co., Ltd.

● mark: Standard stocked item  Recommended Tightening Torque (N·m)

Sumitomo Electric Cutting Tools Official Apps for iOS/Android



Cutting calculation App

**SumiTool Calculator**



Grade & chipbreaker comparison App

**SumiTool Converter**



< SAFETY NOTES >



● Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.

● Please handle with care as this product has sharp edges.  
 ● Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.

● When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

 **Sumitomo Electric Industries, Ltd.**

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